Neptun Deep Project

Presentation Memorandum on Neptun Deep Project for issuance of Environmental Agreement

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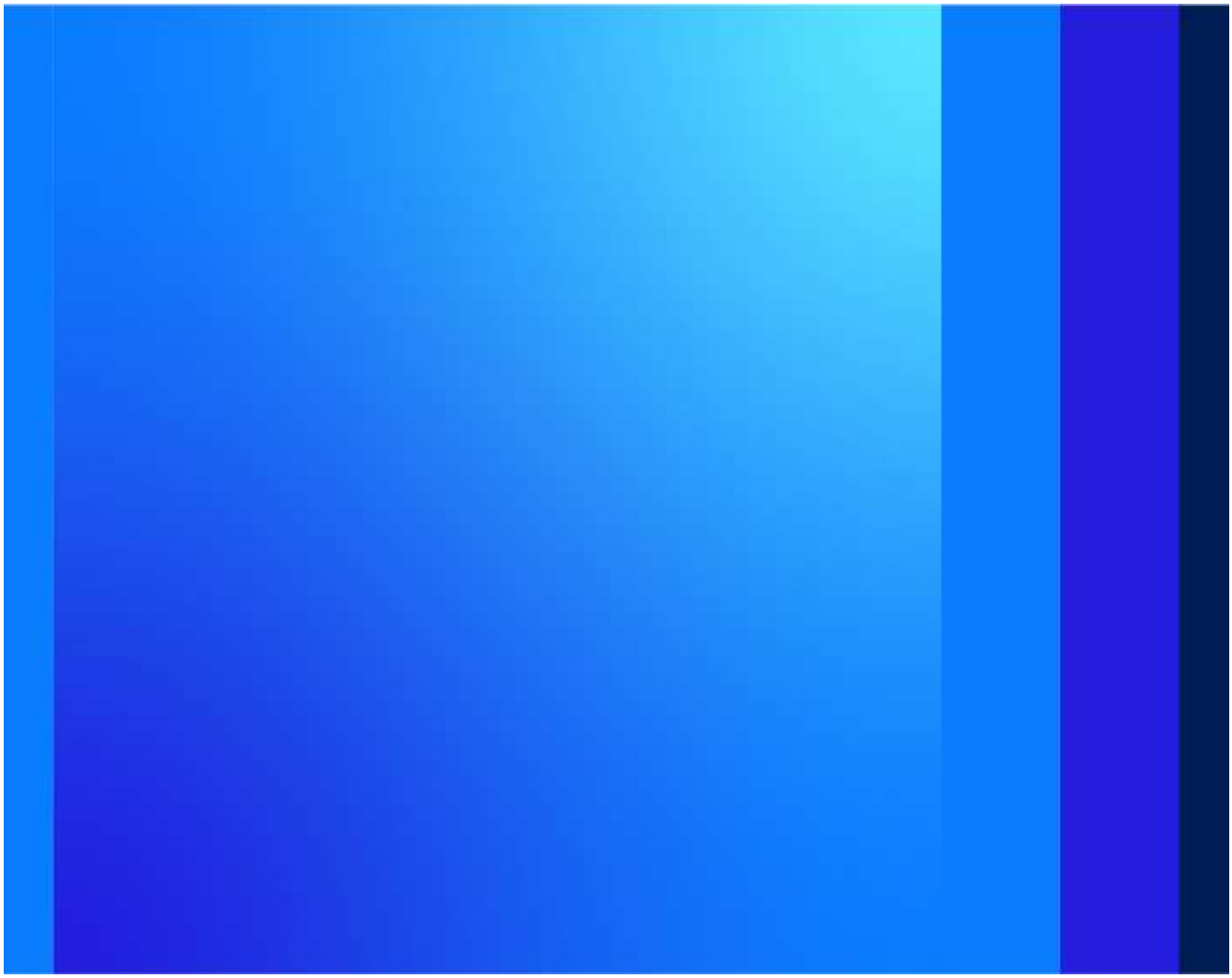

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	EPC Consultanță de mediu
	PFA Zaharia Constantin

Halcrow Romania SRL is a Jacobs Engineering Group Inc. Company
85 Carol Davila Street
Room A, 2nd floor, 050453
Sector 5, Bucharest, Romania
T +40 3 1106 5376
F +40 311 034 189
www.jacobs.com

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B	13.10.2021	Version revised	Gabriel Coman, EIA Specialist 1 NIMRD Grigore Antipa EPC Consultanță de mediu	Ionut Vasile, Permitting Discipline Lead/EIA Specialist	Roxana Dorneanu, Deputy Project Manager
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Lista de semnături a membrilor echipei de elaborare a Memoriului de prezentare

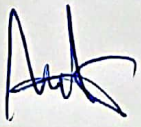
Halcrow România SRL

Nume și prenume	Nume companie/instituție	Poziție	Semnătura	Data
Dorneanu Roxana	Halcrow România SRL	Manager Adjunct de Proiect		09.12.2021
Vasile Ionuț	Halcrow România SRL	Specialist EIM, Coordonator Avize/Autorizații		09.12.2021
Coman Gabriel	Halcrow România SRL	Specialist EIM și Avize/Autorizații		09.12.2021

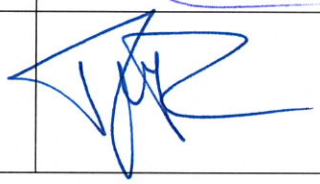
PFA Zaharia Constantin

Nume și prenume	Nume companie/instituție	Poziție	Semnătura	Data
Zaharia Constantin	PFA Zaharia Constantin	Consultant de mediu, componentă aer		09.12.2021

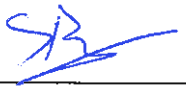
Institutul Național de Cercetare - Dezvoltare Marină "Grigore Antipa" Constanța

Nume și prenume	Nume companie/instituție	Poziție	Semnătura	Data
Timofte Florin	Institutul Național de Cercetare - Dezvoltare Marină "Grigore Antipa" Constanța	Expert habitate pelagice, biodiversitate		09.12.2021
Abaza Valeria	Institutul Național de Cercetare - Dezvoltare Marină "Grigore Antipa" Constanța	Expert habitate bentale, biodiversitate		09.12.2021
Marin Oana	Institutul Național de Cercetare - Dezvoltare Marină "Grigore Antipa" Constanța	Expert habitate bentale, biodiversitate		09.12.2021
Filimon Adrian	Institutul Național de Cercetare - Dezvoltare Marină "Grigore Antipa" Constanța	Expert habitate bentale, biodiversitate		09.12.2021
Niță Victor	Institutul Național de Cercetare - Dezvoltare Marină "Grigore Antipa" Constanța	Expert pești, biodiversitate		09.12.2021
Coatu Valentina	Institutul Național de Cercetare - Dezvoltare Marină "Grigore Antipa" Constanța	Expert contaminanți, capitol corpuri de apă		09.12.2021
Spînu Alina	Institutul Național de Cercetare - Dezvoltare Marină "Grigore Antipa" Constanța	Expert GIS		09.12.2021

Institutul Național de Cercetare – Dezvoltare pentru Geologie și Geoecologie Marină – GeoEcoMar

Nume și prenume	Nume companie/instituție	Poziție	Semnătura	Data
Rădulescu Vlad	Institutul Național de Cercetare – Dezvoltare pentru Geologie și Geoecologie Marină – GeoEcoMar	Geofizician		09.12.2021
Lupașcu Naliana	Institutul Național de Cercetare – Dezvoltare pentru Geologie și Geoecologie Marină – GeoEcoMar	Chimist		09.12.2021
Bucse Andra	Institutul Național de Cercetare – Dezvoltare pentru Geologie și Geoecologie Marină – GeoEcoMar	Chimist		09.12.2021
Vasiliu Dan	Institutul Național de Cercetare – Dezvoltare pentru Geologie și Geoecologie Marină – GeoEcoMar	Chimist		09.12.2021
Nesrin Acmola	Institutul Național de Cercetare – Dezvoltare pentru Geologie și Geoecologie Marină – GeoEcoMar	Inginer de mediu		09.12.2021
Rădulescu Raluca	Institutul Național de Cercetare – Dezvoltare pentru Geologie și Geoecologie Marină – GeoEcoMar	Inginer de mediu		09.12.2021
Tutuianu Raluca	Institutul Național de Cercetare – Dezvoltare pentru Geologie și Geoecologie Marină – GeoEcoMar	Inginer de mediu		09.12.2021

EPC Consultanță de mediu

Nume și prenume	Nume companie/instituție	Poziție	Semnătura	Data
Doba Alexandra	EPC Consultanță de mediu	Inginer		09.12.2021
Dumitru Răzvan	EPC Consultanță de mediu	Inginer		09.12.2021
Petrescu Felicia	EPC Consultanță de mediu	Geograf		09.12.2021
Borlea Silvia	EPC Consultanță de mediu	Ecolog		09.12.2021
Matei Octavian	EPC Consultanță de mediu	Ecolog		09.12.2021
Răducanu Cristina Doinița	EPC Consultanță de mediu	Biolog		09.12.2021
Ciubotariu Alexandru	EPC Consultanță de mediu	Biolog		09.12.2021

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Acronyms, Abbreviations and Units

Term	Definition
°C	Degree Celsius
3D	Three-Dimensional
3LPE	Three-Layer Extruded Polyethylene
AACR	National Civil Aviation Authority
AC	Alternating Current
ACCOBAMS	The Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea, and contiguous Atlantic area
ag	Peak Ground Acceleration
AD	Abundance-dominance index
ANIF	Land Reclamation/Improvement National Agency
ANRE	Romanian Energy Regulatory Authority
ANRGN	Romanian Natural Gas Regulatory Authority
bar	Bars
barg	Pressure in Bar, relative to current atmospheric pressure
BAT	Best Available Techniques
bbl	Barrel
bblw	Barrels of Water
bblw/Mscf	Barrels of Water per Million Standard Cubic Feet of Produced Gas
BC	Before Christ
BRUA	Bulgaria, Romania, Hungary, Austria
C1	Methane
C2	Ethane
C3	Propane
iC4	Isobutane
nC4	Normal butane
iC5	Pentane
nC5	Normal pentane
C6	Hexane
C7	Heptane
Ca	Calcium
CCR	Central Control Room
CCTV	Closed-Circuit Television
CLC	CORINE Land Cover
cMIST	Compact Mass transfer and Inline Separation Technology
CTZ	Current Transfer Zone
CW	Coastal water
dBA	Decibels (A-weighted sound levels)
DC	Drill Center
DEH	Direct Electric Heating
DN	National Road

Term	Definition
DODC	Domino Drill Center
DTAC	Technical documentation for issuance of the Construction Permit
EEZ	Exclusive Economic Zone
EH	Electrically Heated
EMEPRL	ExxonMobil Exploration and Production Romania Limited
ESD	Emergency Shutdown
EUNIS	European Nature Information System
LW	Natural lake
FLET	Flowline End Termination
FOC	Fiber Optic Cable
Ft^3	Cubic foot
Ft-lbs	Foot-pound (unit for force)
g	Gravitational Acceleration
GA	General Alarm
gal	US gallon
GD	Government Decision
GEO	Government Emergency Ordinance
GO	Government Ordinance
GPP	Gas Production Pipeline
H_2S	Hydrogen Sulfide
HDD	Horizontal Directional Drilling
HDPE	High-Density Polyethylene
HMI	Human Machine Interface
HMWB-LW	Heavily modified water body – natural lake
HMWB-CW	Heavily modified water body – costal water
HP	High Pressure
hp	Horsepower
HPU	Hydraulic power unit
HV	High Voltage
HVAC	Heating, Ventilation, and Air Conditioning
Hz	Hertz
IBA	Important Birds Area
ICSS	Integrated Control and Safety System
ID	Internal Diameter
ILI	In-line Inspection
ITA	In-Line Tee Assembly
IUCN	International Union for Conservation of Nature
kg	Kilograms
km	Kilometer
KP	Kilometric Point
kV	Kilovolt
kW	Kilowatt

Term	Definition
l	Liter
LAN	Local Area Network
LAeq	Equivalent continuous sound level (A-weighted)
lb	Pound
LED	Light Emitting Diodes
LER	Local Equipment Room
LP	Low Pressure
LW	Natural lake
m	Meter
m^2	Square Meter
m^3	Cubic Meter
MARPOL	International Convention for the Prevention of Pollution from Ships (MARPOL)
mbgl	Meters below ground level
Mbps	Megabit per second
MeOH	Methanol
ML	Mud Line (Seabed level)
mm	Millimeter
MODU	Mobile Offshore Drilling Unit
MPa	Mega Pascal
MSFD	Marine Strategy Framework Directive
MSL	Mean Sea Level
MSV	Multi-Purpose Service Vessel
mSv	millisievert
MT	Metric ton
MW	Megawatt
N_2	Nitrogen
Na	Sodium
NaBr	Sodium Bromide
NAF	Non-Aqueous Fluid
NGMS	Natural Gas Metering Station
NPA	Natural Protected Area
NSA	Noise Sensitive Areas
NTS	National Transmission System
O&M	Operations and Maintenance
OD	Outer Diameter
PAH	Polycyclic Aromatic Hydrocarbon
PCS	Process Control System
PE100	PE100 Polyethylene
PFP	Passive Fire Protection
PLET	Pipeline End Termination
PN	Normal Proctor
ppm	Parts per million

Term	Definition
ppmvd	Parts per million by volume, dry
PSDC	Pelican South Drill Center
psi	Pound per Square Inch
PSV	Pressure Safety Valve
PUG	General Urbanism Plan
PUZ	Zonal Urbanism Plan
RAMSAR	Ramsar Wetland Site
ROV	Remotely Operated Vehicle
rpm	Revolutions per minute
s	Second
SCI	Site of Community Importance
SDU	Subsea Distribution Unit
SIS	Safety Instrumented System
SPA	Special Protection Area
SSIV	Subsea Isolation Valve
SWP	Shallow Water Platform
TBM	Tunnel Boring Machine
Tc	Corner Period
TD	Total Depth
TEG	Tri-Ethylene Glycol
TVD	True Vertical Depth
UHF	Ultra-High Frequency
UPS	Uninterruptible Power Supply
UTA	Umbilical Termination Assembly
V	Volt
VAC	Volts of Alternating Current
VOC	Volatile Organic Compounds
VSAT	Very Small Aperture Terminal
WAN	Wide Area Network
WBDF	Water-based drilling fluid
WD	Water Depth
WFD	Water Framework Directive
WGS	World Geodetic System
°C	Celsius Degree

Glossary of Terms

Term	Definition
Active Fire Protection	A group of systems that require some amount of action or motion in order to work efficiently in the event of a fire. The actions may be manually operated (e.g., fire extinguisher) or automatic (e.g., sprinkler)
Advanced Alarm Management System	A combination of applications that help to make effective alarm systems in conformance to the industry recommendations and standards.
Barrel	US (United States) unit measure of volume defined as 42 US gallons, respectively 159 liters or 35 UK (United Kingdom) gallons
BAT - Best Available Techniques	The most efficient and advanced stage of development registered in the development of an activity and of the exploitation modes, which demonstrates the practical possibility of the specific techniques to constitute the reference for establishing the emission limit values and other authorization conditions, in order to prevent pollution, and, if not possible, to reduce, as a whole, emissions and the impact on the environment as a whole.
Bend Restrictors	Term used in the oil and gas industry as part of offshore deep-sea drilling operations. It is designed to prevent damage to an umbilical cable from overbending. It offsets the action of applied loads which could kink or buckle the internal conduits of an umbilical, cable, flexible pipe.
Cathodic Protection	A technique used to control the corrosion of a metal surface by making it the cathode of an electrochemical cell. A simple method of protection connects the metal to be protected to a more easily corroded "sacrificial metal" to act as the anode. The sacrificial metal then corrodes instead of the protected metal. For structures such as long pipelines, where passive galvanic cathodic protection is not adequate, an external direct current electrical power source is used to provide sufficient current.
Central Control Room	Standalone building from which an unmanned platform / automatic installation is remotely monitored and controlled. The CCR computers communicate with the control computers and instrumentation in the monitored installation via a fiber optic cable or a satellite connection.
Chemical Injection Metering Valves	Valves that ensure flow control, metering, and highly accurate dosing of chemicals in subsea systems.
Closed-Circuit Television	TV system in which signals are not publicly distributed but are monitored primarily for surveillance and security.
cMIST Dehydration Unit	A patented compact absorption and separation technology developed by ExxonMobil specifically for gas dehydration and acid gas removal applications.
Current Transfer Zone	During operation, power is fed to the far end of the flowline via a piggyback cable (see DEH below) and returns through the steel flowline and seawater. At each end of the flow- line, where the current enters and leaves the pipe, additional anodes are mounted to form a well-defined, low impedance path for the current to the sea, known as the current transfer zone.
Deck Integrated Firefighting System	A system consisting of deck integrated pop-up nozzles, foam skid and activation panels. When the system is released the nozzles will be lifted up by the water pressure and make an effective spray distribution of water/foam mixture to the entire landing area.
Direct Electric Heating	The working principle of this system is that the heated flowline is part of an electrical circuit. The DEH system includes a direct electric heating cable piggybacked to the flowline all the way along the heated section. At the far end, the piggyback cable is connected (grounded) to the pipe steel. Analogous, a return cable is connected to the steel pipe in the near end. Thus, the return

Term	Definition
	current is divided between the steel pipe and seawater. The heat development is caused by power losses in the steel pipe and piggyback cable, including the electromagnetic coupling between the cable and the steel pipe.
Drill Center	The drill center of subsea production system refers to the subsea wellhead and the surrounding access facilities including manifold.
Dynamic Positioning	A computer-controlled system to automatically maintain a vessel's position and heading by using its own propellers and thrusters.
Electrical Flying Lead	Leads used to link connections between subsea structures such as manifolds, trees, umbilical termination units and subsea distribution units. Flight leads are provided in lengths between a few meters and a few hundred meters and pre-assembled with connecting plugs.
Electrically Heated	The heating of a pipe or valve by means of an electrical resistor wrapped around the heated object.
Emergency Shutdown	A critical condition for which immediate shutdown of the installation is required and delayed shutdown options are not acceptable because of the danger posed to the platform, human life or physical damage to the equipment.
Exclusive Economic Zone	The exclusive economic zone is established in the marine space of the shore, located beyond the territorial sea and adjacent to them, in which a state exercises sovereign rights and jurisdiction over the natural resources of the seabed, its subsoil and the water column above, and with regard to the various activities related to the exploration, exploitation, protection, conservation of the environment and their management. The exclusive economic zone extends up to a maximum of 200 nautical miles offshore, the distance being calculated from the territorial water line.
Fast Supply Vessel	A vessel specialized in the transport of offshore support personnel, deck cargo, and below-deck cargo such as fuel and potable water to and from offshore installations such as oil platforms, drilling rigs, drill and dive ships or wind farms.
Fiber Optic Cable	A fiber optic cable is a cable that contains one or more optical fibers that serve to guide light. Optical cables are widely used, especially in telecommunications. The optical fibers are generally individually covered with plastic layers and contained in a protective tube suitable for the environment in which the cable will be mounted.
Fire and Gas System	Systems for safeguarding process plants and production facilities that handle flammable and toxic materials. The system contains detection equipment and firefighting and control equipment.
Flare Stack	A gas combustion device used in industrial plants and at oil or gas extraction sites and offshore oil and gas rigs. Flare stacks are primarily used for burning off flammable gas released by safety valves during unplanned over-pressuring of equipment, during startups and shutdowns, they are also often used for the planned combustion of gases over relatively short periods.
Flexible Flowline	Flowlines that transport gas from the drilling center to the production platform.
Flow Assurance	A process that ensures successful and economical flow of hydrocarbons stream from reservoir to the point of sale.
Flow Control Valve	A valve that regulates the flow or pressure of a fluid.
Flowline End Termination	A skid representing the end or termination of a flowline. The skid typically contains a male hub that serves as an attachment point for a jumper. There may also be other components on the skid such as remote operated vehicles interface panels, ball valves and associated mud mats.

Term	Definition
Full Well Stream	Well stream gas that has not had separable liquids removed, such as water, oil, or condensate.
Gas Production Pipeline	The pipeline that connects the production platform to the natural gas metering station and transports the gas treated in accordance with the requirements of the Romanian National Transport System.
Gas turbine generator	The power generator for the production platform driven by a gas turbine powered by gases produced at the production platform.
Heater Skid	Skid type system for raising the temperature of the circulating gas to the level necessary for the operation and inhibition of hydrate formation.
Hook-Up and Commissioning	Overall preparatory activities for the start-up of an asset for oil and gas production.
Human-Machine Interface	A feature or component of a certain device or software application that enables operators to manage industrial and process control machinery via a computer-based graphical user interface
Hydraulic Power Unit	A self-contained system that generally includes a motor, a fluid reservoir, and a pump. It works to apply the hydraulic pressure needed to drive motors, cylinders, and other complementary parts of a given hydraulic system.
Inch	Unit of measure (US and UK standards) of length equivalent to 2.54 cm
Inlet Separator	A separator located at the entrance of the gas processing system, which ensures the primary separation of gas from liquid and solid fractions.
In-Line Inspection	A preventative maintenance examination of pipelines to identify corrosion, cracks and other defects that may result in catastrophic failure of the structure. It is a form of nondestructive examination.
In-Line Tee Assembly	An integrated equipment package that creates a branched line tie-in point along a pipeline. By creating a tee along the pipeline, the operator can plan for tie-in points to fit future expansion plans.
Instrumentation and Control	The system of equipment for monitoring and controlling the processes within an installation. Instruments include valves, transmitters, and analyzers. Control instrumentation includes devices such as solenoids, valves, circuit breakers, and relays.
Integrated Control and Safety System	A technological platform that combines elements of process control and functional safety into a single architecture.
Intelligent Well Completions	Intelligent completions incorporate permanent downhole sensors and surface-controlled downhole flow control valves, enabling the system to monitor, evaluate, and actively manage production (or injection) in real time without any well interventions.
Jumper	A short pipe connector that is used to transport production fluid between two subsea components, for example, a tree and a manifold, a manifold and another manifold etc.
Laydown Area	A temporary storage area for materials unloaded by the crane from supply or support vessels.
Local Area Network	A computer network that interconnects computers within a limited area (e.g., office building).
Local Equipment Room	A room or space within a building or installation for the storage or installation of mechanical or electrical/electronic devices.
Manifold	A manifold is an arrangement of piping and/or valves designed to combine, distributed, control, and often monitor fluid flow.

Term	Definition
Maximum Allowable Operating Pressure	The maximum pressure at which the weakest point of the equipment, system or a vessel can handle at a specific temperature and which the walls may safely hold in normal operation.
Metering Equipment	An equipment for measuring the flow of gases transmitted through a pipeline / installation.
Mobile Offshore Drilling Unit	A floating offshore drilling rig with support legs or dynamic positioning.
Multi-Purpose Service Vessel	Vessels capable of performing a range of activities including supply duties, lifting operations, ROV and survey activities, platform maintenance, diving, light well intervention and accommodation support.
National Transmission System	The natural gas transmission and distribution system on the Romanian territory, part of the public property of the state and operated by TRANSGAZ SA
Natural Gas Metering Station	A dedicated site designed for the continuous and simultaneous analysis of the quantity and quality of the natural gas being transported in the pipeline.
Non-Aqueous Fluid	A non-aqueous drilling fluid or well circulating fluid. Common non-aqueous fluid systems are diesel, mineral oil, or synthetic fluid-based invert emulsions, or other non-water-based fluids
Operations and Maintenance	The functions, duties and labor associated with the daily operations and normal repairs, replacement of parts and structural components, and other activities needed to preserve an asset so that it continues to provide acceptable services and achieves its expected life.
Passive Fire Protection	An integral component of the components of structural fire protection and fire safety in a building. Passive fire protection attempts to contain fires or slow the spread, such as by fire-resistant walls, floors, and doors.
Pipe Spool	Prefabricated off-site pipes in various shapes for connecting pipes and equipment on the platform.
Pipeline End Termination	The end or termination of a pipeline. The skid typically contains a male hub that serves as an attachment point for a jumper. There may also be other components on the skid such as ROV interface panels, ball valves and associated mud mats.
Pipeline Pig	A pig launcher is a device which uses a pressurized container to shoot a cleaning device ("pig") through the pipeline to perform a variety of functions including cleaning, monitoring, and maintaining of the pipe.
Platform Jacket	Jacket refers in the oil and gas exploration and production to the steel frame supporting the deck and the topsides in a fixed offshore platform
Platform Support Vessel	A ship specially designed to supply offshore oil and gas platforms. These ships accomplish a variety of tasks. The primary function for most of these vessels is logistic support and transportation of goods, tools, equipment, and personnel to and from offshore oil platforms and other offshore structures.
Process Control System	Pieces of equipment along the production line during manufacturing that test the process in a variety of ways and return data for monitoring and troubleshooting.
Produced Water	Water that comes out of the well with the gas during production. Produced water contains suspended solids, dissolved solids, and various chemicals used in the production process.
Project Site	The location on where the project installations and associated facilities will be located.
Remote Operated Vehicle	An underwater vehicle which is usually tethered to a ship from where the control is ensured. The vehicle is similar to a robot, which is fitted out with sensors and tools to perform various tasks.

Term	Definition
Riser	A pipe carrying up the subsea gas from the flowline on the seabed to the topside unit on the platform.
Safety Instrumented System	An engineering set of hardware and software controls which are especially used on critical process systems.
Shallow Water Platform	Offshore platform that processes the natural gases extracted from the Neptun Deep block and sends them to shore through a natural gas production pipeline.
Shutdown Valves	An actuated valve designed to stop the flow of a hazardous fluid upon the detection of a dangerous event. This provides protection against possible harm to people, equipment, or the environment.
Shut-in Tubing Pressure	The surface pressure exerted at the top of a wellbore when it is closed either at the Christmas tree or the blowout preventer.
Subsea Distribution Unit	The distribution unit is located subsea and provides the hydraulic, chemical, fiber optic and electrical distribution between the Umbilical Termination Assembly and the rest of the subsea system.
Suction Pile	Suction piles (also called suction caissons or suction anchors) are a long steel cylinder topped with a pile top or cap. The cap comprises valves to assist with embedment as well as connections that differ depending on the use of the pile.
Trawling Protection	Trawling protection structures for protection against fishing activities are structures that do not allow trawl nets to attach equipment and underwater pipes.
Tunnel Boring Machine	A boring equipment used to excavate tunnels with a circular cross section through a variety of soil and rock strata. They may also be used for microtunneling. They can be designed to bore through anything from hard rock to sand.
Ultra-High Frequency	The designation for radio frequencies in the range between 300 megahertz (MHz) and 3 gigahertz (GHz), also known as the decimeter band as the wavelengths range from one meter to one tenth of a meter (one decimeter).
Umbilical	Umbilical System: Assembly of electrical conductors, fiber optics, hydraulic pipes, chemical injection pipes, etc. in a joint metal coating.
Umbilical Termination Assembly	Umbilical termination assemblies terminate umbilical lines and provide one or more connections for hydraulic, chemical, electrical and fiber optic services between umbilical and submarine equipment.
Uninterruptible Power Supply	An electrical apparatus that provides emergency power to a load when the input power source or mains power fails. A UPS differs from an auxiliary or emergency power system or standby generator in that it will provide near-instantaneous protection from input power interruptions, by supplying energy stored in batteries
Vent Stack	A vent stack disposal system is a vertical pipe used to collect and discharge gas into the atmosphere in a way that is safe and efficient.
Very Small Aperture Terminal	A two-way satellite ground station with a dish antenna that is smaller than 3.8 m. The majority of VSAT antennas range from 75 cm to 1.2 m. Data rates, in most cases, range from 4 Kbit/s up to 16 Mbit/s.
Windsock	A windsock is a conical textile tube that is used to tell wind speed and direction. Windsocks typically are used at airports to indicate the direction and strength of the wind to pilots and at chemical plants where there is risk of gaseous leakage.

1. Project name

Neptun Deep Project, including:

- **Onshore facilities:** Pipeline and Communication Cable Installation; Undercrossing of Beach, Seafront, Roads and Railway; Temporary Road Railway Crossing; Construction of the Natural Gas Metering Station - NGMS, Control Center - CCR, Fencing, Lighting, Parking, Green Space, Platforms, and Internal Roads; Site Works Organization and Utilities Connections.

- **Offshore facilities:** Domino and Pelican South Infrastructure (Drill Centers, Wells, Manifolds, Umbilicals, Risers, Flowlines, Ancillary Equipment); Shallow Water Platform; Gas Pipeline; Fiber Optic Cable; Landfall Crossing; Utilities.

2. Project holder

Beneficiary Name:	ExxonMobil Exploration and Production Romania Limited and OMV Petrom SA (the ''Beneficiaries'').
Contact details (address, phone, fax, e-mail address, website):	The contact details of the Beneficiaries are summarized below: • **ExxonMobil Exploration and Production Romania Limited (EMEPRL)**, a company existing under the laws of the Bahamas acting through its Romanian branch office, ExxonMobil Exploration and Production Romania Limited Nassau (Bahamas) Sucursala Bucuresti, registered at the Trade Register Office under no. J40/17387/2008, unique registration code RO24593762, headquarter in Bucharest, 169A Calea Floreasca, Building B, 8th floor, Sector 1, phone/fax: +4031 860 7200 / +4031 860 7280, legal representative Alin Stirbu, email: alin.stirbu@exxonmobil.com; • **OMV Petrom S.A.**, Romanian legal entity with headquarter in Bucharest, 22 Coralilor Street, Sector 1 (''Petrom City''), postal code 013329, registered at the Trade Register Office under no. J40/8302/1997, unique registration code RO1590082.
Name of the contact persons:	Alin Stirbu - Deputy Branch Manager, alin.stirbu@exxonmobil.com Daniel Dinu - Environmental and Regulatory Advisor, daniel.dinu@exxonmobil.com

3. Description of the physical characteristics of the project

3.1 Project summary

Neptun Deep is a proposed offshore natural gas development in the Neptun Deep block, located in the Romanian portion of the Black Sea. ExxonMobil, as the operator, and OMV Petrom, as a 50% partner are the participants in the Neptun Deep project.

The proposed objective of the Neptun Deep project is to develop the natural gas reserves from the Pelican South and Domino fields. Pelican South is located on the continental shelf in approximately 130 m water depth. Domino is located in approximately 1,000 m water depth, off of the continental shelf.

The Domino field is proposed to be developed with two subsea drill centers - Domino Drill Center 1 (DODC1) and Domino Drill Center 2 (DODC2), while the Pelican South field is proposed to be developed with a single drill center - Pelican South Drill Center 1 (PSDC1). Each drill center will contain wells placed in a cluster arrangement around a production manifold. The subsea system will be monitored and controlled using an electro-hydraulic control system connected to a shallow water platform (SWP) by two control umbilicals. The umbilicals will also supply chemicals to the subsea facilities.

The current concept for subsea development contemplates the following: eight subsea production wells, with the possibility of potentially completing up to twelve subsea production wells. Production from the Domino wells will be comingled at the DODC1 and DODC2 manifolds and connected to a single rigid, insulated flowline with direct electric heating (DEH) that will be tied back to the SWP. Pelican South production will be comingled at the PSDC1 manifold and tied back to the SWP by a single heated, flexible flowline.

Both Pelican South and Domino fields will be tied back to the normally unstaffed SWP located near the Pelican South Field in approximately 130 m water depth. The SWP will comprise of a steel jacket structure with topside facilities. The topside facilities will receive the full well stream fluids and produce sales quality gas. The SWP will host facilities for treatment consisting of the separation of well stream fluids and dehydration prior to transportation to shore.

A two-phase inlet separator enables the separation of gas, liquids, and fines. The natural gas will then be further dehydrated/dried utilizing TEG - tri-ethylene glycol to meet the dew-point specification of the Romanian National Transmission System (NTS). The separated produced water stream will meet regulatory requirements and it will be discharged as approved by the competent authorities.

The offshore facilities will be powered by three gas-fired turbine generators located on the topside of the platform. A back-up essential services generator will also be located on the topside. The offshore facilities will be controlled by a distributed control system located on the SWP and at the onshore CCR. Operations and maintenance personnel will be transported to and from the SWP via work boat for maintenance and intervention activities. The topside will have a helideck for emergency evacuation, in the event that rapid evacuation is required.

The offshore facilities will be connected to a metering station on land by a 30-inch (762 mm) gas production pipeline (GPP) and a Fiber Optic Cable (FOC) for control and communication. Communication by FOC is backed up by a very small aperture terminal (VSAT) for control.

From the SWP, dehydrated natural gas will be transported approximately 160 km through the 30-inch (762 mm) diameter GPP for delivery into the Romanian NTS. The GPP will under cross the southern Romanian coastline using a microtunneling method in order to keep the ROSCI 0273 Cape Tuzla marine protected area, the beach and the cliff undisturbed. A NGMS near the shore crossing will serve as the custody-transfer location between the Project and Transgaz, the operator of the Romanian NTS.

The NGMS facility's primary function is to serve as the metering and custody-transfer point for the natural gas from the upstream production facilities operated by ExxonMobil and the downstream NTS operated by Transgaz. The CCR will be located within the area of the NGMS, and its purpose is to house the facilities for monitoring and remotely operating the offshore platform and wells.

Downstream of the custody transfer point, Transgaz will construct a connection to the Romanian NTS. ***Transgaz facilities are not part of the Neptun Deep project scope***.

Figure 1 presents the overall scheme of the Neptun Deep Project. Figure 2 shows the general development concept of Neptun Deep project.

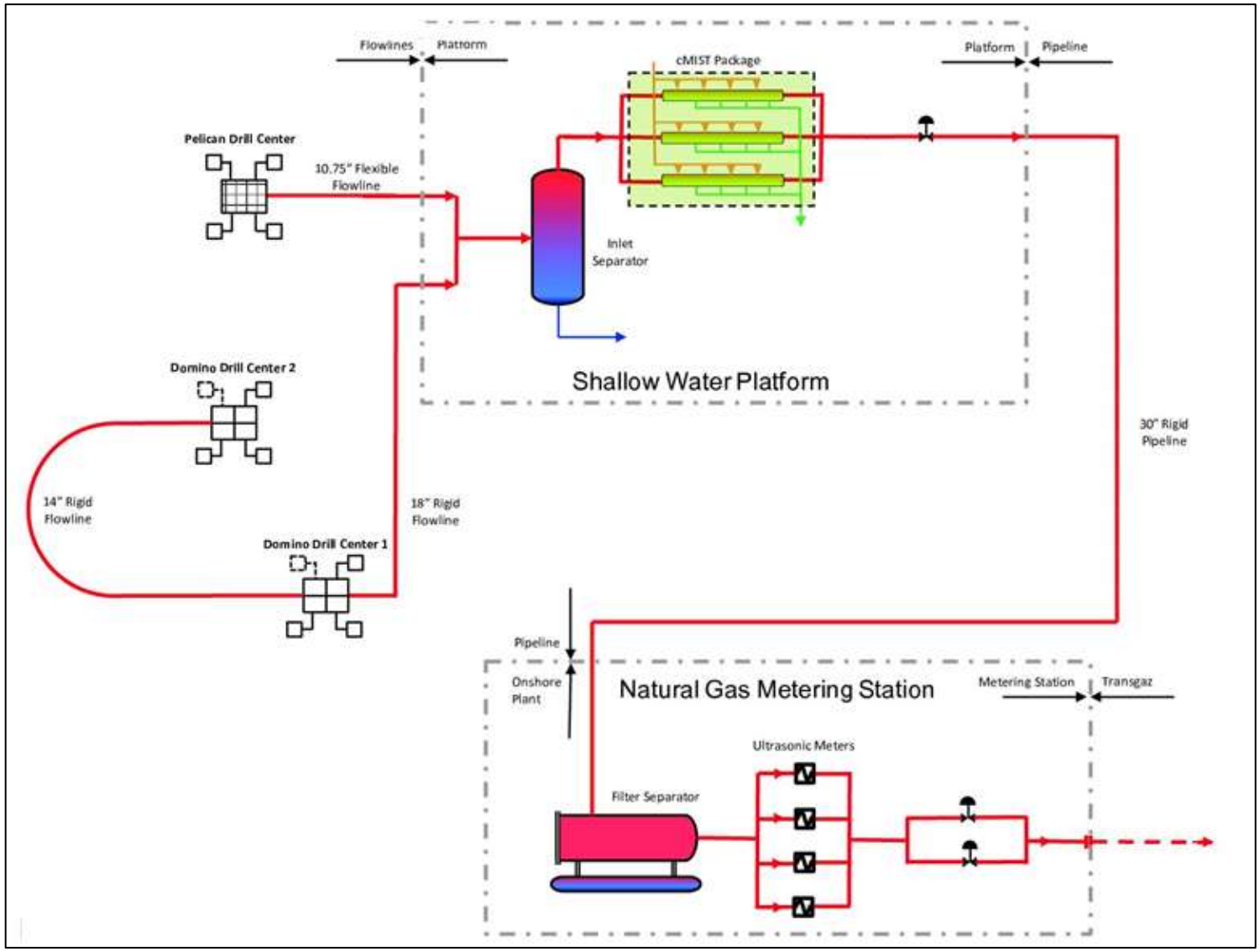


Figure 1 - Neptun Deep Project Overall Scheme

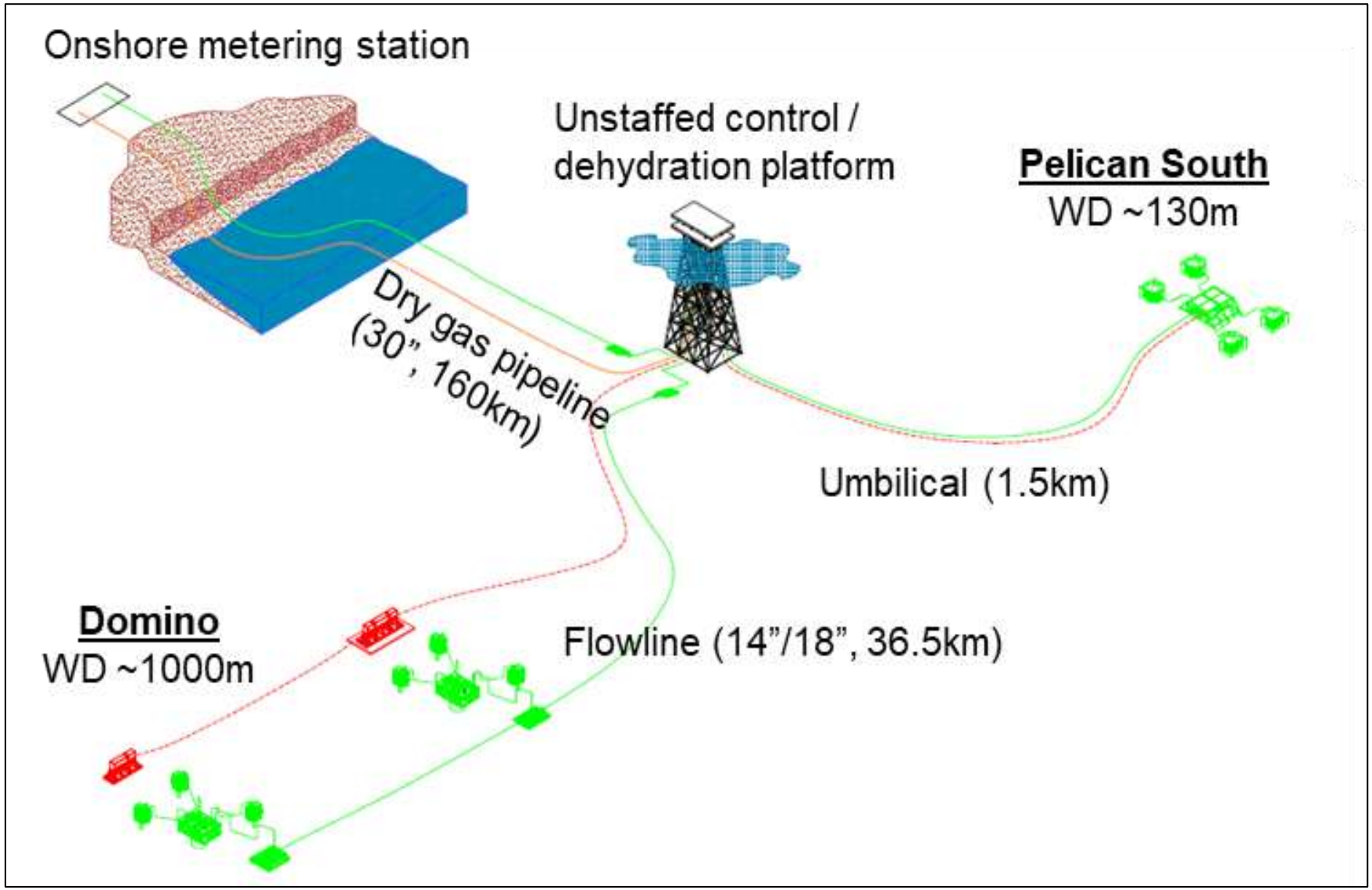


Figure 2 - Neptun Deep General Development Concept

3.2 Justification of project necessity

ExxonMobil Exploration and Production Romania Limited, acting through its Romanian branch office, and OMV Petrom, the Beneficiaries of the Neptun Deep Project, performed initial activities for identification and exploration of hydrocarbons deposits in the Romanian sector of Black Sea in order to analyze their characteristics and to determine if there is feasible production potential from these resources. In 2012, the exploration campaign encountered natural gas reserves in the deep water of the Neptun Block XIX located in the Romanian sector of the Black Sea.

The proposed objective of the Neptun Deep project is to develop the natural gas reserves from the Pelican South and Domino fields and to deliver the gas, treated on the SWP, to the Romanian NTS operated by Transgaz.

The purpose of the Beneficiaries is to sustainably develop the gas resources of the Neptun Deep fields, with a focus on environmental protection during development and operation of the facilities, objective aligned with the Romanian Energy Strategy 2019-2030, with an outlook to 2050. The identified gas consists of very clean gas with high methane, low carbon dioxide (CO_2) and Sulphur, and low content of other hydrocarbons (ethane, propane, butane, etc.).

The project will be developed in accordance with the requirements of local regulations on construction and operation of natural gas infrastructure, including provisions for protection and safety areas applicable to natural gas installations/facilities. The project will be supported by specialized international expertise in similar deep-water projects and will be implemented in accordance with the best industry construction and installation practices and the most recent proven technologies.

The proposed project development includes a series of advantages, such us: minimizing the impact to the local communities due to the location of the SWP and offshore subsea equipment at approximately 160 km from shore and avoiding the current and planned touristic area by using the latest construction methods for shore crossing (microtunneling).

The identification of new natural gas reserves has a positive economic impact by generating additional revenues to the national budget and represents an option for securing the national energy independency and ensuring feasible energy costs for public and private customers.

This gas development would generate a positive impact to the local and national economy, and to the neighborhood local communities. Additional revenues to local budget will be ensured from taxes and contributions required for project development. The project may also contribute to the economic development of the area and represent an opportunity for development of other investments and socio-economic activities within the project area.

The project would generate a positive impact to local road infrastructure due to construction of a new access road (***subject to a separate permitting procedure***) to the onshore NGSM and CCR sites. This new access road will create a new connection of the National Road DN39 to communal road DC4. In addition, the project would contribute to the development of the local power distribution system due to the installation of a power transformer at the NGMS site and extension of power distribution line up to the onshore site (***project subject to a separate permitting procedure***) and thus would represent an opportunity for further connection to power grid of local landowners (currently not connected) from the onshore site area.

The zoning plan regulating the onshore site and project development was approved by the Tuzla Local Council (Decision no 100 from 16th of November 2020) and Constanta County Council (Endorsement no 67 from 27th of November 2019). Copies of these approvals are presented in *Appendix A. Regulatory documents issued by authorities*.

3.3 The value of the investment

The Neptun Deep Project represents a multibillion USD (United States dollars) development by the Project Beneficiaries. The current estimated value of investment for full development of the project is 3,916,000,000 USD.

The final estimated value of the investment will be available after finalizing the Project Cost Estimates, this document being usually attached to the technical documentation for issuance of the construction permit (DTAC).

3.4 Proposed implementation period

The Neptun Deep development will include:

- Environmental and construction/installation permitting activities for issuance of regulatory approvals required to start construction and installation of the Neptun Deep Project;
- Project execution activities including:
    - Procurement, delivery, and transportation of subsea equipment (trees, manifolds), umbilicals, and pipeline;
    - Engineering and procurement, fabrication, and transportation of SWP and pipelines, umbilicals, risers and flowlines;
    - Engineering and procurement of trenchless crossing;
    - Engineering, procurement, fabrication, and transportation of metering station and CCR;
- Construction/installation activities, including:
    - Installation of onshore infrastructure (NGMS, CCR, and other onshore related facilities);
    - Construction of shore crossing microtunnel and installation of GPP and FOC;
    - Installation of offshore Subsea Umbilicals, Risers and Flowlines and SWP;
    - Installation of offshore pipeline, hook-up and commissioning, and start-up;
- Drilling and completion of offshore production wells.

According to the current schedule, it is anticipated that project construction/installation and drilling works will be completed in approximately two years. The final construction and installation schedule will be available at the phase of technical documentation prepared for issuance of construction permit (DTAC file). The duration of the project execution may change depending on unforeseen events (e.g., adverse weather conditions, etc.) that may occur during execution of construction/installation works. The sequences of onshore, shore crossing and offshore construction and installation are summarized in Section 3.6.10 - Execution plan.

The estimated facility design life is 20+ years. At the end of project life, the facilities will be decommissioned in accordance withthe regulations in place at that time, and the sites impacted by the project will be restored if applicable (e.g., onshore NGMS and CCR sites).

3.5 Site layout plans

The project site location is described in Section 5 – Description of the project location. The general site location plans of the onshore and offshore components and associated facilities are shown in *Appendix B. General Site Location Plans*.

The layout of onshore and offshore facilities (both permanent and temporary) is shown in *Appendix C. Onshore and Offshore Site Layout Plans*.

3.6 Physical characteristic features of the project

3.6.1 Profile and production capacities

The main design characteristics of the project are summarized below:

- Facility Design Life: 20+ years;
- Availability: > 95%;
- Estimated Annual Mean Gas Production Daily Rate: 19,000,000 m^3/day (average of daily production estimated for entire project, including all wells and both Domino and Pelican South gas fields).
- Onshore Connection Pressure: minimum 50 bar; maximum 63 bar.

The entire production system shall be designed with an overall uptime target of 95% (excluding any planned downtime).

The natural gas that will be delivered to the Romanian NTS shall meet the requirements of the Romanian Energy Regulatory Authority (ANRE) Order no. 62/2008. The delivery temperature of sales gas downstream of the onshore metering station is set by ANRE Order no. 92/2018 at a minimum of 0ºC. Onshore heaters at the NGMS are required to meet gas delivery temperature requirements.

The initial estimated gas composition from the Domino and Pelican South gas fields is listed in the Table 1.

Table 1 – Initial Estimated Gas Composition

Component	Average Sand A Composition (Domino)	Average Sand B Composition (Domino)	Average Sand A1 Composition (Pelican South)
-	mol %	mol %	mol %
N_2	0.12	0.18	0.11
CO_2	0.02	0.08	0.07
H_2S	0.00	0.00	0.00
C1 -Methane	99.76	99.59	99.63
C2 - Ethane	0.05	0.06	0.07
C3 - Propane	0.02	0.01	0.04
iC4 -Isobutane	0.01	0.01	0.02
nC4 -Normal butane	0.00	0.00	0.00
iC5- Pentane	0.00	0.01	0.01
nC5 - Normal pentane	0.00	0.01	0.01
C6 - Hexane	0.00	0.00	0.03
C7 - Heptane	0.00	0.00	0.00

There is not expected to be any H_2S present in the gas produced as part of this project development.

3.6.2 Description of the installation and process flows existing on site

The main project related onshore and offshore facilities includes:

- **Domino and Pelican South field subsea infrastructure**, including subsea production wells, production flowlines tied back to the SWP from Domino and Pelican South fields, electrical and hydraulic control umbilicals from the SWP to Domino and Pelican South Drill Centers, and other subsea equipment;
- **The normally unmanned SWP** for processing of the produced natural gas comingled from Domino and Pelican South fields, located in approximately 130 m water depth, and subsea control equipment located on the SWP;
- **One GPP** of approximately 160 km long and 762 mm (30-inch) outer diameter (OD) from the SWP to the onshore NGMS, including a trenchless shore crossing (microtunneling) section;
- **One FOC** of approximately 160 km length routed parallel to the gas production pipeline from the SWP to the onshore CCR, including a trenchless shore crossing (microtunneling) section;
- **An onshore normally unmanned NGMS** for measurement and transmission of processed gas to the Romanian NTS;
- **An onshore CCR** located adjacent to the NGMS site that will serve as the primary operations monitoring and control center for all Neptun Deep project facilities (subsea, shallow water platform, production pipeline, and NGMS);
- **Other onshore permanent facilities/areas included at the NGMS and CCR sites** (e.g., fencing, lighting, parking, landscaping, internal roads, technological platforms, and utilities).

Temporary facilities/works (e.g., temporary road railway crossing, construction works sites) will be required to support construction/installation of onshore facilities and shore crossing microtunnel. The details of temporary facilities/works are presented in Section 10. The onshore temporary facilities will be removed once construction/installation works are completed, and the sites impacted will be restored to their initial state.

The offshore construction/installation works will be supported by specialized construction and installation vessels.

An authorized shore base will be set-up in the Constanta area to support both onshore and offshore project activities and will include port facilities and warehousing to provide storage, loading and unloading, trucking, security, monitoring and tracking of goods, material equipment and supplies.

Personnel required to support shore base and warehousing will include stevedores, crane and forklift operators, truck drivers and warehousing.

Tuzla Airport will provide part-time helicopter services including medevac, search and rescue, and transport of personnel for time sensitive operations.

Operations and maintenance activities will require part-time marine support of a supply vessel that can function as personnel transport from shore to SWP, accommodation vessel, supply vessel with sufficient deck space to transport materials and crane.

The Neptun Deep Project related installations and associated facilities are described in the following sections of this memorandum. The layout plans of the onshore and offshore installations and facilities are attached in Appendix C.

3.6.2.1 Onshore Natural Gas Metering Station and Central Control Room

3.6.2.1.1 Natural Gas Metering Station

The NGMS will be a standalone, normally unstaffed custody transfer metering facility located adjacent to the CCR site and will be used for metering and custody transfer of natural gas to the NTS operated by Transgaz. The NGMS site will be fenced and will be located within S1 site (cadastral number 109216) owned by OMV Petrom with superficies rights for EMEPRL. The NGMS fenced site will have a total surface of approximately **12,000 m^2**.

The Stereo 70 and World Geodetic System (WGS) 84 TM30NE coordinates of NGMS fenced site are listed in Table 2.

Table 2 – NGMS Fenced Site Coordinates

No	Stereo 70 Coordinates		WGS84 / TM30NE	
	North (m)	East (m)	North (m)	East (m)
1	281550.1	792282.8	4869953.917	391035.316
2	281550.0	792358.7	4869949.163	391111.005
3	281418.9	792358.5	4869818.43	391102.766
4	281419.1	792265.2	4869824.351	391009.731
5	281530.5	792265.4	4869935.437	391016.761

The NGMS will be designed with remote monitoring from the adjacent CCR. The NGMS will measure the rate of natural gas delivered to the Romanian NTS from the Neptun Deep development.

The NGMS site will include only limited buildings and infrastructure necessary for essential operation such as the Local Equipment Room (LER) and gas chromatograph/moisture analyzer shelter. No provisions will be made for office, storage, or shop space within the NGMS fenced area.

Skid package and subassembly prefabrication offsite will be utilized for the majority of NGMS equipment and buildings including pig traps, metering, and valve equipment.

The NGMS site will include separate, dedicated space for the connection to the Romanian NTS which is being permitted separately by Transgaz. ***Transgaz facilities are not part of this project scope.***

There will be no hydrocarbon processing at the NGMS. All separation and processing of the natural gas will take place at the offshore SWP prior to flowing through the production pipeline that transports natural gas to shore at the the NGMS. While no liquids are anticipated to accompany the processed gas arriving at the NGMS during normal operations, an inlet filter/separator equipped with level switches, alarms and manual dump valves will be installed at the NGMS to protect the NGMS meters from potential small amounts of water being sent to the NGMS by process upsets at the SWP.

A pig receiver assembly will be installed at the inlet of the NGMS site to facilitate in-line inspection (ILI) and maintenance pigging of the production pipeline. The pressure rating (design pressure and maximum operating pressure) of the NGMS piping and associated gas handling equipment will match that for the production pipeline pressure rating. Design of the pig receiver assembly will allow for use in the reverse direction (from NGMS to SWP) as may be required for precommissioning de-watering activities.

The NGMS will include a combination flow and pressure control system to control gas deliveries into the Romanian NTS.

The NGMS process installation diagram is attached in *Appendix D. Process flow diagrams.*

The following is a listing of major buildings and equipment included at the NGMS, as shown on the *Onshore Facilities Plot Plan - Appendix C:*

- Gas Quality (chromatograph and moisture analyzer) shelter;
- LER for control, communication, and Integrated Control and Safety System (ICSS) equipment;
- Inlet filter separator;
- Pipeline pig receiver assembly;
- Metering Skid: four (N+1), Nominal Diameter 300, multipath ultrasonic meter runs;
- Two flow control valves (N+1) and block valve station (located outside of NGMS site to the east of the railway);
- Gas venting system (vent stack);
- Heaters (2 skids with 2 heaters each) to meet regulatory gas delivery temperature requirements;
- Wind Sock installed on a metal pipe, supported on a reinforced concrete foundation;
- Distribution panel (steel cabinet placed on reinforced concrete foundation);
- Technological platform;
- Security fence;
- Personnel emergency exit gates;
- Drive-in gate.

All buildings and equipment installed at the NGMS fenced site will comply with the maximum 12 m height limit stipulated by the Zonal Urbanism Plan in force.

All open surfaces inside NGMS fenced site (excluding technological platform) will be covered with crushed gravel to keep the site free from vegetation and provide vehicular access for construction and operations. The NGMS technological platform will be covered by penetrated macadam.

The main buildings and process equipment installed at the NGMS site are described in the following paragraphs. The layout plan of process equipment is shown in *Appendix E. Process equipment layout plans*.

LER Building

LER will consist of one level building that will be skid mounted, prefabricated, pre-wired, and pre-tested. LER building will be used to house the control equipment, motor control center, power distribution, and drill center systems. Additional equipment includes redundant wall-mounted HVAC (Heating, Ventilation, and Air Conditioning) units.

LER building will be a ground floor container building having steel structure with perimeter walls located on individual foundations made of pier and slab, connected with perimeter beams, made of reinforced concrete.

Gas Quality Shelter

The NGMS fenced site will also accommodate a shelter used to house the gas chromatograph, the moisture analyzer, and other gas sampling/collection equipment. The Gas Quality Shelter will be skid mounted,

prefabricated, pre-wired, and pre-tested. The chromatograph shelter will be located on a reinforced concrete slab foundation.

The gas chromatograph and moisture analyzer equipment will monitor gas quality prior to entry in to the Romanian NTS. The design will include ability for remote monitoring of gas quality by the CCR operator.

Inlet filter separator

An inlet filter/separator will be included at the NGMS site for protection of downstream ultrasonic meters and control valves in case of upset conditions and liquids carry over from SWP. The separator will be equipped with level switches, alarms, and manual dump valves for transfer of liquids to the production pipeline pig receiver area. The inlet filter separator will be located on a reinforced concrete mat foundation.

The filter separator will have approximately 4.95 m length and 1.65 m diameter.

Pipeline pig receiver

A pig receiver assembly will be installed at inlet of the NGMS. The pig receiving station will be located on a reinforced concrete mat foundation.

The pressure rating for the receiver assembly will match the production pipeline. Design of the pig receiver assembly shall allow for use in the reverse direction (from NGMS to SWP) as may be required for pre-commissioning de-watering activities.

Metering Skid

A standard solution as the custody transfer meter skids shall be used to support the gas transfer.

Custody transfer gas measurement will be performed by multipath ultrasonic meters. A total of four (N+1) nominal diameter 300 mm metering runs will be installed for gas custody transfer measurement. Each metering run will include the following:

- Dual ultrasonic meters (Fiscal + Check) in a single body with dual sets of transducers;
- Isolation valves and inspection flanges on both ends;
- Flow condition equipment.

A single turbine meter will also be included as an independent means of flow measurement as needed.

The meter runs are designed based on maximum hourly flow rate at maximum anticipated gas velocity at minimum expected pressure. Location and routing of NGMS piping will be optimized to limit operational noise emissions and impact on neighboring communities as required by local Romanian regulations.

All meter runs will be connected to common inlet and outlet piping headers installed below grade.

The metering skid will be located on a reinforced concrete mat foundation. The skid will have approximately 18.5 m length and 13 m width.

Piping System

The process equipment will be connected through a metallic piping system.

NGMS piping will be designed to match the pressure rating of the upstream production pipeline and have Over Pressure Protection equipment.

The NGMS piping design includes provisions to enable "temporary" receipt of gas from the NTS to support commissioning of the offshore production pipeline and SWP during early project start-up. A "temporary" dedicated custody transfer quality meter, complete with moisture analyzer and gas chromatograph equipment, will be installed on the reverse pressurization line for fiscal measurement and accounting of gas volumes obtained from the NTS.

An anode based Cathodic Protection system will be used for protection of all buried NGMS piping and up to a Monolithic Isolation Joint located just downstream of the custody transfer point to the NTS as agreed with Transgaz.

Valves

Control of gas volumes to Transgaz will be via 2 x 100% control valves installed at the NGMS downstream of the metering equipment. The primary purpose of the control valves is to control gas flow through the station based on daily gas nomination setpoint provided by the CCR operator. These valves will also provide pressure override capability to maintain downstream pressure within established operational limits. Control valves may also be utilized for maintenance of upstream gas production line pack to support system availability.

The flow control valves will be placed on reinforced concrete mat foundation.

Natural gas sourced directly from the pipeline, upstream of the ultrasonic meters, will be used to actuate emergency shutdown and control valves. All gas used at NGMS will be measured with dedicated instrument-type meters. Other isolation valves will be equipped with electric actuators.

A block valve will be located to the east of the onshore railroad crossing within S3 site (cadastral number 109659) owned by OMV Petrom with superficies rights for EMEPRL. The block valve station will be located in a buried manhole, made of reinforced concrete. The block valve site will be provided with perimetral protection fence.

The block valve will include a manual full-bore valve, installed below grade, complete with bypass piping. The valve will also provide the ability to isolate the gas pipeline crossing the railroad tracks. The block valve site will be graveled and will have a total surface of 409 m^2.

The Stereo 70 and World Geodetic System (WGS) 84 TM30NE coordinates of block valve fenced site are listed in the Table 3.

Table 3 - Coordinates of block valve fenced site

No	Stereo 70 Coordinates		WGS84 / TM30NE Coordinates	
	North (m)	East (m)	North (m)	East (m)
1	281550,1	792282,8	4869953,917	391035,316
2	281550,0	792358,7	4869949,163	391111,005
3	281418,9	792358,5	4869818,430	391102,766
4	281419,1	792265,2	4869824,351	391009,731
5	281530,5	792265,4	4869935,437	391016,761

The emergency shutdown valves inside the NGMS will serve as the west-of-railroad crossing isolation valve.

Gas Venting System (Vent Stack)

There will be no continuous venting of gas at the NGMS. Scheduled and planned maintenance venting of NGMS gas piping that requires depressurization will be through an atmospheric vent stack located within the fenced NGMS boundary.

The vent system at NGMS enables safe disposal of gas inventory and allows depressurization of NGMS piping to 100 psi (6.9 barg) within 20 minutes.

The vent is designed as a 10 m high stack with 12-inch (305 mm) diameter. The height and diameter of the vent are specified to minimize adverse visual impact of NGMS metering station.

The vent will be located away from overhead electrical lines and ignition sources and designed to ensure proper dispersion of vented gas. The vent stack will be at a minimum distance of 25 m from equipment and fence line.

The vent stack will be located on a direct foundation made of pier and slab and reinforced concrete anchors for taking over the stretching loads from vent anchor strands.

Heater skids

The delivery temperature of sales gas downstream of the onshore metering station is set by ANRE Order 92/2018 at a minimum of 0ºC. Onshore NGMS heaters role is to heat the natural gas in order to meet NTS gas delivery temperature requirements especially during the winter cold season. Two skids with 2 heaters each will be provided.

The heater skids will be placed on reinforced concrete foundations. The platform of the four heaters will have approximately 13 m length and 11 m width.

Instrumentation and Controls

A 230-volt AC (Alternating Current) UPS (Uninterruptible Power Supply) system will be installed to support essential loads such as ICSS and telecommunications equipment.

A Flow Computer compliant with Specification for Custody Flow Meters will be installed to calculate gas flow through the ultrasonic meters. Control of overall NGMS operation will be via the Process Control System (PCS). Data from both Flow Computer and PCS will be relayed to the CCR via a dedicated communication link.

The Flow Computer will also control flow through the NGMS. Flow set point will be provided by the pipeline operator at the CCR. The NGMS control system will also provide downstream pressure override capability to comply with contractual gas delivery pressure requirements.

The overall process control and process shutdowns of the NGMS facility will be handled by the project's overall PCS and Safety Instrumented System (SIS), respectively.

Protection and Shutdown

Fire and Gas detection equipment will be installed at the NGMS. Confirmation of fire/gas will automatically trigger a station process shutdown which will isolate NGMS piping from the attached pipeline(s) to protect equipment and neighboring communities. Employing isolation and blowdown of piping sections is the most appropriate firefighting method at the natural gas facility.

Portable fire extinguishers will be located inside LER and other areas around the NGMS.

3.6.2.1.2 Central Control Room

The CCR site will be fenced and located within S1 site (cadastral number 109216) owned by OMV Petrom with superficies rights for EMEPRL. The CCR site will have an estimated total surface of approximately 1,639 m^2.

The Stereo 70 and WGS84/TM30NE coordinates of CCR fenced site are listed in Table 4.

Table 4 – CCR Fenced Site Coordinates

No	Stereo 70 Coordinates		WGS84 / TM30NE Coordinates	
	North (m)	East (m)	North (m)	East (m)
1	281627.7	792345.2	4870027.481	391102.306
2	281625.8	792352.1	4870025.163	391109.071
3	281617.2	792381.8	4870014.765	391138.163
4	281586.6	792373.5	4869984.756	391128.009
5	281583.5	792372.6	4869981.72	391126.921
6	281575.8	792370.5	4869974.17	391124.355
7	281583.6	792341.8	4869983.708	391096.211
8	281584.4	792338.9	4869984.684	391093.368
9	281585.7	792334.0	4869986.281	391088.561

The following is a listing of facilities included at the CCR site as shown on the Onshore Facilities Plot Plan – Appendix C:

- CCR building, including operator consoles, HMI, and work stations;
- Fresh water tank – aboveground steel tank, insulated and electrically heated for water storage;
- Septic tank – underground tank used for collection of domestic wastewater from sanitary installations;
- Standby generator;
- Internal road and parking area;
- Security fence;
- Personnel emergency exit gates;
- Drive-in gate;
- VSAT Satellite Dish located on steel structure, supported on a reinforced concrete foundation.

A visitable underground rainwater drainage tank made of reinforced concrete will be installed adjacent to the south-east corner of CCR site on a total surface of 25 m^2.

Open surface inside CCR fenced area and connections to ***project access road (subject to a separate permitting procedure)*** will be concrete made.

All buildings and equipment installed at the CCR fenced site will comply with the maximum 12 m height limit stipulated by the Zonal Urbanism Plan in force.

The CCR will be a standalone building located adjacent to the NGMS site. The CCR will serve as the primary operations control center for all Neptun Deep project facilities (subsea, shallow water platform, production pipeline, and NGMS).

The CCR building will be staffed at all times. Two operators will be stationed at the CCR, these operators will be monitoring and controlling the operations of Subsea, NGMS, and SWP facilities. The Control Room Operator (CRO) will also monitor security aspects of the SWP and the NGMS.

The CCR building will be built up of four prebuild and equipped sections. The building will be a ground floor steel building with perimeter walls, , located on individual foundations made of pier and slab, connected with perimeter beams, made of reinforced concrete.

Central Control Room building will mainly include offices, equipment room, control room, permits room, conference room, restroom, supplies storage room, kitchenette, hallway, and waiting area.

The building will have four access ways, three on the north side and one on the west side and will be accessible for disable people. All entrances will be provided with stairs and a ramp of 1.2 m wide and 8% slope. The access doors are double winged.

The CCR building will be provided with HVAC system to ensure temperature, relative humidity and air quality required to provide reliable operation of electronic equipment and acceptable human working conditions. The HVAC equipment will be placed on the roof of CCR building.

3.6.2.1.3 Other permanent facilities/areas included at the NGMS and CCR

Security and Fencing

Anti-cut, anti-climb perimeter security fencing will be installed around both NGMS and CCR. The security fencing will have gates for vehicular access and emergency personnel exits.

The perimetral fence installed at the NGMS and CCR sites will be made of metal poles located at 2.5 m, anchored in concrete foundations. Galvanized steel wire will be fixed between the fence poles. The car access gate will be made of steel and will have 4 m width. The perimeter fencing will be transparent/shadow-proof and will have a maximum height of 2.5 m.

The NGMS security system will include closed-circuit television (CCTV), intrusion detection, card reader access gates and perimeter fencing. Security systems and cameras will be connected to the CCR for alarming and remote monitoring.

The CCR will be located adjacent to the NGMS and share area access control with NGMS. Dedicated security for the CCR area will be provided (access card readers, vehicle access gate with intercom, monitored CCTV system, lighting and anti-cut/anti-climb perimeter security fencing, etc.). The Control Room section of the CCR building will be designated as a restricted area with security badge access doors and requires segregation from space intended for other uses.

Lighting

Lighting will be included at the NGMS and CCR sites to provide a safe working environment for personnel, satisfy operability requirements, and meet applicable codes/standards. The facility design takes into consideration limiting light pollution.

Parking

Parking areas will be provided outdoors within the secured fenced perimeter of the CCR area. Access to the NGMS will be by land vehicle or by walking from the CCR.

Landscaping

A perimeter vegetation screen made of trees will be installed around the entire parcel of land encompassing the NGMS and CCR (S1 site registered under cadastral number 109216 owned by OMV Petrom with superficies rights for EMEPRL). The pipeline protection area constitutes an exception, as the national regulations do not allow planting of trees or any other plants with roots deeper than 50cm.

In addition, each fenced site (NGMS site, CCR site, and block valve site) will be provided with a perimeter green fence made of shrubs.

The species and sizes of the vegetal material used for perimeter vegetation screen will be selected in order to best accomplish an adequate screen of the site. The vegetation screen installed at the onshore facilities will contribute to the minimization of overall visual impact.

All areas outside fenced sites located within S1, S3, and S4 sites owned by OMV Petrom with superficies rights for EMEPRL will be covered by grass.

Internal Roads and Technological Platforms

The following internal roads and technological platforms will be constructed at the NGMS and CCR sites:

- Internal access roads to the NGMS fenced site and Transgaz tie-in point site (***subject to a separate permitting procedure***) to be constructed on an estimated total surface of 1,056 m^2;
- Technological platform to be constructed within the fenced NGMS site on an estimated total surface of 1,519.60 m^2:
- Concrete platform (including a parking area) to be constructed within the fenced CCR site, around CCR building, on an estimated total surface of 1,177 m^2.

The NGMS technological platform installed within the NGMS fenced site and internal roads to NGMS site and NTS tie-in point site will be covered by penetrated macadam. The full infrastructure works for construction of NGMS technological platform and internal access road to the NGMS fenced site and NTS tie-in point, will include:

- Improvement of ground foundation on a thickness of 0.50 m, compaction degree of minimum 98% Normal Proctor (PN); the improvement of the ground foundation will be done by desensitization to wetting and will include:
    - Removal by digging on approximately 50 cm of the loess layer;
    - Preparing the so - called "loss pillow" by reusing the material excavated with re-installation in successive layers of 15 - 20 cm thick after compaction.
- Installation of a waterproof geotextile;
- Installation of 20 cm layer of ballast optimal mixing, sort 0-63 mm, according to SR EN 13242 + A1: 2008, compaction degree of min. 98% PN;
- Installation of 20 cm layer of crushed stone, sort 0-63 mm according to SR EN 13242 + A1, compaction degree of minimum 98% PN;
- Installation of 10 cm layer of penetrated macadam.

A concrete platform will be constructed around CCR building, up to the limit of the CCR fence. This area will include a parking area. The infrastructure of concrete area around CCR building will include:

- Improvement of ground foundation on a thickness of 0.50 m, compaction degree of minimum 98% PN;
- Installation of a waterproof geotextile;

- Installation of 20 cm layer of ballast optimal mixing, sort 0-63 mm, according to SR EN 13242 + A1: 2008, compaction degree of minimum 98% PN;
- Installation of 20 cm layer of crushed stone, sort 0-63 mm according to SR EN 13242 + A1, compaction degree of minimum 98% PN;
- Installation of kraft paper;
- Installation of 20 cm road concrete layer.

The concrete area will be framed by monolith kerb (curbs) with dimensions 20 x 25 cm, placed on a concrete foundation. For drainage of the rainwater from the concrete area, 1% and 2.5% transversal slopes will be adapted towards ditches.

The details of internal roads, NGMS technological platform, and CCR concrete platform are shown in *Appendix F. Details for other onshore permanent facilities.*

Utilities

The NGMS design premise is a normally unmanned facility. The CCR will be a single building and will be manned by a minimum of two operators at all times. No water or sewer connections to local utilities are planned for NGMS and CCR sites. The CCR site will be provided with standalone freshwater tank and domestic wastewater (septic) tank. In addition, a rainwater tank will be installed adjacent to the south-east corner of CCR site for collection of rainwater inside CCR fenced site.

Power for the NGMS and CCR sites will be sourced from the local provider (ENEL). A standby diesel generator will be installed at the CCR site and will provide backup power to both CCR and NGMS if the local provider power network is down.

Communication between the LER and CCR, and then between the CCR and SWP will be via a direct link FOC. A satellite dish will also be installed at the CCR to provide backup VSAT based communications with SWP.

Telephone and internet service will be sourced from local providers.

Details on the delivery and connection to utilities of the onshore components are presented in the **Section 3.6.5**.

3.6.2.2 Gas Production Pipeline and Fiber Optic Cable

3.6.2.2.1 Gas Production Pipeline

After processing the natural gas at the SWP, an approximately 160 km long and 762 mm (30-inch) diameter GPP will transport it to the onshore NGMS.

The production pipeline will terminate at the onshore NGMS pig receiver. From SWP to NGMS, the gas production pipeline route includes the following components/sections:

- A pig launcher and riser installed on the SWP;
- An offshore pipeline section;
- A trenchless shore crossing section;
- An onshore pipeline section, including a railroad crossing, a valve station located outside NGMS fenced site to the east of the railroad, and several road crossings; and

- A pig receiver installed at the NGMS.

The full route of the production pipeline from offshore SWP to onshore NGMS is shown in the alignment sheets attached in Appendix C.

GPP will also include a pipeline end termination (PLET) installed at the SWP and one subsea isolation valve (SSIV) assembly, remote of the SWP at the extent of the 500 m safety zone and at a water depth of 120 m. The assembly shall consist of a 30-inch (762 mm) actuated ball valve (fully piggable) controlled by direct hydraulics from the platform hydraulic power unit. It shall also be protected by a dedicated over-trawlable SSIV protection structure.

The GPP will be provided with the following characteristics:

- Carbon steel pipeline;
- External corrosion coating, and internal flow coating;
- Concrete weight coating;
- Anodes, flanges/connectors, etc.;
- Riser, tie-in spools, trenchless shore crossing, onshore pipeline to NGMS.

The GPP is sized to support the designed production rates. The overall pipeline design parameters are summarized below:

- Pipe OD: 762 mm (30-inch);
- Pipeline length: approximately 160 km (approximately 1 km will be located onshore);
- Material type: DNV SAW 450;
- Piggable requirements: Yes;
- Specified minimum yield strength: 450 MPa;
- Wall thickness (class 2): 30 mm (class 2);
- Wall thickness (class 1): 17.5 mm;
- Internal corrosion allowance (external corrosion allowance only applicable in the splash zone): 2 mm;
- Design pressure: 139 barg;
- Internal fluid density (gas): 34 -110 kg/m^3;
- Maximum design temperature: 55°C;
- Maximum operating temperature: 45°C;
- Minimum design temperature: -29°C;
- Expected flowing pressure: from 127 barg (at the SWP) to 75 barg (onshore);
- External corrosion coating: Fusion-bonded Epoxy and concrete weight coating /three-layer extruded polyethylene (3LPE);

- Internal coating: flow assurance coating to a thickness of approximately 80 (-0/+25) microns;
- Water depth range: 0 ÷ 137 m.

The system design pressure can accommodate a line pack (actual gas volume stored in the piping system at a certain time) of up to 50 bars in the production pipeline. However, a line pack of approximately 20 bars is expected to be maintained in order to support the operational flexibility of the production system.

The offshore section of the GPP will utilize variations in steel pipe wall thickness, concrete weight coating, and trenching (limited to the near-shore area) to maintain on-bottom stability.

The gas production pipeline will be internally coated for flow assurance, externally coated for corrosion control, and partially externally coated with concrete for buoyancy and stability.

The proposed offshore GPP route is crossing 3 faults and some possible cables/wires, as shown in the Pipeline Alignment Sheets.

As the pipeline approaches the coastline, the sea floor turns rocky. In this area, portions of the pipeline will be placed in a trench for stability.

For the purpose of installation and for protection during operation, the nearshore subsea section of the pipeline will be installed in a trench for a length of approximately 1,600 m between the offshore end of the microtunnel and the 20 m water depth mark (Appendix C). The near shore pipeline installation will require anchored vessels.

The offshore section of 30-inch (762 mm) GPP and FOC will occupy an underwater area **of 638,080 m^2**.

A selection of Stereo 70 and WGS coordinates along the offshore production pipeline route is provided below in Table 5.

Table 5 – Selection of coordinates along GPP offshore route

No.	Stereo 70 Coordinate System		WGS84 TM30NE Coordinate System	
	North (m)	East (m)	North (m)	East (m)
1	281233.000	794081.700	4869527.710	392810.300
2	280514.689	796410.360	4868668.524	395088.500
3	291750.119	871995.750	4875227.036	471141.235
4	292997.320	884786.549	4875682.744	483968.061
5	293912.277	888135.822	4876388.460	487362.887
6	294566.698	899038.303	4876369.014	498270.077
7	299913.630	916468.310	4880623.452	515971.831
8	298791.363	933715.270	4878440.744	533090.744
9	299142.895	936628.568	4878611.227	536015.688
10	298950.561	940460.865	4878182.974	539822.793
11	299299.922	944046.659	4878309.710	543417.669
12	298595.207	947777.930	4877377.046	547092.346

The GPP will under cross the Romanian shore in an area where the coast is shaped like a cliff. Because of this local topography and due to increased efforts to keep the ROSCI 0273 Cape Tuzla marine protected area, the the beach and the cliff pristine, the gas production pipeline and the fiber optic cable encased in concrete pipe will under cross the coastline via an approximately 1 km long concrete microtunnel. The details of the shore crossing are presented in Section 3.6.2.2.3.

Between the shore crossing and the NGMS, a short onshore pipeline section will complete the GPP system to the pig receiver at the inlet of the NGMS. The onshore pipeline route will extend from the onshore shore

crossing microtunnel entry point (located on the S4 site owned by OMV Petrom with superficies rights for EMEPRL) to the NGMS at the first weld upstream of the onshore NGMS pig receiver.

The Stereo 70 and WGS84/TM30NE coordinates of onshore GPP route are listed in Table 6.

Table 6 – Onshore GPP Route Coordinates

No	Stereo 70 Coordinates		WGS84 / TM30NE Coordinates	
	North (m)	East (m)	North (m)	East (m)
1	281507.9	792349.1	4869907.766	391098.849
2	281507.7	792374.7	4869905.996	391124.368
3	281506.6	792519.6	4869896.014	391268.808
4	281506.2	792566.6	4869892.733	391315.656
5	281503.7	792880.4	4869870.997	391628.453
6	281503.0	792973.7	4869864.578	391721.458
7	281502.3	793067.1	4869858.152	391814.562
8	281501.7	793136.4	4869853.304	391883.637
9	281501.1	793212.3	4869848.051	391959.295
10	281500.0	793215.7	4869846.746	391962.618

From the onshore microtunnel entry point until the above ground pig receiver assembly located inside the fenced NGMS site, the onshore section of production pipeline will be buried in a 2 m deep trench.

The onshore pipeline requires a burial depth to top of pipe of 1.25 m below natural ground level. The pipeline will maintain a minimum separation of 0.5 m from any foreign pipeline or utility in any direction. The wall thickness for the onshore pipeline is 30 mm and the pipe is fusion-bonded epoxy coated.

The onshore section of the underground GPP will be mainly installed on the private land owned by OMV Petrom. Local roads and railway line Constanta – Mangalia will be undercrossed by the onshore section of the GPP and FOC (see details in the Section 3.6.2.2.4).

The onshore gas production pipeline has been designed and will be installed in accordance with the provisions of Technical Norm for design and execution of the upstream gas pipelines approved by the Decision no 1220/2006 issued by Romanian Natural Gas Regulatory Authority – ANRGN (presently ANRE).

Protection and safety zones within the area of upstream gas pipelines and associated installations, as well as the safety distances and construction interdictions/restrictions are regulated by the Technical Norms. In accordance with the provisions of this Technical Norms, the following protection and safety zones of the onshore gas pipeline will be ensured for the onshore pipeline and related installations (e.g., NGMS):

- **A minimum protection zone of 6 m width** on each side of the pipeline measured starting from the pipeline axis). No construction works are allowed to be executed within this area;

- **A safety zone of 20 m width** on each side of the pipeline measured starting from the pipeline axis. The area will be ensured to grant the access of the pipeline operator for production, maintenance, and regular monitoring activities, including access in case of emergency. Construction interdictions will be implemented within this area (e.g., housing, office spaces, etc.).

- **A safety zone of 200 m width** on each side of the pipeline measured starting from the pipeline axis. A written endorsement issued by the pipeline operator (ExxonMobil Exploration and Production Romania Limited) must be obtained as part of the construction permit procedure for approval of any new construction within this zone.

Restrictions/interdictions within the 20 m safety distance

According to current regulations in force, buildings such as dwellings, guesthouses, hotels, offices cannot be built within 20 m distance from each side of the pipeline axis.

For the entire area allocated to the safety zone of 40 m (20 m width on each side of pipeline axis), will be implemented interdictions for buildings construction (e.g., dwellings, guesthouses, hotels, administrative buildings, office buildings, etc.). To limit the impact on future development of adjacent properties because of the interdictions/restrictions related to the protection and safety zone of pipeline and associated installations, the Beneficiaries purchased additional parcels to the ones strictly required for construction of the gas pipeline and associated installations (e.g., NGMS). ***Thus, the restrictions to build generated by the installation of the pipeline, apply only on the land surfaces owned by the beneficiaries of the Neptun Deep Project.***

Restrictions/interdictions within the 200 m safety distance

According to the applicable regulations (ANRGN Decision no 1220/2006), a written endorsement must be issued by the pipeline operator for any new construction planned to be built within the safety zone of 200 m width on both sides of the pipeline and associated installations. The pipeline operator endorsement will be included on the list of approvals/endorsements required through the Urbanism Certificate.

The scope of the endorsement is to check the compliance of the new construction to the minimum safety distance criteria listed in the Technical Norm for design and execution of the upstream gas pipelines approved by the Decision no 1220/2006 issued by ANRGN. As per current applicable regulations, no tax/tariff will be required by the pipeline operator for issuance of the written endorsement.

The only construction restrictions applicable to the landowners located within the 200 m width safety zone include: construction of nuclear plants, munitions and explosive material warehouses or shooting ranges.

Any other restrictions for construction of buildings such us: houses, guesthouses, hotels, administrative buildings, recreational buildings, etc. are only limited within the land owned by the beneficiaries. In this sense, no housing or touristic buildings (guesthouses, hotels, etc.) construction restrictions will be implemented for the properties from the safety zone of 200 m width that are located adjacent the property limits owned by the project beneficiaries.

3.6.2.2.2 Fiber Optic Cable

A FOC will be routed parallel to the production pipeline to provide communication between the offshore normally unstaffed SWP and the operators working from the onshore staffed CCR and VSAT control for back up and redundancy.

The FOC will enable control of the offshore facilities and wells from the CCR and surveillance through cameras on the SWP. Internet access will be provided in the SWP local equipment room and Wi-Fi on the SWP (as part of the control system) will allow for process surveillance via local hand-held devices while operations and maintenance (O&M) personnel are present.

The FOC route includes:

- A riser pulled through a J-tube on the SWP;
- An offshore section;
- A trenchless shore crossing;
- An onshore underground splice;

- An onshore FOC section, including a railroad crossing, several road crossings, and connection to the CCR.

The FOC splice box will be located at the onshore side of the shore crossing to splice the onshore FOC to the offshore FOC.

The FOC will be installed along and adjacent to the pipeline alignment from the SWP to the onshore CCR located adjacent to the NGMS.

The FOC, running between onshore CCR and the SWP, follows a similar route alignment as the production pipeline with an offset of 30 m along most of the offshore route. The offset is increased up to approximately 52 m when approaching the platform to accommodate the respective tie-in locations at the platform. For the onshore and shore approach sections, the FOC is routed in close proximity of the pipeline as the FOC will be installed in the same trench and tunnel.

The FOC route from the SWP to the onshore CCR is shown on the Production Pipeline Alignment Sheets (Appendix C).

The offshore section of the FOC will be buried to a target depth of 1.0 m below seabed with 0.5 m as a minimum depth. In areas of faults, the seabed shall not be trenched for burial. The faults crossing configuration will consider the cable accounting for trawl gear protection. A selection of coordinates along FOC offshore route is presented below in Table 7.

Table 7 – Selection of coordinates along FOC offshore route

No.	Stereo 70 Coordinate System		WGS84 TM30NE Coordinate System	
	North (m)	East (m)	North (m)	East (m)
1	281233.000	794081.700	4869527.710	392810.300
2	280513.737	796410.055	4868667.282	395087.798
3	280292.711	797659.102	4868370.264	396319.872
4	280300.277	798502.711	4868326.075	397161.630
5	289854.192	863077.695	4873885.465	462134.117
6	293134.973	885785.732	4875758.026	484972.197
7	293738.935	891919.520	4875982.198	491123.321
8	294672.530	899719.837	4876432.098	498955.631
9	298735.133	933968.167	4878368.672	533339.041
10	298878.188	940964.647	4878079.318	540320.105
11	298567.033	947767.469	4877349.191	547079.923

At the trenchless shore crossing, the FOC will be installed in a High-Density/PE100 Polyethylene (HDPE/PE100) conduit of 250 mm diameter preinstalled in the crossing tunnel during tunnel construction and installation. The details of the shore crossing are presented in Section 3.6.2.2.3.

The onshore FOC conduit will be installed with the onshore GPP in a trench. The coordinates of onshore route were presented in Section 3.6.2.2.1.

The main design parameters of the FOC between SWP and the CCR are summarized below:

- Estimated length: 160 km;
- Number of fiber optic pairs: 12 pairs (24 core);
- Type of system: repeaterless;
- Operating wavelength: 1,550 nm (Nanometers);

- Single mode fiber optic type: single mode, Non-Dispersion-Shifted Fiber G.652 or G.654;
- Overall design: loose tube, armoured;
- Maximum optical loss @ 1,550 nm: 0.181 dB/km;
- Riser type for SWP: static (j-Tube);
- Minimum offshore burial depth: 0.5 m;
- Target offshore burial depth: 1 m;
- Shore crossing: pre-installed conduit;
- Maximum loss per splice: 0.1 dB (decibels).

The cable will have a minimum life span rating of 25 years in the subsea environment in which it is installed.

A VSAT backup system will be utilized for the project to pass critical Internet Protocol traffic between the CCR and the SWP upon loss of fiber optic communications.

3.6.2.2.3 Shore Crossing

The production pipeline and fiber optic cable shore crossing are planned as a bundle installation using the microtunneling method and will under cross the local road De 259, the cliff and the beach.

The shoreline is crossed at the designated landfall site located in Tuzla shore area. The landfall will be constructed as a trenchless shore crossing by means of a two-meter diameter pipejacking tunnel. The microtunnel execution plan will require anchored vessels. The microtunneling construction method was selected rather the more traditional open cut method in order to minimize as much as possible the environmental impact associated with shore crossing construction.

The shore crossing will be constructed to provide a landfall for the 762 mm (30-inch) production pipeline of the Neptun Deep project as well as a FOC (in a protection conduit of a 250 mm diameter) for data communication.

The shore crossing microtunnel will be constructed over a length of 890 m between the onshore starting point at kilometric point (KP) 156.965 of the pipeline route and KP 156.075 at the offshore end. The onshore entry point of the microtunnel will be located within the private land (S4 site) owned by OMV Petrom with superficies rights for EMEPRL. The exit point of the microtunnel will be located within the coastal waters of the Black Sea. The public local unpaved road De269, seafront (private domain of Tuzla locality) and beach (public domain of National Administration "Apele Române" – Water Basin Administration "Dobrogea – Litoral") will be undercrossed by the microtunnel.

The calculated area occupied by the landfall crossing is of 2,136 m^2 from which:

- 678 m^2 is in the onshore area;
- 1,458 m^2 is in the nearshore area.

Stereo 70 and World Geodetic System (WGS) coordinates for microtunnel entry point and exit point are provided in Table 8.

Table 8 – Microtunnel entry point and exit point coordinates

Location	Stereo 70 Coordinate System		WGS84 TM30NE Coordinate System	
	North (m)	East (m)	North (m)	East (m)
Onshore Entry point	281495.4	793230.7	4869841.70	391977.73
Offshore Exit point	281233.0	794081.7	4869527.71	392810.30

The main design parameters of tunnel alignment include:

- Length of drive: 890 m;
- Maximum depth: 25 m;
- Radius: 2,500 m;
- Exit angle: 2°.

The details of the shore crossing are shown in Appendix C.

The key dimensions of the pipeline and FOC at the shore crossing are:

- Production pipeline:
    - OD: 762 mm (30-inch);
    - Wall thickness: 30 mm;
    - Material: DNV 450 FDU;
    - Density: 7,850 kg/m^3;
    - External coating: 3.4 mm 3LPE.
- Conduit for fiber optic cable:
    - Diameter: 250 mm;
    - Wall thickness: 22.7 mm (Standard Dimensional Ratio - SDR11);
    - Material: HDPE / PE100.

The cross section of the shore crossing microtunnel is shown in the Figure 3.

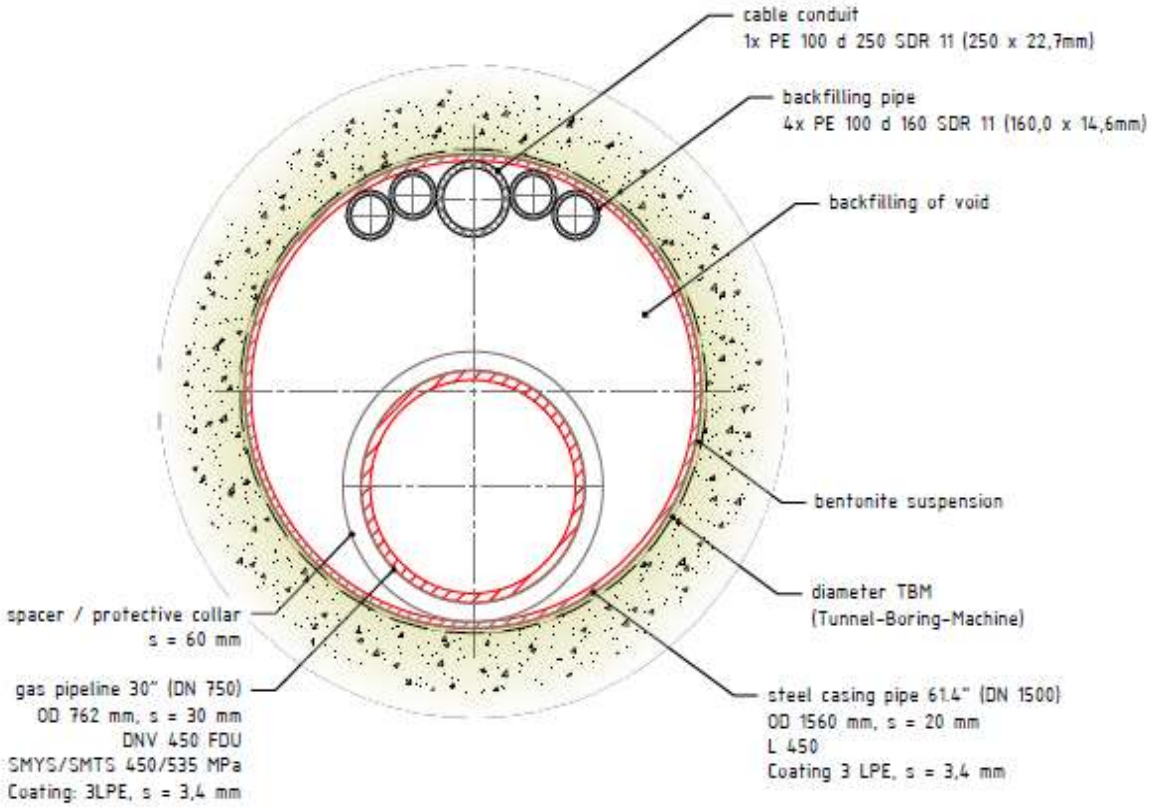


Figure 3 – Shore crossing cross – section

3.6.2.2.4 Local Roads and Railway Onshore Crossing

The communal road DC 4, local unpaved roads De 277 and De 259/4 and Constanta – Mangalia railway line will be undercrossed by the onshore section of the production pipeline and fiber optic cable (Appendix C). Local roads and railway under crossings will be installed by auger bore or horizontal directional drilling methods. The pipeline will be protected from corrosion by anticorrosion coating and a cathodic protection system with test stations.

Stereo 70 and WGS84/TM30NE coordinates of the area impacted by the local roads and railway crossing are listed in Table 9.

Table 9 – Local Road and Railway Crossing Corridor Coordinates

No	Stereo 70 Coordinates		WGS84 / TM30NE	
	North (m)	East (m)	North (m)	East (m)
1	281493.6	792471.8	4869887.930	391218.410
2	281514.6	792471.8	4869908.870	391219.700
3	281514.8	792453.2	4869910.210	391201.160
4	281493.8	792453.0	4869889.280	391199.670
5	281514.2	792525.4	4869905.190	391273.130
6	281493.2	792525.3	4869884.250	391271.740
7	281493.3	792518.3	4869884.780	391264.760
8	281514.3	792518.5	4869905.710	391266.250

3.6.2.3 Domino and Pelican South Fields Offshore Infrastructure

The proposed objective of the Neptun Deep project is to develop the natural gas reserves from the Domino and Pelican South.

The main components of the Domino Field include:

- Gas production wells drilled and connected to two subsea manifolds in a cluster arrangement. The wells and subsea manifolds will be located at 2 separate drill centers, DODC1 and DODC2, connected by a 14-inch flowline and electrical hydraulic control umbilical;
- 1 dual diameter (14-inch (355.6 mm) /18-inch (457.2 mm) of approximately 36.5 km long rigid steel flowline tied back to the SWP. For hydrate mitigation purposes, the 18-inch /14-inch flowline will be DEH and insulated;
- 2 electrical and hydraulic control umbilical segments: 1 between the SWP and DODC1 and 1 between DODC1 and DODC2. The umbilicals will also supply chemicals to the subsea facilities. Flying leads will then connect the umbilical from the subsea distribution unit at the drill center to the wells and manifold;
- Subsea pig launchers will be included to allow pigging of the flowlines to the SWP;
- Suction pile foundations will be used for manifolds;
- Mud-mat foundations will be used for umbilical termination assembly / subsea distribution unit (SDU).

The main components of the Pelican South Field include:

- Gas production wells drilled and connected to a subsea production manifold in a cluster arrangement at PSDC1 drill center. The wells and subsea manifold will be equipped with over-trawl protection structures for protection from fishing activity;
- One 10.75-inch (273 mm) diameter heated flexible flowline tied back ~1.5 km to the SWP from PSDC1; the flowline will be buried for protection from fishing activity;
- Electrical and hydraulic control umbilical between the SWP and PSDC1. An umbilical will also supply chemicals to the subsea facilities. The umbilical will be buried for protection from fishing activity. Flying leads will then connect the umbilical from the SDU at the drill center to the wells and manifold;
- Due to the presence of shallow gas throughout the Pelican South field, the foundation for the manifold and trawl protection will be a mud-mat with skirt penetrating no more than 4 m.

3.6.2.3.1 Gas Production Wells

The current development drilling plan consists of drilling and completing of maximum 12 subsea gas production wells (8 planned wells and 4 optional wells), respectively:

- 5 planned + 1 optional wells will be drilled to 3,000 m vertical depth from DODC1 and DODC2 drill centers (3 wells/drill center) at Domino field in 800 – 1,100 m water depth;
- 3 planned + 1 optional wells will be drilled to 3,400 m vertical depth from a single drill center (PSDC1) at Pelican South field in 120 – 130 m water depth;
- 2 optional wells (these wells will be separately authorized if their drilling will be decided in the future).

The production wells that are subject to this presentation memorandum are presented below in Table 10.

Table 10 – Domino and Pelican South Production Wells

Drill Center Name	Well Name	Well Acronym	Well Drilling Status	Production Wells Coordinates			
				Stereo 70		WGS84 / TM30NE	
				North (m)	East (m)	North (m)	East (m)
DODC1	Domino 1-1	D1-1	Optional Well	280042.05	964337.03	4857867.47	562446.693
DODC1	Domino 1-2	D1-2	Planned Well	280051.98	964319.45	4857878.449	562429.79
DODC1	Domino 1-3	D1-3	Planned Well	280076.85	964333.47	4857902.363	562445.294
DODC2	Domino 2-1	D2-1	Planned Well	279056.05	959247.85	4857199.066	557315.098
DODC2	Domino 2-2	D2-2	Planned Well	279080.81	959262.09	4857222.858	557330.814
DODC2	Domino 2-3	D2-3	Planned Well	279090.88	959244.59	4857233.971	557313.998
PSDC1	Pelican Sud 1-1	PS1-1	Planned Well	297886.85	948232.72	4876642.666	547501.534
PSDC1	Pelican Sud 1-2	PS1-2	Planned Well	299322.42	949911.44	4877969.51	549263.006
PSDC1	Pelican Sud 1-3	PS1-3	Planned Well	299482.55	948653.75	4878206.755	548019.63
PSDC1	Pelican Sud 1-4	PS1-4	Optional Well	299329.51	947062.06	4878152.553	546424.078

The well design concept was mainly based on data collected during the drilling exploration program and the reservoir production requirements for Domino and Pelican South. The well design life is required to be 20 years.

3.6.2.3.2 Drilling Centers

The Domino drilling centers will be arranged as traditional deep-water clusters, while the Pelican South field will be configured in a cluster arrangement with trawl-resistant coverings over each structure and protective mattresses or alternative type of cover as needed over jumpers and flying leads. The orientation of the drilling centers will take into consideration the general flowline/umbilical approaches, along with the assumed drilling rig mooring pattern. The layouts of the drilling centers will accommodate installation and precommissioning considerations along with future expansion possibilities.

The layout of each drill center is shown in the following drawings:

- Drawing no. ROND-EW-YDPAL-22-0012-B: DODC1 drill center layout;
- Drawing no. ROND-EW-YDLAY-22-0005-B: DODC2 drill center layout;
- Drawing no. ROND-EW-YDLAY-22-0003-B: PSDC1 drill center layout.

The above-mentioned layout plans are presented in Appendix C.

The underwater areas that will be occupied by the Domino and Pelican South drill centers are summarized below:

- 8,686 m^2 represents the area occupied by DODC1 and related subsea equipment (manifold, trees, etc.);
- 8,722 m^2 represents the area occupied by DODC2 and related subsea equipment (manifold, trees, etc.);

- 11,088 m^2 represents the area occupied by PSDC1 and related subsea equipment (manifold, trees, etc.).

A selection of Stereo 70 and WGS coordinates for Drilling Centers (DCs) locations is provided in Table 11.

Table 11 - SWP and Drilling Centers Coordinates

Location	Stereo 70 Coordinate System		WGS84 TM30NE Coordinate System	
	North (m)	East (m)	North (m)	East (m)
PSDC1	299471.109	948682.675	4878194.000	548048.000
DODC1	280058.975	964335.021	4857884.918	562445.992
DODC2	279072.992	959245.900	4857216.520	557314.550

The configuration of the drilling centers will include dual pressure multiplexed electro-hydraulic control system with comms on power for communication.

The DODC1 and DODC2 will be provided with SDU and Umbilical Termination Assembly (UTAs) at each drilling center sharing the same foundation structure. The connection between UTA and SDU will be via flying leads.

The PSDC1 will be provided with hydraulic and chemical lines from the umbilical connected directly to the manifold with a multi-bore connector. The distribution of hydraulic, chemicals, electrical power, and control signals will be integrated into the manifold.

3.6.2.3.3 Domino and Pelican South Production Flowlines

The main characteristics of production flowlines are summarized below:

- 1 dual diameter Domino DEH production flowline of approximately 36.5 km long ~26 km long, 457.2 mm (18-inch) OD DEH flowline from the SWP to DODC1 and ~10.5 km long, 355.6 mm (14 inch) OD DEH flowline from DODC1 to DODC2 including a Flowline End Termination (FLET) at the SWP, an In-line Tee Assembly (ITA) at DODC1 where the flowline diameter changes, and a FLET at DODC2. The route from Domino to the SWP requires crossing a scarp along the continental shelf.

- 273 mm (10.75-inch) internal diameter (ID) Pelican South EH flexible production flowline of ~1.5 km long from the Pelican field to the SWP including a subsea connection to the manifold and a topside termination on the SWP.

The underwater areas that will be occupied by the production flowlines are summarized below:

- 73,260 m^2 represents the area occupied by Domino flowline;

- 2,952 m^2 represents the area occupied by Pelican South flowline.

Domino Direct Electric Heating Flowline

Open DEH flowlines will be used at Domino to provide active hydrate management by means of electrical heating. The production DEH system will include:

- Power, control, and monitoring equipment (SWP and CCR components);

- 1 dual core or coaxial riser cable with pull head, bend restrictors, and J-tube seal (if applicable);

- 1 subsea junction box;

- 1 or 2 armored feeder cable(s) depending on cable core design;

- 1 piggyback cable of approximately 37 km long with trawling protection and attachment system;
- 2 flowline terminations (1 at SWP, 1 at DODC2);
- 2 Current Transfer Zones (CTZs) with concrete mattress foundations to ensure CTZ sits proud of seabed.

The dual diameter Domino DEH production flowline has the following main characteristics, but not limited to:

- Carbon steel pipeline;
- Corrosion and thermal insulation;
- Anodes, flanges/connectors, etc.;
- Riser and tie-in spools;
- Open DEH system.

The route of the Domino DEH flowlines has been determined based on the findings of a flowline routing study conducted by a third-party contractor. The routing study included assessment of the route survey data (e.g., geophysical survey), flowline data, gas field details, SWP and manifolds tie-in details.

The route of the Domino flowlines from SWP to DODC1 and from DODC1 to DODC2 is shown in Appendix C.

A selection of coordinates along the route of the Domino flowlines is shown in Table 12.

Table 12 - Selection of coordinates for Domino production flowline

No.	Stereo 70 System		WGS84 TM30NE System	
	North (m)	East (m)	North (m)	East (m)
1	279025.231	959218.525	4857170.626	557284.239
2	276777.665	963127.252	4854690.053	561040.140
3	279825.013	964862.252	4857619.268	562956.872
4	281781.656	961391.265	4859783.027	559619.212
5	282876.545	960055.451	4860956.399	558355.790
6	285033.298	957585.578	4863044.502	556407.621
7	298468.416	947769.656	4877251.218	547076.271

Pelican South Electrically Heated Flowline

Open Electrically Heated (EH) flowlines will be used at Pelican South to provide active hydrate management by means of electrical heating. Pelican South EH flexible production system will be provided with power, control, and monitoring equipment (SWP and CCR components).

The Pelican South EH production flowline will have the following main characteristics, but not limited to:

- Pull head, bend restrictors, and J-tube seal (if applicable);
- Power, control, and monitoring equipment;
- Fiber optic temperature and condition monitoring;

- Option: combine the EH flexible flowline and Pelican South static umbilical into a single Integrated Production Bundle.

The route of the Pelican EH flowline and umbilical between the SWP and the Pelican South manifold has been determined based on the findings of the flowline routing study conducted by a third-party contractor. The routing study included assessment of route survey data (e.g., geophysical survey), flowline data, Pelican South field details, SWP and Pelican manifold tie-in details.

The routes of the flowline and umbilical are straight for most of the route length except at the approach to the Pelican manifold, with the umbilical routed parallel at a distance of 30 m from the flowline route centerline.

The route of the Pelican flexible flowline is shown in Appendix C.

A selection of coordinates along the route of the Pelican South flowline is shown in Table 13.

Table 13 - Selection of coordinates for Pelican South production flowline

No.	Stereo 70 System		WGS84 TM30NE System	
	North (m)	East (m)	North (m)	East (m)
1	298529.483	947778.099	4877311.547	547088.434
2	298571.455	948025.817	4877338.144	547337.967
3	299330.154	948715.309	4.878.051.525	548.071.818
4	299467.235	948686.464	4878189.906	548051.541

3.6.2.3.4 Domino and Pelican South Umbilicals

The Domino and Pelican South subsea systems will be monitored and controlled using electrical and hydraulic control systems connected to the SWP by dedicated umbilical control connections.

The Domino subsea system will include two electrical and hydraulic control umbilical segments: one between the SWP and DODC1 and one between DODC1 and DODC2. The umbilicals will also supply chemicals to the subsea facilities. Flying leads will then connect the umbilical from the SDU at the drill center to the wells and manifold.

The Pelican South subsea system will include an electrical and hydraulic control umbilical between the SWP and PSDC1. An umbilical will also supply chemicals to the subsea facilities. The umbilical will be buried for protection from fishing activity. Flying leads will then connect the umbilical from the SDU at the drill center to the wells and manifold.

The main characteristics of umbilicals are summarized below:

- Domino infield static umbilical of approximately 6 km long from DODC1 to DODC2;
- Domino slope static umbilical of approximately 26.5 km long from the SWP to DODC1;
- Pelican South static umbilical of approximately 1.5 km long from the SWP to PSDC1.

The underwater areas that will be occupied by the Domino and Pelican South umbilicals are summarized below:

- 2,952 m^2 represents the area occupied by SWP - PSDC1 umbilical;
- 52,280 m^2 represents the area occupied by SWP – DODC1 umbilical;
- 12,040 m^2 represents the area occupied by DODC1 – DODC2 umbilical.

The routes of the umbilicals between the SWP and both Domino and Pelican South manifolds have been determined based on the findings of specific routing studies conducted by a third-party contractor. The routes of the Domino and Pelican South umbilicals are shown in the following drawings and attached in Appendix C:

- Drawings no. ROND-EW-YDPAL-22-003 ÷ ROND-EW-YDPAL-22-008: Domino Umbilical SWP-DODC1 alignment sheets;
- Drawings no. ROND-EW-YDPAL-22-009 ÷ ROND-EW-YDPAL-22-010: Domino Umbilical DODC1-DODC2 alignment sheets;
- Drawing no. ROND-EW-YDPAL-22-0001: Pelican Umbilical alignment sheet.

A selection of coordinates along the routes of the Domino and Pelican South umbilicals are shown in Table 14 and Table 15.

Table 14 - Selection of coordinates for Domino umbilicals

No.	Stereo 70 System		WGS84 TM30NE System	
	North (m)	East (m)	North (m)	East (m)
1	279121.446	959273.766	4857263.065	557345.247
2	278877.798	963092.034	4856784.791	561134.752
3	280010.520	964307.348	4857838.133	562415.662
4	286370.590	955974.009	4864690.128	554504.478
5	295452.595	951276.560	4874029.679	550384.472
6	298351.206	947735.390	4877136.544	547034.892
7	298507.646	947757.291	4877291.073	547066.372

Table 15 – Selection of coordinates for Pelican South umbilicals

No.	Stereo 70 System		WGS84 TM30NE System	
	North (m)	East (m)	North (m)	East (m)
1	298546.514	947776.631	4877328.610	547088.044
2	298616.904	947858.514	4877393.697	547173.987
3	298600.027	948011.182	4877367.451	547325.075
4	299466.468	948684.774	4878189.250	548049.812

The configuration for the subsea umbilical will include:

- A pull-in head, used to connect the umbilical to the topside system and to pull the umbilical into position on the host facility;
- A topsides umbilical termination hang-off assembly used to hang-off and secure the umbilical to the host facility;
- Static umbilical segments;
- UTAs and associated foundation structures connected to the subsea ends of the main umbilicals, and to both ends of the infield umbilical;
- Bend restrictors at each umbilical-UTA interface to prevent umbilical over-bending during installation and retrieval;

- Cathodic Protection system covering umbilical and UTA with anodes placed on the UTA;
- Bellmouth at the end of each J-tube through which the 2 static umbilicals will be pulled onto the SWP;
- Centralizers inside J-tubes for installation and/or operation;
- One-off repair splice for Domino and Pelican South;
- Umbilical armoring included in areas where trenching is required;
- Umbilical to account for and mitigate concerns that are present as a result of operation of the DEH system that is part of the Domino Flowline (AC Corrosion, induced voltage, communication interference, grounding etc.).

3.6.2.3.5 Manifolds, suction piles and mudmats

Each drill center will contain wells placed in a cluster arrangement around a production manifold. The production wells will be connected to 2 production manifolds at DODC1 and DODC2, respectively one production manifold at PSDC1.

Foundation suction piles and/or mudmats will be included for subsea equipment, as follows:

- 2 Suction Piles with associated platforms for the two Domino production manifolds;
- 1 Suction Pile with associated platform for the Domino production flowline ITA;
- 1 Suction Pile with associated platform for the Domino production FLET at DODC2;
- 1 Mudmat for the Domino production flowline FLET at the SWP;
- 1 Mudmat for the Production pipeline PLET at the SWP.

3.6.2.3.6 Other subsea equipment

The following FLETs, PLETs, and ITAs will be installed:

- One 457.2 mm (18-inch) Domino production flowline FLET at the SWP;
- One 355.6 mm (14-inch) Domino production flowline FLET at DODC2;
- One 457.2 mm (18-inch) / 355.6 mm (14-inch) Domino production flowline ITA (with 14 to 18-inch concentric expander and DEH piggyback cable integration) at DODC1;
- One 762 mm (30-inch) production pipeline PLET at the SWP.

A total of 2 risers (one for production pipeline and one for Domino production flowline) and 7 J-tube will be provided within the project.

The ancillary equipment includes:

- One 355.6 mm (14-inch) Domino production flowline subsea pig launcher that also includes 457.2 mm (18-inch) major barrel and is used to maintain the multi-diameter Domino production flowline;
- One 273.1 mm (10.75-inch) ID Pelican EH flexible production flowline subsea pig launcher / receiver (for pre-commissioning only).

3.6.2.4 Shallow Water Platform

3.6.2.4.1 SWP Overview

The Domino and Pelican South production will be tied back to a standalone, normally unmanned production SWP comprising of a jacket structure with two-level topsides facilities. The SWP will be located on the continental shelf in water ranging from 120-130 m deep and will occupy an underwater area of **3,547 m^2**. Stereo 70 and WGS coordinates of SWP location are provided below in Table 16.

Table 16 - SWP Coordinates

Location	Stereo 70 Coordinate System		WGS84 TM30NE Coordinate System	
	North (m)	East (m)	North (m)	East (m)
SWP	298534.294	947751.252	4877318.000	547062.000

The SWP will have a minimum 20-year design life. SWP main design parameters are listed in Table 17.

Table 17 - SWP Design Parameters

Parameter	Characteristics
Estimated Produced Water Rate	Up to 60 m^3/hr
Electrical Power Generation	3 x 50%
Gas dehydration unit/cMIST	1 x 100% or 3 x 33%
TEG Regeneration	1 x 100%
Persons Onboard	Unstaffed

Notes:

1. There is no provision for condensate handling. Hydrocarbon liquid rate anticipated to be 0 m^3/h.
2. Short term produced water rates of 830 m^3/h to be managed during pigging operations.
   Estimated Annual Mean Gas Production Daily Rate: 19,000,000 m^3/day (average of daily production estimated for entire project, including all wells and both Domino and Pelican South gas fields).

The topside facilities will process the full well stream fluids producing a dry gas sales stream. The dehydrated gas will be exported via a production pipeline to an onshore NGMS for custody transfer to the Romanian NTS.

Treatment of produced water will be handled on the facility, accounting for expected increases in liquid handling throughout the facility's life. Due to the expected 99.4% concentration of dry gas / methane with no liquid hydrocarbons present in the Domino and Pelican South flow streams, the process equipment on the facility is not designed to accommodate liquid hydrocarbons.

The description of process flow at the SWP is presented in Section 3.6.3.1.

The production processes on the SWP will be monitored and controlled remotely via the FOC from the onshore CCR located adjacent to the NGMS site.

The SWP will also provide electric power, utilities, and controls to the associated subsea developments.

The list of major facilities and systems at the SWP includes:

- Structural systems, including:
  - Steel Piled Jacket provided with foundation appurtenances, boat landing, sea deck, jacket leg storage tanks, and external corrosion protection and
  - Topsides provided with helideck, access and egress systems.
- Process Facilities, including:

  - Inlet Manifold;
  - Inlet separator;
  - Gas Dehydration Unit/cMIST;
  - Glycol Regeneration System;
  - Pigging Facilities;
  - Well Clean-Up Facilities.
- Utilities and Process Support Facilities, including:
  - Vent Systems;
  - Fuel Gas Systems;
  - Instrument Gas Systems;
  - Nitrogen System;
  - Hydraulic Power Unit;
  - Platform Crane;
  - Open Drain System;
  - Utility Liquid Storage;
  - Methanol System;
  - Chemical Injection System.
- Electrical Systems, including:
  - Main Power Generation System;
  - Essential Power Generation System;
  - Power Distribution System;
  - Local Equipment Room;
  - Uninterruptible Power and DC Power Systems;
  - Lighting;
  - Earthing;
  - DEH and Electrical Trace Heating Power Systems.
- Control Systems, including Instrumentation and Controls;
- Facility Communication and Security Systems;

- Safety Systems, including: Emergency Shutdown and Isolation System, SIS, Relief Blowdown and Flare Systems, Fire and Gas Detection System, Active and Passive Fire Protection Systems, HVAC Systems, Internal and External Communication Systems, Escape, Evacuation and Rescue Systems.

3.6.2.4.2 SWP Infrastructure

The SWP structural system consists of an integrated deck topside and a four-legged, steel piled jacket substructure. Figure 4 below shows a 3D Conceptual Model of the SWP.



Figure 4 – Shallow Water Platform 3D Model

Topsides

The current conceptual layout of topsides calls for 2 deck levels. The Upper Deck level consists primarily of process equipment and power generation equipment. The Lower Deck level consists primarily of utilities and subsea control equipment.

The steel piled jacket is four-legged steel braced structure with skirt piles. The jacket will support the integrated topsides, appurtenances, and piping. The jacket configuration will facilitate a floatover installation of the topsides.

Topsides will accommodate the required process, utilities, subsea controls, and other functional requirements. The topsides will also house a pedestal crane and a vent boom structure. A truss system along the main gridlines will be used to support each level and provide resistance to lateral loads. A series of beam grillage will form the flooring system that will support the deck grating and/or plating.

A 500 m safety zone shall be established around the platform that unauthorized vessels are prohibited from entering. Navigation aids specific to offshore platforms will be installed at the SWP.

The main processes, utilities, controls, etc. accommodated within the topsides are summarized below:

- A minimum 20 year service life;
- Weight estimate: 4,557 metric tons (neat, ex-deck support frame);
- Honeywell Process Control System / SIS; process will be controlled remotely from onshore control room via FOC & VSAT back-up;
- 2-phase gas-liquid separation - 60 m^3/h liquid capacity;
- Gas Dehydration Unit/cMIST;
- TEG regeneration large, but standard technology;
- Small process flare for routine gas emissions;
- Cold vent for emergency upsets;
- Produced fluids filtered and discharged to Black Sea;
- 9 MW gas-fired power generation with 3 x 50% Solar Centaur 50 turbines;
- Gas-fired essential services generator;
- Local equipment room for electrical and control systems, including subsea control system;
- Topside module for DEH power supply and control;
- Shared hydraulic power unit for subsea and topsides;
- Platform crane to support maintenance campaigns;
- Routine access via boat landing; non-routine access via helideck.

Jacket

The main design characteristics of the jacket are summarized below:

- 120 m fixed jacket support structure;
- Weight estimate: 6,847 metric tons (neat, including buoyancy, ex. piles)
- 41.5 m gap to accommodate topsides float-over;

- Secured to sea floor with eight x 84-inch (2133.6 mm) diameter, 110-meter-long piles.

The jacket will be founded to the soil using skirt piles, instead of main piles driven through the legs of the jacket. The use of skirt piles will allow for storage of fluids inside the legs of the jacket. The design calls for 2 skirt piles per leg, for a total of eight piles. Based on current information, the target penetration for each pile is 90 m below mudline.

The SWP will be provided with process facilities, such as: inlet manifold, inlet separator, gas dehydration system, TEG regeneration system, pigging facilities (pig receiver for Domino flowline, pig launcher for the GPP), and produced water treatment facilities. The description of process flow and related facilities is presented below in Section 3.6.3.1.

The platform jacket will support 5 caissons, respectively 1 caisson will be for the produced water discharge and the other 4 caissons (1 caisson for open drain fluids storage, 1 caisson for lean TEG storage, 2 caissons for methanol storage) will connect to leg storage tanks for various utility liquids.

The jacket will utilize the top compartment of all four legs as storage tanks of 200 m^3 each for process fluids (1 tank for lean glycol storage, 2 tanks for methanol storage and 1 tank for collected open drain fluids) that will be used during platform operations. Pump caissons will run down vertically from the Sea Deck and will be connected to the leg storage tanks via interconnecting piping. A closure diaphragm will separate the leg tank storage compartment from the bottom compartment of the jacket leg, which will be flooded with seawater during upending of the jacket. The inside of the jacket legs will be coated and provided with cathodic protection via sacrificial anodes to prevent corrosion from the liquids being stored inside the leg tanks.

Precipitation that falls onto decked areas around the SWP equipment will be captured and diverted into an open drain system. Similarly, any wash down water that falls into decked areas will likewise be captured and diverted into the open drain system. All open drain water will be diverted to the storage tank of 200 m^3 located in one of the steel legs of the SWP.

2 Risers and 7 J-tubes will be installed at the SWP in order to receive production flows and house umbilicals and power cables for subsea equipment. The risers/J-tubes will route up through the jacket and terminate on a platform near the top of the jacket. Cables and pipes from the topsides will then connect down to the platform that house these terminations and junction boxes. To minimize the impact of a riser event, all risers have been located on the east side of the facility, closest to the vent and furthest from the power generation.

The jacket will have a Sea Deck level near the top of the jacket. The Sea Deck will support the anchor flanges for the risers and J-tubes. The Sea Deck is designed to allow for umbilicals and cables to be pulled in and terminated before the topsides has arrived. This installation would require that the Sea Deck be designed to support a winch system which would be required for pull-in of the cables and umbilicals through the J-tubes.

The platform was designed to accommodate future facilities. In this sense, 2 J-tubes slots will be pre-installed on the jacket for future facilities installation.

The main electrical equipment provided at the SWP will include:

- Main power generation system consisting of three Solar Centaur 50 gas turbine generators operating in a N+1 configuration, thus allowing one main generator to be spare (e.g., cold standby) at all times. The rated output of two Centaur 50 generators at -4.4°C and 27°C are approximately 8.9 megawatt (MW) and 7.3 MW, respectively. The generators will be sized to supply all electrical loads including DEH under all operating conditions. DEH is the dominant electrical load representing over 60% of the entire load;

- One natural gas driven essential service generator of 400 VAC (Volts of Alternating Current) will be provided for black start, and for SWP and subsea essential loads (e.g., life safety, equipment protection, critical heat tracing, critical operating equipment and to safety and control systems). For black start

purposes the essential generator will be fed with fuel gas from the sales gas pipeline via an electric operated bypass valve. The essential generator is sized to support starting of the main power gas turbine generators and can be started from the onshore CCR;

- A Local Equipment Room will be utilized to provide efficient distribution of electric power on the SWP in order to minimize/optimize cable size and length and provide protection to equipment from the outdoor ambient environment. There will be one standalone 2-level pressurized LER where a transformer room separated by a switchgear will consume the first level and a battery & ICSS room along with an outside redundant HVAC system will encompass the second level. The Local Equipment Room will house all necessary electrical, instrumentation, control, and fire protection equipment to serve the process and infrastructure requirements;

- Non-redundant 230V AC UPS systems with an autonomy time of 90 minutes will provide power to loads that cannot tolerate power interruption or that require reliable and regulated AC power;

- A DEH container will be installed to supply and control single phase power to the DEH Domino flowline while allowing remote control and delivery of the required current for resistance heating to each flowline. Fiber optic monitoring will be included in the Domino piggyback cable for distributed temperature indication and protection of the system;

- Pelican electrically heated flexible system that will be housed in the Local Equipment Room.

Two separate hydraulic power units will be provided on the SWP, respectively: one utilizing an aqueous motive fluid and a second utilizing an environmentally safe, low volatility mineral oil. The aqueous hydraulic power unit provides pressurized hydraulic fluid for operation of the subsea hydraulic power system as well as actuation of the large bore shutdown valves topside. The mineral oil hydraulic power unit provides drive fluid to the hydraulically driven caisson pumps serving the jacket leg storage.

Emergency shutdown and isolation equipment (e.g., shutdown valves) and measures will be provided at the SWP for protecting hydrocarbon processing facilities.

An Emergency Relief Vent is sized to relieve the upside potential gas rate in the event of blocked flow. It is also capable of lesser vent rates such as flowline depressurization, gas blow-by, and other credible scenarios.

Continuous hydrocarbon vents on individual systems or equipment, including the produced water flash drum flash gas, the gas streams from the TEG regeneration package, the blanketing gas for the jacket legs, and exhaust of the pneumatic actuators, are disposed of to a low-pressure flare. This flare is equipped with spark type ignitors as the primary method of ignition with a self-aspirating flame front generator as the secondary means of ignition.

Fire and Gas Detection Systems will be installed to detect and notify personnel of fires, hazardous accumulations of flammable gas, oxygen deficient and/or hazardous atmospheres as applicable, and to interface with other systems to minimize the extent and severity of these events. Flame, gas, and smoke detectors will be located across the platform as appropriate.

Active fire protection systems will be provided in order to protect personnel, provide the means for extinguishing and preventing escalation of fires where possible, and reduce fire damage and thus enable the facility to return to a safe status as soon as possible after a fire. The active fire protection system at the SWP will include:

- The helideck equipped with a self-contained foam-based Deck Integrated Fire Fighting System;

- Self-contained Fine Water Mist System in Gas Turbine and Essential Generator Enclosures;

- Fire Extinguishing System for LER and DEH Buildings;

- Fire extinguishers.

The helideck will be provided for emergency medical evacuation or for urgent operational need. The helideck will be sized to accommodate an Agusta/Westland AW 139 helicopter. No refueling facilities will be provided. The helideck will be located on the west side of the facility, away from the risers, flare, and cold vent. It has been located to minimize the impact of the exhaust from the Gas Turbine Generators on to the availability of the helideck.

Passive Fire Protection will be provided as required at the Installation to prevent the spread of fire, and also protect personnel, equipment, and the structural integrity of the platform. The primary functions of fireproofing on offshore facilities are to prevent the collapse of the portions of the structure needed for safe platform evacuation, prevent escalation of fire from one area to an adjacent area, and protect systems and equipment that are of essential importance to safety.

HVAC system will be installed to provide an acceptable environment (temperature, humidity, and filtration standards) within all enclosed areas (e.g., LER), and to maintain segregation of hazardous and nonhazardous areas by way of pressure differentials and/or dilution ventilation.

Internal and external communications systems (e.g., alarms, very high frequency radios, etc.) will be installed at the SWP in order to provide general audible communication during normal and emergency operations, provide audible and visual indication of changes to the platform status, keep personnel informed of potentially hazardous work activities, and provide means (hand portable radio) for person-to-person communications.

Escape, evacuation, and rescue systems will be provided at the SWP, and will include primary and secondary escape routes, evacuation routes, and a temporary shelter.

The jacket is designed with a single boat landing on the west side of the platform, which is on the opposite side of the risers, vent, and flare. The boat landing is designed to accommodate marine personnel transfer via swing rope or from a heave-compensated gangway mounted on a supply vessel.

The crew boat provides primary means of access to the platform, via a heave compensating ''Walk to Work'' gangway. The boat also provides accommodation and welfare facilities for personnel while visiting the platform. The crew boat accommodation will be designated as primary muster point for the platform and evacuation to the crew boat through the heave compensated gangway is considered the primary means of evacuation from the platform during an emergency.

No permanent accommodation will be included on the platform, as no personnel will be continuously located on the facility. A temporary shelter will be provided for protection from the elements should the normal means of egress be temporarily unavailable. The temporary shelter is designed to accommodate 12 personnel for overnight stay and will be provided with 12 beds to enable each person to take rest and sleep. The shelter will be large enough to accommodate typical O&M team of 20 personnel based on a minimum size of 0.6 to 0.7 m^2 per person.

The shelter is designed with blast and fire resistance to maintain its integrity and provide protection to personnel, and will be used in case of:

- Major abrupt boat failure leading to inability to approach and connect to SWP. The personnel may stay stranded on SWP for 18-20 hours;

- O&M team of 6-8 members (including pilots) will travel to platform by helicopter in case of operational emergencies. If the helicopter does not start or suffers an equipment failure on arrival at SWP then the pilots and operations/maintenance personnel will move to SWP temporary shelter and await the arrival of the boat and additional crew.

An electrically driven platform crane fixed length box boom with 30 m boom, will be provided to facilitate transfer of supplies and equipment to and from the platform as well as to assist in major maintenance activities. The crane may also be utilized as a secondary means of personnel transfer when boat landing is not practical, e.g., medical transfer. The crane will be located on the Upper Deck of the platform and will require a boom rest. A laydown area will be provided on the Lower Deck within the crane's reach.

3.6.3 Description of the production processes of the project

3.6.3.1 Offshore production processes

The proposed objective of the Neptun Deep project is to develop the natural gas reserves from the Domino (2 drill centers) and Pelican South (1 drill center) gas fields. The produced gas and water arrive on the SWP facilities via separate flowlines from the Pelican South and Domino fields drill centers.

The SWP will be provided with installations and facilities to support the gas production, separation, and dehydration process, such as:

- Production flowlines and inlet manifold;
- Inlet separator;
- Gas Dehydration Unit/cMIST;
- Glycol Regeneration System;
- Pigging facilities;
- Produced water treatment system.

Due to the expected 99.4% concentration of dry gas / methane with no liquid hydrocarbons present in the Domino and Pelican South flow streams, the process equipment on the facility is not designed to accommodate liquid hydrocarbons.

A simplified process flow diagram of the process flow at the SWP is shown in Figure 5. A summary description of process flow and equipment is presented in the paragraphs below.

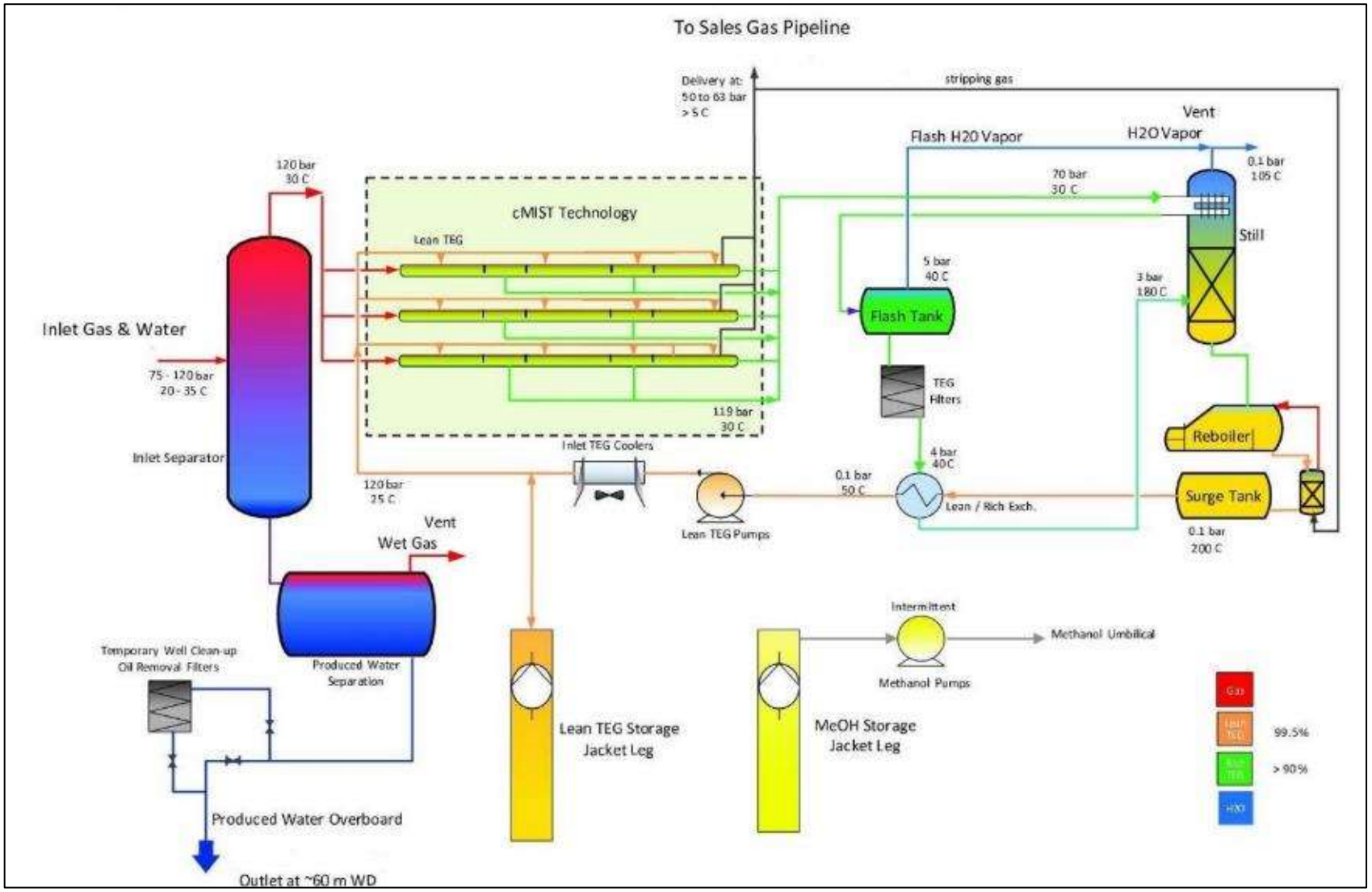


Figure 5 – Shallow Water Platform: Simplified Process Flow Diagram

Production manifold

The flow line system incorporates an open DEH system being used for continuous hydrate prevention for the Domino field and an EH flexible flowline for Pelican South. Power generated at the platform is used to energize both the DEH and flexible flowline heating systems. The Domino flowline will have a fixed riser and the Pelican flexible will run up the jacket inside a J-tube.

At the platform, the two risers pass through their respective boarding valves followed by barred tees. The flow path through the mainline of the barred tee provides piggable access to either a pig receiver for Domino or a connection for a temporary pig trap for Pelican.

A permanent pig receiver is provided for the Domino production flowline sized to accommodate the largest maintenance and ILI pig. Space shall be allocated to allow unloading of the pigs. Purging of the receiver shall be performed from a nitrogen system that also snuffing capability to the emergency relief vent and is sized to provide a minimum of three snuffing attempts in addition to maintenance purging. Pressurized nitrogen bottles are provided along with a distribution header to facilitate purging of equipment such as pig traps.

Through the side of each barred tee, the flow is routed to the Production manifold. Isolations as well as riser chokes are supplied on both lines of the manifold prior to being comingled. The return of the Domino pig receiver is also comingled with the production flow in the production manifold prior to being routed to the primary separator.

Heat tracing is provided from the splash zone of the risers through the inlet manifold and to the inlet separator to prevent hydrates in the winter. While ambient temperatures can reach -17°C, the heat tracing will maintain a process temperature above the hydrate formation temperature.

Gas Separation

Production from the Domino and Pelican fields will be manifolded in such a way that each field can be routed to the Inlet separator. The full well stream is then separated into produced gas and produced water via the inlet separator.

The Inlet separator is a traditional vertical gravity-based separator designed to provide vapor liquid separation as well as slug or surge capacity of 23 m^3. The inlet separator size will be of 2.3 m diameter and 10.8 m length.

The operating pressure of the inlet separator will be 125 barg (gauge pressure) in early life but will reduce to as low as 75 barg in late life. Operating pressure will continue to reduce as rates decline and the export pipeline pressure drop decreases. The average arrival temperature is 25°C; however, the temperature could be as high as 30°C in the summer.

Defoamer is injected at the inlet of Primary Separator to prevent foaming within the separator. The separated wet gas from Primary Separator flows to the gas dehydration unit.

The liquid leaving the bottom of the separator is composed of produced water, injected chemicals, and solids (formation fines). Note that there is no hydrocarbon liquids content present in the liquid stream.

The inlet separator and piping are designed to ensure that the fines remain entrained in the water phase and passed to the produced water separator in order to prevent any sand accumulation within the separator system including piping.

While metering for well allocation occurs subsea at the tree and metering for fiscal custody transfer occurs onshore at the metering station, surveillance level metering is also provided on both the gas and water streams from the separator.

The separator liquid level will be controlled by a level controller and control valves provided in the liquid outlet. Pressure is controlled by a downstream pressure control located at the pipeline inlet. The temperature at gas outlet will be monitored to ensure it is operating above hydrate formation temperature (15°C) and below dehydration unit maximum temperature limit of 35°C and starts experiencing degraded performance at 30°C. Pelican South (high temperature fluids) and Domino flow rates may be adjusted as required to keep the temperature within the operating limits. A spool piece is provided at the separator gas outlet for installation of a Gas Cooler in case of such a requirement due to higher-than-expected arrival temperatures in the future.

Relief Valves and Blowdown valves are provided on the separator for over pressure protection and is relief and vents are routed to High Pressure (HP) Emergency Vent Header.

The gas from Inlet separator flows to the dehydration unit. The liquid leaving the bottom of the Inlet Separator is passed to the produced water degassing drum (horizontal two-phase gas-liquid separator) where the residual gas which remains in the mixture of produced water, fines, and chemicals is removed via a low pressure (0.5 barg) flash separation. The flashed gas is sent to an atmospheric vent and the remaining produced water effluent will be managed in accordance with relevant regulations in force.

Gas Dehydration/Drying

The produced gas from the Inlet Separator is dehydrated/dried in the gas dehydration/drying unit using lean TEG. Rich Glycol from the gas dehydration unit is regenerated in the TEG Regeneration system to produce lean TEG which is used in the gas dehydration unit. For makeup and initial fill, lean Glycol is stored in the TEG storage tank of 200 m^3 storage volume installed in one of jacket legs.

The lean TEG absorbs water during the dehydration process and becomes rich TEG. The dehydrated gas leaving the gas dehydration unit system is routed to the onshore metering station via the subsea production pipeline to the onshore gas metering station and finally to the Romanian NTS.

The water rich TEG stream is regenerated in a conventional glycol regeneration system.

The lean TEG from the regeneration system is fed to the gas dehydration unit and the flow rate is controlled using a flow control valve. The TEG to each unit is divided into four streams that are fed to the individual stages. The TEG flow rate to the individual stages will be set by the operating team. The rich TEG from the gas dehydration unit and the polishing unit will be combined together and sent to the TEG regeneration unit.

The liquid level in the monoline separators will be controlled by a nucleonic level controller and control valve provided in the liquid outlet line. A control valve is provided downstream of the polishing unit on all dehydration units for balancing the pressure between the parallel units and for isolation of units. Pressure drop across each gas dehydration unit stage will be measured to detect plugging and liquid carry over issues. Pressure drop will also be measured across the mist eliminator in the monoline separator boots. The water content of the gas will be measured downstream of the polishing units using online moisture analyzers.

Alarms and trips are provided as required to facilitate safe operation of the system.

Triethylene Glycol (TEG) Regeneration

The combined rich TEG liquid outlet from gas dehydration system is routed to the TEG Regeneration system. The rich TEG is regenerated for reuse by flashing it to low pressure, heating and by fuel gas stripping. Regenerated lean TEG is routed back to the gas dehydration system. Make-up Lean TEG will be added to the system to maintain the optimal operating parameters of the system.

The TEG Regeneration section is composed of (listed according to flow sequence):

- TEG Reflux Condenser: mounted at the top of the TEG Still Column (inside);
- Rich TEG Flash Tank (vertical 2-P Separator);

- Rich TEG Filters;
- Lean/Rich Glycol Cross Exchangers;
- TEG Still Column (vertical) mounted on top of TEG reboiler;
- TEG Reboiler (horizontal) with TEG Reboiler Electric Heater located inside;
- TEG Reboiler Electric Heater (4 x 200 kW) consisting of 4 bundles, each bundle with 33% excess elements (not connected to power supply) required as spare;
- Gas Stripping Stahl Column (vertical);
- Lean TEG Surge Vessel (horizontal drum);
- Lean TEG Pumps;
- Lean TEG Air Cooler: combined unit with reboiler vent air cooler using shared fans; during normal operation single fan will operate; both fans will operate during peak demand;
- Reboiler Vent Air Cooler: combined unit with TEG air cooler using shared fans;
- Reboiler Vent Knock Out Drum: vertical 2-P separator with outlet connected to low pressure flare.

TEG Regeneration Unit is a package unit. All the equipment above and associated piping are included in the scope of package unit except Reboiler Vent Knock Out Drum which is located outside the skid.

In the rich TEG inlet line to Regeneration unit, a hand control valve is used to reduce the pressure down to rich TEG Flash Drum operating pressure of 6 barg (from 125 to 75 barg in gas dehydration unit). The rich TEG is pre-heated in the TEG Reflux Condenser (located at the top of TEG Still Column) by heat exchange with the vapor from the TEG Reboiler. From the condenser, the rich glycol flows to the rich TEG Flash Drum, where the glycol is flashed to remove any dissolved gases to Low Pressure (LP) Flare Header. Rich TEG Flash Drum is to liberate the residual gas and formation water that were dissolved in the TEG during gas drying process by depressurization and heating. Note that there is no hydrocarbon liquid present in the production fluids and hence no liquid hydrocarbon is expected in the TEG Regen system. Hence no hydrocarbon separation system is provided in the Flash Drum and also no charcoal filters required for hydrocarbon adsorption. However, the TEG system is a closed loop where decomposition and corrosion residues could accumulate. The rich TEG from the Flash Drum flows through Glycol Filters to remove any solids/impurities larger than 5 microns size. Two filters are provided, one for operation and the other in standby.

After the Glycol Filters, the rich glycol is heated further in the Lean/Wet Glycol exchanger by cross exchange with the hot lean glycol coming from the TEG Reboiler. After the Lean/Wet Glycol exchanger, the rich glycol flows to the TEG Still Column where the water is removed from the glycol through distillation. The Still Column operates at approximately 0.5 barg. The temperature is 204°C at the bottom of the still and vapor leaving the TEG Reflux Condenser is controlled to ~100°C by the flow of cold Rich TEG through the cooling coils and its bypass. The non-refluxed vapor not condensed by the overhead condenser is sent to Vent Cooler. This cross exchange cools the column overhead vapors providing reflux in the Still Column to minimize glycol losses. Liquids from the Still Column flow to the glycol Reboiler located at the bottom of the Still Column. The TEG Reboiler uses Electric Heaters to heat and vaporize the water from the glycol. The temperature in the TEG Reboiler is kept at 204 °C.

From the TEG Reboiler, the lean glycol flows via an overflow pipe to the Gas Stripping Stahl Column. In the column TEG flows counter current to a small amount of stripping gas (fuel gas) for final water removal. The required concentration of Lean TEG to dehydrate the gas is reached in this column. This stripping gas is taken from the LP Fuel Gas System and is preheated by flowing through a coil inserted in the TEG Reboiler. Excess stripping gas can cause high TEG losses in the TEG Still Colum and hence the flow rate shall be controlled.

The bottoms of the Stahl column flow through the Surge Drum while the overhead returns to the glycol Reboiler. The Surge Drum feeds the Lean/Rich Exchanger where the lean glycol is cooled by cross exchange with the rich glycol. After the Lean/ Rich Exchanger, the lean glycol flows to the TEG Surge Vessel. This liquid flows by gravity. The TEG Surge Vessel provides a buffer volume for the circulating glycol and is used to maintain a suitable inventory of TEG in the system to provide reasonable operating time before TEG must be added to the system. It is also designed to hold sufficient Lean TEG volume and contain TEG volume displacement due to thermal expansion when the system is heated.

The Lean TEG is pumped from the TEG Surge Vessel by the Lean TEG Pumps through Lean TEG Air Cooler into the gas dehydration system. There are two Lean TEG Pumps with one operating and the other stand by. When the duty pump trips the standby pump shall start automatically. The Lean TEG Air Cooler further reduces the temperature of Lean TEG for the gas dehydration unit injection. Note that Lean TEG supply temperature would be adjusted based on gas dehydration unit operating temperature and ambient temperature conditions.

The overhead non-refluxed vapor from TEG Reflux Condenser is sent to Reboiler Vent Air Cooler and then to Reboiler Vent Knockout Drum. The condensed water is separated and disposed via Produced Water Disposal Caisson. The separated gas from the top of the knockout drum is vented to LP Flare.

TEG Still Column Top/ Reflux Condenser overhead gas temperature is controlled by adjusting the bypass control valve around the condenser exchanger. Flash Drum liquid level will be controlled by a level controller and control valve provided in the liquid outlet. Flash Drum Pressure is controlled by pressure control valve located at vapor outlet. Reboiler Rich TEG temperature is controlled by heater element control. Fuel gas flow (stripping gas) is controlled by a Flow Controller in the fuel gas supply line. A minimum flow control is provided for Lean TEG Recirculation pump protection.

Lean TEG supply temperature controlled by the Lean TEG bypass control provided across Lean TEG Air Cooler. Surge Drum level is controlled by the on-off mode operation of Lean TEG Storage pump.

Relief Valves and Blowdown valves are provided for equipment/piping over pressure protection.

Gas export to shore

Downstream of the gas dehydration units, the treated gas flow is manifolded together for export to shore. A backpressure control valve is provided on the combined stream to allow for constant platform pressure independent of pipeline packing, depletion, or gas sales rate at the onshore NGMS. A dew point analyzer is provided to ensure gas outlet to pipeline meets dew point specification. A slip stream is then taken to supply the fuel gas system prior to the remaining gas departing the platform through a rigid riser and traveling to shore in the production pipeline.

For maintenance of the production pipeline, a single pig launcher is provided and sized to accommodate the largest maintenance pig appropriate to that pipeline. Space shall be allocated to allow loading of the pigs as well as the addition of a trap barrel extension for receiving of an ILI pig. Purging of the launcher shall be performed from the nitrogen system. The motive fluid for kicking and driving the pig will be sales gas from the gas dehydration unit system.

3.6.3.2 Onshore production processes

After processing the natural gas at the SWP in order to comply with contractual gas transmission specifications, the gas production pipeline will transport it to the onshore NGMS for measurements prior to transfer to the downstream Transgaz Pipeline supplying the Romanian NTS.

NGMS will include a combination flow and pressure control system to control gas deliveries into the Romanian NTS. Control of gas volumes transferred into the Romanian NTS will be achieved via the two control valves installed at the NGMS downstream of the metering equipment.

There will be no hydrocarbon processing at the NGMS. All separation and processing of the natural gas will take place at the offshore SWP prior to flowing through the production pipeline to the NGMS. While no liquids are anticipated to accompany the processed gas arriving at the NGMS during normal operations, an inlet filter / separator equipped with level switches, alarms and manual dump valves will be installed at the NGMS to protect the NGMS meters from potential small amounts of water being sent to the NGMS by process upsets at the SWP.

A pig receiver assembly will be installed at the inlet of the NGMS to facilitate in-line inspection and maintenance pigging of the production pipeline. The pressure rating (design pressure and maximum operating pressure) of the NGMS piping and associated gas handling equipment will match that for the production pipeline pressure rating. Design of the pig receiver assembly will allow for use in the reverse direction as may be required for pre-commissioning de-watering activities.

The NGMS piping design includes provisions to enable "temporary" receipt of gas from the NTS to support commissioning of the offshore production pipeline and SWP during early project start-up. A "temporary" dedicated custody transfer quality meter, complete with moisture analyzer and gas chromatograph equipment, will be installed on the reverse pressurization line for fiscal measurement and accounting of gas volumes obtained from the NTS.

The CCR will serve as the primary operations control center for all Neptun Deep project facilities (subsea, shallow water platform, production pipeline, and NGMS). The CCR will house the facilities for monitoring and remotely operating project facilities.

The process flow diagrams are shown in Appendix D.

3.6.4 Raw materials, energy and used fuels, and their supply

The onsite construction and installation works proposed by the project will be executed using natural resources (fresh water, sea water, wood, etc.), mineral aggregates (e.g., sand, gravel, limestone, bentonite, etc.), building materials (e.g., concrete, geotextiles, and other project specific building materials), energy, fuels, chemicals and other project specific materials and products.

The freshwater will be ensured by water trucks supplied from water sources located within project area based on specific agreements signed with the regional water supply operator (RAJA Constanta). For offshore construction/installation activities, the fresh water will be provided by construction/installation vessels supplied from authorized water sources in the Constanta Port.

The sea water required for construction/installation activities (e.g., pipeline/flowline hydrostatic testing, tunnel backfilling, drilling fluid) will be taken from the Black Sea.

The mineral aggregates (e.g., sand, crushed stone, bentonite, etc.) will be brought from authorized sites with sufficient production capacities, located within Constanta County (less than 100 km) for a better efficiency and for reducing the impact on the environment due to transport equipment emissions. The materials will be loaded from the extraction site and transported by authorized vehicles to the onshore construction sites or to the project designed shore base location and then onboard of the offshore construction/installation vessels.

The specific building materials required for project construction/installation will be purchased based on contractual agreements executed with authorized specialized suppliers. All building materials will be fabricated in accordance with applicable standards and norms and will be accompanied by certificates of conformity. The building materials and equipment will be properly stored and managed in accordance with applicable legislation and standards.

The overall philosophy used in the selection of materials is based on minimizing full life-cycle costs (capital and operating costs), ensuring intended production design life, and maintaining schedule for fabrication, while working to minimize needed maintenance and acknowledging the generally longer response times to any loss

of containment and realizing that during operation the scheduled trips to the offshore SWP will likely occur every 3 months.

The chemicals used for onshore construction/installation will be procured from authorized suppliers and temporarily stored at the onshore construction sites. The chemicals used for offshore construction/installation (e.g., pipelines precommissioning chemicals) will be procured from authorized suppliers and temporarily stored at the designated onshore project quayside location. The chemicals will be further transported to the offshore sites by specialized installation vessels. The chemicals will be stored and managed in accordance with legal provisions and material safety data sheets requirements. Details on chemicals management during project lifecycle are presented in Section 6.1.9.

Power will be required during construction, installation, and commissioning of onshore, shore crossing and offshore facilities. The required power will be sourced by:

- An electrical power transformer that will source power to the facilities (including offices and lighting) and equipment at the onshore NGMS construction site. The power transformer will be connected to the local power supply network (located at approximately 1,400 m South to the onshore project site). ***The electrical power connection (power transformer and connection to the power network) is not part of the project scope described in this technical memorandum and will be subject to a separate permitting/regulatory procedure)***;

- Power diesel generators will be temporarily installed at the microtunneling construction works site and pipeline stringing yard and will provide power to tunneling related equipment and facilities, pipe assembly related facilities, and administrative offices;

- Specific power generation and distribution systems installed onboard of offshore support vessels;

- A portable power generator will be provided at the SWP to support the first-time startup of the SWP.

Details on onshore and offshore power supply are presented in Sections 3.6.5.1.3 and 3.6.5.2.3.

The fuels for onshore construction/installation equipment and vehicles will be regularly supplied from local fuel stations and transported via fuel tanker trucks by local distributors. The fuels will be temporarily stored onsite in approved/certified tanks provided with the possibility of collecting potential leaks.

The fuels for offshore vessels and equipment will be supplied by Regional Quayside Distributor (Constanta area) and transported to the offshore project area via supply vessels. The fuels for offshore vessels and equipment will be stored onshore at the project quayside location and then onboard the offshore vessels.

3.6.5 Connection to utility networks in the area

3.6.5.1 Onshore Utilities

3.6.5.1.1 Water Supply

No connections to local water supply network are planned during construction and operation phases.

The NGMS design premise is a normally unstaffed facility. This eliminates the need for an onsite water system at the NGMS.

The CCR area will be provided with standalone freshwater tank. No water connections to local utilities are planned. The freshwater tank will be an elevated tank to gravity feed the building water facilities. The freshwater tank will be periodically supplied by water trucks based on specific agreements signed with certified contractors.

The freshwater tank consists of an above-ground metal tank of 12 m^3 volume that is equipped with thermal insulation and electrical resistance against frost. A submersible pump (electronic hydrophore type) with Q (flow) = 50 l/min, H (height) = 30 m, P (power) = 1.1 KW will be incorporated to the water tank. The pressure and flow in the installation will be ensured by means of this electronic hydrophore. The capacity of the water tank was dimensioned considering a water requirement of 20 days.

The fresh water will be used for sanitary installations (toilets, washbasins, sinks). This water will not be used for human-digestive consumption or for the preparation of food or edible liquids.

The water supply system inside the CCR building will be made of polypropylene pipe for water supply with thermo fusion connection having diameters between DN 20 mm and DN 32 mm. The hot water supply will be made from an electric boiler with a volume of 50 liters equipped with electric resistance P = 2,000 W.

Cold and hot water pipes will be insulated with thermal insulation and anti-condensation sleeves. The external pipes up to the frost depth will be thermally insulated and will be protected by antifreeze electrical cables controlled by a thermostat for temperatures lower than 5°C.

The water needs during construction/installation phase include sanitary water for site offices and crews (e.g., showers, toilets) and fresh water for construction/installation works (e.g., tunneling process, pipeline installation and testing, etc.). The onshore construction works sites will be provided with temporary water supply and storage tanks supplied by water trucks based on specific agreements signed with certified contractors. Details on water supply facilities installed at the construction works sites are presented in Section 10.

Fresh water needs (domestic water, process water) required during project lifecycle will be ensured from the local water sources operated by the regional water supply provider (RAJA Constanta).

The drinking water during both construction and operation phases will be ensured from commercial sources (bottled water) based on specific agreements signed with certified contractors.

3.6.5.1.2 Wastewater Management

No connections to local wastewater sewage networks are planned during construction and operation phases.

There will be no wastewater systems at the NGMS. The NGMS is not a normally staffed facility so this eliminates the need for onsite sewer systems.

The CCR area will be provided with standalone domestic wastewater (septic) tank. No sewer connections to local utilities are planned. The domestic wastewater tank will be an underground septic tank for gravity drainage from CCR building facilities. The underground septic tank will be periodically emptied by vacuum trucks based on specific agreements signed with certified contractors.

A rainwater drainage tank will be installed adjacent to the south-east corner of CCR site on a total surface of 25 m^2. The tank will collect the rainwater that drains through concrete areas inside CCR fenced site.

Details on wastewater management facilities installed at the CCR fenced site are presented in Section 6.1.1.3.

The construction works sites will be provided with temporary wastewater management facilities that will be periodically emptied by trucks and transported to and disposed of at authorized disposal facilities based on specific agreements signed with certified contractors. No sewer connections to local utilities are planned.

The main wastewater streams generated during onshore construction phase include domestic wastewater (graywater, blackwater) from administrative areas and produced water generated from construction/installation works (e.g., shaft construction, microtunnelling process, pipeline hydrotesting, etc.). Details on wastewater management facilities installed at the construction works sites are presented in Section 10.

3.6.5.1.3 Power Supply

Power for operation of onshore project components (NGMS, CCR, etc.) will be sourced from the local power provider (ENEL) using the electrical power transformer that will be installed on the east side of the NGMS site. The power connection project will include an access road and perimeter fence. ***The electrical power connection project is not part of the project scope described in this presentation memorandum and will be subject to a separate permitting procedure.***

The electric power supplied from the local power grid will serve as the primary power source for the onshore facilities. Power and cable distribution will be buried to the extent possible and designed to minimize above ground obstructions.

A standby diesel generator, complete with automatic power transfer switch, will be installed at the CCR site and will provide backup power to both CCR and NGMS. The standby generator will be sized to support essential operational loads for both NGMS and CCR during power outages. A small diesel fuel tank sized to support 3 days of continuous operation at full load, will be installed/incorporated within the standby generator. If necessary, the small diesel tank will be supplied by fuel trucks based on specific agreements signed with certified contractors.

An Automatic Transfer Switch will be provided to ensure automatic transition to and back from generator power.

Power supply is required at the onshore construction sites (NGMS construction site and microtunneling construction site). The power supply for NGMS construction site will be ensured from the electrical power transformer (***not part of the project scope described in this presentation memorandum and will be subject to a separate permitting procedure)*** that will be installed on the east side of the future NGMS site. Electrical panels installed at the NGMS construction site will serve the power required for construction site facilities (including lighting) and equipment.

The power required at the microtunneling construction site will be ensured by three diesel powered generators of 750 kW each that will be installed at the microtunneling construction site. The diesel generators will ensure the power for microtunnelling related facilities (including lighting) and equipment. One diesel generator will be installed at the pipeline stringing yard and will provide power for pipe assembly related facilities.

3.6.5.1.4 Gas Supply

No connection to local gas supply networks is planned during construction and operation phase.

NGMS and CCR related offices and welfare facilities will be provided with electrical heating. Similarly, the onshore construction sites related buildings will be provided with electrical heating.

3.6.5.1.5 Heating, Ventilation, and Air Conditioning

HVAC system will be installed at the onshore located LER and CCR buildings. HVAC system will consist of an air treatment control unit connected to an external Variable Refrigerant Volume evaporation unit with high efficiency and low energy consumption. The air conditioning system will be mounted on the building roof.

The distribution of the air conditioning in the rooms will be done through rectangular air channels made of galvanized sheet, thermally insulated with basalt mineral wool mattresses.

The selection of the routes of the distribution channels was done considering the location of the air treatment plant and the possibilities of laying and masking the pipes.

Discharge vents have been provided for the introduction of air into the rooms for ceiling mounting. The connection between the discharge mouth and the flexible aluminum connection with which it is connected to the air inlet pipe is made by means of a telescopic plenum.

The evacuation of the air from the rooms will be done through the air recirculation / exhaust vents with the grid for mounting in the false ceiling, these being provided with an exhaust flow control system.

3.6.5.1.6 Telecommunication and Security

Communication between the LER and CCR, and then between the CCR and SWP will be via the direct link FOC routed parallel to the production pipeline. The FOC will provide communication between the SWP and operators working from the onshore staffed CCR. Fiber optic has been selected upon the basis of bandwidth, and availability for remote process control application.

The CCR will have provisions to communicate with the NGMS and SWP. The offshore FOC will serve as the primary means for communication with the SWP. A VSAT satellite dish will also be installed at the CCR to provide backup for communications with SWP.

Telephone and internet service will be sourced from local providers. There will be a dedicated fiber optic Multi-Protocol Label Switching connection with minimum 30 Mbps bandwidth for primary wide area network (WAN) link to the Business local area network (LAN). There will also be a wireless (IBPC) connection with 30 Mbps bandwidth for Dual-Line phone service that will provide secondary WAN connection to Business LAN. Antennae for the wireless connection will be located on the CCR roof.

The CCR will be provided with specialized security systems, including monitored CCTV system and access card readers. Security badge access will be required for access to the control room restricted area of the CCR building. In addition, the NGMS site will be provided with security systems including CCTV system, intrusion detection, and card reader access gates. Security systems and cameras will be connected to the CCR for alarming and remote monitoring. Both CCR and NGMS sites will be provided with perimeter fencing.

Telecommunication at the construction works sites will be done with mobile phones and very high frequency radios.

3.6.5.2 Offshore Utilities

3.6.5.2.1 Water Supply

No connections to water supply networks are planned during drilling/construction/installation, operation, and decommissioning phases.

The SWP is normally an unstaffed platform with personnel arriving on site only in case of emergency and for scheduled maintenance. The maintenance crew will be housed on the transport boat thus no fresh domestic water system is needed on the SWP.

Utility Water is required when people are on board to perform maintenance operations and to supply fresh water to the safety showers. Water is provided by support vessel, which includes pressure regulation and over pressure capability. Water is fed to the SWP via hose. To avoid cross contamination, hose connections will be customized so boat connection only fits corresponding SWP hose connection.

The safety showers tanks will be replenished with fresh water coming from the Support Crew Boat via freshwater header permanently piped to the units.

The eye wash units will be replenished from potable water cans brought from shore.

The fresh water for domestic/sanitary and drinking need at the drilling rig will be ensured by transport from port or by desalinization of sea water through desalinization systems available on the drilling rig. Sea water or desalinized sea water will be used for firefighting. Desalinized sea water will be used for equipment cooling.

Sea water pumped out of the Black Sea will be desalinized and utilized for preparation of drilling fluids required for production wells drilling.

For offshore construction/installation activities, the fresh water will be provided by construction/installation vessels supplied from authorized water sources located in Constanta Port.

Project hydrotesting of the production pipeline from NGMS pig receiver to SWP, and Domino and Pelican South flowlines will use sea water. Fresh water will be used for shore crossing microtunnel hydrotesting.

The drinking water during project lifecycle will be ensured from commercial sources (bottled water) brought from shore based on specific agreements signed with certified contractors.

3.6.5.2.2 Wastewater Management

No connections to wastewater sewage networks are planned during project lifecycle.

The wastewater streams generated during drilling/construction/installation/commissioning will include hydrostatic test water, well drilling and start up water discharges, wastewater (gray water, black water) and rainwater generated by drilling platform/support vessels.

The main wastewater streams generated during operation phase will include produced water and well restart fluids, subsea valve actuator fluids, SWP platform drains discharges, wastewater (gray water, black water) and rainwater generated by operations and maintenance vessels.

Decommissioning will require just pigging the flowline twice with sea water without additional chemicals.

All above mentioned wastewater streams will be managed in accordance with the appropriate regulations on wastewater management and will be transported via barges to shore-based wastewater treatment facilities (e.g., well start up water discharges) or discharged into the Black Sea marine environment (e.g., hydrostatic test water, water based drilling fluids, produced water, rainwater and other wastewaters that meet specification for discharge to sea), upon approval by the competent authorities.

The wastewater (gray water, blackwater) and rainwater generated by drilling rig and support vessels during project life (drilling, construction/installation, commissioning, production, decommissioning) will be managed following the appropriate maritime regulations regarding disposal of wastewater.

The water-based drilling fluid will flow on sea floor during the first two sections of the wells when drilling as is done riserless. Once the riserless sections are drilled and the riser installed, the drilling switches to a closed system and therefore to the NAF (Non-Aqueous Fluid) drilling fluid. This fluid returns to the drilling platform where is separated from the cuttings and stored temporarily on the drilling rig prior to being shipped onshore for treatment/disposal at an authorized waste facility.

Details on offshore wastewater sources and wastewater collection, treatment, and discharge systems are presented in Section 6.1.1.

3.6.5.2.3 Power Supply

No connections to power networks are planned during project lifecycle.

The vessels used during different project phases (construction/installation, precommissioning, commissioning, maintenance & operations, and decommissioning) will be provided with specific power generation and distribution systems to ensure power supply onboard of vessels.

The drilling rig will be powered by a minimum 32.065 kW main engine and will be equipped with an emergency generator capable of simultaneously supplying the services necessary for the safety of personnel in an emergency for at least 18 hours.

The required power for operation of offshore infrastructure (SWP, subsea systems, lighting systems, etc.) will be produced on site using natural gas from the production pipeline as a fuel source.

The main power will be generated offshore by three Solar Centaur 50 gas turbine generators operating in a N+1 configuration, thus allowing one main generator to be spare (e.g., cold standby) at all times. The rated output of two Centaur 50 generators at -4.4°C and 27°C are approximately 8.9 MW and 7.3 MW, respectively. The generators will be sized to supply all electrical loads including DEH under all operating conditions. DEH is the dominant electrical load representing over 60% of the entire plant load.

The main power will be generated at 6 Kilovolt (kV), 50 Hertz (Hz). Loss of one generator will require load shedding of DEH. It is expected that site conditions will allow 2 turbines to satisfy normal DEH operating load while maintaining N+1 configuration. However, the spare turbine generator will be required to meet DEH cold restart conditions expected approximately once per year.

If all main power gas turbine generators are down, all subsea wells will be shut down and topside equipment will be blocked in. Electrical power is not required to safely isolate the subsea or topside equipment. All valves required to safely isolate the facility are "fail safe" meaning that on loss of power they move to the safe position of closed or open via a mechanical spring.

Backup to the gas turbine generators is a non-redundant 230 VAC UPS system which is a battery system whose function is to provide power to maintain control and communication equipment for many hours. Another electrical backup system is the Essential Generator that is fueled with gas from the export pipeline.

One natural gas driven essential service generator will be provided for black start, and for SWP and subsea essential loads. The essential generator is sized to support starting of the main power gas turbine generators and can be started from the onshore CCR. The essential generator will be 400 VAC, 3-phase, 50 Hz, designed for the worst-case ambient conditions. The total calculated load essential load is 630 kW (kilowatt), excluding contingency. The essential power distribution system shall be designed to provide power to essential loads such as life safety, equipment protection, critical heat tracing, critical operating equipment and to safety and control systems such as fire and gas detection system, emergency shutdown and blowdown system, essential lighting, telecommunication, and process control system. For black start purposes the essential generator will be fed with fuel gas from the sales gas pipeline via an electric operated bypass valve.

If an event occurs that disrupts the use of gas turbine generators and essential generator, personnel will be required to visit the SWP by supply vessel for a manual restart. Proper SWP safety checks will be performed before attempting to restart essential generator. If the essential generator cannot be restarted, a portable generator will be brought to the SWP and an electrical connection at the sea deck is provided to plug in. The portable generator will be sized to provide power to the essential equipment of the gas turbine generators (lube oil pumps, heaters, starter). After the essential equipment is operating from the portable generator the gas turbine generators will be restarted with gas from the export pipeline.

For the initial startup of the SWP (1st time), a portable generator will be located on the platform to support the commissioning effort and used to power control, communications and critical SWP equipment. If buy- back gas is available in the export pipeline, that will be used to start-up the essential generator and gas turbine generators. If buy-back gas is not available, then first gas well will be opened to provide the initial gas for gas turbine generators start-up.

The main and essential power will be distributed via 6kV and 400V (Volt) switchboards, respectively, located in the LER. Main power is distributed at the same voltage generated in order to reduce weight/complexity of the platform. Feeders in cable trays will be used to provide power to various areas on the upper and lower deck of the offshore platform. For step-down distribution, 2 transformers of 6kV/0.415kV will provide power to LV switchgear where a secondary selective system will be incorporated. Transformers will be of the dry type and located inside LER. DEH and Pelican systems will be fed from the main 6kV switchgear.

LER will be utilized to provide efficient distribution of electric power on the SWP in order to minimize/optimize cable size and length and provide protection to equipment from the outdoor ambient environment. There will be one standalone 2-level pressurized LER where a transformer room separated by a switchgear will consume the first level and a battery & ICSS room along with an outside redundant HVAC system will encompass the second level. LER will house all necessary electrical, instrumentation, control, and fire protection equipment to serve the process and infrastructure requirements.

3.6.5.2.4 Gas Supply

Fuel Gas System

No connection to gas supply networks is planned during construction and operation phase.

Downstream of the gas dehydration unit and prior to entering the production pipeline, a slip stream of dehydrated sales gas is taken to be used as fuel gas for power generation and instrument gas for process control valves. The sales gas pipeline will function as a receiver for storing instrument gas during a shutdown.

During black start and early life operation, this gas stream is appropriately superheated with an electric heater to meet the requirements of the selected primary power generators and to avoid low temperatures due to Joule-Thomson effect in the letdown valves, where the pressure is reduced to about 30 barg. Temperature is kept to at least 0 °C before entering the fuel gas scrubber. A bypass is provided around the heater for mid and late life of the platform when the pressure decreases in the system.

Redundant parallel control valves are installed to insure a robust fuel gas and instrument gas supply. The parallel control valves provide redundancy to prevent the failure of a single control valve from causing a loss of fuel gas and instrument gas to the entire facility. A bypass is provided with a self-contained pressure regulator to supply Fuel Gas to the Essential Generator during black start. Bypass valves need to be manually operated to let the fuel gas from production pipeline to the superheater. Power will be supplied from UPS during this operation, thus restricting it to 15 kW. Once Essential Generator is online, power supplied to superheater will be fed from essential bus.

From the letdown station, fuel gas is routed to a 1x100% scrubber. The majority of the flow downstream of the Fuel Gas Scrubber is sent to the 3x50% Main Power Generators, where each package is provided with 2x100% Fuel Gas Filters, coalescer type, at the inlet to each turbine.

The remaining flow is sent to the Essential Generator and to a second let down station with the same configuration as previous valves (redundant parallel control valves and bypass with self-regulating valve for black start). The pressure is reduced to 7 barg to supply LP Fuel Gas to purge/blanket/stripping gas and to the Instrument Gas system. Relief valves set at 10 barg are located downstream of the control valves to provide overpressure protection to the end users.

Instrument Gas System

The project basis is to utilize a combination of hydraulic, pneumatic, and electric valves. For process control valves requiring pneumatic actuators, instrument gas drawn from the fuel gas system will be provided in lieu of instrument air.

A slip stream is taken from the LP Fuel Gas Header and routed to the Instrument Gas Filters prior distribution. The instrument gas distribution header will normally run at 7 barg and the low-pressure trip is set at 5.5 barg. This low-low pressure in the instrument gas distribution initiates a Process Shut-Down that is implemented by two out of three voting of pressure transmitters

The instrument gas is distributed to the instrument manifolds and other users. The returned instrument gas is collected and manifolded back together for disposal to the flare. This arrangement is to avoid local fuel gas emissions.

During black start, the three bypasses provided with self-contained pressure regulators need to be manually operated to let the fuel gas from production pipeline to instrument gas users. Power will be supplied from UPS to open the bypass shutdown valves during this operation. After gas dehydration unit is operating and fuel gas has been dehydrated, then bypass valves will be closed to establish normal operation to the fuel gas system.

3.6.5.2.5 Heating, Ventilation, and Air Conditioning

Offshore vessels will be provided with specific heating systems onboard of vessels.

HVAC system will be installed at the SWP to provide an acceptable environment (temperature, humidity, and filtration standards) within all offshore enclosed areas, and to maintain segregation of hazardous and nonhazardous areas by way of pressure differentials and/or dilution ventilation.

3.6.5.2.6 Telecommunication and Security

The main offshore communications and security systems will include:

- FOC and backup VSAT satellite;
- Ultra-High Frequency (UHF) radio system;
- Marine radio system;
- CCTV system;
- Hot-line voice system and satellite phones;
- Automatic Identification System.

FOC will transmit dedicated Voice (Hot) Lines between CCR and SWP, General Alarm (GA) as part of the SIS, Video Camera, Marine Radio and Two-Way Radio. Remote access capabilities for Company business network and to allow vendors to remotely access their respective networks from the SWP will be included.

In the unforeseen loss of FOC, the SWP is equipped with a backup satellite (VSAT) to provide data transmission between the SWP and onshore CCR. Bandwidth shedding/ network prioritization philosophy is to be outlined to determine what level of control and surveillance will be lost when on back-up VSAT rather than FOC. The SWP will continue to operate normally on the backup communication (VSAT). If both FOC and VSAT cannot transmit data from SWP to onshore CCR, the SWP will shut down safely based on the controls and interlock systems are located on the SWP.

UHF radio system

The system will provide radio communications for personnel on the platform, and the control room operators onshore for emergency and maintenance activities. The onshore and offshore portions of the system shall be linked via the fiberoptic cable to/from shore, so personnel can communicate between all sites. The control room operator interface to the radio system shall be available at the CCR console. The system shall consist of radio repeaters, handhelds radios, and control stations. The pedestal crane/operator shall be fitted with a UHF radio for loading and unloading activities.

Marine radio system

The system will provide communications between the supply/crew boats, SWP, drilling rig, and control room operators for marine operations. The marine radio on the SWP shall be located in the LER and include remote control functionality for operation in the Temporary Shelter. The radio on the SWP shall be linked to the control room operators via the fiber optic link. The control room operator interface to the SWP marine radio shall be

available at the CCR console. The pedestal crane/operator on the platform shall also be fitted with a marine radio for communications with supply/crew boats.

CCTV System

This system will provide high-definition video to the control room operators of most areas of the SWP. The CCTV system shall be a dual-purpose system for operations and security and include the most recent technology for unmanned platform monitoring and security surveillance. The system design shall provide a detailed view of most areas/equipment's on the SWP for the control room operators. Thus, should a major hazard event happen while operators are onboard SWP, control room operators will be able to potentially monitor major hazard event including areas impacted and thus help the onboard operators with situation awareness.

Hot-Line Voice System and satellite phones

A hot-line voice system will provide for immediate voice communications between the onshore control room operators and various locations on the SWP. Locations for the hot line will include the LER, Temporary Shelter, and the DEH Building. The operator interface for the hotline system will be available at the CCR console. Satellite phone capability will be made available for critical or emergency phone service from the SWP. Satellite phones also will serve as backup communications to the CCR in case of failure of the hot-line system.

Automatic Identification System

On the SWP, an automatic identification system will broadcast a safety message to similar equipped vessels near the SWP. The received data from similar equipped vessels in the SWP area will be displayed on a console screen at the CCR. It uses transponders on ships and will be used to eliminate vessel collisions with the SWP.

3.6.6 Description of the site restoration works in the areas impacted by the project execution

Upon completion of the project construction and installation works, site restoration works (ecological reconstruction for restoring the site to the original land quality) will be carried out in areas impacted by the onshore construction works sites (NGMS and microtunneling construction works sites), temporary construction roads and railway crossing, pipeline and fiber optic cable installation corridors, offshore trenches and other temporary areas impacted by the project execution.

The site restoration works will mainly include:

- Removal of buildings and facilities installed at the NGMS and microtunneling construction works sites;
- Removal/demolition of the temporary construction infrastructure (temporary construction roads, temporary railway crossing, technological platforms, parking areas, storage areas, etc.);
- Backfilling of the onshore, nearshore, and offshore pipeline and FOC installation trenches;
- Removal of construction and installation equipment used for project execution;
- Proper management of wastewater, waste, chemicals, and materials used during construction and installation phase in accordance with legal provisions;
- Rehabilitation (scarifying, backfilling, levelling, and revegetating, as appropriate) of all areas disturbed by the construction and installation works. Where contamination is identified, the site will be rehabilitated, and contaminated material will be managed in accordance with legal provisions;
- Site revegetation (use of grass seeds, fertilizers, and chemical amendments, as appropriate);
- Completion of the taking over protocol for restoring the onshore site to the original land quality.

The restoration works will be carried out by the appointed Contractors, under direct supervision of the Beneficiary, and will be executed in compliance with the relevant national permitting and environmental regulations.

3.6.7 New access ways or changes to existing ones

Onshore site access

From west to east, the onshore project site is currently crossed by the following transportation infrastructure (as shown in Appendix C):

- Communal Road DC4 located to the east of S1 site (cadastral number 109216);
- Railway line Constanta – Mangalia (cadastral number 109182) located between communal road DC4 and local road De277;
- Local Road De277 located between railway line Constanta – Mangalia and S3 site (cadastral number 109659);
- Local Road De259/4 located between S3 site and S4 site (cadastral numbers 109729 and 100819).

The onshore project area can be currently accessed using the existing communal or local public roads located within the project area, as listed below:

- S1 site can be accessed through the graveled communal road DC4 (4 m width) located to the east and local earth road De229/1 (4 m width) located to the north. Both local roads can be accessed from National Road DN39;
- S3 site can be accessed from Tuzla or Costinesti localities through the earth local road De277 (4 m width) located to the west;
- S4 site can be accessed from Tuzla or Costinesti localities through the earth local road De269 (4 m width) located to the east.

The access to the onshore area during project lifecycle will be ensured from the European Road E87 (National Road DN 39) through a new access road of approximately 2 km long that will connect the European Road E87 (National Road DN 39) located to the west of NGMS and CCR site and the communal road DC4 located to the east of the NGMS and CCR site. The new permanent access road will support the construction and operation of the onshore project facilities.

The access road construction project is not part of the project scope described in this presentation memorandum and will be subject to a separate permitting procedure.

In the early construction phase, until completion of the new access road to the NGMS and CCR sites, the project site will be accessed via the existing local roads within the project area (e.g., communal road DC4). However, the public access to the sea front via the local earth road De269 will not be impacted/blocked due to the onshore construction and installation works and no access to the construction sites will be ensured through this road.

After construction of the new access road to the NGMS and CCR construction works site, the access to the construction sites will be directly ensured from the National Road DN39 with no needs of accessing the sites via the existing local roads within the project site.

In addition, a temporary railway crossing and temporary construction roads will be installed during the construction phase in order to grant access of the personnel and equipment to the microtunneling construction and pipeline installation areas located on the left side of the railway line Mangalia – Constanta. After

completion of construction and installation works, the temporary railway crossing, and construction roads will be decommissioned, and the areas impacted by the temporary works will be restored.

Traffic safety signs will be installed at the temporary and permanent access roads and temporary railway crossing in accordance with specific legislation in force.

Offshore site access

Access to offshore components during construction and operation will be achieved by water or air.

During drilling/construction/installation phase, access to the offshore development will be realized by water with special construction and installation vessels with personnel shifts being transported by helicopter. The departure point for the support and transport vessels will be Constanta Port and for the helicopters will be one of the two airports located in Constanta County.

The SWP is designed as an unattended facility with only periodic visits by specialized operations personnel to carryout scheduled and unscheduled maintenance activities. The SWP will be accessible for normal operations by marine vessels only.

Marine fleet will include a fast supply vessel and or platform support vessel capable of reaching the SWP in approximately 8 hours from the Constanta area.

Vessels will be outfitted with a heave compensated gangway, and this will be the primary method of personnel transfer. Vessel will remain in close proximity to the platform (with gangway connected when possible) whenever personnel are on the platform.

For urgent operation support or for medical emergency evacuation, the SWP is fitted with a 17 m diameter helideck that can support a take-off weight of 6.8 tonnes, suitable for an AgustaWestland AW139, a 15-seat medium-sized helicopter.

Any visit to platform when no vessel is in attendance will be regulated by a visit specific platform operations and emergency response plan that will address operating criteria, e.g., duration of stay, weather windows, etc. along with plans for responding to emergencies during this operational phase.

3.6.8 Natural resources used during construction and operation

Natural resources (freshwater, sea water, mineral aggregates, etc.) will be used during construction and installation phase. The use of natural resources will be mainly indirect, the natural resources being purchased from authorized suppliers/contractors based on contractual basis.

Natural resources (natural gas, freshwater, petroleum-based fuels) will be used during the operation phase. The purpose of the proposed project includes utilization of a natural resource, respectively natural gas reserves from the Pelican South and Domino offshore gas fields, and delivery of dehydrated gas to the Romanian NTS. The estimated annual mean gas production daily rate is 19,000,000 m^3/day, representing the average of daily production estimated for entire project, including all wells and both Domino and Pelican South gas fields.

During the operation phase, downstream of the gas dehydration unit and prior to entering the production pipeline, a slip stream of dehydrated sales gas will be used offshore as fuel gas for power generation and instrument gas for process control valves.

The freshwater sourced by onshore suppliers will be used for domestic and sanitary water needs at the onshore facilities and onboard of operations & maintenance offshore vessels.

Refined oil-based fuels (e.g., diesel, jet fuel) purchased from onshore authorized suppliers will be used during operation phase to source the diesel-powered generators (e.g., backup diesel powered generator installed at the CCR site, vessels power generators), offshore vessels and helicopters.

If required, mineral aggregates (e.g., sand, gravel, concrete) will be used for maintenance/rehabilitation of interior roads, parking, and technological platforms during operation of the onshore NGMS and CCR.

Onshore power will be ensured by connection to the local power network (ENEL) via the power transformer to be installed at the NGMS and CCR sites during construction phase.

3.6.9 Methods used in construction/demolition

3.6.9.1 Construction and Installation

3.6.9.1.1 Onshore NGMS and CCR

The onshore facilities will be constructed and installed on site in approximately one year and will consist of a prepared surface, foundations, skidded and un-skidded equipment, and prefabricated and stick assembled structures and piping assemblies.

The current assumption is that fabrication or equipment and modules will occur to the extent possible offsite at regional or international fabrication facilities. Pre-fabricated modules and equipment components will be shipped to Romania via marine transportation. Once in Romania, the components and equipment will be stored at a quayside storage facility until needed. When required at the construction site, the modules and equipment components will be loaded onto tractor trailers and transported to site via public roads and dedicated permanent access road. The site will have only limited temporary storage and does not have direct sea nor railroad access facilities in place.

The NGMS and CCR related construction and installation works will include:

- Construction of temporary construction works sites (NGMS construction site, microtunneling construction site, temporary railway crossing, access roads to construction sites, etc.) and installation of related facilities and equipment required for execution of permanent facilities;
- Construction/installation of NGMS facility (including pig receiver);
- Construction/installation of CCR facility;
- Construction/installation of other permanent facilities/areas at the NGMS and CCR sites (e.g., interior roads, platforms, buildings, fencing, landscaping, utilities, etc.);
- Execution of civil works leading to the Transgaz pigging facility (e.g., internal access road to this facility). (***Transgaz pigging facility is not part of this project and will be subject to a separate permitting procedure***).

Following underground construction, equipment, piping, and buildings will be installed on their foundations. Details on building and equipment foundations were presented above in Section 3.6.2.1.

Interconnecting pipe and cabling will then be installed and tied in.

The onshore gas production pipeline isolation valve will be installed as part of the pipeline installation campaign.

Simultaneous operations with Transgaz pipeline and pigging equipment installation will be coordinated and managed to minimize disruptions to either party.

3.6.9.1.2 Gas Production Pipeline and Fiber Optic Cable

The full procedure for completion of GPP and FOC installation will include procurement, fabrication, transportation and installation, system completion (including flooding testing and gauging, system integrity testing, dewatering, disposal of residual hydrotest water, drying, and inerting), and commissioning support for 30-inch (762 mm) GPP and FOC from the SWP to the NGMS.

GPP components (pipeline end termination, riser tie-in spool induction bends, etc.) will be fabricated, integrated, completed, tested, and commissioned to the maximum extent possible prior to delivery to the installation.

It is envisioned that fabricated and manufactured components and equipment will be shipped to Romania via marine transportation. Once in Romania, the components and equipment will be stored at a quayside storage facility until needed. When required at the onshore construction sites, the components and equipment will be loaded onto tractor trailers and transported to site via public roads and dedicated permanent and temporary access roads. The construction sites will have only limited temporary storage and does not have direct sea nor railroad access facilities in place.

The line pipe (30-inch/762 mm outer diameter) for the GPP will be manufactured, internally coated for flow assurance purposes and externally anti-corrosion coated. Following completion of manufacturing and coating the pipe will be transported from the pipe coating mill(s) to their location for storage/ preparation for offshore installation. If required, the offshore GPP pipe will be counter bored, have concrete weight coating applied and have anodes, and other installation aids installed prior to the pipe being stored in preparation for delivery to the offshore installation vessel.

Tunnel jack pipe will be manufactured offsite at specialty concrete pipe manufacturing facility.

If required, the nearshore, shore crossing and onshore GPP pipeline will be prepared and stored prior to delivery to the NGMS/microtunneling construction sites or to the installation vessel. Any concrete weight coating required, will be applied onshore prior to delivery to the offshore installation vessel.

Upon completion of the offshore pipeline section, shore crossing, onshore pipeline section and NGMS construction, installation, and precommissioning, the gas production pipeline section and components will be tied in and made ready for dewatering, drying, inerting, and commissioning. The GPP will be flooded from subsea to onshore using filtered and treated seawater for hydrotesting and leak testing purposes.

The FOC will be manufactured, spooled, and stored at the manufacturer's facility for loading directly to the offshore installation vessel or delivering to the onshore construction sites. Miscellaneous FOC system components will be manufactured by various international manufacturing facilities and shipped to the regional shore base for shipment to the installation vessel or to the onshore construction site. A FOC section of approximately 5 km for installation between the onshore junction vault (near the shore crossing) and the CCR will be delivered to the NGMS location. The onshore section of FOC will have same specifications as the offshore section and will be manufactured by the same supplier.

Site acceptance testing will be conducted on the FOC (end-to-end) after installation. These tests will include optic loss measurements end-to-end, and terminal station equipment tests together with the submarine fiber cable. At the commissioning and site acceptance testing, the initial parameters will be recorded, and periodically the parameters will be retested in accordance with local government regulations, industry standards, and beneficiary preventive maintenance schedules.

The main construction and installation works of onshore, shore crossing and offshore GPP and FOC are summarized in the sections below of this document.

A. Onshore construction and installation of GPP and FOC

The onshore GPP section, block valve station, local roads and railroad crossing and tie-in to the pig receiver at the NGMS will be constructed utilizing conventional onshore construction methods and equipment.

The onshore GPP section will have approximately 1 km length and will be installed using conventional onshore pipeline installation and burial methods in a 2 m deep trench (with a burial depth to top of pipe of 1.25 m below natural ground level and a minimum separation of 0.5 m from any foreign pipeline or utility in any direction). Local roads and railway under crossings will be installed by auger bore or horizontal directional drilling (HDD) methods.

The onshore FOC will be installed using conventional onshore cable installation and burial methods and connected to the shore crossing and offshore sections by splicing the cables in a preinstalled underground cable splice vault. The FOC conduit will be installed with the onshore section of the GPP in a trench that will be lined with an impermeable geomembrane. A sand bed will be used to protect the geomembrane from the pipeline and FOC conduit. A weak concrete mix (8 MPa) will be used for backfilling (flowable fill) to the top of the loess soil layer. Native topsoil will be used from the top of the loess layer to the ground surface.

The cable will be buried to a depth of 1 meter as minimum onshore from the CCR to the entry of the shore crossing microtunnel. For railroad and road crossings, cable will be installed at a depth of 1.5 m as minimum.

A temporary pipeline corridor will be ensured for installation of onshore production pipeline and FOC. The underground pipeline installation corridor will have a total surface of 16,523 m^2 (Appendix C). The installation corridor will have a width of 21 m (13.3 m width on the southern part of the pipe position and 7.7 m width to the northern side of the pipe position) along the entire length of approximately 787 m. The pipeline installation corridor will not be fenced and will be marked by safety tapes. The execution of pipeline corridor will include removal of the vegetal soil layer on a thickness of 30 cm. The removed vegetal soil will be stored on a width of 4.26 m at the southern limit of the working corridor.

Local roads and railway under crossings will be installed by auger bore or HDD methods. A temporary pipeline corridor will be ensured for execution of local roads and railway undercrossing by the onshore production pipeline and FOC conduit (Appendix C). The total surface temporarily occupied for execution/installation of pipeline undercrossing of railway and local roads is 539 m^2. The execution of the corridor will include removal of the vegetal soil layer on a thickness of 30 cm and signaling within the area.

Transgaz will be responsible for construction, installation, tie-in, mechanical completion, and commissioning of the pig launcher, onshore pipeline, and any other facilities required downstream of the meter station for tie-in to the NTS.

B. Shore Crossing Construction/Installation of GPP and FOC

The shore crossing tunnel and pipeline will be installed prior to the offshore pipeline installation in order to avoid the requirement for an above water tie-in if possible. This interface point between the offshore pipeline installation contractor and shore crossing installation contractor will be closely monitored. Where possible shore crossing construction activities will be scheduled and performed in compliance with any and all local regulations to reduce the environmental impact. However, during tunneling operations, 24 hour/day operations will be required, and environmental mitigation measures (e.g., noise abatement, dust control, etc.) will be utilized if required to comply with all applicable local environmental regulations.

In order to minimize the environmental impact as much as possible on the ROSCI 0273 Cape Tuzla marine protected area, the shore crossing undercrosses this area. Offshore dredging for shore-crossing construction and near shore pipeline on-bottom stability will only be required adjacent to this Natura 2000 environmentally sensitive area. Dredging methods will be selected to minimize turbidity and it will be monitored during dredging operations.

The tunnel and near shore pipeline execution plans will require anchored vessels. For safe control of station keeping and vessel movements, these vessels require some anchors to be set within the Natura 2000 environmentally sensitive areas.

The main shore crossing related construction and installation works will include:

- Preparation of construction site area;
- Construction of the tunneling launch shaft;
- Execution of tunneling works;
- Preparation of pipeline for installation, including stringing, welding, testing;
- Offshore recovery of the tunneling machine and preparation of pipe trench;
- Installation of the pipeline;
- Backfilling of the tunnel and offshore trench;
- Reinstating works.

The above execution plan is based on the preparation of a pipeline on shore which is pulled to sea for a later connection to the offshore pipeline section. The design of the landfall tunnel describes an alternative which alters the pipeline installation process to pull ashore a pipeline from an offshore vessel. This may be considered at a later stage and is not considered to represent a significant change to the execution of the onshore works.

An estimated total construction duration of 13 months has been determined from start of shore crossing construction to the end of the reinstating works.

The execution of the shore crossing will include both onshore and offshore construction/installation works, as detailed in the paragraphs below.

Onshore construction/installation works

The main sequences of the onshore microtunneling construction and pipeline installation works include:

- Preparation of the onshore construction site, including construction access road, tunnel site, launch shaft, and pipeline stringing yard, welding, and storage areas;
- Execution of tunneling works; and
- Pipeline installation.

Onshore Microtunneling Construction Site

The onshore construction works will start with the site preparation and installation of the onshore construction works site, including tunnel site organization, pipeline stringing yard, pipeline storage area, welding area and temporary access roads to the construction works site. The details of the construction works site and associated facilities and construction methods are presented in Section 10.

Construction of launch shaft

The launch shaft will be executed by either driving sheet piles or drill secant piles. Water will be required for making up drilling fluid during the drilling of secant piles. The excess water will be collected in two

containerized steel tanks and tested prior to disposal for parameters required by the disposal facility. Each tank will have a volume of 30 m^3 and the following dimensions: 6 m x 2.5 m x 2 m.

After the shaft walls are built, the shaft can be excavated (wet or dry) depending on ground water level. The excavated soil from the shaft (approximately 3,270 m^3) will be stored on a temporary storage area of 1,100 m^2 (55 m x 20 m), near the launch shaft area. It is currently anticipated that a volume of approximately 1900 m^3 from the total volume of excavated soil from the launch shaft will be used for shaft backfilling at the end of the works, and a volume of approximately 1,370 m^3 resultant from drilling of secant piles will be transported with trucks to an authorized disposal facility.

Then the concrete floor is poured. After curing of the concrete, the shaft may still be partially filled with ground water. This water will be tested inside the shaft prior to pumping out and disposing. The water will remain in the shaft until the test results are available.

Once the shaft is constructed, it will be equipped for microtunneling operations (seal, jacking frame, tunnel boring machine, etc.).

Execution of tunneling works

Once the construction works site is completed, mobilized and all equipment is installed thereon, the tunneling process will start with the installation of the tunnel boring machine (TBM) into the executed launch shaft.

At the front of TBM the soil is mechanically excavated with a rotating cutter head and hydraulically transported back to the microtunnel construction site through a closed drilling fluid system.

On site, the water based drilling fluid is processed in a separation plant, where soil or rock is separated from the drilling fluid through a series of sieves and hydro cyclones. The soil will temporarily be stored on site for sampling and testing prior to disposal to an appropriate/licensed site. The total estimated amount of soil to be excavated by the tunneling process is 4,030 m^3.

Soil cuttings (excavated soil from the tunneling process) are separated from drilling fluid in the separation plant and will be stored on site within the separation plant area. Depending on the testing regime additional space may be used on site, before transporting the cuttings to a licensed facility. The soil cuttings dumping area at the separation plant may be surrounded by a berm and sealed with a polyethylene (PE) foil to prevent residual drilling fluid draining to the soil. Alternatively, the dumping area can be constructed with a concrete floor.

Recycled drilling fluid is reused and pumped from the separation plant back to the TBM. Although it is 'recycled' in the separation plant some will have to be replaced/exchanged to keep optimal usage parameters. Upon requirements, the used drilling fluid can be stored on site in container units or an additional tank with enough storage capacity that need to be installed on site. Then, the used drilling fluid is tested and disposed at a licensed facility.

The drilling fluid is not only used to convey excavated material from the TBM but also to stabilize the soil face in front of the TBM and to lubricate the outside of the tunnel pipes.

Due to the permeability of the ground, the drilling fluid will continuously penetrate and partially seal the formation. The majority of this volume is excavated during the advance of the TBM, but a fraction of the drilling fluid may not be reclaimed. To make up for these losses, new bentonite with water drilling fluid will constantly be mixed on site to replenish the system.

During tunneling execution, water is required to make up drilling fluid and to clean the tunnel. The total estimated amount of water required for completion of the tunneling process (including drilling fluid system and cleaning) is 5,450 m^3.

The tunneling operation is carried out over a total length of 890 m until the TBM reaches the offshore target pit where it will be recovered from a vessel.

Prior to the recovery of the TBM however, all service lines will be removed from the tunnel and conduits for the FOC and backfilling lines will be installed.

The installation of the conduits is often combined with the tunnel clearing works to limit the number of transports into the tunnel. The HDPE conduits are mounted to the tunnel ceiling with brackets, where they are interconnected by means of electro couplings.

Onshore Pipeline Installation

During the tunnel construction, assembly of the pipeline for its installation into the tunnel is carried out inside the string yard area (see details of the area in Section 10).

Individual pipes are transported to site for temporary storage, lined up, welded, and tested.

The limited overall string yard length requires the pipeline to be prepared as five partial strings. During the installation process, these strings will be moved laterally and welded together at the forward end of the string yard.

Movement of the complete strings will be carried out by lifting plant such as side booms or crawler cranes. As a safer alternative, lateral movement by means of bogies is proposed. This way the string will only have to be lowered from the bogies onto the installation rollers.

The pipe string will be pulled towards the tunnel on a series of roller supports and along a curved alignment. For the insertion of the pipe into the tunnel it is required to extend the launch shaft for approximately 50 m length.

While the sheet piles for this shaft extension may be installed together with the launch shaft piles, excavation of this shaft section may only be carried out once the main jacks and abutment have been removed after completion of the TBM drive.

To protect the pipeline from mechanical damage in the tunnel and on the seabed, protective collars and sleeves will be mounted around the pipe during the installation process.

Offshore construction/installation works

The main sequences of the offshore microtunneling construction and pipeline installation works include:

- Recovery of the tunnel boring machine;
- Excavation of the offshore reception pit and pipe trench;
- Offshore installation of the pipeline into the tunnel.

As the first step, the recovery pit will be excavated to remove coarse material or rock from the exit pit area. The reception pit will have 26 m length x 22.5 m width and will occupy a total surface of 585 m^2.

The pit will then be backfilled with gravel and ballast material may optionally be placed over the tunnel end to secure the tunnel against flotation.

After these preparations, the tunneling operation are carried out until the TBM reaches the reception pit. The tunnel is now fully constructed, and all services are stripped from the tunnel and conduits are installed.

In the next phase, the tunnel has to be flooded to prevent the tunnel from becoming buoyant when the TBM is extracted. Tunnel flooding is commonly done through inlets on the TBM that are operated by divers (as all electrics and other equipment has been stripped from the tunnel). After flooding the tunnel, the TBM can be recovered and the water level in the tunnel/shaft corresponds to the sea water level.

After excavation the TBM will be lifted from the tunnel end and transported to shore.

Then the excavation of the transition to the offshore trench (1,600 m length x 17 m width, total surface of 27,200 m^2) is completed and the pipeline is pulled from onshore through the tunnel to the end of the trench. Excess water that is displaced by the pipeline is relieved to sea.

After installation of the production pipeline and the FOC conduit, the trench and shore crossing reception pit will be backfilled using locally sourced gravel.

After the trench and exit pit are backfilled, the tunnel will be filled from onshore with a grout material. For this operation the seaside end of the tunnel will to be closed by backfilling the offshore transition shaft. Grouting will be wet in wet, the grout being poured through dedicated fill lines to the low end of the tunnel. To grouting operation will displace the sea water from inside the tunnel This excess water will no longer reach the sea, as the tunnel end is blocked and will be displaced into the shaft. This water will be pumped and temporary stored on site into the storage water tank until testing and disposal.

The individual offshore construction phases are addressed in the paragraphs below.

Excavation of reception pit and pipe trench

For the preparation of the reception pit and pipe trench, an estimated total volume of 40,950 m^3, respectively 950 m^3 for execution of the recovery pit and 40,000 m^3 for execution of the pipe trench, will be excavated and transported to an authorized dedicated dumping area.

Due to the seabed composition of weathered limestone with larger blocks or rock fragments, this material will have to be excavated by suitable equipment.

Typically, a back-hoe excavator on a spud leg pontoon will be used for this work. Excavation with this equipment can be carried out to water depths beyond 20 m.

The excavated material will be loaded to (split) barges and sailed to an authorized onshore dump site or relocated on the seafloor to an area designated by the competent authorities.

Recovery of the tunnel boring machine

For recovery and excavation of the TBM from the reception pit different equipment will be used. Sand from the pit will be removed by mass flow excavation tools (pumps) and diving operations will be required to activate a separation module on the TBM.

Once the TBM has been uncovered and pushed off the tunnel end it may be recovered by a lifting vessel. It is envisaged, that excavation, diving, and recovery works will be executed from a single vessel / barge.

Depending on the lifting capacity of the vessel, and distance from port, the TBM will either be fully recovered to deck or transported to port suspended under water.

Pipeline installation

For the installation of the pipeline from onshore to offshore a pull barge with a winch will be deployed. The pull capacity for this project has been estimated as 500 t, for a length of 2,500 m pipeline and a submerged weight of 0.9 kN/m.

To pull the pipe, a pull wire is led through the tunnel and attached to both the pipe at the onshore site and the winch frame on the pull barge. During the pull operation, the winch and barge are moved together with the pipe, while pull forces are introduced to a back-anchoring system.

As a result, a working corridor (as shown in Appendix C) is required for the pull operation. Anchor handling vessels and tugs are used to position and secure the barge.

C. Offshore Construction/Installation of GPP and FOC

The GPP offshore section will be installed by recovering and tying into the end of the near shore pipeline section and laying the pipeline toward the SWP using a DP S-lay pipeline installation vessel. As a contingency in case the GPP landfall crossing and near-shore sections have not yet been installed, the GPP offshore section can be installed with a pipeline end flange via a dead-man anchor. Thus, the offshore section can be tied later into the near shore section using a flanged spool piece tie-in. As a third alternative, if the GPP landfall crossing and near-shore sections have not yet been installed, the offshore section can be initiated from a dead-man anchor, installed, and tied into the shallow water section using the over water tie-in method at a later date.

The GPP will be installed in a trench for a portion of its length for on-bottom stability purposes, and the FOC will be laid in a trench over its entire length for stability and/or over trawl protection purposes. Pre-trenching is considered the base case for the GPP while simultaneous installation trenching is considered the base case for the FOC. GPP on-bottom stability will be managed through a combination of pipe steel wall thickness, concrete weight coating and the noted trenching methods utilizing constructability/installability as a key decision criterion. A combination of post installation jetting and pre-installation trenching utilizing dredging is expected.

Dredged material from the pipeline installation on the sea floor will be set aside and after the pipeline is installed it is put back on top of it.

Installation of offshore seafloor rock berms using conventional fall pipe rock dump vessel will be required for pre-installation seabed remediation in specific areas along the GPP route for span mitigation at fault crossings.

The FOC can be installed before or after the offshore SWP has been installed. The J-tube on the SWP jacket shall be designed to facilitate installation of FOC riser prior to and/or after installation of the topsides.

The near shore FOC conduit and GPP section will be installed to the offshore pipeline installation vessel tie-in point and abandoned. The near shore pipeline and FOC trenches will be excavated in advance of pipeline and FOC conduit installation activities.

A plow will be used for FOC trench to lay the cable in the trench and allow to backfill naturally for the entire length.

3.6.9.1.3 Shallow Water Platform

SWP will be fabricated off site by specialized companies and will be delivered to location by boat in 2 separate pieces, respectively:

- SWP Steel Pile Jacket, including:
    - 2 preinstalled risers;
    - 7 preinstalled J-tubes of which five have planned use and 2 are spares;
    - 5 Caissons;
    - Sea deck to support pull-in of the FOC, umbilicals, the Domino DEH electrical cable, and the Pelican heated flexible flowline;

- SWP topsides gas processing facilities.

The foundation of steel pile jacket will include the installation of eight skirt piles (2 skirt piles per leg).

The jacket and topsides will be designed and fabricated to comply with transportation motions and height restrictions.

The jacket will be loaded onto a transportation and launch barge by skidding, sea fastened and transported to a regional fabrication/staging site for installation preparation.

The foundation piles will be loaded onto a transportation barge, sea fastened and transported to a regional fabrication/staging site for installation preparation.

For the base case float over topsides installation method is assumed, the topsides will be loaded onto a transport barge or heavy transport vessels by skidding, sea fastened and transported to the regional fabrication/staging site for installation preparation.

All structures that are not fabricated in the Black Sea will be designed to the 58 m height restriction of the Istanbul Bosphorus Bridges to allow for transport via cargo barge or heavy lift vessel. This height restriction is from the waterline to the top of loaded out structures. In addition to the 58 m clearance, an appropriate safety factor will be applied.

The topsides and jacket will undergo preparations for the final offshore tow and installation while at the regional fabrication/staging location. After preparations are complete, the jacket will be towed offshore.

The jacket, with 2 external buoyancy tanks pinned to jacket legs, will be end launched from the transport barge after final sea fastening removal, then upended by ballasting with crane assist and set on the seafloor. The skirt piles will then be stabbed and driven to grade utilizing underwater hammers. Skirt pile sizing will be monitored as part of the constructability effort to ensure that the pile cap, hammer, and crane block will be submerged after self-weight penetration.

The SWP jacket will be designed to facilitate installation of heated flexible flowline, umbilicals, FOC, and DEH cable risers prior to and/or after installation of the topsides.

After jacket installation and final quayside preparations, the topsides will be towed offshore for the float over operation. A barge or heavy lift vessel with a breadth of no more than 36.6 m will be used to float the topsides over the jacket.

The helideck, crane, and vent stack will be evaluated for installation at the regional fabrication/staging site, at the installation site, or at post topsides installation.

Once the topsides structure is set on the jacket, the following Subsea Umbilicals Risers and Flowlines installation activities and offshore Hook-Up and Commissioning activities will be performed prior to handing the facility over to the start-up team:

- The topsides will be welded out to the jacket;
- Flowline, GPP, umbilical, DEH power cable, and FOC tie-ins to the facilities will be performed;
- Flowline and GP system leak testing and dewatering will be performed;
- Final system completion activities will be performed.

The heated flexible flowline, umbilicals, and DEH cable layout at the SWP will be designed to facilitate first end riser installation while the FOC riser can be installed either first or second end. The SWP jacket shall be designed

to facilitate installation of heated flexible flowline, umbilicals, FOC, and DEH cable risers prior to and/or after installation of the topsides.

3.6.9.1.4 Subsea systems

The full development of offshore subsea systems (manifolds, production flowlines, umbilicals, risers, etc.) will include onshore fabrication and transportation, offshore installation, system completion and commissioning activities.

The subsea equipment and components will be fabricated, integrated, tested, and completed to the maximum extent possible prior to leaving the fabrication or integration facilities. Fabrication will take place in multiple worldwide locations.

Offshore vessels capable of performing the work and also capable of meeting the Bosphorus Strait bridge passage height restriction will be utilized for installation of subsea systems. If required, vessels will be modified to enable crane and other vessel mounted structures to meet the Bosphorus Strait bridge passage height restriction.

Flexible pipe/umbilical installation vessel, flowline installation vessel or either dedicated Multi-Purpose Service Vessel - MSV will be used for installation of the following subsea components:

- Production manifold foundation and the manifolds;
- Flexible and/or rigid flowline and well jumpers between the subsea flowlines, manifolds, and trees;
- The hydraulic and electrical flying leads between the subsea umbilical termination assemblies, subsea distribution units, manifolds, and trees.

The subsea equipment components, insulated rigid steel flowline with DEH cable, in-line tee assembly, flowline end termination and subsea pig launcher, and heated flexible flowline, umbilicals, well jumpers, flowline jumpers, and flying leads will be installed by the offshore subsea umbilicals, risers and flowlines contractor. The subsea trees and flowbases/tubing-hanger spools will be installed separately by drilling contractor.

The general execution philosophy for the offshore installation work will be to initiate the flowline installation as early as possible.

It is currently envisioned that flowline and DEH piggyback cable will be installed simultaneously and strapped together during flowline installation operations. At this time, installation of the flowline using the same S-lay vessel that installs the GPP is envisioned as the most likely offshore installation option.

The Domino Flowline DEH power cable riser section can be installed and connected to the piggyback cable either by the pipeline installation vessel or separately by the flexible pipe / umbilical installation vessel or a dedicated MSV.

To reduce riser tie-in spool length, the Domino flowline route assumes flowline installation prior to installing the SWP. If the schedule changes and the SWP is installed prior to the flowline, then the flowline routing will require adjustment at the base of the jacket to provide adequate clearance between the pipelay vessel and the SWP.

It is currently envisioned that the Pelican South heated flexible flowline and DEH power cable riser will be installed by a dynamic positioning flexible pipe / umbilical installation vessel initiating the installations with 1st end riser installations at the SWP and laid from the SWP to PSDC1 for the flowline and the subsea junction box location for the DEH riser.

The PSDC and DODC1 umbilicals will be installed from the SWP J-tube risers to the drill centers, and the DODC2 umbilical will be installed in either direction. It is currently envisioned that the control umbilicals will be

installed by a deep-water flexible pipe / umbilical installation vessel. Any direct connection of the control umbilicals to the SDUs and / or manifolds can be performed either by the deep-water flexible pipe / umbilical installation vessel or a dedicated MSV.

Offshore trenching and naturally backfilling of the Pelican South flowline and umbilicals over their entire length and Domino flowline and umbilical from the SWP to the 200 m water depth contour will be required for over-trawl protection. A marine mechanical trenching machine will be used to run over pipe.

3.6.9.2 Wells Drilling

The well construction scope includes drilling and completion of gas producers in the Miocene formation of the Neptun Deep Block in the western Black Sea. In general, the wells will be located in the main reservoir compartments of both the Domino and Pelican South fields.

Wells will be drilled in a continuous drilling and completion campaign using a thruster-assisted/moored Mobile Offshore Drilling Unit - MODU. Tubing head spools and subsea trees are planned to be installed offline using a multi-purpose support/installation vessel. After tie-in to the subsea facilities, the wells will be unloaded to the SWP.

Drilling Rig

The drilling rig must provide a stable platform from which the seabed can be drilled with the following operating characteristics:

- Operating conditions riser connected, drilling conditions – maximum wind velocity 17.7 m/s, wave height 2.8 m, surface current speed 0.35 m/s;
- Operating conditions riser connected, non-drilling conditions – maximum wind velocity 30.6 m/s, wave height 6.8 m, surface current speed 0.67 m/s;
- Minimum Transit speed (calm seas): 2.32 m/s.

Drilling rig storage capabilities ensure that will accommodate the storage of casings sufficient marine riser for maximum operating depth and drill pipe and drill collars; cement; barite/bentonite; brine for drilling fluid; chemicals for drilling fluid; rig fuel; potable water; and fresh water for drilling.

The drilling rig will be fitted with desalinization systems in order to generate potable water onboard the drilling vessel at a minimum rate sufficient for maximum capacity of personnel on board.

The drilling rig will be powered by a minimum 32.065 kW main engine and emergency generator capable of simultaneously supplying the services necessary for the safety of personnel in an emergency for 18 hours. The drilling rig will utilize low sulfur diesel fuel with < 0.1% sulfur.

The rig Top Drive will have a minimum static load rating of 810 MT Main, 405 MT Aux, a minimum horsepower rating of 745.7 kW (continuous) and a minimum pressure rating of 517 bars. Top drives will be capable of continuous operation at 250 rpm and 81.34 kN-m.

The drilling rig will be equipped with the following installations: Electric Logging Unit, drilling fluid logging unit, Subsea support facility with vertical access to the sea, MWD/Directional Drilling unit, Cement Unit, ROV Units, Gravel Pack Skid Equipment, High Flow Brine Filtration Equipment, Coil Tubing Unit, Bucking Unit, Simplified landing String / Subsea Test Tree – HPU (hydraulic power unit), Umbilical reeler, Completion control line reelers, Workshop containers, Contingency equipment and Slickline/Eline units.

The drilling rig will be equipped with two deck cranes able to reach any area on the deck including the helideck and well test areas. Each crane will have a 10 MT minimum dynamic lift capacity with the whip line. The maximum anticipated crane load during the drilling and completion is 65 MT.

The drilling rig will be fitted with a helicopter landing platform designed to accommodate a S92 Helicopter, or equivalent helicopter.

The helideck will have fueling capacities with a permanent storage capacity for 4,500 liters (1,190 gal) of tested, usable helicopter fuel. The helideck will be fitted with foam monitor stations with heat protection shields and at least two Stairway Exits.

Wells

The wells will be drilled to total depth in the Miocene and completed across the target reservoir intervals with deviated wellbores. Wells will be designed to maximize wellbore productivity and to deliver from 2,825,214 m^3/day to 4,237,820 m^3/day at initial reservoir conditions. Tubing size is planned to be 7-inch (177.8 mm) outside diameter. All wells will be equipped with permanent downhole pressure and temperature gauges.

The wells drilling will be done progressively, in successive stages, until the final depth. The general well structure construction will consist of:

- 36-inch (914.4mm) casing:
    - Drilling a 42-inch (1066.8 mm) wellbore through jetting with water-based drilling fluid (WBDF);
    - Installing the 36-inch (914.4 mm) casing;
    - Cementing the casing up to mudline;
- 22-inch (558.8 mm) casing:
    - Drilling a 26-inch (660.4 mm) borehole with WBDF;
    - Installing the 22-inch inch (558.8 mm) casing reduced to 20-inch (508 mm);
    - Cementing the casing up to mudline;
    - Installing a 18-3/4-inch (476.25 mm) and 1,035 bars well head.
- 13-3/8-inch (339.72 mm) casing:
    - Drilling a 17.5-inch (444.5 mm) borehole with NAF;
    - Installing the 13-3/8-inch (339.72 mm) casing;
    - Partial cementation of the casing.
- 10-3/4-inch (273.05 mm) casing:
    - Drilling a 14-inch (355.6 mm) borehole with NAF;
    - Installing the 10-3/4-inch (273.05 mm) casing reduced to 9-5/8-inch (244.47 mm);
    - Partial cementation of the casing.

- 5-1/2-inch (139.7 mm) screen base pipe:
    - Drilling a 9.5-inch (241.3 mm) borehole with NAF, to the final depth of the well;
    - Installing the 5-1/2-inch (139.7 mm) screen base pipe to the final depth of the well;
    - Installation of filter gravel package.

During well drilling different measurements will be done down the borehole.

Details on each well structure is presented below.

Domino 1-1 well will be drilled at water depth of -978 m MSL (Mean Sea Level). The total depth (TD) of the well bore will be -3,133 m MSL TVD (True Vertical Depth).

The well casing will consist of the following:

- 36-inch (914.4mm) casing from -978 m MSL to -1,078 m MSL TVD, cemented up to ML (Mud Line);
- 22-inch (558.8 mm) reduced to 20-inch (508 mm) casing from -978 m MSL to -1,619 m MSL TVD, cemented up to ML;
- 13-3/8-inch (339.72 mm) casing from -978 m MSL to -2,035 m MSL TVD, cemented between -1,678 m MSL and -2,035 m MSL TVD;
- 10-3/4-inch (273.05 mm) reduced to 9-5/8-inch (244.47 mm) from -978 m MSL to -2,542 m MSL TVD, cemented between -2,182 m MSL and -2,542 m MSL TVD;
- 5-1/2-inch (139.7 mm) screen base pipe from -2,242 m MSL to -3,133 m MSL TVD.

The well bore will be drilled using two types of drilling fluid:

- WBDF between ML at -978 m MSL and -1,619 m MSL TVD;
- NAF between -1,618 m MSL and -3,133 m MSL TVD.

A total of 4,278 m^3 of WBDF and 2,053 m^3 of NAF will be used in order to reach the TD.

Domino 1-2 well will be drilled at water depth of -978 m MSL. The TD of the well bore will be -3,125 m MSL TVD.

The well casing will consist of the following:

- 36-inch (914.4mm) casing from -978 m MSL to -1,078 m MSL TVD, cemented up to ML;
- 22-inch (558.8 mm) reduced to 20-inch (508 mm) casing from -978 m MSL to -1,619 m MSL TVD, cemented up to ML;
- 13-3/8-inch (339.72 mm) casing from -978 m MSL to -2,050 m MSL TVD, cemented between -1,678 m MSL and -2,050 m MSL TVD;
- 10-3/4-inch (273.05 mm) reduced to 9-5/8-inch (244.47 mm) casing from -978 m MSL to -2,500 m MSL TVD, cemented between -2,150 m MSL and -2,500 m MSL TVD;
- 5-1/2-inch (139.7 mm) screen base pipe from -2,500 m MSL to -3,125 m MSL TVD.

The well bore will be drilled using two types of drilling fluid:

- WBDF between ML at -978 m MSL and -1,619 m MSL TVD;
- NAF between -1,619 m MSL and -3,125 m MSL TVD.

A total of 4,278 m^3 of WBDF and 2,310 m^3 of NAF will be used in order to reach the TD.

Domino 1-3 well will be drilled at water depth of -978 m MSL. The TD of the well bore will be -2,615 m MSL TVD.

The well casing will consist of the following:

- 36-inch (914.4mm) casing from -978 m MSL to -1,078 m MSL TVD, cemented up to ML;
- 22-inch (558.8 mm) reduced to 20-inch (508 mm) casing from -978 m MSL to -1,620 m MSL TVD, cemented up to ML;
- 13-3/8-inch (339.72 mm) casing from -978 m MSL to -2,110 m MSL TVD, cemented between -1,831 m MSL and -2,110 m MSL TVD;
- 10-3/4-inch (273.05 mm) reduced to 9-5/8-inch (244.47 mm) casing from -978 m MSL to -2,457 m MSL TVD, cemented between -2,374 m MSL and -2,457 m MSL TVD;
- 5-1/2-inch (139.7 mm) screen base pipe from -2,457 m MSL to -2,615 m MSL TVD.

The well bore will be drilled using two types of drilling fluid:

- WBDF between ML at -978 m MSL and -1,620 m MSL TVD;
- NAF between -1,620 m MSL and -2,615 m MSL TVD.

A total of 4,278 m^3 of WBDF and 2,189 m^3 of NAF will be used in order to reach the TD.

Domino 2-1 well will be drilled at water depth of -949 m MSL. The TD of the well bore will be -2,701 m MSL TVD.

The well casing will consist of the following:

- 36-inch (914.4mm) casing from -949 m MSL to -1,049 m MSL TVD, cemented up to ML;
- 22-inch (558.8 mm) reduced to 20-inch (508 mm) casing from -949 m MSL to -1,648 m MSL TVD, cemented up to ML;
- 13-3/8-inch (339.72 mm) casing from -949 m MSL to -1,937 m MSL TVD, cemented between -1,726 m MSL and -1,937 m MSL TVD;
- 10-3/4-inch (273.05 mm) reduced to 9-5/8-inch (244.47 mm) casing from -949 m MSL to -2,410 m MSL TVD, cemented between -2,125 m MSL and -2,410 m MSL TVD;
- 5-1/2-inch (139.7 mm) screen base pipe from -2,419 m MSL to -2,701 m MSL TVD.

The well bore will be drilled using two types of drilling fluid:

- WBDF between ML at -949 m MSL and -1,648 m MSL TVD;

- NAF between -1,648 m MSL and -2,701 m MSL TVD.

A total of 4,581 m^3 of WBDF and 1,933 m^3 of NAF will be used in order to reach the TD.

Domino 2-2 well will be drilled at water depth of -949 m MSL. The TD of the well bore will be -2,693 m MSL TVD.

The well casing will consist of the following:

- 36-inch (914.4mm) casing from -949 m MSL to -1,049 m MSL TVD, cemented up to ML;
- 22-inch (558.8 mm) reduced to 20-inch (508 mm) casing from -949 m MSL to -1,648 m MSL TVD, cemented up to ML;
- 13-3/8-inch (339.72 mm) casing from -949 m MSL to -2,130 m MSL TVD, cemented between -2,109 m MSL and -2,130 m MSL TVD;
- 10-3/4-inch (273.05 mm) reduced to 9-5/8-inch (244.47 mm) casing from -949 m MSL to -2,500 m MSL TVD, cemented between -2,235 m MSL and -2,500 m MSL TVD;
- 5-1/2-inch (139.7 mm) screen base pipe from -2,500 m MSL to -2,683 m MSL TVD.

The well bore will be drilled using two types of drilling fluid:

- WBDF between ML at -949 m MSL and -1,648 m MSL TVD;
- NAF between -1,648 m MSL and -2,683 m MSL TVD.

A total of 4,581 m^3 of WBDF and 2,474 m^3 of NAF will be used in order to reach the TD.

Domino 2-3 well will be drilled at water depth of -949.5 m MSL. The TD of the well bore will be -2,690 m MSL TVD.

The well casing will consist of the following:

- 36-inch (914.4mm) casing from -949.5 m MSL to -1,049 m MSL TVD, cemented up to ML;
- 22-inch (558.8 mm) reduced to 20-inch (508 mm) casing from -949.5 m MSL to -1,648 m MSL TVD, cemented up to ML;
- 13-3/8-inch (339.72 mm) casing from -949,5 m MSL to -2,086 m MSL TVD, cemented between -1,954 m MSL and -2,086 m MSL TVD;
- 10-3/4-inch (273.05 mm) reduced to 9-5/8-inch (244.47 mm) casing from -949 m MSL to -2,430 m MSL TVD, cemented between -2,165 m MSL and -2,430 m MSL TVD;
- 5-1/2-inch (139.7 mm) screen base pipe from -2,430 m MSL to -2,690 m MSL TVD.

The well bore will be drilled using two types of drilling fluid:

- WBDF between ML at -949.5 m MSL and -1,618 m MSL TVD;
- NAF between -1,648 m MSL and -2,690m MSL TVD.

A total of 4,575 m^3 of WBDF and 2,029 m^3 of NAF will be used in order to reach the TD.

Pelican South 1-1 well will be drilled at water depth of -126.5 m MSL. The TD of the well bore will be -3,135 m MSL TVD.

The well casing will consist of the following:

- 36-inch (914.4mm) casing from -126.5 m MSL to -252 m MSL TVD, cemented up to ML;
- 22-inch (558.8 mm) reduced to 20-inch (508 mm) casing from -126.5 m MSL to -810 m MSL TVD, cemented up to ML;
- 13-3/8-inch (339.72 mm) casing from -126.5 m MSL to -1,875 m MSL TVD, cemented between -1,476 m MSL and -1,875 m MSL TVD;
- 10-3/4-inch (273.05 mm) reduced to 9-5/8-inch (244.47 mm) casing from -126.5 m MSL to -2,943 m MSL TVD, cemented between -2,500 m MSL and -2,943 m MSL TVD;
- 5-1/2-inch (139.7 mm) screen base pipe from -2,943 m MSL to -3,135 m MSL TVD.

The well bore will be drilled using two types of drilling fluid:

- WBDF between ML at -126.5 m MSL and -810 m MSL TVD;
- NAF between -810 m MSL and -3,135 m MSL TVD.

A total of 4,716 m^3 of WBDF and 2,411 m^3 of NAF will be used in order to reach the TD.

Pelican South 1-2 well will be drilled at water depth of -126.5 m MSL. The TD of the well bore will be -3,135 m MSL TVD.

The well casing will consist of the following:

- 36-inch (914.4mm) casing from -126.5 m MSL to -252 m MSL TVD, cemented up to ML;
- 22-inch (558.8 mm) reduced to 20-inch (508 mm) casing from -126.5 m MSL to -810 m MSL TVD, cemented up to ML;
- 13-3/8-inch (339.72 mm) casing from -126.5 m MSL to -1,904 m MSL TVD, cemented between -1,433 m MSL and -1,904 m MSL TVD;
- 10-3/4-inch (273.05 mm) reduced to 9-5/8-inch (244.47 mm) casing from -126.5 m MSL to -2,984 m MSL TVD, cemented between -2,655 m MSL and -2,984 m MSL TVD;
- 5-1/2-inch (139.7 mm) screen base pipe from -2,984 m MSL to -3,135 m MSL TVD.

The well bore will be drilled using two types of drilling fluid:

- WBDF between ML at -126.5 m MSL and -810 m MSL TVD;
- NAF between -810 m MSL and -3,135 m MSL TVD.

A total of 4,716 m^3 of WBDF and 2,307 m^3 of NAF will be used in order to reach the TD.

Pelican South 1-3 well will be drilled at water depth of -126.5 m MSL. The TD of the well bore will be -3,157 m MSL TVD.

The well casing will consist of the following:

- 36-inch (914.4mm) casing from -126.5 m MSL to -252 m MSL TVD, cemented up to ML;
- 22-inch (558.8 mm) reduced to 20-inch (508 mm) casing from -126.5 m MSL to -810 m MSL TVD, cemented up to ML;
- 13-3/8-inch (339.72 mm) casing from -126.5 m MSL to -1,842 m MSL TVD, cemented between -1,445 m MSL and -1,842 m MSL TVD;
- 10-3/4-inch (273.05 mm) reduced to 9-5/8-inch (244.47 mm) casing from -126.5 m MSL to -2,665 m MSL TVD, cemented between -2,465 m MSL and -2,665 m MSL TVD;
- 5-1/2-inch (139.7 mm) screen base pipe from -2,665 m MSL to -3,157 m MSL TVD.

The well bore will be drilled using two types of drilling fluid:

- WBDF between ML at -126.5 m MSL and -810 m MSL TVD;
- NAF between -810 m MSL and -3,157 m MSL TVD.

A total of 4,716 m^3 of WBDF and 2,191 m^3 of NAF will be used in order to reach the TD.

Pelican South 1-4 well will be drilled at water depth of -126.5 m MSL. The TD of the well bore will be -3,167 m MSL TVD.

The well casing will consist of the following:

- 36-inch (914.4mm) casing from -126.5 m MSL to -252 m MSL TVD, cemented up to ML;
- 22-inch (558.8 mm) reduced to 20-inch (508 mm) casing from -126.5 m MSL to -810 m MSL TVD, cemented up to ML;
- 13-3/8-inch (339.72 mm) casing from -126.5 m MSL to -1,822 m MSL TVD, cemented between -1,428 m MSL and -1,822 m MSL TVD;
- 10-3/4-inch (273.05 mm) reduced to 9-5/8-inch (244.47 mm) casing from -126.5 m MSL to -2,903 m MSL TVD, cemented between -2,490 m MSL and -2,903 m MSL TVD;
- 5-1/2-inch (139.7 mm) screen base pipe from -2,903 m MSL to -3,167 m MSL TVD.

The well bore will be drilled using two types of drilling fluid:

- WBDF between ML at -126.5 m MSL and -810 m MSL TVD;
- NAF between -810 m MSL and -3,167 m MSL TVD.

A total of 4,716 m^3 of WBDF and 2,385 m^3 of NAF will be used in order to reach the TD.

The schematic well execution/drilling is presented in Figure 6.

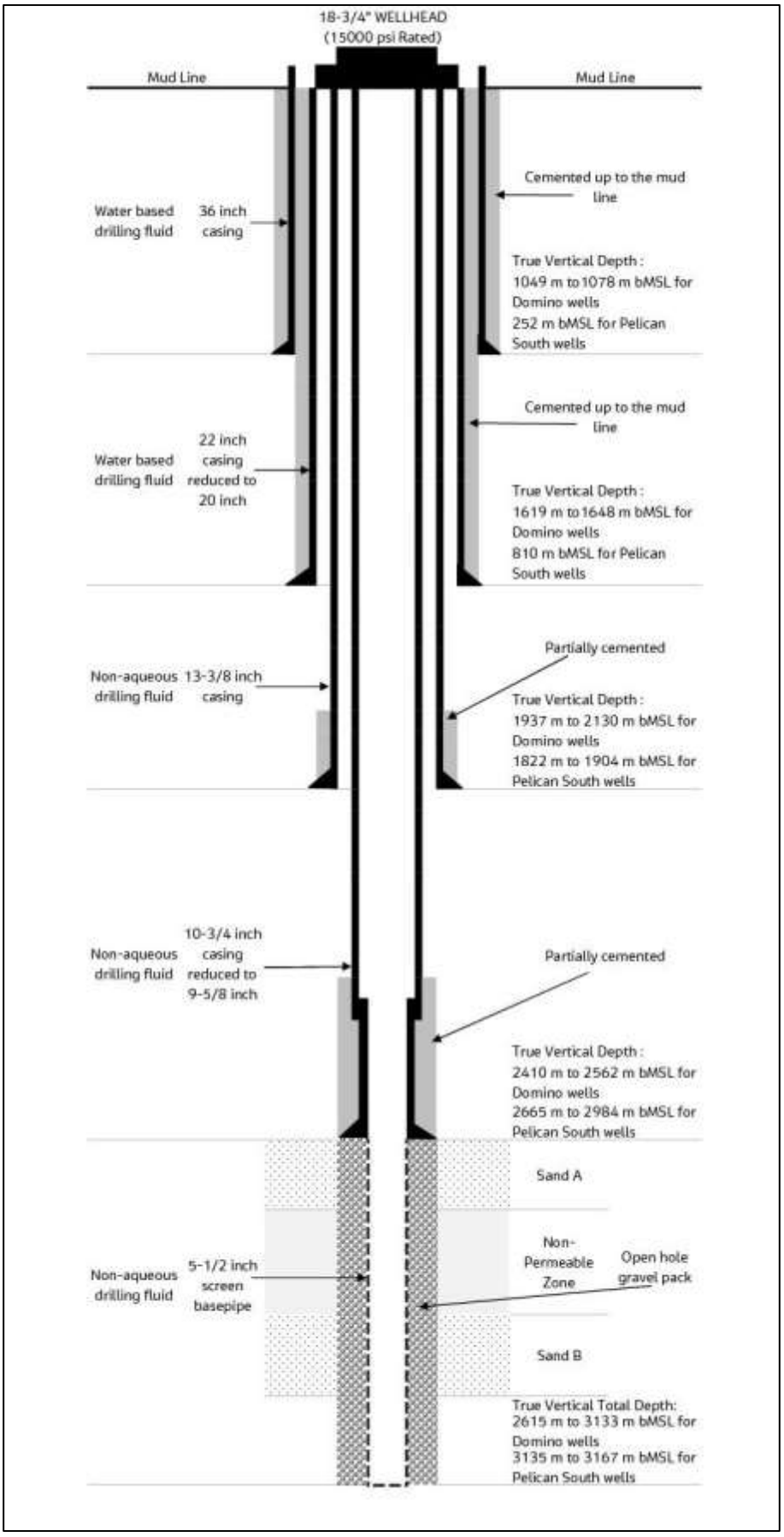


Figure 6 – Schematic well execution

The wells will be constructed using dual-zone intelligent completions. Each zone will be selectively managed by means of a surface-controlled downhole valve installed as a part of the upper completion. Zonal isolation will be achieved using open-hole packers installed as a part of the lower completion.

Well integrity throughout the drilling program will be maintained using features of the program such as:

- Well control practices and procedures;
- Sufficient drilling fluid density for overbalance;
- Surface hole drilling and surface casing setting to address any potential shallow hazards;
- Intermediate and production drilling and casing set through a blow-out preventer;
- Casing seats selected to provide integrity for well control; and
- Testing of well control equipment.

The wells will be fitted with 5-inch (127 mm) x 2-inch (50.8 mm) vertical trees with tubing head spool, connection to a single-header manifold, flexible jumpers with vertical connectors at tree end and horizontal connectors at the manifold end and a static electro-hydraulic and chemical umbilical.

The shut-in tubing pressures at the subsea wellheads are:

- Domino – 319 bar;
- Pelican South – 321 bar.

The wells are expected to be high permeability and therefore would require no stimulation. Thus, no acid returns are expected. Limited NAF returns are expected over the initial months of production based on un-planned losses into the formation during the drilling process.

When the wells will be handed over from drilling, associated brine containing Sodium (Na) and Calcium (Ca) will be transported back to SWP.

Due to the unconsolidated nature of the reservoir, open-hole completions with sand control will be required for each well. Sand control will be achieved through the combination of direct wire wrap screen technology and open-hole gravel pack technology. Downhole zonal isolation and active zonal control are required in a select number of wells and will be achieved through the use of intelligent completion technology.

Sand detection monitors will be installed on each production tree to detect a completion failure in case of occurrence. When detected, the wells will be choked back to a sand-free rate or shut in until the sand control completion is repaired.

Fines are expected to be deposited in the Domino flowline in mid to late life due to low velocities after the flow rate in the line drops below 10,735,811 m^3. Fines are expected to be deposited in the Pelican South flowline in late life after flow rate in the line drops below 2,825,213 m^3.

3.6.9.3 Precommissioning/Commissioning

System completion will be completed to the greatest extent practical at the fabrication/manufacturing facilities and the regional fabrication/staging site prior to mobilizing for onshore and offshore installation. The list of key system completion activities to be performed before onshore and offshore infrastructure start-up is shown below:

- Testing and verification of topside facilities following fabrication and prior to sail away, including:
    - Completion of loop and function testing;
    - Gas turbine generators commissioning performance testing at factory acceptance testing, and up to fail-to-fire in the fabrication yard, then full testing, load shedding, etc. offshore after hydrocarbon gas;
    - Commissioning performance testing of Essential Power Generator at factory acceptance testing, up to fail-to-fire testing onshore, and them full testing offshore with hydrocarbon gas;
    - Circulation cleaning of process and utility systems;
- Prior to installation, testing (including hydrotesting and drift pigging, as applicable) of the following:
    - All jacket and topside piping including the preinstalled pipeline, flowline risers, and mechanical, control, and electrical systems;
    - All subsea equipment components and controls systems, well and flowline jumpers, and riser tie-in spools;
- External seal testing all subsea flowline and riser connections;
- Flooding, pigging, chemical inhibition, and hydrostatic testing of the entire GPP, as well as testing of subsea flowlines prior to installation of jumpers and riser tie-in spools;
- Bulk dewatering and chemical treatment of residual hydrotest water in the entire GPP and flowline systems; the activity will be performed using pig trains with fresh water and thermodynamic hydrate inhibitor slugs driven by compressed air to discharge the filtered and chemically treated seawater hydrotest medium to sea. The bulk dewatering will be followed by packing the gas production and flowline systems with 95% to 98% nitrogen to a predetermined pressure for start-up readiness;
- Drying the GPP to midstream gas transmission pipeline criteria;
- Hydrotesting umbilical tubes and testing and verification of umbilical controls and communications functions after installation;
- Leak testing of umbilical systems after installation of hydraulic flying leads;
- Leak testing of the entire GPP, flowline systems (after installation of jumpers and riser tie-in spools), and topsides piping and equipment;
- Electrical continuity and function checks of all subsea controls after installation of electrical flying leads and fiber optic flying leads;
- Testing and verification of fiber optic communication cable integrity after installation;

- Testing and verification of topside facilities and functions after post installation hook-up (including utility systems re-commissioning and testing with communication to the onshore control room prior to the introduction of hydrocarbons);
- Testing and verification of onshore GPP facility functions after installation and hook-up;
- Well clean-up to the SWP;
- Precommissioning and commissioning activities of onshore components, such us:
    - Onshore GPP section cleaning, flooding, hydrotesting, pigging, gauging, leak testing, dewatering, drying/preservation;
    - FOC insertion loss and optical time domain reflectometer tests for each installed segment from NGMS to CCR;
    - Onshore pigging equipment cleaning, hydrotesting, gauging, pigging, leak testing, and loop checks;
    - Precommissioning and commissioning of NGMS related equipment (e.g. filter separator, ultrasonic metering skid, etc.) at modularization yard (hydrotest, flushing cleaning, dewatering, drying, cleanliness checks and calibration; vessel closure inspection/certification, preservation/inert vessel; instrument loop tests; prove alarm, trip, controls to ICSS; calibration of level transmitters of the separators by filling with water, drain, dry; test prove meter loop, etc.) and onshore site (e.g. loop checks, function test analyzers on calibration gases, recheck systems after transport, turnover to operations);
    - Gas analyzers loop checks and commissioning of all analyzers (e.g., gas chromatograph);
    - LER equipment testing (e.g., functional acceptance testing of assembled system, ground system verification, factory acceptance testing integration test on applicable equipment installed in building, etc.);
    - Process Shutdown System and Emergency Shutdown (ESD) precommissioning (e.g., loop checks, function test and devices) and commissioning activities (e.g., function testing);
    - Process control system precommissioning and commissioning activities (e.g., loop checks, function tests and devices);
    - Onshore venting system pre-commissioning at modularization yard (e.g., flushing and cleaning, leaking test, loop checks, function test, preserve) and onshore site (complete cleanliness blows, drying; loop checks or reconfirmation of loops already tested; leak test of entire system, etc.) and commissioning activities (e.g., function test of entire system, function test vent as part of ESD testing);
    - Fire & Gas System precommissioning and commissioning (e.g., complete function loop testing; installation and commissioning of catalytic and electrochemical fire and gas devices, complete systems testing, etc.);
    - Cathodic protection precommissioning and commissioning activities (e.g., installation of monolithic isolation joints or comparable equipment for electrical isolation of NGMS piping from the upstream offshore production and downstream Transgaz pipelines; complete mechanical completion and loop checks; test current and integrity of anode systems; energize system and verify controls, current and integrity for impressed current systems; etc.);

- CCTV system pre-commissioning (e.g., loop checks, function test and devices) and commissioning (e.g. system integrity checks, certifications verification, commissioning of CCTV cabinet and cameras, integrated function testing, cameras adjusting, ensuring full mechanical functionality and remote control);

- HVAC system checks and tests conducted at modularization yard (e.g., loop checks, test fans, louvers, and dampers) and onshore site (e.g., loop checks and stating testing on mechanically complete system; energization of the fans, louvers and dampers; carrying out electrical & mechanical function check for condensing unit; verification system performance; leak/pressure test building and enclosure with HVAC, etc.);

- UPS precommissioning activities (e.g., complete installation checks; loop checks; inspection prior to energizing, etc.);

- Other pre-commissioning and commissioning activities of the onshore equipment/systems (e.g. power distribution system, standby power generator, sewage systems, water supply systems/facilities, fire-fighting equipment, lighting and grounding system, telecoms management system, and other systems/equipment installed at the onshore site).

3.6.9.4 Decommissioning/Demolition

The current land use of the onshore NGMS and CCR sites (site S1, cadastral number 109216) is agricultural with no presence of existing buildings, infrastructure, or utilities on site.

The existing local roads, railway line and buried utilities (e.g., water lines) present within the onshore project area will be impacted by the installation works of onshore section of proposed pipeline and fiber optic cable route. The underground shore crossing microtunnel will under cross the local road De 259, the cliff and the beach.

The execution of onshore infrastructure does not include any demolition works of existing infrastructure present within the project area (e.g., local roads, railway line, existing utilities).

However, upon completion of the project construction and installation works, site restoration works (e.g., removal/demolition of temporary infrastructure, building, facilities, and equipment installed at the construction works sites; management of wastewater, waste, chemicals, and materials in accordance with legal provisions, site rehabilitation and restoration to the original land used) will be carried out in areas impacted by the onshore construction and installation works. In addition, once access to the shore crossing and beach side of the railroad is no longer required, the temporary rail crossing road will be decommissioned and restored to the required condition.

No demolition/decommissioning works are planned to be performed during the construction and installation phase of the project offshore infrastructure.

3.6.10 Execution plan

The current assumption is that fabrication of equipment and modules will occur to the extent possible offsite at regional or international fabrication facilities. The components and equipment will be stored at the quayside storage facility before shipping to onshore or offshore sites for installation.

According to the current schedule, it is anticipated that construction and installation of project infrastructure will be completed in approximately 2 years. The main onshore, shore crossing and offshore construction/installation sequences are summarized in the paragraphs below.

The onshore and offshore facilities will operate for a life period of 20+ years. At the completion of end life, the facilities will be decommissioned/abandoned according to specific decommissioning/abandonment plans prepared in compliance with specific legislation in force at that date. The decommissioning/abandonment

works will be performed in accordance with an appropriate execution plan (schedule) that will be part of decommissioning/abandonment plans.

Construction/installation of onshore infrastructure

The main phases of the onshore construction/installation activities will include:

- Construction/installation of temporary NGMS and CCR construction works site (including site preparation, earthworks, storage areas, installation of containers, etc.) and other temporary works (e.g. pipeline installation working corridor, temporary railroad crossing, temporary construction roads, etc.);

- Construction/installation of permanent NGMS and CCR sites (including site preparation, earthworks, civil works, installation of buildings/offices and equipment, utilities, etc.) and other related facilities (utilities, interior roads and platforms, parking, fencing, landscaping, etc.);

- Installation of onshore section of GPP (including block valve site) and FOC, including execution of local roads, railway, and existing utilities crossings (e.g., existing RAJA water pipeline);

- Decommissioning of the temporary construction works (construction works site, temporary railroad crossing, temporary construction roads, etc.) and restoration of the land impacted by the construction/installation works.

The NGMS and CCR sites will consist of a prepared surface, foundations, skidded and un-skidded equipment, and prefabricated and stick assembled structures (prefabricated structural steel components), buildings (e.g. CCR building, LER, gas chromatograph and moisture analyzer shelter), equipment packages (e.g. electrical heaters, pig receiver, filter separator, transformers, standby diesel generator and incorporated diesel storage tank) and piping assemblies (including pipe, fittings, and valves), and interior roads, parking and platforms.

The installation of onshore GPP and FOC (including block valve station and crossings) will be managed to avoid simultaneous operations conflicts with the other onshore facilities.

At the completion of the construction/installation works the temporary works will be decommissioned and the sites impacted by the construction/installation works will be restored to the original use.

For certain operations, seasonal work restrictions and mitigation measures will be considered during construction phase and temporary works decommissioning and site restoration due to project site proximity to residential and tourist areas.

Construction/installation of GPP and FOC shore crossing

An estimated total construction duration of approximately **13 months** has been determined from start of shore crossing construction to the end of the reinstating works. Tunneling related works will be executed in 3-shifts, 24/7 h, respectively 10 work hours/day for other microtunneling related construction works. The execution plan of the shore crossing will include both onshore and offshore works as summarized below.

- Onshore works:

    - Construction of temporary access roads, reinforcement of construction works sites (tunneling site, stringing yards, pipe storage area), and reinstatement of temporary access roads, stringing yard, and tunneling construction site at the completion of construction works;

    - Launch shaft related works, including launch shaft construction, launch shaft conversion, and launch shaft removal;

- Tunneling construction works, including mobilization, tunnel drive (launching, operation, and arrival), tunnel preparation (strip out, install conduits, tunnel flooding), and equipment demobilization;
- Pipeline construction, including delivery, stringing, welding, nod-destructive testing, hydrotesting (preinstallation) and weld goose neck;
- Tunnel backfilling, including equipment mobilization, backfilling, and equipment demobilization.

- Offshore works:
  - Execution of tunnel boring machine recovery pit;
  - Recovery of tunnel boring machine;
  - Excavation of offshore trench;
  - Backfilling (partial) of the offshore trench;
  - Pipeline installation.

At the completion of the shore crossing related construction and installation works, the construction sites will be decommissioned, and the onshore and offshore areas impacted by the works will be restored.

Construction/installation of offshore infrastructure

According to the current schedule, it is anticipated that offshore infrastructure construction/installation will be completed in one season (year). The main phases of the offshore installation activities will include:

- Installation of offshore gas production pipeline (offshore installation vessel operations included):
  - Installation of prefabricated piping assemblies - offshore pipeline to nearshore pipeline tie-in spool, pipeline end termination and riser to pipeline tie-in spool;
  - Foundation execution for pipeline end termination;
  - Crushed stone/gravel reinforcement for rock berms at seabed fault features;
  - Prefabricated and manufactured pipeline installation and precommissioning aids;
- Offshore installation of Domino flowlines (offshore installation vessel operations included):
  - Installation of prefabricated piping assemblies – flowline end terminations, in-lie tee assembly, riser to flowline tie-in spool, flowline jumpers, subsea pig launcher and in-line direct electrical heating components;
  - Foundations execution for flowline end terminations, in-line tee assembly, and subsea pig launcher;
  - Installation of prefabricated and manufactured flowline installation and precommissioning aids;
- Offshore installation of Pelican South prefabricated and manufactured flowline and precommissioning aids (offshore installation vessel operations included);
- Offshore installation of Pelican South and Domino control umbilicals;

- Offshore installation (installation vessel operations included) of subsea equipment (manifolds foundations, manifolds, flowline jumpers, well jumpers, flying leads, flowline riser tie-in spools and over trawl protection structures, including:
    - Subsea production manifold foundation suction piles for Domino and Pelican South drilling centers;
    - Installation of subsea production manifolds (pre-filled with preservation fluid) for Domino drill centers (DODC1 and DODC2) and Pelican South drill center – PSDC1 (outfitted with a pre-installed trawl protection structure);
    - Installation of over trawl protection structures for PSDC1 wells;
    - Installation of rigid flowline jumpers at DODC1 and DODC2;
    - Installation of rigid well jumpers at DODC1 and DODC2;
    - Installation of production gas pipeline and Domino flowline riser tie-in spools at SWP;
    - Installation of GPP tie-in spools between offshore and near shore pipeline sections;
    - Installation and precommissioning of prefabricated and manufactured aids;
- Offshore SWP jacket and topside installation - installation vessel operations and hook up contractor personnel and accommodation vessel operations;
- Offshore installation of fiber optic cable between shore crossing and SWP.

Drilling campaign execution plan

The total period for drilling and completion is estimated to take approximately 80 days per well, with 5 wells available at startup, 4 wells at Domino (at least 3 wells at DODC2), and 1 well at Pelican South. All wells will be drilled in a continuous drilling and completion campaign using a thruster assisted, moored MODU, with an option to drill additional wells.

The remaining production wells are expected to be drilled and completed while the project infrastructure is operating.

3.6.11 Relation with other existing or planned projects

Existing or planned projects to be performed in the area of the Project Neptun Deep are presented in Tables 18 and 19.

Table 18 - Existing projects and activities in the area of the Neptun Dee Project

Project name	Project description	Connection to Neptun Deep Project
Reduction of coastal erosion Phase II (2014-2020), Beneficiary: The National Administration "Apele Române" – Water Basin Administration "Dobrogea – Litoral (ABADL)	The aim of this project is to ensure adaptation to climate change, prevention, and risk management by erosion protection of the shoreline through building dykes and beach enlargement. The project is funded by European funds under the Large Infrastructure Operational Program (POIM), Priority Axis 5 - Promoting adaptation to climate change, prevention and risk management, Specific Objective 5.1 - Reducing the effects and damage to the population caused by associated natural phenomena. Implementation period: 2018-2023	As part of this project, erosion protection works will be caried out in an area located between shipwreck Evangelia and Forum Hotel in Costinesti. The closest Neptun Deep Project component to the location of erosion protection works is represented by the microtunnel that is located approximately 1.5 km north to the northern limit of the above-mentioned erosion protection works area.
Cliff consolidation works in the area of Tuzla locality, Constanta County, Beneficiary: The National Administration "Apele Române" – ABADL	The aim of the project is to prevent the extension of landslides and to increase the tourist attractiveness in the coastal sector of Tuzla commune. The works will involve works to ensure a cliff slope of 1:1.5 like excavations and fillings, berms 2.5 m wide and 4 m high from the ground, protection of stone and concrete blocks at the base of the cliff and build an alley of concrete slabs. Currently, the works are suspended due to litigation between ABADL and Tuzla City Hall.	The cliff consolidation works will be caried out on the cliff located along the eastern side of the project onshore site. The Neptun Deep microtunnel will under cross the cliff area. The microtunnel will be drilled in the rock layer below the cliff without impacting the cliff or its consolidation works.
The regional water and wastewater infrastructure development project in the operating area of S.C. RAJA S.A. Constanta, between 2014-2020 - Rehabilitation and extension of distribution and sewerage networks, rehabilitation of wastewater pumping station and wastewater discharge pipes from Tuzla, Constanta County, Beneficiary: RAJA S.A. Constanta	The general objective of the project is to continue the strategy for the development of the water and wastewater sector, in order to achieve the targets assumed by Romania through the Treaty of Accession to the European Union, by preparing the Financing Application for accessing European funds for environmental infrastructure in the 2014 programming period. -2020 and the necessary technical-economic documentation. The purpose of the project also includes the rehabilitation and extension of the distribution and sewerage networks, rehabilitation of the wastewater pumping station and wastewater discharge pipes from Tuzla locality, Constanta County. The project is financed by European funds within the Large Infrastructure Operational Program (POIM), Priority Axis 3 - Development of environmental infrastructure in conditions of efficient management of resources, Specific Objective 3.2. - Increasing the level of collection and treatment of urban wastewater, as well as the degree of ensuring the drinking water supply of the population. Implementation period: Ongoing	The project also includes rehabilitation of a 500 mm discharge pipe that crosses from south to north the OMV Petrom owned site S3, by removing the old water pipeline and installing a new one along the local road De 277. The Neptun Deep Project related onshore section of gas production pipeline and fiber optic cable will under cross the new RAJA discharge pipe.
BRUA / Phase 2 - Black Sea Coast - Podisor Pipeline (RO) for collecting the gas from the Black Sea,	The project "Black Sea Coast – Podisor Pipeline (RO) for collecting the gas from the Black Sea" consists in the construction of a telescopic pipeline with diameters of 48-inch (Dn 1200) and 40-inch (Dn 1000), respectively, designed to transport natural gas to a pressure of 63 bar. The pipeline will have a total length of	As part of BRUA Phase 2 Project, a Transgaz Tie-In Point facility connected to the Neptun Deep Project NGMS will be constructed. The Transgaz Tie-In Point ***(facility not part of the project scope described in this memorandum, subject to a separate permitting***

Project name	Project description	Connection to Neptun Deep Project
Beneficiary: The National Natural Gas Transport Company Transgaz S.A.	approximately 308 km and will connect the Black Sea coast with the Podisor Technological Node going through Amzacea and Vlasin. The pipeline will transfer the gas into the NTS with the possibility of transmission through the BRUA pipeline to other European countries the expected gas production of ExxonMobil and OMV Petrom from the Domino and Pelican South fields in the Black Sea. Implementation period: 2020-2022	***procedure***) will be installed on the private land owned by OMV Petrom with superficies rights for EMEPRL (site S1, cadastral number 109216). The Black Sea Coast – Podisor Pipeline will transport the gas produced by the Neptun Deep Project into the Romanian NTS.
Shipping in the Black Sea	Shipping in the Black Sea is performed along recommended and unilateral routes using traffic separation schemes, especially in congested areas such as the Bosporus and the approach towards it and at large harbors such as Odessa and Constanta. Each of the Black Sea bordering countries uses sea transport in its trading and commercial activities.	Shipping lanes from Ukrainian and Romanian harbors and the Bosporus and/or Bulgarian harbors are crossing the proposed Neptun Deep offshore production pipeline route.
Fishing	Professional fishing activities are expected to take place between 20 and 150 m water depth based on natural and legal limits. Practically, fishing is limited to shallower water depths due to the capabilities of most of the used vessels. The Romanian fleet operates up to 30 to 35 marine miles out in the Black Sea, or a water depth of approximately 60 m because of the characteristics of the vessels and their limited autonomy.	Fishing grounds are overlapping with the Neptun Deep production pipeline route and shallow water subsea infrastructure (e.g., Pelican South infrastructure).

Table 19 – Potential future projects in the area of the Neptun Deep Project

Project name	Project description	Connection to Neptun Deep Project
Neptun Deep – Construction of Access Road, Site Organization, Provision and Connection to Utilities, Access Road to them, related to Natural Gas Metering Station and Control Center, Beneficiary: ExxonMobil Exploration and Production Romania Limited and OMV Petrom	The general objective of the project is to build a new access road connecting the National Road DN39 to the onshore NGMS and CCR sites. The construction works for the new access road are anticipated to be performed before the NGMS and CCR construction.	The new permanent access road will support the construction and operation of the onshore Neptun Deep project facilities.
Construction of roundabout on the National Road DN39 - km 23 + 190, Tuzla commune, Constanta County, Beneficiary: The Romanian National Company for Road Infrastructure Administration (CNAIR)	The purpose of the project is to build a roundabout on the National Road DN39 - KM 23 + 190 to connect the new proposed access road for Neptun Deep Project and the new proposed access road to Tuzla airport, with DN39. The construction works for the new roundabout are anticipated to be performed before the NGMS and CCR construction.	The proposed roundabout will connect the new proposed access road for Neptun Deep Project with DN39.
Neptun Deep - Power supply for the NGMS and CCR Sites, Beneficiary: ExxonMobil Exploration and Production Romania Limited and OMV Petrom	The purpose of the project is to provide an electrical connection for the NGMS and CCR sites during construction and operation phases. The works will include construction and installation of: • An electrical Over Head power Line (OHL) connected to the existing electrical network in Costinești; • An electrical power transformer that will be installed on the east side of the NGMS site (20/0.4kV – 630kVA); and • An underground cable connection between the OHL network in Costinești and the substation (1,459 m length).	The proposed power transformer will provide power for construction and operation of onshore project components (NGMS, CCR, etc.).
Midia Gas Development project, Beneficiary: Black Sea Oil & Gas SA together with its co-venture partners, Petro Ventures Resources SRL and Gas Plus Dacia SRL	Midia Gas Development project consists of the Ana and Doina gas fields which were discovered in 2007 and 1995 respectively. Both are of latest Miocene to Dacian age, shallow, marine sandstone (delta-tops), biogenic gas reservoirs, some 120 km offshore Romania, in the XV Midia Shallow area where the water depths are of 70 meters. In terms of facilities, the project consists of 5 production wells (1 well at Doina field and 4 wells at Ana field), a subsea gas production system over the Doina well which will be connected through a 18 km pipeline with a new unmanned production platform located over Ana field. A 121 km subsea pipeline will ensure the delivery of the gas from Ana platform to the shore, where a 4.1 km underground pipeline will connect to the new onshore gas treatment plant. The processed gas will be delivered into the NTS	The offshore Ana production platform of Midia Gas Development project is located at approximately 50 km distance west from the SWP of the Neptun Deep project and at approximately 4 km distance north from the gas production pipeline. By the time of installation and construction of the offshore facilities of Neptun Deep project, all the offshore facilities of Midia Gas Development project will be in place and under operation.

Project name	Project description	Connection to Neptun Deep Project
	operated by Transgaz at the gas metering station to be found within the onshore gas treatment plant. Planned implementation period: expected project drilling and construction completion: end of 2021.	
Modernization and Development of Airport Infrastructure at Tuzla Airport, Beneficiary: Regional Air Services SRL	The general objective of the project is development and modernization of airport infrastructure at Tuzla Airport. The main objectives of the project are construction of runways for the operative movement of the planes, rain collection system, light beacon installation for operation at night and in low visibility conditions, construction of the perimeter road inside the airport, construction of a perimeter security fence, development of a CCTV system for monitoring air operations, construction of a control tower and related annexes to ensure the safety and security of air traffic. Planned implementation period: 2018-2023	Tuzla Airport site is located at approximately 2 km north-west of NGMS. Tuzla Airport will have a new access road connected to the National Road DN 39 Constanta - Mangalia. The new roundabout planned to be constructed on the National Road DN 39 will provide access to both the new access road to the airport and the new access road to the Neptun Deep onshore facilities.
AGRI – LNG project, Beneficiary: The developer of this project is SC AGRI LNG Project Company SRL, shareholders ROMGAZ (Romania), SOCAR (Azerbaijan) and GOGC (Georgia)	AGRI is the first LNG (Liquefied Natural Gas) project to be developed in the Black Sea, which aims to transport natural gas from the Caspian Sea region to Europe. The Azerbaijan-Georgia-Romania-Hungary (AGRI) interconnector has been designed as an integral part of the Southern Corridor, providing the shortest direct route for Caspian gas to the European market. AGRI will transport Azerbaijani natural gas, which will be liquefied in Georgia, then transported across the Black Sea to a regasification terminal to be built on the Romanian Black Sea coast. From that moment, the gas will be pumped through the Romanian natural gas transmission system to Hungary, through the Interconnector between Romania and Hungary (Arad - Szeghed) and will be further transported to the European market. Planned implementation period: expected start of the project is 2026	LNG transport ships could cross above the Neptun Deep production pipeline, depending on the final position of the AGRI onshore terminal. No official information was available on the status of the project implementation.
White Stream, Beneficiary: White Stream LTD	The White Stream gas pipeline is a proposed cross-infrastructure pipeline in the Black Sea for gas transport from Turkmenistan through the second branch of the trans-Caspian pipeline directly to Romania and other EU member states. The White Stream pipeline is a component of the Southern Gas Transportation Corridor. The White Stream underwater pipeline will connect the South Caucasus pipeline to the Romanian terminal in Constanta. From there, the gas can flow through existing infrastructure from Ukraine, Slovakia, and the Czech Republic to Central and Northern European countries with some volumes of gas also supplying the new BRUA pipeline. Initial planned implementation period: 2018-2023	The White Stream pipeline could cross the Neptun Deep production pipeline depending on the final position of the onshore terminal. The European Network of Transmission System Operators for Gas (ENTSOG) included both the Trans-Caspian Pipeline (TCP) and the White Stream project in Annex A of the Ten-Year Network Development Plan 2018 (TYNDP 2018). No official information was available on the status of the project implementation.

Project name	Project description	Connection to Neptun Deep Project
Romania – Turkey High Voltage Direct Current (HVDC) Interconnection Link, Beneficiary: C.N.T.E.E. TRANSELECTRICA S.A.	The project consists of a transmission link connecting the grid system in Romania at Constanta Nord substation, with that in Turkey at the Alibeyköy substation. The connection point of the cable to the Romanian power system will be the Constanta Nord 400 kV substation. The connection point to the Turkish power system will be the Alibeyköy 380 kV substation to the north-west of Istanbul. The approximate transmission length is 400 km. The project aims to strengthen the transmission capacity and improve the power exchange in the south-east Europe region, thereby enabling improved supply security, quantity, and quality. Planned implementation period: 5.5 years (no start date identified)	The Romania – Turkey HVDC cable could cross the Neptun Deep production pipeline. No official information was available on the status of the project implementation.

3.6.12 Details on the alternatives that have been considered

3.6.12.1 Alternative ''Zero''

The zero alternative consists of non-implementation of the proposed Neptun Deep project. Non-implementation of the project means that will be no natural gas development of Domino and Pelican South fields and construction and operation of onshore and offshore gas related infrastructure will not be performed.

For zero alternative, the studied areas will keep the current baseline conditions. By non-implementation of the project, no environmental or social impact will be generated over the onshore studied area. Similarly, no impact (neither adverse or positive) will be generated over the coastal and offshore marine environment or existing operations (e.g., shipping, fishing) from project studied area.

If the Project will be not be started/implemented, the Neptun Deep project implementation objectives, such us: securing the national energy independency, ensuring feasible energy costs to public and private customers, additional revenues to local and national budgets, transfer of the dehydrated gas to the Romanian NTS will not be finally met. The project purpose and justification are detailed in Section 3.2.

The potential impact (adverse or positive) that might be generated by the project implementation will not occur and the current onshore, coastal, and offshore environmental and social conditions will remain unchanged.

3.6.12.2 Engineering/technological alternatives

During the early project stages of concept evaluation and selection, options to develop the gas reservoirs found in the Domino and Pelican South fields were further developed to understand the facilities and technologies required, confirm the ability to achieve business objectives, assess financial attractiveness, and identify potential safety and environmental risks and issues including those associated with major accident hazards.

A number of engineering concepts were considered at this early stage including consideration of aspects such as:

- Risk reduction associated with major accident hazards;
- The potential location of the gas processing facilities (onshore vs offshore);
- Whether the gas processing facilities could be designed to be operated as an unmanned facility;
- Whether the wellheads were located on the seabed or on an offshore platform;

- Hazards associated with the location of flowlines, pipelines, and processing facilities;
- Overall reduction in GHG emissions through use of technology.

Initially, the project concept was envisioned as minimum offshore facilities, including a well gathering platform, a gas pipeline to shore and, a staffed onshore treatment plant that included facilities such as gas dehydration, power generation and relief systems. After further assessment and obtaining more understanding of the socioeconomic and environmental drivers of the region, the concept evolved to a safer design which minimized the onshore facilities, moving most of the equipment offshore, and optimizing the offshore platform design in order to accomplish a normally unattended concept, where the operations and maintenance crew only need periodic visits to perform their planned activities.

There were also a number of concepts evaluated addressing system and equipment selection and design that are documented in the facility engineering technical decisions document. In terms of environmental performance and protection then a series of independent BAT evaluations have been completed addressing:

- Flaring, venting and valve actuators;
- Power and heat generation; and
- Chemicals and discharges to sea.

The independent BAT reports included evaluation of various technical alternatives with emphasis on environmental performance, technical applicability, and financial criteria. The results of these studies were used within the design concept selection process.

In terms of shore crossing construction, different construction methods alternatives were studied and assessed for selection of the best method for execution of shore crossing in the project area. The considered alternatives for shore crossing construction included the following methods: open cut, horizontal directional drilling, and microtunneling. The alternatives for pipeline installation in the shore crossing area include installation in either of two directions: offshore to onshore or vice versa, independent of the construction method used for shore crossing.

The outcome of the evaluation and selection process is the concept outlined in this Presentation Memorandum, respectively: the subsea tie-back of the Domino and Pelican South fields to the normally unmanned Neptun Deep SWP and further the dehydrated gas is transported through the gas production pipeline to the onshore NGMS for transfer to the Romanian NTS. This option best meets the overall business objectives when considering factors such as environmental risks and concerns, safety of personnel and the community, suitability and availability of technologies, and commercial considerations. The main factors considered for the selection of design concept include:

- Provision of unstaffed offshore platform with:
    - Digital remote monitoring and control from onshore CCR and worldwide assistance;
    - Fiber optic cable with VSAT back-up;
    - Electrically heated flowlines for hydrate mitigation;
    - Gas dehydration/drying unit technology for offshore platform dehydration system;
    - Simple process (e.g. no compression);
    - 3-month planned maintenance frequency (part of equipment specification & monitoring equipment).

- Design to facilitate the execution, including:
    - Single season offshore installation;
    - S-lay installation of deep water Domino DEH flowline;
    - Installation of platform topsides by float-over;
    - Minimized pipeline trenching / dredging;
    - Flexibility in tie-in method/sequence for onshore/offshore gas production pipeline interface;
    - Float-over topside concept facilitates minimizing mobilization cost and critical path offshore Hook-Up and Commissioning duration;
- Provision of single carbon steel Domino flowline to both drill centers (DODC1 and DODC2) provided with dual diameter flowline to ensure solids transport, as well as subsea pig launcher and pigs suitable for solids transport during dual diameter pigging;
- Provision of 30-inch (762 mm) production pipeline with internal flow coating (instead of 32-inch - 812.8 mm);
- Use of jacket legs for liquid storage (methanol, TEG, open drain) at the SWP;
- Simplified concept of SWP (e.g., removal of diesel and closed drain systems from platform, use of gas vs instrument air);
- SWP provided with flare for routine emissions, vent for emergency blowdown;
- Main access to the SWP ensured via vessel with heave compensated gangway, helideck for emergency only;
- No fiscal metering provided at offshore platform;
- Ensuring of integrated platform process and subsea controls;
- Use of 5-inch (127 mm) trees (instead of 7-inch - 177.8 mm);
- Provision of electric actuated chemical injection valves on subsea manifolds;
- Provision of Domino flowline in carbon steel not Corrosion-Resistant Alloy (CRA) or CRA-lined;
- Provision of CRA lined flexible flowline for Pelican.

3.6.13 Other activities that may occur as a result of the project

Upon project development completion, further connections to gas transmission network of new customers may occur due to the extension of natural gas NTS.

The access to the onshore area during project lifecycle will be made through a new access road ***(not part of the project scope described in this presentation memorandum, subject to a separate permitting procedure)*** that will connect the European Road E87 and the communal road DC4. The new permanent access road will support the construction and operation of the onshore project facilities.

A separate project for electrical power connection of onshore facilities to the local power supply ***network (not part of the project scope described in this presentation memorandum, subject to a separate permitting***

procedure) will be developed by the project beneficiaries. The extension of existing local power network up to the onshore project site may contribute to the further development of local power distribution network by connection to the new power line of other local landowners (currently not connected) from onshore site area.

The project development will consider use of natural resources, mineral aggregates, fuels, chemicals, building materials and other specific products that will be procured from certified local, regional, and international suppliers/contractors based on specific contractual agreements. The raw materials will be transported to the onshore and offshore project sites through authorized vehicles/vessels.

The project will not include any connections to the local water supply and wastewater sewage networks. The water supply will be ensured from water sources located within project area based on specific agreements signed with the regional water supply operator. The onshore transport and treatment of wastewater generated during project lifecycle will be performed by certified operators based on specific contractual agreements.

All waste generated during project lifecycle will be properly managed on site and will be transported and disposed to authorized waste management facilities, as per specific waste management regulations in force.

Onshore and offshore project operations will be supported by a shore base that will include port facilities and warehousing to provide storage, loading and unloading, trucking, security, monitoring and tracking of goods, material equipment and supplies. Helicopter services including medevac, search and rescue, and transport of personnel for time sensitive operations will occur during project lifecycle.

Operations and maintenance activities will require regular marine support of a supply vessel that can function as personnel transport from shore to SWP, accommodation vessel, supply vessel with sufficient deck space to transport materials and crane.

3.6.14 Other permits required for the project

According to the Urbanism Certificate no 85 from 29.04.2021 issued for the onshore project facilities by Constanta County Council, the following endorsements / approvals were requested in order to obtain the Construction Permit:

- Endorsements and agreements on urban utilities and infrastructure:
    - Water supply;
    - Sewage network;
    - Power supply;
    - Waste management/sanitation.
- Other Endorsements and Agreements:
    - Fire protection;
    - Public health.
- Specific endorsements / agreements of the central public administration and / or their decentralized services:
    - Cadaster and land registration office - OCPI – update of topographical support/cadaster;
    - Ministry of Culture – Constanta County Directorate for Culture;
    - Ministry of National Defense - MAPN – Major General State;

- Ministry of Internal Affairs - MAI;
- Romanian Intelligence Service - SRI;
- Ministry of Agriculture and Rural Development – Constanta County Directorate for Agriculture;
- Land Improvement Agency - ANIF - Territorial Branch Dobrogea;
- CN CF CFR SA – National Railway Authority, Regional Railway Agency Constanta;
- National Civil Aviation Authority - AACR;
- Water Basin Administration Dobrogea – Litoral – ABA-DL;
- National Coastal Zone Committee - CNZC;
- Transgaz Medias – Territorial Branch Constanta.

According to Offshore Law no 256 from 2018, the following agreements/approvals are requested in order to obtain the Construction Permit for the offshore project facilities:

- Water Basin Administration Dobrogea – Litoral – ABA-DL;
- Maritime Hydrographic Directorate - DHM;
- Romanian Naval Authority;
- Ministry of National Defense;
- Romanian Border Police;
- Ministry of Culture – Constanta County Directorate for Culture;
- Ministry of Foreign Affairs – MAE;
- Competent Authority for Offshore Oil Operations at the Black Sea – ACROPO.

As per Law no 256/2018, the final Construction Permits for the onshore and offshore components of the project will be issued by the Ministry of Energy.

4. Description of required demolition works

The project scope includes construction and installation of onshore, shore crossing and offshore infrastructure of Neptun Deep Project. No demolition works are planned to be performed during the construction and installation phase of the Neptun Deep infrastructure.

The execution of onshore infrastructure does not include any demolition works of existing infrastructure present within the project area (e.g., local roads, railway line, existing utilities, buildings, etc.).

Upon completion of the project construction and installation works, site restoration works will be carried out in areas impacted by the construction and installation works (details are provided in Section 3.6.6).

5. Description of the project location

5.1 Project Site Location

5.1.1 Onshore Site Location

The area proposed for construction/installation of the onshore facilities of the Neptun Deep project is located in the southern part of the administrative territory of Tuzla commune, Constanta County, close to the northern limit of the administrative territory of Costinești commune.

The onshore project site (represented by the private land owned by OMV Petrom S.A. with superficies rights for EMEPRL, respectively S1 site registered under cadastral number 109216, S3 site registered under cadastral number 109659, and S4 site registered under cadastral numbers 109729 and 100819) is situated between the east side of the National Road DN39 Constanta – Mangalia (from Constanta direction), km 23+190, and the local unpaved road De269 located along the sea front.

The surroundings of the onshore project site include:

- North: local road De 229/1 and private properties (parcel A259/89 cadastral number 108838 and parcel A259/91);
- East: local unpaved road De269, cliff, beach, and the Black Sea (at approximately 60 m);
- South: private property (parcel A289/3b), vegetal screen (cadastral number 109189), private properties (parcel A259/105, cadastral number 100794 and parcel A259/106, cadastral number 107526);
- West: private properties (parcel A289/1a, lot 2/1 cadastral number 109365 and lot 2/2 cadastral number 109364).

The Black Sea is located at approximately 60 m east of the eastern-most edge of the onshore project site.

Tuzla Airport is located to the northwest of the western limit of the onshore site at approximately 2 km distance.

Private dwellings were identified to the south and southeast of the onshore project site. The closest dwellings are located at approximately 100 m south from the limit of the site proposed for installation of the production pipeline and onshore entry point of the microtunnel shore crossing, respectively at approximately 350 m south-east from the limit of the site proposed for installation of NGMS, at the date of present document.

A private orchard is located in the vicinity of the western limit of the onshore project site.

Irrigation channel CDI-8 Biruinta, part of "*Amenajarea 1340 Carasu – Biruinta*" Facility, administrated by the ANIF – Constanta Branch is located to the north close to the project site.

The general onshore site location is shown in Appendix B.

5.1.2 Shore Crossing Site Location

The production pipeline and FOC shore crossing is planned as a bundle installation using the microtunneling method.

The onshore entry point of the microtunnel will be located within S4 site owned by OMV Petrom with superficies rights for EMEPRL, the Beneficiaries of the project. Local road De269 (cadastral number 109115), the cliff (cadastral number 110670) and the beach (cadastral number 106571) are located adjacent to the eastern

side of the onshore project site and will be undercrossed by the onshore section of underground shore crossing microtunnel.

The offshore exit point of the microtunnel will be located within the coastal waters of the Black Sea.

5.1.3 Offshore Site Location

The Neptun Deep field development area is located within the Neptun Deep block of the western Black Sea, outside of country territorial waters, in the Romanian Exclusive Economic Zone - EEZ. The offshore infrastructure crosses several different and unique physiographic provinces including a nearshore zone, the continental shelf, and the slope from the shelf to the basin. General offshore development location of the Neptun Deep Project is shown in Appendix B.

SWP is located on the continental shelf of the Black Sea approximately 160 km west of Tuzla locality, Constanta County in the Black Sea.

PSDC1 is located on the continental shelf of the Black Sea approximately 160 km west of Tuzla locality, at about 2 km northeast of the SWP in the Black Sea.

DODC1 and DODC2 are located on the slope from the shelf to the basin of the Black Sea approximately 175 km west of Tuzla locality, at about 24 km southeast of the SWP in the Black Sea.

5.2 Distance to borders

The nearest international border to the onshore project site is represented by Bulgarian territory border situated more than 25 km south of the southern-most edge of the onshore project site. Ukrainian Republic and Republic of Moldova' borders are located more than 100 km north of the onshore project area, at approximately 140 km (Ukraine) and 170 km (Republic of Moldova).

The production pipeline is approximately 160 km long on a west-east direction between the shore and the SWP location on the continental shelf. The pipeline is generally running in parallel with the southern limit of Romania's EEZ that borders northern part of Bulgaria's EEZ. The distance between the production pipeline and EEZ limit varies between 25 km near the shore and 46 km near the SWP location.

The SWP is located at approximately 46 km north from the south limit of Romania's EEZ (bordering the Bulgaria's EEZ) in the Black Sea.

PSDC1 is located at approximately 47 km north from the south limit of Romania's EEZ and DODC1 and DODC2 are located at approximately 35 km north from the south limit of Romania's EEZ (bordering the Bulgaria's EEZ) in the Black Sea.

5.3 Location of the site in relation with the cultural patrimony

5.3.1 Onshore

The onshore project site (S1, S3, and S4 sites, as defined above in Section 5.1.1) was investigated for presence of potential archaeological sites during the archaeological surveys performed in 2018, as part of the procedure for preparation and approval of the Archaeological Diagnostic Report for the project *"Establishment of natural gas metering station and control center, construction of access road and underground natural gas pipeline"*.

According to the findings of the Archaeological Diagnostic Report prepared by the Museum of National History and Archaeology from Constanta (MINAC) and approved by Ministry of Culture – Constanta County Cultural Direction, the studied area is located within an area with low archaeological potential, without conclusive archaeological trace.

The closest archaeological objective is represented by Costinescu Mound located at approximately 500 m distance to the north-west corner of the onshore project site.

According to the available public data (e.g., National Archaeological Record of Romania – RAN, https://map.cimec.ro/Mapserver/), a total of 7 archaeological sites and 31 mounds (cairns) were identified within a 5 km radius of the onshore project area. A summary description of the seven archaeological sites is shown below:

- Roman settlement of Tuzla: this site lies northwest of the project area and is approximately 1 km south of Lake Techirghiol. This settlement dates back to the 3rd century and was erected during the Roman Era.

- Archaeological site of Tuzla 1: this site lies north east of the project area and is very close (approximately 50 m) from the Tuzla lighthouse on the coast. This site dates back to the 3rd century and was developed during the Roman-Byzantine era.

- Archaeological site of Tuzla 2: this Roman era settlement is located in between ''Tuzla Mica'' Bay and ''Tuzla Mare'' Bay.

- Archaeological site of Tuzla 3: this site is located west of the ''Tuzla Mare'' Bay, on the first peninsula on the south side. This site was built in the Roman era.

- Archaeological Site ''Parthenopolis of Costinesti'': this site lies near the coast in the eroded shore approximately 250 m north of the Fishery. The site dates back to the Roman era.

- Archaeological Site of Costinesti: the archaeological site of Costinesti is located north of the small promontory located between the sea and the lake. This site dates back to the Roman Era.

- Hellenistic Settlement of Costinesti: the Hellenistic settlement in Costinesti is 2 km northeast of the intersection of the Constanta - Mangalia National Road with the road to Costinesti. The site dates back to the Hellenistic era in the 4th century BC.

The onshore cultural heritage resources located within a radius of 25 km from project site are shown in Figure 7.

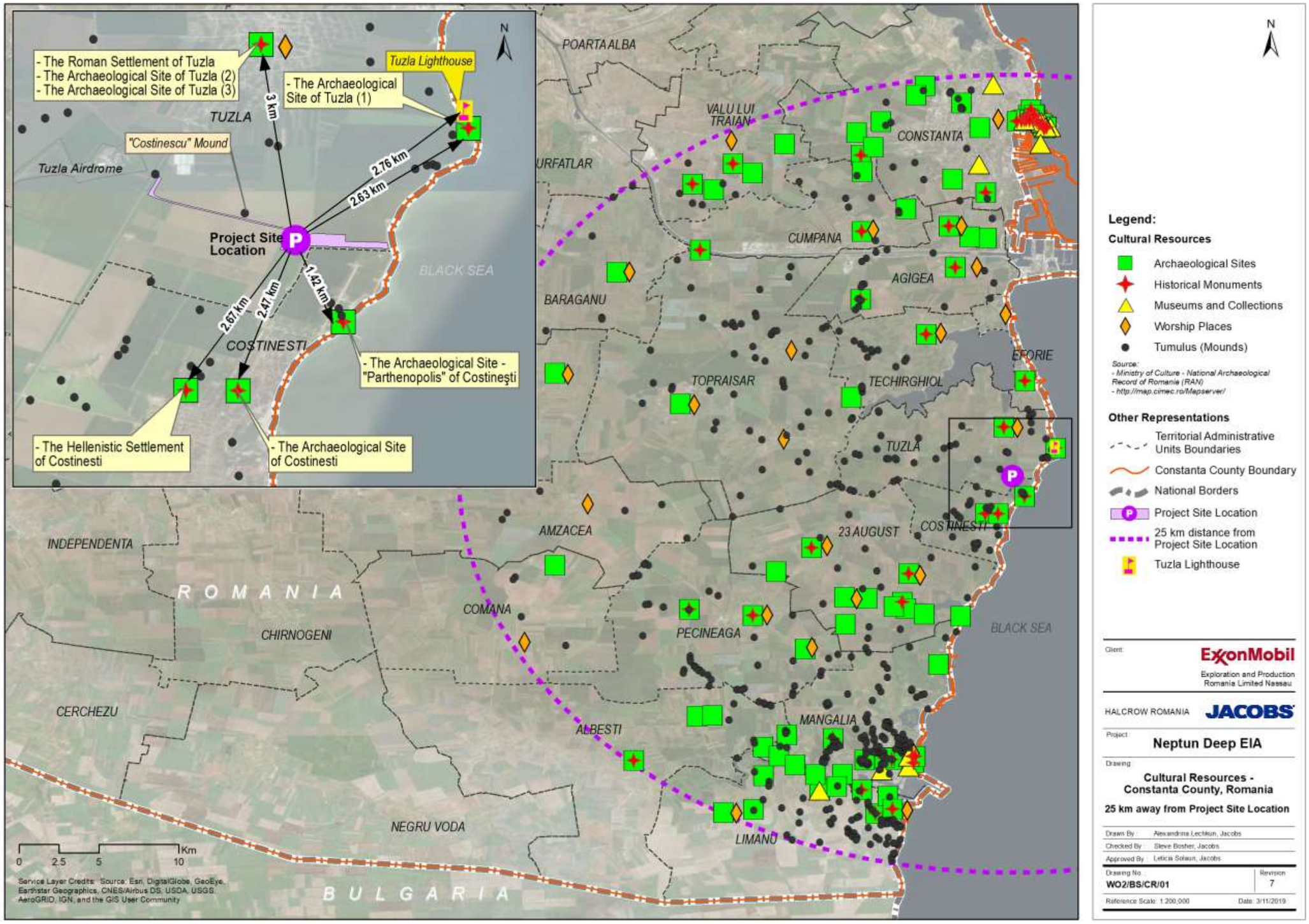


Figure 7 - Onshore cultural resources located within 25 km from project site

5.3.2 Offshore

The project site is partially located within the archaeological protection area of the Romanian shelf of the Black Sea coast (CT-l-s-A-02561 *''Platforma continentala a litoralului romanesc al Mării Negre"*).

An offshore area of approximately 385 km^2 located within the project site has been subject to geophysical desktop and field surveys conducted during 2013, 2014, and 2017 by Fugro Oceansismica. The geophysical data were acquired using non-intrusive methods of acoustic investigation (Side Scan Sonar, Sub-bottom Profiller and Multibeam EchoSounder).

Further on, a Geophysical Interpretation Report focused on potential identified archaeological targets, including maps and images with the possible targets, was prepared based on the geophysical data acquired during 2013 – 2017. The report was prepared in 2020 by the National Research and Development Institute for Marine Geology and Geo-Ecology – GeoEcoMar.

The geophysical interpretation was focused on assessment of side scan data, together with sub-bottom and multibeam data, to locate, identify and map possible archaeological features on the seabed. After analyzing all the geophysical data acquired for the entire perimeter of 385 km^2, the identified targets were classified into 4 main categories, as described below:

- Archaeological target - Features which are clearly identified to be archaeological;
- Geological target - Features which are clearly identified to be of geological nature;
- Anthropic target - Features which are clearly identified to be of modern anthropic origin (e.g., dredging, sampling, industrial debris, etc.);
- Undefined target - Features where it is unclear what they are and could potentially be any of the other 3 categories presented above.

The position of all investigated locations and the coordinates of all possible archaeological findings were included into a Global Information System - GIS map.

The results of geophysical interpretation report were assessed by archeologists of MINAC for selection of possible archaeological targets to be further investigated/documented using underwater noninvasive archaeological investigations (underwater photos and video footage). A number of 21 identified possible archaeological features located at water depths between 8 m and 116 m were further investigated using noninvasive investigation methods (e.g., divers, remotely operated underwater vehicles). The noninvasive underwater archaeological surveys were conducted during October 2020 – March 2021 under direct supervision of MINAC archeologists.

The findings of the noninvasive underwater investigations were assessed by the MINAC archeologists, as part of the procedure for preparation of a final Archaeological Diagnostic Report.

The non-intrusive archaeological diagnostic identified a number of four wooden wrecks that present a certain historical and archaeological potential and require a protection area of 50 m, as defined by article 8 of Law no. 256/2018.

Other four targets located at deep depths that could not be technically visualized during these investigations have been provided with a protected area similarly to the one provided for the four identified wooden wrecks (50 m protection area), upon completion of new investigations for confirmation or negation of artifacts presence. The distance between the protection area limit of these targets and gas pipeline varies from 63 m to 225 m.

The final Archaeological Diagnostic Report prepared by MINAC archeologists (that recommend the endorsement of the project) was approved by the National Archaeological Commission.

5.4 Current and planned land uses of the site and adjacent areas

The onshore project site (S1, S3, and S4 sites, as defined in Section 5.1.1) is located to the south of Tuzla commune administrative territory close to the northern border of Costinesti commune administrative territory. Currently, the project site has agricultural land use with no presence of any buildings on site. No industrial activities are present within or in the closest proximity of onshore project site.

From west to east, the onshore project site is crossed by the communal road DC4, railway line Constanta – Mangalia, local road De277, and local road De259/4.

The local road De269, the cliff and the beach are located to the east of onshore project site and will be undercrossed by the onshore section of underground shore crossing microtunnel. According to the provisions of the approved General Urbanism Plan (PUG) of Tuzla commune, the beach area located to the east of onshore project site is currently located within built-up area with green areas and has recreational functional zoning.

Air transportation activities are currently performed within Tuzla private airport area that is located approximately 2 km north – west of the western-most edge of the onshore project site.

Private dwellings and touristic guesthouses were identified to the south and southeast of the onshore project site on the administrative territory of Costinesti commune. According to the provisions of the approved PUG of Costinesti commune, a built up (*"intravilan"*) area located adjacent to the south of the onshore project site, on the administrative territory of Costinesti commune, is proposed for touristic development (villas, guesthouses).

The private land owned by OMV Petrom S.A. with superficies rights for EMEPRL (S1, S3, and S4 sites) is represented by a cropland that was not cultivated in the last years since acquired by the Project Beneficiaries.

The site owned by the Project Beneficiaries is surrounded by land used for intensive forms of agriculture. The existing activities in the proximity of the site are mainly agricultural, including cereal crops and fruit farming (a private orchard is located close to the west of onshore project site).

According to CLC (CORINE Land Cover classification) 2018, most of the agricultural lands in the studied area are covered by the "*Non-irrigated arable land*" class, followed by "*Vineyards*", "*Fruit trees and berry plantations*", "Pastures" and "*Complex cultivation patterns*".

The agricultural lands from the southern part of Tuzla Administrative Territorial Units (ATU) and the northern limit of Costinesti ATU are represented by "*Non-irrigated arable land*" (4,043.04 ha for Tuzla and 1,496.49 ha for Costinesti) and "*Fruit trees and berry plantations*" (109.88 ha for Tuzla and 9.02 ha for Costinesti).

Figure 8 presents the type of land use in the project area according to CLC 2018. The project site area is characterized by predominantly agricultural lands with only small areas of spontaneous vegetation.

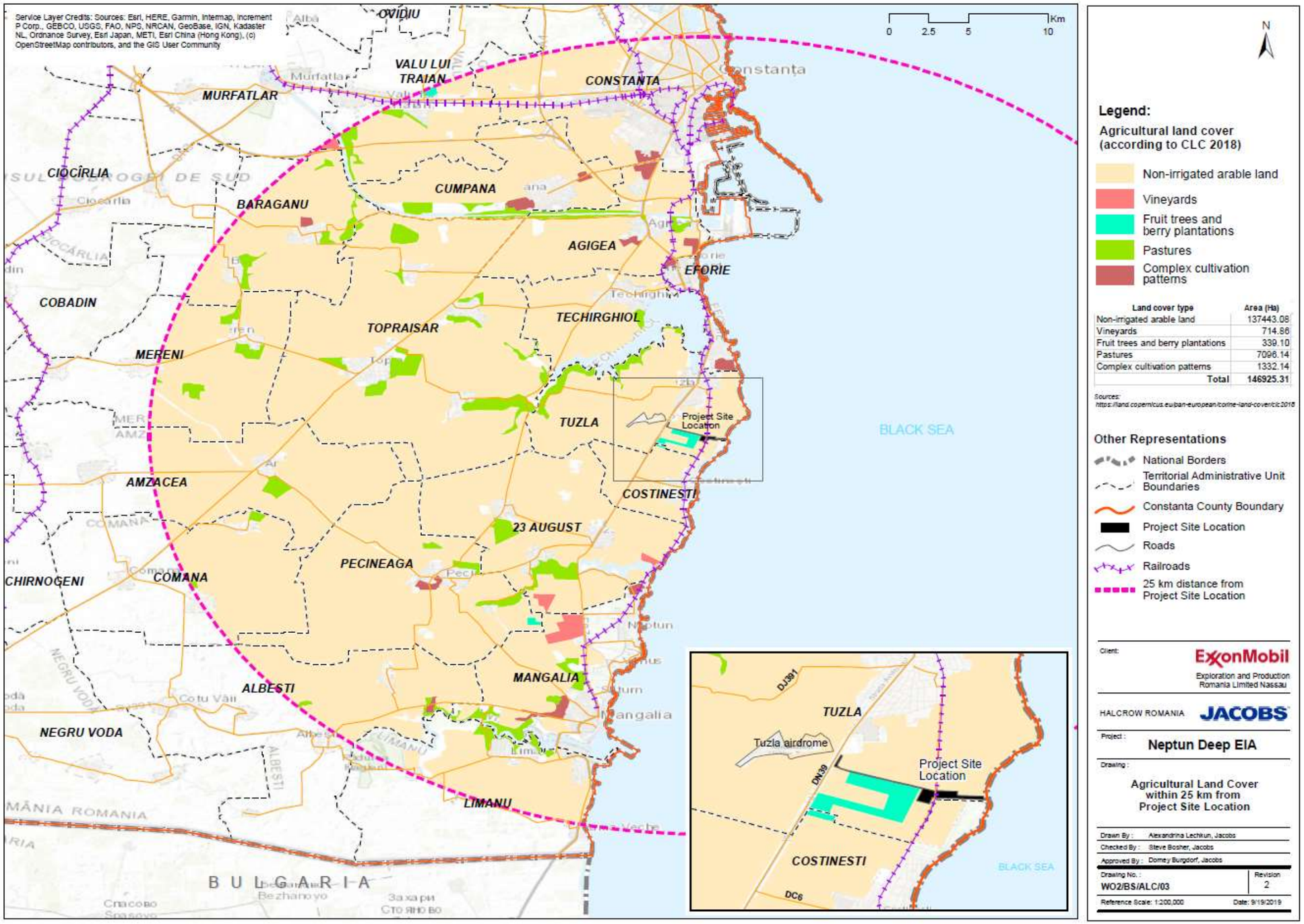


Figure 8 - Onshore project area land use (CLC 2018)

Source: *Neptun Deep Project, Natural Resources Summary Report, 2019*

The Black Sea is located approximately 60 m east of the eastern-most edge of the onshore project site. The existing activities within the offshore area include mainly marine shipping and fishing activities. Other oil & gas exploration and production perimeters are identified within the Romanian portion of the Black Sea. The proposed offshore development is part of XIX Neptun block.

Land Occupancy

The entire onshore area impacted by the construction/installation works of the onshore facilities and shore crossing microtunnel described in this presentation memorandum is represented by private and public property, and has a total surface of **232,876 m^2**, from which:

- **223,184 m^2:** private property of OMV Petrom S.A. with superficies rights for EMEPRL, corresponding to **S1 site – cadastral number 109216 (85,000 m^2), S3 site – cadastral number 109659** (**70,880 m^2**) and **S4 site – cadastral numbers 109729 and 100819 (67,304 m^2);**
- **657 m^2**: public property of Tuzla City Hall - communal road DC 4;
- **4,408 m^2:** public property administrated by the Ministry of Transportation and leasehold held by the National Railway Company ''CFR'' S.A. – railway line Constanta – Mangalia (cadastral number 109182);
- **898 m^2**: public property of Tuzla City Hall – local road De 277;
- **571 m^2**: public property of Tuzla City Hall – local road De 259/4;
- **494 m^2**: public property of Tuzla City Hall – local road De 269 (cadastral number 109115);
- **1,484 m^2**: private property of Tuzla City Hall (cadastral number 110670);
- **1,180 m^2**: public property of Romanian State administrated by National Administration ''Apele Romane'' through Water Basin Administration Dobrogea – Litoral (cadastral number 106571).

The surfaces occupied by the onshore and offshore project facilities are summarized below.

The onshore main permanent facilities (NGMS, CCR and other related facilities installed at the NGMS and CCR sites) will occupy a total surface of approximatelly **15,200 m^2**.

An underground area of **2,117 m^2** will be occupied by the onshore section of GPP and FOC from NGMS to onshore entry point of shore crossing microtunnel.

The green areas (perimeter trees screen, shrubs green fence, and areas covered by grass) installed at the onshore project site will occupy a total surface of approximately 20ha.

A total surface area of **62,000 m^2** will be temporarily impacted by the onshore construction works sites and other temporary works, from which:

- 1,030 m^2 will be occupied by the temporary railway crossing, including connections to local roads;
- 16,523 m^2 will be occupied by the pipeline corridor installation area;
- 539 m^2 will be occupied by the natural gas pipeline undercrossing of railway and local roads;
- 9,770 m^2 will be occupied by the NGMS and CCR related Construction Works Site Organization (including administrative containers, parking area, precommissioning pad);

- 5,850 m^2 will be occupied by the microtunneling related construction works site, including launch shaft area;
- 18,339 m^2 will be occupied by the stringing yard, including welding area;
- 450 m^2 will be occupied by the pipe storage area; and
- 9,499 m^2 will be occupied by the temporary access roads to the microtunneling construction site.

The area occupied by the shore crossing microtunnel is of **2,136 m^2** from which:

- 678 m^2 in the onshore area;
- 1,458 m^2 in the nearshore area.

The underwater area that will be occupied by the offshore facilities (SWP, Domino and Pelican South Drilling Centers, flowlines, umbilicals, production pipeline, offshore landfall, and other related facilities) is **813,607 m^2**, from which:

- 3,547 m^2 represents the area occupied by the SWP;
- 8,686 m^2 represents the area occupied by DODC1 and related subsea equipment (manifold, trees, etc.);
- 8,722 m^2 represents the area occupied by DODC2 and related subsea equipment (manifold, trees, etc.);
- 11,088 m^2 represents the area occupied by PSDC1 and related subsea equipment (manifold, trees, etc.);
- 73,260 m^2 represents the area occupied by Domino flowline;
- 2,952 m^2 represents the area occupied by Pelican South flowline;
- 2,952 m^2 represents the area occupied by SWP - PSDC1 umbilical;
- 52,280 m^2 represents the area occupied by SWP – DODC1 umbilical;
- 12,040 m^2 represents the area occupied by DODC1 – DODC2 umbilical; and
- 638,080 m^2 represents the area occupied by the offshore section of 30-inch (762 mm) GPP and FOC.

5.5 Zoning and land use policies

For the onshore component of the Neptun Deep project, was obtained the Urbanism Certificate no 85 from 29.04.2021 issued by Constanta County Council.

For the onshore component, the Beneficiaries have developed the PUZ – Zonal Urbanism Plan for Construction of the NGMS, Control Center, Access Road and Underground Pipe Laying for Natural Gaz Transport, for which it has obtained Decision no 100 dated 16th of November 2020 issued by the Tuzla City Hall Local Council.

According to the PUZ documentation prepared in support of the final decision for PUZ approval, the requirements/provisions of the following urbanism plans and other plans/programs applicable to the project area were assessed and considered:

- National Sustainable Development Strategy Romania 2013-2020-2030;
- Integrated Urban Development Strategy of Constanta Metropolitan Area;
- Assessment and Risk Covering Plan of Tuzla commune, 2017;
- Constanta County Urbanism Plan;
- General Urbanism Plan of Tuzla commune;
- General Urbanism Plan of Costinesti commune.

PUZ documentation considered all provisions related to area characteristics, construction safety, protection of public interest, maximum permitted height, green spaces, and fencing stipulated by the General Urbanism Plan of Tuzla commune. The functional zoning established by PUZ includes technical – urbanistic equipment (*"echipamente tehnico-edilitare"*), roads (*"cai de comunicatie rutiera"*) and green spaces (*''spatii plantate"*).

Following approval of PUZ documentation by the Tuzla City Hall, the private land owned by OMV Petrom with superficies rights for EMEPRL registered under cadastral number 109216 (S1 site, total surface of 85,000 m^2) that is proposed for construction/installation of the onshore NGMS, CCR, and other related facilities included at the NGMS and CCR sites has been included within the limit of built-up area (in Romanian *"intravilan"*) of Tuzla commune.

The other private lands owned by OMV Petrom with superficies rights for EMEPRL, respectively S3 site (cadastral number 109659, total surface 70,880 m^2) and S4 site (cadastral numbers 109729 and 100819, total surface 67,304 m^2) are located outside the limit of built-up area (in Romanian *"extravilan"*) of Tuzla commune.

According to the current PUG regulations of Tuzla commune, the entire area between the railway line Constanta – Mangalia and the cliff, that also includes S3 and S4 sites, is proposed for potential development of built-up area (*"intravilan"*) with residential and touristic functional zoning. This area will be undercrossed by the underground onshore section of gas production pipeline and fiber optic cable, and an onshore section of the underground shore crossing microtunnel. The block valve station will be also installed within this area, to the east side of the railway line. No other permanent surface buildings/facilities are planned to be installed within the area between the railway line and the cliff.

The installation of natural gas pipelines within this area will not impact the potential future development plan of locality concerning expansion of built-up area (''intravilan'') due to the fact that the pipelines can be installed both on built-up areas (*''intravilan"*) and outside of built-up areas (*''extravilan"*).

The onshore gas production pipeline has been designed and will be installed in accordance with the provisions of Technical Norm for design and execution of the upstream gas pipelines approved by the Decision no 1220/2006 issued by ANRGN (presently ANRE). In accordance with the provisions of this Technical Norms, protection and safety zones must be implemented for the onshore pipeline and related installations (e.g., NGMS), including:

- A minimum protection zone of 6 m width on each side of the pipeline measured starting from the pipeline axis) where no construction works are allowed to be executed;
- A safety zone of 20 m width on each side of the pipeline measured starting from the pipeline axis where construction interdictions will be implemented (e.g., housing, office spaces, etc.).
- A safety zone of 200 m width on each side of the pipeline measured starting from the pipeline axis where a written endorsement issued by the pipeline operator must be obtained as part of the construction permit procedure for approval of any new construction within this zone.

Details on protection and safety zones, and related construction interdictions were presented in Section 3.6.2.2.1.

All permanent onshore buildings and equipment will comply with the maximum 12 m height limit stipulated by the Zonal Urbanism Plan in force.

5.6 Location of the project towards sensitive areas

5.6.1 Localization of the project towards the protected natural areas of national interest

This project will be developed on two types of ecosystems – maritime (Black Sea) and terrestrial (Constanța County).

The project onshore facilities are not located inside the limits of any natural protected areas (including special protection area – SPA, site of community importance – SCI, natural protected areas, RAMSAR sites, Important Birds Area – IBA) designated at international, community and/or national level.

The closest Natura 2000 protected areas to the onshore project site (S1, S3, and S4 sites owned by the Project Beneficiaries) are represented by ROSPA0076 Marea Neagră and ROSCI0273 Zona marină de la Capul Tuzla, located at approximately 60 m east of the eastern-most edge of the onshore project site. The closest part of the project towards the Natura 2000 sites is the land plot corridor where the underground pipeline will be executed. Other Natura 2000 sites are located at more than 3 km from the onshore part of the project.

The closest Natura 2000 protected areas to the offshore project site are represented by:

- Natura 2000 site ROSPA0076 Marea Neagră is crossed by the Gas Production Pipeline (GPP) and FOC on a length of approximately 2.5 km;
- Natura 2000 site ROSCI 0273 Zona marină de la Capul Tuzla is under-crossed to its south-western corner by the GPP and FOC shore crossing section on a length of approximately 600 m.

The location of the site in relation to the natural protected areas of community interest is presented in Section 12.

The natural protected areas located in the area of the onshore project site (S1, S3, and S4 sites owned by the Project Beneficiaries) are represented by the following:

- RONPA0937 Techirghiol Lake Natural reserve located at approximately 5 km distance of the north-western corner of the onshore project site.

5.6.2 Location of the project towards wetlands - Ramsar sites

Romania has adhered to the Convention on wetlands of international importance, especially as a Ramsar aquatic bird habitat, since 1991. 19 Ramsar sites have been declared throughout Romania.

In the Ramsar Convention, wetlands have been defined as stretches of ponds, marshes, natural or artificial waters, permanent or temporary, where the water is drifting or flowing, sweet or salty, including stretches of sea water whose depth at reflux does not exceed 6 m.

By signing the Ramsar Convention, Romania has undertaken to designate the wetlands on its territory to be included in the list of wetlands of international importance.

The closest Ramsar site to the onshore project site (S1, S3, and S4 sites owned by the Project Beneficiaries) is represented by Techirghiol Lake RAMSAR site, code 1610, located at approximately 4 km distance of the north-western corner of the onshore project site.

5.7 Geographic coordinates of the project site

The Stereo 70 coordinates of the entire onshore project site area impacted by the construction/installation works of the onshore facilities and shore crossing microtunnel described in this presentation memorandum are listed in Table 20.

Table 20 – Onshore Project Site Area Stereo 70 Coordinates

Site Name	Cadastral number	Total Surface (m^2)	Stereo 70 Coordinates		
			No.	North(X) m	East(Y) m
S1 – future location of NGMS, CCR and other related facilities	109216	85,000	56	281679.306	792,252.519
			57	281610.294	792,478.519
			5	281440.016	792476.365
			6	281452.291	792426.275
			7	281282.954	792384.742
			8	281358.352	792149.476
			9	281657.239	792245.434
S3 – future location of a section of onshore production pipeline and fiber optic cable, block valve station	109659	70,880	1	281628.591	792510.222
			2	281625.471	792881.611
			3	281576.744	792881.117
			4	281522.805	792880.571
			5	281511.079	792880.453
			6	281491.872	792880.258
			7	281482.668	792880.163
			8	281473.460	792880.071
			9	281464.250	792879.978
			10	281439.753	792879.730
			11	281434.020	792879.672
			12	281437.123	792510.407
			13	281442.856	792510.407
			14	281467.351	792510.387
			15	281476.562	792510.407
			16	281485.769	792510.407
			17	281494.979	792510.316
			18	281514.187	792510.503
			19	281514.188	792510.406
			20	281525.914	792510.524
			21	281579.857	792510.753
			22	281579.860	792510.373
S4 – future location of a section of onshore production pipeline & fiber optic cable, and onshore entry point of shore crossing microtunnel	100819 109729	67,304	2	281520.099	793350.925
			3	281514.688	793352.429
			4	281508.320	793354.199
			5	281503.297	793355.595
			6	281495.567	793357.743
			7	281488.799	793359.624
			8	281484.413	793360.843
			9	281479.408	793362.234
			10	281470.068	793364.829
			11	281460.780	793367.409
			12	281460.742	793367.419
			13	281457.284	793368.381
			14	281435.875	793374.329
			15	281433.149	793375.086
			16	281430.165	793375.916

Site Name	Cadastral number	Total Surface (m^2)	Stereo 70 Coordinates		
			No.	North(X) m	East(Y) m
			17	281434.300	792883.678
			18	281439.998	792883.736
			19	281464.840	792883.991
			20	281474.107	792884.082
			21	281483.425	792884.175
			22	281492.793	792884.270
			23	281499.545	792884.339
			24	281512.267	792884.468
			1	281524.018	792884.586
			28	281577.030	792885.137
			27	281573.250	793335.249
			26	281565.690	793337.602
			25	281539.480	793345.551
Communal Road DC4	NA	657	57	281610.294	792478.519
			101	281613.601	792484.248
			102	281495.124	792480.427
			103	281441.837	792477.829
			104	281439.918	792477.520
			5	281440.016	792476.365
Railway line Constanta - Mangalia	109182	4,408	101	281613.601	792484.248
			105	281626.287	792506.229
			106	281579.848	792506.373
			107	281525.929	792506.524
			108	281514.218	792506.406
			109	281494.970	792506.314
			110	281458.000	792504.000
			111	281437.929	792500.925
			104	281439.918	792477.520
			103	281441.837	792477.829
			102	281495.124	792480.427
Local Road De277	NA	898	105	281626.287	792506.229
			58	281628.591	792510.222
			92	281579.860	792510.373
			91	281579.857	792510.753
			90	281525.914	792510.524
			89	281514.188	792510.406
			88	281514.187	792510.503
			87	281494.981	792510.314
			86	281485.769	792510.407
			85	281476.562	792510.407
			84	281467.351	792510.387
			83	281442.856	792510.407
			4	281437.123	792510.407
			111	281437.929	792500.925
			110	281458.000	792504.000
			109	281494.970	792506.314
			108	281514.218	792506.406
			107	281525.929	792506.524
			106	281579.848	792506.373
Local Road De259/4	NA	571	28	281577.030	792885.137
			1	281524.018	792884.586

Site Name	Cadastral number	Total Surface (m^2)	Stereo 70 Coordinates		
			No.	North(X) m	East(Y) m
			24	281512.267	792884.468
			23	281499.545	792884.339
			22	281492.793	792884.270
			21	281483.425	792884.175
			20	281474.107	792884.082
			19	281464.840	792883.991
			18	281439.998	792883.736
			17	281434.300	792883.678
			11	281434.020	792879.672
			10	281439.753	792879.730
			9	281464.250	792879.978
			8	281473.460	792880.071
			7	281482.668	792880.163
			6	281491.872	792880.258
			5	281511.079	792880.453
			4	281522.805	792880.571
			3	281576.744	792881.117
Local road De269	109115	494	10	281470.068	793364.829
			11	281460.780	793367.409
			12	281460.742	793367.419
			13	281457.284	793368.381
			14	281435.875	793374.329
			15	281433.149	793375.086
			16	281430.165	793375.916
			1	281429.505	793376.102
			2	281425.542	793388.950
			3	281427.909	793388.186
			4	281449.936	793380.922
			5	281471.811	793374.655
Cliff	110670	1,484	5	281471.811	793374.655
			4	281449.936	793380.922
			3	281427.909	793388.186
			2	281425.542	793388.950
			9	281414.647	793424.276
			8	281427.293	793420.187
			7	281431.557	793419.145
			6	281461.068	793409.486
Beach	106571	1,180	6	281461.068	793409.486
			7	281431.557	793419.145
			8	281427.293	793420.187
			9	281414.647	793424.276
			10	281406.901	793449.453
			11	281428.844	793445.663
			12	281451.651	793440.018

The coordinates of main onshore, shore crossing and offshore permanent project facilities were presented above in Section 3.6.2.

The coordinates of the onshore construction works sites and other onshore temporary facilities are presented in Section 10.2.

The general onshore, shore crossing and offshore site location is shown in Appendix B.

5.8 Details of any considered alternative for site location

Onshore Alternatives

The onshore project site has been selected following an assessment of various site alternatives considered for construction/installation of onshore NGMS and CCR sites. The criteria used for assessment of site alternatives included:

- Environmental criteria (e.g., site location, current site conditions, proximity to residential areas and natural protected areas, potential historical pollution, etc.) and potential impact generated by project construction and operation on environment and adjacent natural protected areas;
- Socio-economic criteria, such us: current development of the area, land use (agricultural or barren), access to the site, proximity to the transportation infrastructure);
- Design criteria - complexity of technical solutions required to be implemented upon each potential site limitations/restrictions;
- Construction criteria – potential difficulties in execution due to the complexity of technical solutions required to be implemented on site, including the potential of using the latest shore crossing technologies (e.g., microtunneling);
- Operational criteria - facilitate operations and maintenance works.

A number of 4 potential sites located along the Black Sea coast from north to south were considered within assessment of the site alternatives, including:

- Site alternative no 1 – site located within the area of Cap Midia;
- Site alternative no 2 – site located within the administrative area of 23 August locality;
- Site alternative no 3 (the current onshore project site) – site located within the administrative area of Tuzla locality;
- Site alternative no 4 – site located within the administrative area of 2 Mai locality.

The current development concept (offshore subsea equipment, offshore SWP and onshore NGMS connected by a gas production pipeline from offshore to shore) and process flow (natural gas production through the Pelican South and Domino drilling centers, delivery of produced gas to the SWP facilities via separate flowlines from drilling centers, gas separation at the SWP, transportation of the processed natural gas from the SWP to the onshore NGMS site via gas production pipeline and delivery of sales gas to the Romanian NTS) have been considered applicable to all studied alternatives.

A summary of the main findings of the onshore site alternatives assessment is shown in the Table 21.

Table 21 – Onshore site alternatives

Site Alternative	Main Findings
Site alternative no 1: Cap Midia	The site is located within the Midia industrial area (Petromidia oil refinery, terminal). The site area has an intensive industrial use and may have potential presence of historical pollution. A military base (''*Unitatea Militara nr. 08153 Capu Midia – Tabara de Instructie si Poligon de Trageri Sol – Aer*'') is present within the area. The potential risk of crossing the military base and field of fire has been considered. The site is located in the proximity of a natural protected area – Rezervatia Biosferei Delta Dunarii (UNESCO natural protected area). Due to the presence of this protected area and other limitations (e.g. potential historical pollution on site, presence of military base in the area), this site alternative site has been rejected.
Site alternative no 2: 23 August	The site is located within the administrative area of 23 August locality, close to the Black Sea front (located to the East of site). The land use is mainly agricultural. The railway line CF 800 Constanta - Mangalia is located within the site proximity (250 m away from the sea front). The site presents calcareous cavernous geological conditions. The sea front wall is exposed to natural erosion processes with no consolidation/stabilization works. The execution of onshore facilities (including pipeline corridor and shore crossing) can be impacted by the local soil and subsoil conditions and sea front erosion. The geotechnical investigations performed on site revealed the presence of a calcareous rock layer impacted by an intensive karstification process due to the presence of Black Sea waters. This represents a safety construction risk that should be avoided, as per current safety construction guidelines. The execution of shore crossing works may activate landslide processes in the sea front area (not terraced). Due to the above-mentioned construction safety constraints, this site alternative has been rejected.
Site alternative no 3: Tuzla	This site has currently mainly agricultural use and is located within the limits of Tuzla commune administrative area. The site is located between the National Road DN39 (located at approximately 1.8 km to the west of site limit) and Black Sea coast (located at approximately 60 m to the east of site limit). The site area is crossed by the railway line Constanta – Mangalia and local roads (e.g., communal road DC4). The site can be currently accessed by using the existing communal or local roads that are connected to the National Road DN39. Tuzla Airport is located to the northwest of the western limit of the site at approximately 2 km distance. The site has a mainly flat topography, with the highest elevation recorded on the western part of the site and slope inclination decreasing towards the east. No existent surface water body has been identified within the site limits. The Black Sea located at approximately 60 m distance from the eastern limit of the site.

Site Alternative	Main Findings
	No onshore archaeological sites were identified within the site limits, as per archaeological investigations performed onsite. The site is not located inside the limits of any natural protected areas (SPA, SCI, natural protected area, RAMSAR Wetland site, IBA) designated at international, community and/or national level. The closest natural protected areas are represented by ROSPA0076 Marea Neagră and ROSCI0273 Zona marină de la Capul Tuzla, located at approximately 60 m east of the east-most edge of the site. This site represents the final location selected for the implementation of the onshore and shore crossing works. The site has been selected as the best site alternative regarding environmental (including natural protected areas, sea front and beach) protection, and safety of construction and operation. The soil and subsoil conditions of the selected site are more favorable for execution of the pipeline corridor and shore crossing in comparison to the other assessed alternatives. In terms of shore crossing, the assessment indicated that the construction of a shore crossing in this area would be less challenging compared to other studied site alternatives taking into consideration the following aspects: • Local geological conditions (structure of soil/subsoil is more feasible for construction). • Current land development status (agricultural, limited urban development); • Existing corridor between environmental protected areas which allows the installation of the pipeline as close as possible to the shoreline without impacting protected habitats and species; • No impact on archaeological sites; • Easy access to the Romanian NTS operated by Transgaz; •
Site alternative no 4: 2 Mai	The site area is located between 2 Mai and Vama Veche localities. Natural protected area ROSCI0269 ''Rezervația Marină 2 Mai – Vama Veche'' is located along the Black Sea coast. The construction/installation works (e.g., shore crossing) should be performed within the natural protected area limits. The biodiversity and habitats present inside the natural protected area may be potentially significantly impacted by the works as undercrossing the protected area in its entire length is not possible No existing access roads were identified within the investigated area. Due to the above-mentioned constraints, no further investigations were performed for this site and this alternative has been rejected.

Following assessment of site alternatives based on the above-mentioned criteria, **the Site alternative no 3 (current project onshore site located in Tuzla)** has been selected as the best site alternative for construction and installation of onshore facilities and microtunnelling shore crossing.

Offshore site

The offshore SWP will be located on the continental shelf approximately 160 km offshore east of Constanta, in the area of the Pelican reservoir. The platform location was selected in order to minimize the potential of encountering shallow gas hazards. Five other alternative options for platform location were assessed during the selection of best location for platform installation. Three of those potential locations were used at one point as the basis of the platform location. The proposed location of the platform was selected as the location where shallow gas was least likely to be found. Other factors considered for selection of the platform location included:

- Proximity to the drill centers;
- Clearance distance from drilling rig mooring pattern; and
- Clearance from other geohazards.

An evaluation has been conducted to assess the drilling shallow hazards and supported the selection of proposed locations of the Domino and Pelican South drill centers. The locations of drill center were selected in order to minimize drilling shallow hazards while minimizing methanol requirements for longer jumpers and engineering rework.

The route of the production pipeline has been determined based on the findings of the pipeline routing study conducted by a third-party contractor in order to determine the appropriate route for installation of the production pipeline and to provide a basis for pipeline design. The routing study included assessment of the following input data:

- Route survey data: geophysical (bathymetry and seafloor features) and geotechnical surveys;
- Pipeline data;
- SWP tie-in details;
- NGMS tie-in details;
- Third party activities (existing or anticipated cable crossings, fishing areas, shipping infrastructure, sensitive and protected areas, and other constraints like wrecks, debris, trawl scars, etc.).

The general criteria applied to all pipeline routing studies (e.g. minimization of the route length and the number of intersection points, avoid where possible restricted offshore area such us shipping lanes, military areas, dumping areas, mining activities, etc., taking into consideration the requirements of third parties such us fishing organizations, avoid where possible pipelines, cables and utilities crossings, and other general criteria) were considered in the selection of the pipeline route. The full route of the proposed production pipeline from offshore SWP to onshore NGMS is shown in the alignment sheets attached to this document (Appendix C).

Similarly, the routes of the flowlines and umbilicals have been determined based on the findings of specific flowlines and umbilicals routing studies conducted by third-party contractor. The routing study included assessment of the route survey data (e.g., geophysical survey), flowlines and umbilicals data, gas field details, SWP and manifolds tie-in details.

The proposed routes of Domino and Pelican South flowlines and umbilicals are shown in the alignment sheets attached to this document (Appendix C).

6. Description of the significant possible effects of the project on the environment

6.1 Sources of pollutants and installations for the retainment, evacuation, and dispersion of pollutants in the environment

6.1.1 Water quality protection

6.1.1.1 Existing situation

Groundwater

The onshore project site is characterized by the general structure of Dobrogea where the groundwater is mainly found in a pressurized aquifer system located in the limestone deposits. The karstic aquifers are the main supply of water for the entire region.

According to the literature review, the following aquifers have been identified within the onshore area of interest:

- The upper (shallow) aquifer represented by the following groundwater bodies:
    - *RODL10 Dobrogea de Sud* is an unconfined aquifer of Holocene and Mid – Upper Pleistocene age, porous – permeable type, with the covering strata in some locations varying from the surface to 0.50 mbgl (meters below ground level);
    - *RODL04 Cobadin – Mangalia* is an artesian, karstic aquifer of Sarmatian age, developed in hard rocks, predominantly limestone; this represents a transboundary groundwater body, and the thickness of the cover strata varies between surface and 20.00 mbgl.
- The lower (deep) aquifer represented by *RODL06 Platforma Valaha*. This groundwater body is a karstic deep aquifer, artesian, captured in Barremian - Jurassic deposits; this represents a transboundary aquifer with a significant economic importance; the thickness of the cover strata is variable.

The location of onshore project site in relation with the identified aquifers is presented in Figure 9. More details on groundwater bodies present within the onshore project site, including quantitative and chemical status of the groundwater bodies, are presented in Section 13.

During the 2019 geotechnical investigation campaign performed within the onshore project site (S1, S3, and S4 sites owned by OMV Petrom with superficies rights for EMEPRL), local groundwater level was identified at depths below 30 mbgl at the future NGMS and CCR proposed location (site S1 - cadastral number 109216) and 20 mbgl along the proposed pipeline corridor area (S3 site – cadastral number 109659 and S4 site – cadastral numbers 109729 and 100819). The groundwater level identified corresponds to the Black Sea level in absolute elevation.

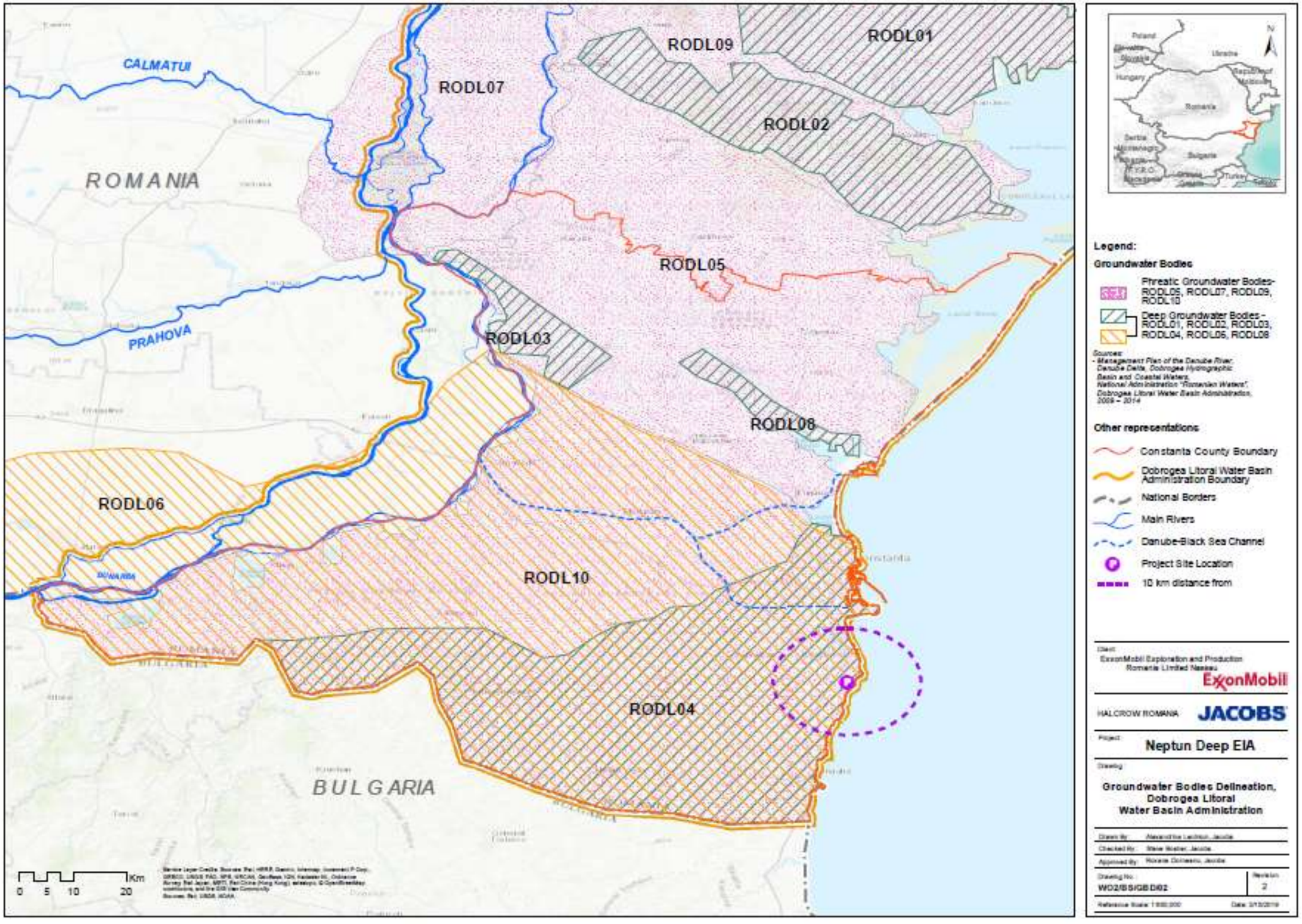


Figure 9 – Groundwater bodies identified within the onshore project site

Surface water

The onshore project site is located within the Dobrogea – Litoral Hydrographic Basin. No water courses have been identified within the onshore project site. The Black Sea is located at approximately 60 m east of the eastern-most edge of the onshore project site. Costinesti lake (a saltwater lake currently connected to the Black Sea) is located at approximately 3 km south – east of the onshore project site.

The closest onshore surface water course (rivers or streams) is represented by Tatlageagul Mare River (cadastral code XV_1.11b) that is located at more than 5 km distance to the south-west of the onshore project site. Other onshore surface water courses located within a radius of approximately 20 km within the project site are represented by:

- Dereaua River (cadastral code XV_1.11) located to the northwest of project site;
- Biruinta River (cadastral code XV_1.11a) located to the northwest of project site;
- Tatlageacul Mic River (cadastral code XV_1.11c) located to the southwest of the onshore project site; and
- Albesti River (cadastral code XV_1.12) located to the southwest of the onshore project site.

The location of onshore project site in relation with the closest onshore surface water courses (rivers or streams) is presented in Figure 21, Section 13.2. No surface water bodies were identified within the onshore project site (S1, S3, S4 sites owned by OMV Petrom with superficies rights for EMEPRL). The closest onshore surface water body is represented by Techirghiol Sarat Lake (water body code ROLW15.1_B2) located at approximately 4 km to the north of the onshore northern-most edge of the onshore project site. Other onshore surface water bodies located at more than 5 km from the onshore project site are represented by:

- Techirghiol Dulce Lake (code ROLW15.1_B1) located to the northwest of project site;
- Tatlageac Lake (code ROLW15.1_B9) located to the south of project site; and
- Mangalia (code ROCT01_B2) located to the south of project site.

The coastal section of the gas production pipeline and FOC route will partially intersect the coastal water body Eforie Nord -Vama Veche (water body code ROCT02_B2) located to the east of the onshore project site.

The location of project site in relation with the closest onshore and coastal water bodies is presented in Figure 22, Section 13.2.

Details on ecological and chemical status of the surface water bodies are presented in the Section 13.3 and the environmental objectives of the identified water bodies are presented in the Section 13.5.

The offshore section of the project is located within the Black Sea region. Water depth across the Neptun Deep block ranges from 700 – 1,100 m at the Domino field to 120 – 130 m on the shelf at the Pelican field and platform location. The basin slope separates the Domino and Pelican fields. Along the gas production pipeline route on the continental shelf, the water depth decreases from 120 m to between 10–15 m at the proposed trenchless shore crossing location.

Approximate water depth range for the main objectives of the offshore Neptun Deep development are:

- Shallow Water Platform: 120 –130 m;
- Pelican South Drill Center: 120–130 m;
- Domino Drill Center 1: 970–980 m;

- Domino Drill Center 2: 945–955 m.

6.1.1.2 Sources of pollutants for water, discharge point or emissary

The main potential sources of water pollution during **construction phase** include:

- Improper management of wastewater resulting from execution of onshore construction/installation works (e.g., domestic wastewater generated from administrative areas, produced water from microtunneling execution and hydrotesting, rainwater, etc.);
- Accidental fuel, oil, chemicals, and other liquids leakage from construction vehicles, equipment, and facilities during execution of construction/installation works;
- Improper management of waste, fuels, chemicals and used materials at onshore construction sites (NGMS construction site, microtunneling construction site, stringing yard, pipe storage area, etc.);
- Improper discharge of fluids and wastewater produced during drilling, construction/installation, precommissioning and commissioning phase (e.g., drilling, completion and start up fluids; pipelines hydrostatic test water, domestic wastewater and rainwater generated by the drilling platform and support vessels);
- Accidental fuel, oil, chemicals, or other materials leakages into the Black Sea during drilling, construction and installation of coastal and offshore facilities and transport of construction materials on the sea;
- Fuel and materials leakage following vessels accidents;
- Improper management of waste, fuels, chemicals and used materials onboard of drilling platform and offshore construction/installation vessels;
- Execution of shore crossing, near shore and offshore dredging and trenching works that generate temporary increase in suspended sediments levels or turbidity;
- Improper quality and use of material used for backfilling of nearshore and offshore excavations and trenches.

During operation, the main potential sources of water pollution may be the following:

- Wastewater resulted during operation of NGMS and CCR sites (e.g., domestic wastewater generated from CCR building, rainwater, etc.);
- Improper management of waste, fuels, and used materials at onshore NGMS and CCR sites;
- Fluids and waste water resulting during operation of offshore infrastructure (produced water, well restart fluids, subsea valve actuator fluids, platform drains water, domestic wastewater and rainwater generated by the operations and maintenance support vessels);
- Accidental fuel, oil, chemicals, waste, or other materials leakages into the Black Sea during operations and maintenance activities at the offshore infrastructure and from support vessels;
- Fuel and materials leakage following support vessels accidents.

The onshore and offshore wastewater sources and related discharge points are summarized below.

6.1.1.2.1 Onshore Wastewater Streams

Wastewater streams will result from multiple sources during onshore project construction/installation and operation, as summarized below.

Construction and Installation Phase

The main wastewater streams during construction/installation phase include:

- Domestic wastewater generated from NGMS and microtunneling construction works sites related offices and crew administrative areas (containers) will be collected on site by wastewater storage tanks that will be periodically emptied by trucks. The wastewater will be further transported and disposed of at authorized disposal facilities based on specific agreements signed with certified contractors;

- Wastewater generated from washing truck facility that will be installed within the proposed access road area before connection with the National Road DN 39. *The washing trucks facility is not part of the project scope described in this technical memorandum and will be subject to a separate permitting procedure.* The wastewater will be periodically emptied by trucks, transported, and disposed of at authorized disposal facilities based on specific agreements signed with certified contractors;

- Produced water resulting from shaft construction, tunneling process (drilling fluid system and cleaning), pipeline construction/installation (hydrotest line pipe); and

- Displaced tunnel water (sea water) resulting from tunnel backfilling.

Operation Phase

The main wastewater streams during operation phase include:

- Domestic wastewater generated from CCR building facilities will be collected on site by an underground septic tank of approximately 20 m^3 volume that will be periodically emptied by vacuum trucks. The wastewater will be further transported and disposed of at authorized disposal facilities based on specific agreements signed with certified contractors;

- Rainwater that drains through concrete areas inside the CCR fenced site will be collected by a rainwater drainage tank installed on a total surface of approximately 25 m^2. The tank will be periodically emptied by vacuum trucks for transport and disposal at an authorized wastewater treatment facility.

6.1.1.2.2 Offshore Wastewater Streams

Wastewater produced during project life (construction, precommissioning, commissioning, production, decommissioning) will result from multiple sources, as summarized below.

Construction and Installation/Precommissioning/Commissioning Phase

The main wastewater streams during construction/installation/pre-commissioning/commissioning phase include:

- Construction wastewater discharge (hydrostatic test water);

- Well drilling and start-up water discharges;

- Wastewater (graywater, blackwater) and rainwater generated by the construction/installation support vessels.

Hydrostatic Test Water

The production flowlines connecting the subsea wellheads and manifolds at the Domino and Pelican South DCs to the SWP will undergo hydrostatic testing before commissioning to ensure that the system can hold line pressure above the maximum allowable operating pressure rating. Similarly, the natural gas pipeline extending from the onshore NGMS to the SWP will undergo similar hydrostatic testing.

The hydrostatic test water will be withdrawn from Black Sea waters, filtered, and treated with preservation chemicals to inhibit damage to the flow lines.

Upon completion of the pressure tests, the hydrostatic test water is planned to be discharged into the Black Sea at the DODC2 location that will be situated deep in the Black Sea anoxic waters at a depth of over 950 m. This is a one-time event and the volume of water is significant and is not feasible to be brought onshore for treatment. Discharge into the Black Sea is the only feasible option, and the discharge will be done in the anoxic layer.

Drilling, Completion and Well Start Up Water Discharges

During drilling, water-based drilling fluids will be used during the first two sections of the wells when drilling as is done riserless. Once the riserless sections are drilled and the riser installed, NAF based drilling fluids (that contain an oily base) will be used until the well reaches total depth. Formation (rock) cuttings and NAF will be circulated. NAF returns to the drilling platform where is separated from the cuttings and stored temporarily on the drilling rig prior to being shipped onshore for treatment/disposal at an authorized waste facility. The cuttings will be captured for transport by barge to a shore-based waste handling facility following proper waste management processes for treatment and disposal. Water based drilling fluids are discharged instead directly on the seafloor from the well surface hole (volume cannot be captured because there is no riser connected to bring fluid and cuttings back to surface).

Upon drilling completion, the well will be filled with a clean inhibited brine to serve as a well completion fluid for protection of the well until start of production. Fresh water mixed with sodium bromide (NaBr) will be used to create the brine well completion fluid. All the completion fluids and methanol used during well start-up will go into the flowline along with any produced water and any residual drilling fluids in the formation but will not be displaced to the SWP until a sufficient gas flowrate is established to push the fluid up the flowline and riser. This process will repeat for each new well. The well start-up effluent is currently planned to be shipped by barges to a shore-based authorized wastewater treatment facility.

Well start-up effluent will go to the SWP together with production effluent. This effluent will not be discharged to the sea. It will be collected at the SWP and transported to shore.

Wastewater generated by drilling platform and support vessels

Wastewater (e.g., graywater, blackwater, rainwater, etc.) generated by the drilling platform and support vessels will be collected onboard, managed, and discharged following the appropriate maritime regulations (e.g., MARPOL (International Convention for the Prevention of Pollution from Ships) Convention; Black Sea Convention) regarding disposal of wastewater).

Rainwater falling into operational areas will be collected and discharged into the sea only if it will comply with the maximum 15 ppm concentration of hydrocarbons according to MARPOL regulation. If the concentration of hydrocarbons exceeds 15 ppm the water will be transported onshore for treatment/ disposal to an authorized facility.

Rainwater falling outside operational areas of the drilling rig will be discharged directly into the sea.

Bilge water from the drilling rig and support vessels will be transported onshore for treatment/ disposal to an authorized facility.

Operation Phase

The main wastewater streams during operation phase include:

- Produced water and well restart fluids;
- Subsea Valve Actuator Fluid Discharge;
- Rainwater/wash down water generated on the SWP;
- Wastewater (graywater, blackwater) and rainwater generated by the operations and maintenance support vessels.

Produced Water and Well Restart Wastewater Stream

Produced formation water (produced water) will be the largest volume of operations-related wastewater and is currently anticipated to be discharged from the SWP at 60 m water depth.

The produced water stream is a constant discharge that will consist of the reservoir water separated at the SWP from the gas production plus the residual chemicals added to preserve facilities and aid processing, and small amounts of fine- to very-fine sand.

Neptun Deep system may be shut in and restarted several times per year. Some restarts would be cold start-ups where methanol is injected to prevent hydrate formation. Methanol used for restarts will mix with the full production well stream and be discharged with the produced water.

Subsea Valve Actuator Fluid Discharge

Subsea valves on the wellheads utilize the pressure of a control fluid to actuate those valves. The pressurized control fluid is supplied from the SWP via the umbilicals.

An extremely small quantity of an aqueous ethylene glycol solution will be released in the marine environment when closing the valves on the well trees. The release of small amounts of water-based control fluid to operate subsea valves is a common practice in the oil & gas industry around the world.

Rainwater/wash down water generated on the SWP

Precipitation and fresh water used during maintenance wash down are two sources of water that are anticipated at the SWP.

Precipitation that falls on open deck grating and stairs will not be collected and pass directly to the sea surface.

Fresh water used on the SWP will be supplied by maintenance support vessels (e.g., boats and / or barges) for use with safety showers and platform wash down. As this water will fall on open deck grating and stairs, it too will not be collected and pass directly to the sea surface.

Precipitation that falls onto decked areas around the SWP equipment will be captured and diverted into the open drain system. Similarly, any wash down water that falls into decked areas will likewise be captured and diverted into the open drain system.

Maintenance chemicals will not be routinely injected in the open drain system; however, every 5 years or as needed, the open drain system including storage tank will be flushed with a biocide. During this cleaning activity, all fluids captured in the open drain system will be pumped to storage tank(s) on the maintenance vessel for proper onshore disposal at an approved wastewater management facility.

There is a potential that lube oil or other process chemicals could be captured in the open drain water system from minor leaks around equipment or if a chemical or fuel release occurs.

All open drain water will be diverted to a storage tank located in one of the steel legs of the SWP. The tank is provided with an oil and water separator and an analyzer which allows the discharge of the water fraction unless it exceeds the maximum 15 ppm hydrocarbon limit. The oily fraction will be removed periodically by vessel and shipped to shore for treatment by certified/authorized contractors.

Wastewater generated by Operations & Maintenance Vessels

Wastewater (e.g., graywater, blackwater, rainwater, etc.) generated by the Operations & Maintenance vessels will be collected onboard, managed, and discharged following the appropriate maritime regulations (e.g., MARPOL Convention, Black Sea Convention) regarding disposal of wastewater.

Decommissioning Wastewater Management

Decommissioning will require just pigging the flowline twice with sea water without additional chemicals.

Wastewater (graywater, blackwater) and rainwater generated by the decommissioning support vessels will be managed following the appropriate maritime regulations regarding management and disposal of wastewater.

6.1.1.3 Wastewater treatment plants or pre-treatment plants

6.1.1.3.1 Onshore Facilities

No wastewater treatment or pre-treatment plants will be installed at the onshore construction works sites (NGMS and CCR construction site and microtunnel construction site).

The wastewater generated during construction/installation works will be discharged to the sea upon approval of discharge parameters by the authorities (e.g. excess water that is displaced by the pipeline installation into the tunnel, displaced tunnel sea water resulting from microtunnel backfilling, pipe line hydrotest fresh water) or collected on site (e.g., excess water from drilling fluid system and tunnel cleaning) by storage tanks that will be periodically emptied by trucks and wastewater transported to and disposed of at authorized disposal facilities based on specific agreements signed with certified contractors.

The domestic wastewater will be collected on site in 20 m^3 septic tanks for each of the two construction sites. The septic tanks will be periodically emptied by trucks and wastewater transported to and disposed of at authorized disposal facilities based on specific agreements signed with certified contractors. No sewer connections to local utilities are planned.

Displaced tunnel water (sea water) resulting from tunnel backfilling will be buffered on site, tested, and drained to the Black Sea via FOC conduit, upon approval of discharge parameters by the authorities.

No connections to local wastewater sewerage network or wastewater treatment facilities are planned to be installed at the NGMS and CCR sites during operation phase. The NGMS is a normally unstaffed facility so this eliminates the need for onsite sewer systems. The CCR area will be provided with standalone domestic wastewater (septic) underground tank and a rainwater storage tank for collection of rainwater that falls through the concrete platform installed within CCR fenced site.

Domestic Wastewater Management Facilities

The CCR area will be provided with standalone domestic wastewater (septic) underground tank. A sewerage system made of polypropylene fireproof sewer pipes with nominal diameters between 40 mm and 110 mm will be installed for evacuation of domestic wastewater generated from CCR building. A slope of minimum 2% will be provided for horizontal sewer pipes. The sewer columns will be provided with primary ventilation pipes

for the evacuation of gases from the installation and for the contact with its atmosphere (external diameter De of 110 mm).

The sewer pipes under the floor and up to 3 m away from the building will be installed in protection channels, in accordance with NP 125-2010 Normative. The manhole is dry type with cleaning piece, in order to visualize the possible water losses.

The evacuation of domestic wastewater will be done by connecting to the wastewater (septic tank) of approximately 20 m^3 volume. The wastewater tank basin will be of prefabricated type made from polyester armed with fiber glass. The tank will be placed on a concrete slab and will be anchored with straps according to its technical book.

The connection will be made through an external sewer network. The wastewater tank will be provided with a ventilation pipe.

The external sewerage networks will be made of PVC-KG® tube DN 160 mm pipes. The domestic sewerage networks were dimensioned according to STAS 1795-90. The domestic sewerage networks were provided with slopes to ensure a minimum self-cleaning speed of 0.7 m/s. The domestic sewerage networks will be made in accordance with provisions of STAS 3051-91. The domestic sewerage network directs the waters to a sealed drain.

The useful capacity of the wastewater tank has been dimensioned considering a draining interval of 30 days.

The underground septic tank will be periodically emptied by vacuum trucks based on specific agreements signed with certified contractors.

Rainwater Management Facilities

For collection of rainwater inside the CCR fenced site, a rainwater storage tank will be installed adjacent to the south-east corner of CCR site on a total surface of 25 m^2. The rainwater from the roofs of CCR building will be collected by lateral attic receivers and pipes and discharged to the ground and further directed by vertical systematization through drainage ditches to the rainwater storage basin.

The rainwater from the concrete platform surrounding CCR building will be collected by vertical systematization through drainage ditches and directed to the rainwater storage tank.

The rainwater drainage ditches system will be positioned on all sides of the CCR building. The drainage ditches will be constructed out of precast concrete gutters of 1,000 mm length, 160 mm width, and 265 mm height.

The concrete platform transversal slopes will be adapted to between 1% and 2.5% towards the drainage ditches and the longitudinal slope of the gutters will be 0.25%.

The rainwater collected by the drainage ditches system will be discharged into a concrete manhole of 1,000 mm DN. The rainwater collected by the concrete manhole will be discharged into a rainwater storage tank through a HDPE pipe of 200 mm nominal diameter.

The rainwater storage tank will be made of reinforced concrete class C25/30, having the following estimated dimensions:

- Depth: 3.20 m;
- Width: 4.50 m (4 m interior width);
- Length: 5.50 m (5 m interior length) ;
- Wall thickness: 25 cm.

The rainwater tank will have a total volume of 64 m^3 (40 m^3 useful volume) and will be provided with a reinforced concrete cover class C25/30, provided with a frame, and cast-iron access cover.

The rainwater tank was dimensioned as a cover for a calculation rain of maximum intensity 130 l/s/ha, with a duration of 10 minutes, with a frequency of 1/1 for zone 5 related to the map with the distribution of the zones for intensity / duration / frequency graphs, on based on the following standards and norms:

- STAS 9470-73 – Hydrotechnique - Maximum rainfalls – Intensities, Duration, Frequencies;
- SR 1846-2:2007/C91:2008 - External sewers. Design requirements. Part 2: Determination of rainwater flows;
- NP 133 / 2-2013 - Norm regarding the design, execution and operation of water supply and sewerage systems of localities. Part II. Local sewerage systems.

The rainwater tank will be periodically emptied by vacuum trucks and discharged to authorized wastewater management facilities, upon confirmation by testing of compliance to water quality discharge criteria, based on specific agreements signed with certified contractors.

6.1.1.3.2 Offshore Facilities

The wastewater generated by the drilling platform, construction and installation vessels, operations and maintenance vessels and other support vessels that will be used during project lifecycle will be collected and managed by the wastewater management facilities installed onboard of vessels and barged to the shore for further disposal at the authorized wastewater treatment plants or/discharged to the sea following the appropriate maritime regulations regarding disposal of wastewater.

The runoff rainwater collection system for the operating areas is fitted with an oil/water separator capable of retaining the possible hydrocarbons collected by the water.

The SWP will be provided with a produced water treatment system, a temporary well clean up filtering system, an open drain system, and a produced water disposal caisson, as summarized below. The SWP wastewater flow diagram is presented in Appendix D.

Produced Water Treatment System

The full well stream from the Domino and Pelican fields is separated at the SWP into produced gas and produced water via the inlet separator. The gas from Inlet separator flows to the dehydration units.

The liquid leaving the bottom of the Inlet Separator is passed to the produced water degassing drum where the residual gas which remains in the mixture of produced water, fines, and chemicals is removed via a low pressure (0.5 barg) flash separation. The flashed gas will be sent to an atmospheric vent and the remaining produced water effluent will be discharged from the platform to the Black Sea at 60 m depth via a disposal caisson.

The produced water degassing drum consists of a horizontal two-phase gas – liquid separator provided with internals. The internals will include inlet vane diffuser device, mist eliminator at gas outlet, water outlet Vortex breaker, and sand jetting internals.

Note that there is no hydrocarbon liquids content present in the liquid stream. The produced water degassing drum will facilitate removal of entrained sand via the liquid outlet and prevent deposition in the vessel. A sand jetting system is provided in the vessel to facilitate jetting and sand removal, as required. High pressure produced water from upstream Primary (Inlet) Separator will be used as sand jet water.

Produced water degassing drum operating pressure is 0.5 barg. Operating Temperature changes based on topsides arrival temperature of both Pelican and Domino fields. The average fluid arrival temperature to the separator is 25°C; however, the temperature could be as high as 30°C in the summer.

The degassing drum liquid level will be controlled by a level controller and control valves provided in the liquid outlet. Pressure is controlled by a pressure control located at the gas outlet line. Produced Water outlet flow will be measured by a Flow Indicator.

Alarms and trips are provided as required to facilitate safe operation of the system.

Relief Valves are provided on the vessel for over pressure protection which relieves to LP emergency vent header.

The produced water will be monitored at the produced water outlet line.

All the lines and equipment in the produced water treating system will be designed for the presence of sand content in the fluids and facilitate its removal through produced water disposal. This is to prevent potential accumulation, blockage, erosion and corrosion for lines and equipment.

Well Clean Up Filters System

A well clean up filtration system is currently being taken into consideration to be installed at the SWP for ensuring that the produced water discharge does not contain an unacceptable amount of hydrocarbon during well clean-up operation.

The degassing process is fitted downstream with well clean up vertical filters that will remove any potential remaining drilling fluid that might come out of the wells. These hydrophobic filters will trap the oil and sand while allowing the water to pass through. The filters are capable of filtering approximately 60 m^3/h and can remove any potential remaining oily drilling fluid (NAF) content to less than 10 ppm. The current design considers two filters. They will be used alternatively. While one is in use, the second one is in stand-by ready to be used when the first needs to be replaced. Once replaced, the new filter remains in stand-by until the working filter needs replacement, and so on. These filters are used until NAF has been removed from system. The well start-up effluent will be shipped to shore for treatment and considering this the need for using such filters might also be eliminated.

Open Drain System

An open drain system will be installed at the SWP to collect precipitation and any wash down water from the decked areas around the SWP. The majority of decking is open grating to maximize water run-off; however, around equipment which poses a hydrocarbon liquid or chemical spill hazard, secondary containment is provided through plate decking and berms.

Open drain water will be diverted to a sump tank having a capacity of 200 m^3. The tank has been dimensioned based on average rainfall and the total area of open drain system. The open drain containment tank is located in one of the jacket legs with a hydraulically driven caisson pump as the method of lifting the sump fluids for either discharge to sea or transfer to the maintenance support vessel for onshore disposal. No skimming system is provided based upon only limited volumes of liquid hydrocarbons, namely lube oil, being present and all utility chemicals being aqueous.

The tank will be provided with an oil and water separator and an analyzer which allows the discharge of the water fraction unless it exceeds the maximum 15 ppm hydrocarbon limit. The oily fraction will be removed periodically by vessel and shipped to shore for treatment by certified/authorized contractors.

The liquid level is continuously monitored to serve as a tertiary detection of platform leaks; equipment instrumentation is the primary detection mechanism and video surveillance is the secondary mechanism. If a large leak is detected, the entire volume is pumped out to the maintenance support vessel for onshore disposal

during the next planned maintenance trip. If no large leaks are detected between maintenance trips, any collected rainwater and wash-down water is put into recycle to verify the hydrocarbon content utilizing the analyzer on the caisson pump discharge. With confirmation of acceptable hydrocarbon content, the pump is then routed to the produced water caisson downstream of the sample point for combined discharge to sea with the produced water. The sump tank is pumped out from the bottom up until all of the aqueous layer below the gravity separated hydrocarbon layer has been removed. As the hydrocarbon content at the analyzer increases to the maximum acceptable level, indicating that the hydrocarbon layer is starting to reach the pump, discharge to sea is stopped and the remainder of the sump contents are pumped to the maintenance support vessel for onshore disposal at an approved wastewater management facility. If biocide of the system is required, it will be applied by pouring and flushing the biocide down one of the drains into the open drain tank, and the treatment will be performed just prior to pumping out the open drain tank contents to the maintenance support vessel to avoid high concentrations of biocide being discharged to sea.

Produced water Disposal Caisson

The remaining produced water resulting from the produced water degassing drum, rainwater pumped out by the open drain pump, and condensed water from reboiler vent knock out drum (see details in Section 3.6.3.1 – Glycol Regeneration) will be discharged to the sea via a vertical disposal caisson. The caisson is vented to atmosphere via a vent line located on the inlet line. The outlet to sea at the bottom of the caisson is anticipated to be below 60 m water depth.

The discharged produced water will be monitored for oil in water content, salinity, and other parameters as per requirements of a specific monitoring plan for operation phase approved by the competent authorities.

6.1.2 Air protection

6.1.2.1 Existing situation

Onshore

The onshore project site has currently agricultural land use and no industrial activities were identified within or in the closest proximity of the project site.

There are no existing industrial air pollution sources identified in the onshore project area. The main existing sources of air pollution from the onshore project area include:

- Road and rail traffic, especially during touristic season, through the existing road (DN39, communal road DC4, and local earth roads) and railway (Constanta – Mangalia railway line) infrastructure within the project area;
- Air traffic operations performed at Tuzla Airport; and
- Household heating (especially during cold season) and food preparation.

An existing non-hazardous waste landfill has been identified at approximately 5 km distance of the southern limit of the onshore project site. The landfill is located in Schitu village, Costinesti commune and is operated by SC IRIDEX GROUP.

The main odor sources present in Tuzla and Costinesti areas include animal farms and the existing non-hazardous waste landfill located in Costinesti. However, the distance between the project site and these sources is more than 5 km therefore the odor impact may be considered unlikely.

Offshore

The main existing activities in the Black Sea offshore area include shipping, fishing, and oil & gas exploration and production operations. The main sources of air pollution include power generators and transportation vessels (both ships and aircraft), as well as, flaring from the existing oil and gas offshore facilities.

Location of the future SWP is in the open sea, at approximately 160 km to the shore. There are no other platforms in operation/exploration in a 50 km radius from the SWP.

Fishing is limited to shallower water depths due to the capabilities of the majority of the used vessels. The Romanian fleet operates up to 30 to 35 marine miles (55 to 65 km) out in the Black Sea, or a water depth of approximately 60 m as a consequence of the characteristics of the vessels and their limited autonomy.

Shipping lanes crossing the export pipeline route consist of the following:

- Ships sailing between the Ukrainian harbors of Odessa, Chornomorsk (Illichivsk), Yuzhny and Nikolaev and the Bosporus area;
- Ships between Romanian harbors of Constanta, Midia and Galati and the Bosporus area;
- Ships between Bulgarian harbors of Varna and Burgas and Romanian and Ukrainian harbors.

Ships traveling to Romania are about 4,180 ships per year with 75% of them estimated to cross the pipeline corridor. The overall total (all vessel sizes and all ports from Romania, Ukraine, and Bulgaria) is 11,390 vessels in a year, or an average of 31 vessels per day. Each vessel arriving is assumed to leave again after a short period of time. A conservative estimate of the number of crossings for the production pipeline is therefore 2 times the number of harbor visits presented above, resulting in 22,780 crossings in a year, or an average of 62 crossings per day.

Existing Air Quality

There is no air quality monitoring network located within the onshore or offshore project site.

Constanta County operates seven continuous monitoring stations, measuring nitrogen oxides (NO_x), nitric oxide (NO), sulphur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), benzene, PM_{10}, $PM_{2.5}$ and ozone (O_3). PM samples are also obtained and analysed for heavy metals (e.g., Pb, Cd, Ni, As). The locations and the characteristics of each station are detailed in Table 22 and are spatially illustrated in Figure 10.

Table 22 – Automated monitoring network in Constanta County

European Code	Station Name	Type of Station	Type of station's Area	Pollutants Monitored	City	Distance to onshore site (km)
RO0131A	CT-1	Traffic	Urban	SO_2, NOx, NO, NO_2, CO, Benzene, PM_{10}, Heavy metals*	Constanta	31.8
RO0132A	CT-2	Background	Urban	SO_2, NOx, NO, NO_2, CO, O_3, Benzene, $PM_{2.5}$	Constanta	31.2
RO0133A	CT-3	Background	Suburban	SO_2, NOx, NO, NO_2, CO, O_3, Benzene, PM_{10}, Heavy metals*	Navodari	52.5
RO0134A	CT-4	Traffic	Urban	SO_2, NOx, NO, NO_2, CO, Benzene, PM_{10}, Heavy metals*	Mangalia	25
RO0135A	CT-5	Industrial	Urban	SO_2, NOx, NO, NO_2, CO, O_3, PM_{10}, Heavy metals*	Constanta	27.7
RO0136A	CT-6	Industrial	Urban	SO_2, NOx, NO, NO_2, CO, O_3, Benzene	Navodari	53.9
RO0137A	CT-7	Industrial	Urban	SO_2, NOx, NO, NO_2, CO, O_3, PM_{10}, Heavy metals*	Medgidia	60.8

Note: * Heavy metals (e.g., Pb, Cd, Ni, As) are analyzed from particulate matter (PM_{10}) samples.

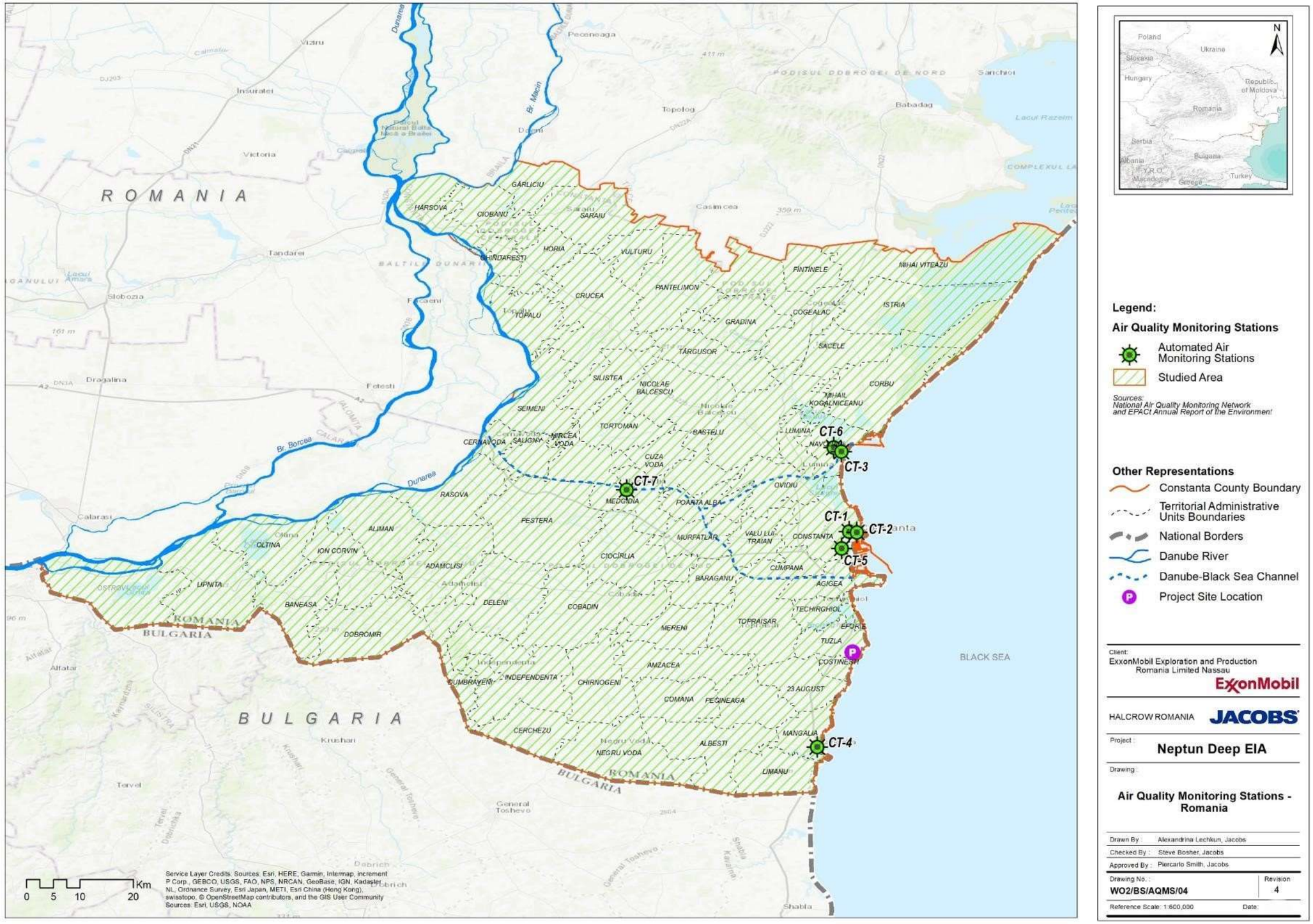


Figure 10 - Automated Monitoring Stations in Constanta County

The two closest monitoring stations to the onshore project site are represented by CT4 station located in Mangalia (25 km distance to the south) and CT5 station located in Constanta (27.7 km distance to the north). Both stations are located in urban areas, however the one from Mangalia is intended to monitor road traffic emissions and the one from Constanta to monitor the impacts of industrial activities. Both stations are located close to the seashore, 0.5 km and 1.5 km, respectively, similar to the onshore project site location.

Table 23 shows the annual mean concentrations of all monitored pollutants calculated for each station in 2020. The data weas obtained from the Constanta Environmental Protection Agency's Annual Air Quality Preliminary Report of the Environment, 2020.

Table 23 – Mean annual concentrations of all monitored pollutants per station in Constanta County (2020)

Station	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO (mg/m^3)	O_3 ($\mu g/m^3$)	PM_{10}^* ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	Pb ($\mu g/m^3$)	Ni ($\mu g/m^3$)	Cd ($\mu g/m^3$)	As ($\mu g/m^3$)
CT1	53.78	4.79	0.4	N/A	25	N/A	1.49	0.01	3.27	0.19	0.9
CT2	18.94	6.12	0.21	51.21	21.38	11.41	1.54	0.01	4.89	0.5	0.68
CT3	4.13	7.69	0.32	43.05	23.62	N/A	1.52	0.05	2.95	0.49	0.85
CT4	15.84	6.79	0.11	N/A	18.09	N/A	2.71	N/A	N/A	N/A	N/A
CT5	19.62	5.88	0.06	43.68	26.78	N/A	N/A	N/A	N/A	N/A	N/A
CT6	22.29	12.21	0.11	51.82	N/A	N/A	1.73	N/A	N/A	N/A	N/A
CT7	11.51	10.14	0.14	56.94	24.64	N/A	N/A	N/A	N/A	N/A	N/A

*Note: * Gravimetric method*

A summary of the air monitoring results recorded in 2020 at the monitoring stations from Constanta County, as presented in the 2020 Annual Air Quality Preliminary Report (http://www.anpm.ro/web/apm-constanta/raportare-anuala), as presented in summary below:

- SO_2: All monitoring stations recorded mean hourly concentrations below the human health hourly limit (350 $\mu g/m^3$). The mean daily concentrations were recorded below the human health daily limit (125 $\mu g/m^3$) and below the upper evaluation target limit (75 $\mu g/m^3$). No limits are provided by the legislation in force for annual average;

- NO_2: Five stations (from 7 stations) recorded mean hourly concentrations below the human health hourly limit (200 $\mu g/m^3$). Two exceedances of the hourly limit were recorded at the CT1 station, and one exceedance was recorded at the CT5 station. The annual mean concentration limit (40 $\mu g/m^3$) was exceeded at the CT1 station;

- CO: All monitoring stations recorded maximum daily concentrations (8 hours) below the human health limit (10 mg/m3). No limits are provided by the legislation in force for annual average;

- Ozone (O_3): All monitoring stations (five stations) recorded maximum hourly concentrations below the alert threshold (240 $\mu g/m^3$), respectively below reporting threshold (180 $\mu g/m^3$). The human health target limit (120 $\mu g/m^3$) was exceeded at the CT7 station in Medgidia (a total of 32 days with exceedances recorded) and CT6 station in Năvodari (2 days with exceedances recorded). No annual average limit is established for ozone;

- PM_{10} (gravimetric method): All monitoring stations (6 stations monitoring PM) recorded concentrations below human health annual limit (40 $\mu g/m^3$) and upper evaluation target (28 $\mu g/m^3$). Comparing to the previous reporting year (2019), exceedances of the daily limit were recorded at the CT1 station (11 exceedances), CT2 station (4 exceedances), CT3 station (11 exceedances), CT7 station (2 exceedances), and CT5 station (7 exceedances). The annual report highlighted that human health impact assessment studies are required to evaluate the impact of PM10 high values on human health and considering the climate conditions in Constanta County;

- $PM_{2.5}$: The human health annual limit (25 µg/m^3) and the upper evaluation threshold (17 µg/m^3) were not exceeded;

- Heavy metals (analyzed from PM_{10}): The annual mean concentrations did not exceed the annual limit, the upper and upper evaluation thresholds;

- Benzene (C_6H_6): All monitoring stations (5 stations monitoring benzene) recorded concentrations below the annual average limit (5 µg/m^3) stipulated by the legislation in force.

6.1.2.2 Sources of pollutants for air, pollutants, including odor sources

Construction Phase

The main sources of potential air emissions during onshore construction phase include:

- Execution of site preparation and civil works;

- Handling of the excavated soil, backfilling material, aggregates, and construction materials;

- Handling of construction waste (e.g., soil cuttings resulting from microtunnel execution);

- Construction site traffic related dust emissions;

- Emissions generated by vehicles and equipment engines used for construction of onshore facilities (NGMS, CCR, and other facilities), installation of onshore section of pipeline and FOC, and execution of shore crossing microtunnel;

- Emissions resulted from use of diesel generators for sourcing power to the construction facilities and equipment;

- Emissions from pre-commissioning operations (welding, concrete coating, painting, etc.) performed on site;

- Emissions generated by road traffic that will take place to transport equipment, aggregates and other construction materials to the construction works sites.

The main sources of atmospheric emissions during offshore drilling/construction/installation/commissioning include:

- Fuel combustion (diesel fuel, aviation fuel) related emissions from construction/installation vessels and barges used to support drilling/construction and installation/commissioning works and helicopters used to transfer personnel offshore during these phases;

- Emissions resulted from offshore power/heating generation (e.g., drilling rig, support vessels and barges, portable generator used to provide power for the initial startup of the SWP);

- Emissions from welding operations performed during pipeline and SWP installation.

The main potential air pollutants released during the construction activities including:

- Nitrogen oxides (NO_x), sulfur dioxide (SO_2), carbon monoxide (CO), carbon dioxide (CO_2), particulate matter (PM), heavy metals, and hydrocarbons, as a result of the internal combustion engines of the vehicles and equipment used for performance of drilling, construction and installation, and commissioning works;

- Particulate matter (dust) due to earthwork movements (site clearance, soil excavation, backfilling), traffic, handling of construction materials (soil, mineral aggregates, and construction material) and waste (e.g., soil cuttings resulted from microtunnel execution);

- Heavy metals and gases from welding processes;

- Volatile organic compounds (VOC) from painting operations.

Operation Phase

The main sources of potential air emissions and pollutants during operation phase of onshore facilities include:

- Diesel fuel related emissions from the back-up diesel generator used to provide power to the CCR and NGMS;

- Emissions from mobile sources inside the onshore project site (e.g., vehicles used by the operators and visitors at the CCR and NGMS sites);

- Emissions from regular maintenance operations at the NGMS and CCR sites (e.g., welding), if applicable;

- Emissions from HVAC systems installed at the CCR.

An atmospheric vent stack located within the fenced NGMS boundary will allow scheduled and planned venting of NGMS gas piping.

During the operation phase of the offshore infrastructure, the main air emissions are associated with:

- Energy generation (main power gas turbine generators, gas driven essential service generator, temporary diesel generator transported at the SWP used for commissioning and initial startup of the SWP or for back up to main and essential power generation); the main pollutants are NOx and CO (as a result of natural gas combustion);

  Emissions from the relief, blowdown, and flare system installed at the SWP: The first function of the flaring and venting system is to safely dispose of low-pressure gas from the process (mainly TEG regeneration). The second function of the flaring and venting system is to safely release high pressure gas in case of non-routine events, e.g., if the flow is blocked in the export pipeline, or in case of upset in the process. These releases are for short duration only and may happen a few times per year.

  There are no continuous high-pressure sources to the flare or vent on the platform. Direct emissions of methane (CH_4) during venting represent GHG emissions;

- Diesel fuel combustion related emissions generated by the operations and maintenance support vessels: the emissions are specific for the Diesel fuel burning in internal combustion engines and the main pollutants are represented by NO_x, CO, SO_2 and particulate matter;
- Aviation fuel combustion related emissions generated by the helicopters used for transportation to/from the SWP;

- Emissions from regular maintenance operations at the SWP and offshore infrastructure (e.g., welding), if the case;

- Emissions from HVAC system installed at the SWP.

6.1.2.3 Installations for the retainment and dispersion of pollutants in the atmosphere

No specific installations for the retainment and dispersion of pollutants in the atmosphere are anticipated to be provided during construction phase. The drilling/construction/installation vehicles and equipment will be controlled to ensure that they are compliant with the applicable air regulations.

During operation phase, no gas odorization equipment (mercaptan equipment) will be included at the NGMS site.

An onshore vent stack and an offshore relief, blowdown, and flare system will operate during production phase. A summary description of these facilities is presented in the paragraphs below.

Onshore Vent Stack

There will be no continuous venting of gas at the NGMS. Scheduled and planned maintenance venting of NGMS gas piping will be through the atmospheric vent stack located within the fenced NGMS boundary.

The vent system at NGMS enables safe disposal of gas inventory and allows depressurization of NGMS piping to 6.9 bars within 20 minutes.

The vent is designed as a 10 m high stack with 12-inch (305 mm) diameter. The height and diameter of the vent are specified to minimize adverse visual impact of NGMS metering station.

The vent will be located away from overhead electrical lines and ignition sources and designed to ensure proper dispersion of vented gas. The vent stack will be at a minimum distance of 25 m from equipment and fence line.

Offshore Relief, Blowdown, and Flare System

A relief, blowdown, and flare system will provide means for the safe disposal of hydrocarbons released from the production facility via pressure safety valve discharge, emergency depressurization, manual venting operations, and controlled release to flare. The relief, blowdown, and flare system to be installed on the SWP includes:

- Relief and Blowdown Vent System collecting discharge of process pressure safety and blowdown valves;
- Low Pressure (LP) Flare System collecting discharge of process pressure control valves;
- Low pressure atmospheric relief vents.

Relief and Blowdown Vent System consists of:

- A High Pressure (HP) Vent collection header, designed to collect relieved fluids and blowdown fluids from systems with a design pressure of 42 barg (in general) or higher. The Blocked Outlet of Primary Separator Scenario is the controlling scenario for sizing of the HP Vent Header;
- A LP Vent collection header designed to collect relieved fluids and blowdown fluids from selected systems with a design pressure less than 42 barg. The Gas Blow-by Scenario from Primary Separator to Degassing Drum controlling scenario for sizing of the LP Vent Header;
- A Vent Scrubber for separation of liquids from relief loads and associated pump. The Gas Blow-by Scenario from Primary Separator to Degassing Drum based on the smaller level control valve is the controlling scenario for sizing of Vent Scrubber;
- A Vent Header from Vent Scrubber to the Vent Stack / Tip. The Total Power Failure / Instrument Power Failure Scenario is the controlling scenario for sizing of the Vent Header;

- An Emergency Cold Vent Stack / Tip located at the end of the Vent Header (Boom) with associated fitting/components to detect incidental ignition. Total Power Failure / Instrument Power Failure is the controlling scenario for the Vent Stack / Tip design, and for the boom length based on thermal radiation in case of incidental ignition;

- A nitrogen snuffing system provided for use after potential incidental ignition, i.e., lightning. Snuffing system sizing criteria based on normal platform operation with produced water drum PSV – pressure safety valve leaking or failing open.

LP Flare System consists of three components as follows:

- LP Flare collection header designed to collect gas discharges from pressure reducing valves in continuous service. The Total Power Failure/Instrument Power Failure Scenario is the controlling sizing scenario for sizing of the LP Flare Header.

- LP Flare Stack/Tip designed to burn the continuous gas releases from the platform to comply with local environmental emission regulations. LP Flare Tip shall maintain flame stability, minimize burn-back, reduce flame pull-down, and meet upstream conditions and requirements for back pressure. LP Flare Tip includes continuous burning pilots. The Total Power Failure/Instrument Power Failure Scenario is the controlling sizing scenario for sizing of the LP Flare.

- Automatic High Energy Ignition to be used as the primary ignition source for flare pilots with a Flame Front Generator as back-up.

Low pressure atmospheric relief vents include the jacket legs PSVs, produced water caisson vent, chemical tank PSVs and lube oil tank vents.

6.1.3 Protection against noise and vibration

6.1.3.1 Existing situation

6.1.3.1.1 Onshore

6.1.3.1.1.1 Existing noise sources in the project area

The site proposed for the onshore facilities of the Project is not located in an area with existing significant fixed noise sources. The neighbouring areas are mainly rural and touristic areas, and the main economic activities are represented by agricultural activities, small shops, accommodation facilities and restaurants. Many of the touristic facilities have a seasonal, temporary activity, being active mainly during the summer season.

The main existing noise sources in the project area are represented by the transport infrastructure: roads, railway, and aerodrome.

The closest major road to the onshore project site, with noise maps available according to Government Decision - GD no. 321/2005 (*republished), is the National Road 39 (DN39), located to the west of NGMS site, at approximately 1.8 km distance. In the area there are also a number of secondary roads (county, communal and local). According to the Strategic Noise Map for DN39, available on CNAIR web site, the noise levels from the national road range from more than 75 dB(A) at the road level to less than 35 dB(A) at approximately 400 m.

The closest railway from the onshore project site is represented by the Constanta – Mangalia section, which crosses the Project site, being located at the East border of the NGMS. For this railway section noise maps are not required by the Environmental Noise Directive (END), and noise measurements were not identified in publicly available sources. Railway noise as opposed to that from a busy road is not a continuous noise source type, but depending on the rail traffic, it is characterized by discrete noise events associated with train passages.

The closest airport from the project site, Tuzla Private Airport (also known as Tuzla Aerodrome), is located to the north-west of the onshore project site at approximately 2 km from the NGMS. Tuzla Private Airport is a small airport for charter aircraft with an area of 36 ha. For this airport noise maps are not performed, and noise measurements were not identified in publicly available sources.

Other important noise sources to be considered for the characterization of the existing situation are the industrial sources. No significant industrial noise sources were identified in the vicinity of the project site location. The study area extended approximately 4 km from the onshore project site location, within Tuzla and Costinesti localities. As previously mentioned, the neighbouring areas are mainly rural and touristic areas and the main economic activities are represented by agricultural activities, small shops, accommodation facilities and restaurants.

At a distance of approximately 5 km south from the onshore project site location, in Costinesti Administrative Territorial Unit, Schitu village, it is located a municipal waste landfill. According to the Site report for this landfill, available on EPA Constanta website, the A-weighted equivalent continuous sound level, LAeq measured on the northern border of the landfill site, near the main gate, have recorded values of 60.2 dB(A) and 62.8 dB(A) measured in 2014 and 2015, respectively. Given the large distance between this facility and the onshore project site location, the landfill activities are unlikely to influence the ambient noise level at the project site.

Significant economic activities in terms of noise generating activities are located in Mangalia and Constanta municipalities, at large distances from the onshore project site.

6.1.3.1.1.2 Noise sensitive areas

According to *Order no. 119/2014 for approval of Norms of hygiene and public sanitation regarding the living environment of the population,* protected territory is a "territory in which exceedance of maximum admissible concentrations of physical, chemical and biological pollutants from environmental factors is not allowed; it includes residential areas, parks, nature reserves, areas of balneo-climatic interest, areas of rest and recreation, social-cultural institutions, educational institutions and medical institutions".

In order to identify Noise Sensitive Areas (NSA) near the onshore project site location, beside the field surveys, there were analysed different GIS resources including satellite images, topographic maps, and vectorial datasets such as buildings and residential areas.

The approximate distances between the identified NSAs and the project site boundary are presented in Table 24.

Table 24 - Closest noise sensitive areas from the project site

Type of NSA	Name	Approximate distances to the Project site (km)	Applicable noise limits dB(A) [1]	
			Daytime (07:00 - 23:00)	Night-time (23:00 - 07:00)
Residential areas	Costinesti	0.1	55 50[2]	45 40[2]
	Tuzla	1.6		
Hotel	Costinesti	2.1		
School	Tuzla	2.7		
Church	Tuzla	2.7		
Natural reserve	Techirghiol Lake	5		

[1] according to Order no. 119/2014 noise limit criteria.
[2] applicable noise limits to be correlated with the results of the baseline measurements. In cases where an objective will be located in an area in the vicinity of a protected territory where the background exterior noise before the objective construction does not exceed 50 dB (A) during the day and 40 dB (A) during the night.

6.1.3.1.1.3 Noise measurements in the project area

In order to characterize the existing noise levels in the project area (the baseline conditions for existing noise levels at the project site, as well as the noise conditions for the sensitive receptors in the area), noise measurements were performed in conformity with the Romanian and European standards.

The noise survey locations have been defined within a 2 km distance around the onshore project site location. The noise baseline measurements included sampling at the NGMS onshore parcel boundaries and in the vicinity of the closest sensitive receptors. The measurements results have showed that the majority of the baseline measurement locations are within the applicable noise limit with some of the measured noise levels in the area exceeding the maximum permissible levels. The background noise levels in the area are mainly influenced by the traffic on the national road DN 39, as well as by the traffic on the railway. The results at the sensitive receptors were also influenced by domestic activities carried out in the respective areas (e.g., animal husbandry, construction activities).

According to Order 119/2014, in cases where an objective will be located in an area in the vicinity of a protected territory where the background exterior noise before the objective construction does not exceed 50 dB (A) during the day and 40 dB (A) during the night, the maximum permissible levels will be 50 dB (A) during the day and 40 dB (A) during the night. Therefore, for the sensitive receptors (residential) where the background noise does not currently exceed 50 dB (A) during the day and 40 dB (A) during the night, the activities from the project will meet the regulatory noise requirements during its execution and operation.

6.1.3.1.2 Offshore

There is no noise and vibration level monitoring network located within the offshore project site. The main existing source of noise and vibration within the offshore project area is represented by the traffic of transportation and fishing vessels. The vessels equipment (e.g., power generators, pneumatic equipment, cranes) represent an existing source of noise in the offshore project area.

Aircraft traffic is also representing a source of noise in the offshore project area.

6.1.3.2 Noise and vibration sources

6.1.3.2.1 Onshore

During the construction phase, the noise sources will have a temporary character and duration, which they will manifest locally and intermittently. The main noise sources will be represented by:

- The operation of equipment used during the construction works (e.g., transport vehicles, heavy trucks, excavators, cranes, bulldozers, microtunnelling equipment, diesel generator) – engines functioning, handling of materials and equipment (e.g., handling of pipes);
- The excavation activities, respectively earth loading and unloading;
- The traffic on the construction site area, working fronts and on the access roads.

Based on the current information, it is estimated that during the construction works the following main equipment will be used:

- Earthmoving equipment used to prepare the terrain: bulldozers (~ 115 dB);
- Excavating equipment: excavators (~ 115 dB);
- Compacting equipment: compactors (~ 105 dB);
- Cranes (~ 95 dB);

- Tunnel boring machine (TMB) (~ 90 dB);
- Heavy trucks: several vehicles/day (~ 110 dB);
- Diesel generators (~ 78 dB).

The construction works will represent an important noise source, with the potential of significantly affecting the neighbouring sensitive receptors for a limited period of time. The noise modelling for a worst-case scenario (a maximum load with equipment and simultaneous operations) and a normal scenario will be presented in the subsequent stages of the procedure for obtaining the Environmental Agreement.

During the operation phase of the onshore NGMS, the following noise sources will be present on the site:

- Functioning under normal operation conditions:
    - Flow control valve – ~ 77.5 dBA;
    - On/Off valve – ~ 67.5 dBA;
    - Motor operated valve – ~ 50.2 dBA each;
    - Check valve – ~ 51.0 dBA;
    - Shutdown valve – ~ 50.2 dBA;
    - Shutdown valve – ~ 44.9 dBA;
    - Flow conditioner – ~ 67.8 dBA;
- Functioning in emergency cases:
    - Restriction orifice type 1 – ~ 121.1 dBA;
    - Restriction orifice type 2 – ~ 122.3 dBA;
    - Restriction orifice type 3 – ~ 111.1 dBA;
    - Essential generator package – ~ 78 dBA.

During the operation phase the noise sources will have a continuous character. It is not expected that these sources would significantly affect the neighbouring sensitive receptors. The noise modelling for the normal functioning scenario will be presented in the subsequent stages of the procedure for obtaining the Environmental Agreement (EIA Report).

6.1.3.2.2 Offshore

The main sources of noise and vibration during near shore and offshore construction phase are represented by:

- Well casing installation and performance of drilling operations;
- Execution of dredging/trenching and backfilling works;
- SWP installation (e.g., jacket piling), production pipeline and flowlines installation and other subsea equipment installation;
- Drilling platform, support construction/installation vessels, helicopters, dredging and trenching equipment, and other construction/installation equipment;

- Drilling platform and support vessels related equipment (e.g., power generators, cranes, etc.).

The main potential impacts associated with the noise and vibrations during the offshore operation, are represented by:

- Equipment and operations at the SWP;
- Traffic and equipment of the operations & maintenance vessels;
- Helicopter traffic.

6.1.3.3 Arrangements and equipment for the protection against noise and vibration

6.1.3.3.1 Onshore and shore crossing

During the construction phase will be implemented technological and operational measures for reducing the noise. These are presented in Section 7 of this Presentation memorandum.

During the operation phase of the onshore NGMS, the following equipment for the protection against noise and vibration are foreseen:

- The Flow control valves will be supplied with Whisper Flow III noise trims, which typically reduce noise by 30 dBA;
- The Flow conditioners will be supplied with noise attenuators, which typically reduce noise by 20 dBA;
- The emergency generator will be supplied with insulating case and vibration absorbers.

6.1.3.3.2 Offshore

The main measures for protection against noise and vibration during construction phase include:

- Develop a noise management plan to be implemented during execution of drilling, construction/and installation works;
- Implementation of ACCOBAMS (The Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea, and contiguous Atlantic area) methodological guidance on underwater noise mitigation measures that are relevant for different types of project operations;
- Use of vessels compliant with applicable marine conventions/regulations (e.g., MARPOL Convention);
- Use of equipment and machinery technically compliant with the best available existing technologies in terms of noise levels;
- Periodic technical checks of vehicles and equipment used to carry out the works;
- Reducing the speed of vessels if marine mammals are present in the area.

The main measures for protection against noise and vibration during operation phase include:

- Use of low noise generation equipment at the SWP;
- Apply administrative controls in the high noise areas at the SWP (e.g., lube oil coolers, air cooler fans, vent KO pump, hydraulic power unit, etc.), such us:
    - Designate the highly impacted areas as restricted area and erect a proper signage such as ''high noise area'';

- Install visual alarm system for emergency warning purpose;
- Limit personnel duration of stay at highly impacted areas;

- Delivery of health, safety, and environmental awareness training to the operations and maintenance teams and instruct the personnel to wear hearing control protection device where mandatory;
- Periodic technical checks of operations/maintenance vessels and helicopters used for transport of personnel;
- Reducing the speed of operations and maintenance vessels if marine mammals are reported in the area.

6.1.4 Protection against radiation

6.1.4.1 Radiation sources

The natural radioactivity of the environment is the major source of internal and external irradiation of the human body. Natural radioactivity is determined by the presence of radioactive substances in the air, water, soil, vegetation, terrestrial animal organisms that naturally exist since ancient times, to which is added cosmic radiation. The natural reference exposure is 2.4 millisievert (mSv) / year, which is internationally accepted. The two components of natural exposure are: external exposure, 0.85 mSv / year and internal exposure, 1.55 mSv / year. The main and constant factor of human body irradiation is the presence in the free atmosphere of the radioactive gases Radon (Rn-222) and Toron (Rn-220), as well as their descendants.

According to the Environmental Factors Status Report for 2019 prepared by Constanta Environmental Protection Agency, as in the previous years, the artificial radionuclide present in the environment was Cs-137 (identified in air samples, raw water, spontaneous vegetation, uncultivated and arable soils samples collected in Constanta County). It was released into the atmosphere during the Chernobyl accident, was deposited on the ground and has resided there since 1986.

The standard program and the supplementary / special surveillance program in the area of influence of Cernavoda Nuclear Power Plant had as its main purpose the estimation, based on the measurements, of the additional exposure of the population as a result of the functioning of the nuclear plant. The analyzes revealed that in the environment there is no presence of artificial radionuclides in the range of emitters having as its source emissions from the Cernavoda nuclear power plant located at approximately 60 km from onshore project site.

A radionuclide of interest is tritium, detected in precipitation samples, drinking water and surface water. Tritium (H-3) is an unstable isotope of hydrogen, beta emitter (average energy of beta radiation emitted is 5.7 keV and maximum energy of 18.6 keV) with a physical half-life of 12.3 years and a biological half-life of 10 days.

Tritium exists in the environment as a natural radionuclide. It is formed in the upper atmosphere, through the interactions of cosmic radiation with elements in the upper layers of the atmosphere.

As an artificial radionuclide, H-3 is present in the environment due to the operation of nuclear power plants, being one of the activation products resulting in nuclear processes.

The main routes of exposure to tritium are the incorporation of tritiated water by ingestion and by inhalation / absorption through the skin and the incorporation of organically bound tritium by ingestion of food.

The additional exposure of the population in the area as a result of the operation of Cernavoda Nuclear Power Plant is insignificant compared to the natural exposure and is in accordance with national and international regulations on the exposure of the population as a result of nuclear practices.

During the project life, the following main radiation sources are considered:

- Use of sealed radioactive sources contained in instrumentation such as level measurement devices during drilling (e.g., geophysical investigations), construction and operation phases;
- Welding operations during construction/installation (e.g., during preparation of pipeline for installation at the stringing yard, installation of offshore pipelines and SWP, etc.) and operation (e.g. welding during performance of regular maintenance works);
- Thermal radiation resulting from the atmospheric vent system provided on NGMS to allow safe disposal of hydrocarbons released from the facility as a result of emergency depressurization and manual venting operations;
- Thermal radiation from the flaring and venting system installed at the SWP.

6.1.4.2 Devices and equipment for radiation protection

During the project life, the following measures should be applied for radioactive radiation protection:

- Sealed radioactive sources shall be stored securely, tracked during shipment, properly accounted for at all times, and disposed of safely in accordance with the regulations;
- Sealed radioactive sources shall be considered for use in process measurement instrumentation only when there is no other acceptable alternative;
- Safe access shall be provided by ladders, platforms, or other means as necessary so that sealed sources can be installed, maintained, and changed out in order to minimize the potential for radiation exposure and to provide a safe working platform;
- An inventory of all sealed radioactive sources and their locations shall be prepared in order to trigger tracking and safe keeping requirements;
- Each radioactive source shall have the capability of being locked in the shuttered position;
- Installation shall be carried out by properly trained and licensed personnel:
    - Only persons trained and licensed by the appropriate governing entity to mount, repair, relocate, and/or remove the part of the instrument containing the sealed radioactive source shall do so;
    - Proper warning signs shall be installed, and proper barriers used to ensure that unprotected and unauthorized personnel are not inadvertently exposed to radiation;
    - Personnel carrying out the installation shall wear thermo-luminescent dosimeters (e.g., radiation badges) and/or pocket dosimeters (real-time readout);
    - The instrument shutter shall be locked in the closed position (e.g., OFF position) during mounting on, relocation on, or removal from the process equipment.
- An area survey is required to ensure that proper barriers and warning signs are installed to ensure that unprotected and unauthorized personnel are not inadvertently exposed to radiation;
- Persons shall not enter any vessel that contains a nuclear radioactive source or has an attached nuclear gauge unless the shutter has been locked in the closed position;
- A device containing a sealed radioactive source shall be labeled and identified with signs;

- Periodic checks shall be made as required to ensure that the sources are in place, their mounting remains firm, and the shutters are operational. A wipe leak test is required, usually every 6 months, to ensure that the housing remains sound and that no unexpected leakage is taking place;

- Maintenance of the sealed radioactive source shall only be carried out by properly trained and licensed persons employed by the nuclear gauge manufacturer;

- Before anyone may enter a pipe or vessel served by instrumentation containing a sealed radioactive source, the source shall first be retracted and locked out, a radiation survey shall be performed;

- Sealed radioactive sources are hazardous waste and shall be disposed of at approved certified facilities. The preferred method of source disposal is to return it to the manufacturer;

- Manufacturer recommendations and the requirements of all national and relevant international agreements shall be followed;

- The following are essential to handling and tracking of radioactive sources:

    - Sealed radioactive sources shall be controlled items;

    - Sealed radioactive sources shall be kept securely and their location known at all times;

    - A proper chain of custody shall be established and recorded;

    - Sealed radioactive sources shall be handed off to persons authorized to receive them;

    - Any person or organization transferring sealed radioactive sources shall first determine that the person or organization receiving the sources has proper procedures in place that ensure their safe handling;

- Welding activities (e.g. such us for preparation of pipeline instalation) will be carried out inside special sheds or tents.

6.1.5 Soil and subsoil protection

6.1.5.1 Existing situation

6.1.5.1.1 Onshore

Local Topography

The topography of Tuzla commune is generally flat with slopes to the sea (east) and north (towards Lake Techirghiol) with a maximum elevation of 60 m above Black Sea level (Baldaran Hill). In the eastern part, the boundary is the shore cliff that has the highest height in the area of Cap Tuzla, with lower cliff heights to the north (Eforie) and to the south (Costinesti).

Geomorphology

From a geomorphology point of view, the onshore project site is located within the Southern Dobrogea Plateau, and more specifically within the subunit called Mangalia Plateau. Similarly, to the Tuzla commune, the project site has a mainly flat topography, with the highest elevation recorded on the western part of the site and slope inclination decreasing towards the east.

Geology

Local geology is represented mainly by topsoil (thickness up to 1.00 m), followed by Pleistocene loess deposits with thicknesses up to 15.00 m, with reddish intercalations indicating layers of paleosol from interglacial periods. Clay deposits are developed on Sarmatian limestones and associated with loess formation; the transition developed gradually thus it is hard to identify. Rock formation is represented by karstified Sarmatian bioclastic limestone, which starts below 20.00 mbgl (as encountered within the boreholes drilled during the 2019 geotechnical investigation campaign performed on site).

Soils

The onshore project site area was subject to an assessment of pedological conditions and soil quality classes, as part of Pedological Study no. 341/16.06.2021 prepared by the Office for Pedological and Agrochemical Studies (OSPA) Constanta. According to the findings of this study, the onshore project site is represented by soils type Lime rich Chernozem part of the Cernisoils Class and are classified under quality class III (third).

The soil classification under a quality class is made based on a quality score. To establish the quality score of the soil, 3 soil profiles were executed from which 15 pedological samples were collected from the project site. The samples collected were analyzed in the OSPA Constanta laboratory for the following parameters: granulometry, pH, salt content, carbonate content, mobile phosphorus, and mobile potassium. According to the analyzes results, within the analyzed area (lands identified under the cadastral numbers 109659, 109729 and 100819) the soils are part of the Cernisols Class - Calcareous Cernozem of black-brown color, with a grainy, angular, loose structure, reaching a thickness of 55 - 60 cm, with a humus content of up to 3.5 - 4 %.

For the onshore project site, historical potential sources of contamination could be represented by the common practice of using pesticides and fertilizers to amend the land quality for agricultural purposes.

6.1.5.1.2 Offshore

Geomorphological description of the Romanian coastal area and the adjacent inner and outer shelf

Shelf Geomorphology

The continental shelf of the Black Sea (29.9% of the bottom surface) represents the submerged prolongation of the continental mass. Its maximum extent is reached in the North-Western part of the Black Sea, where its maximum width reaches approximately 200 km. Here, its depth varies from 0 to 100 m, sometimes reaching 160 m. In other parts of the sea its depth diminishes to less than 100 m, with a width of 2.2-15 km, appearing as a narrow, intermittent band near the Caucasian and Anatolian coasts.

The North-Western continental shelf occupies the Southern part of the Scythic Platform, belonging to the East-European Paleozoic and Epi-Paleozoic; it is characterized by a gentle slope and its relief is represented by a flat erosional plain. Valleys and canyons, most of them representing submarine prolongations of the rivers, complicate the flat relief. The sea level changes occurring in different geological periods resulted in the local formation of submarine terraces or small hillocks, separated by depressions.

Bathymetric, seismic - acoustic, and sedimentological studies performed by GeoEcoMar on the Romanian Black Sea shelf allowed the identification of three distinct units: the littoral zone, the inner shelf, and the outer shelf. Apart from these sections, a very distinctive unit can be pointed out: the Danube Delta.

Inner shelf

The Romanian Black Sea inner shelf is very well defined, having a width of 10–15 km in the northern area and about 1–5 km south of Constanta. Modern sediments locally mask the relict geomorphologic structures. Northwards of Cape Midia, the bottom slope varies between 1.1 ‰ and 4.0 ‰, while southwards of Constanta section, the relict structures are better preserved, especially the submarine terraces, where the slope is steeper (1.6 – 6.0 ‰). Eastwards, the inner shelf boundary is marked by the 27–30 m isobaths.

On the inner shelf, sedimentary processes are dominated by the shift of fair (fine sediments) and stormy weather (sandy sheets). Considering its hydrodynamic and sedimentological structures, the Danube Delta front is the equivalent of the inner shelf unit.

Outer shelf

From its western edge, along the 27–30 m isobaths, the outer shelf develops a very gentle slope (below 1.0 ‰) extending eastwards to its limit placed at about 120 m.

Sedimentation rates are significantly reduced on the outer shelf surface. The most spectacular structure is the Viteaz Canyon, genetically connected with the Danubian Sfantu Gheorghe Branch.

The Danube Prodelta of the outer shelf displays all the known types of deformation processes for non-consolidated sediments.

Relict geomorphologic structures

The Romanian Black Sea shelf reveals the presence of some positive and negative geomorphologic structures, witnesses of older coastal and terrestrial environments, such as submarine terraces, barrier beaches, river valleys, etc.

The internal, western zone of the Romanian shelf stands out as the shallow marine area, which receives clayey and silty sediments supplied by the Danube River. Moving as suspended load, the sediment flux goes beyond the area in front of the Danube Delta but does not reach the eastern external shelf zone. Under the influence of the dominant currents the clayey sediment flux moves southward toward the Bulgarian shelf, keeping closer to the shoreline.

Situated outside the area covered by the Danube fed sediment flux the external, eastern part of the Romanian continental shelf represents an area practically deprived of clastic material. Within this sediment-starved shelf area the condensed sediment accumulation is of biogenic origin, consisting of organic pellets on relict sediments or shell concentrations.

The Danubian sediments seldom reach the shelf area north and northwest of the Danube mouths. Dniester and Dnieper, the main rivers north of Danube Delta, are themselves not significant suppliers of sediment for the north-western Black Sea shelf. These Ukrainian rivers discharge their sedimentary load into lagoons, separated by beach barriers from the Black Sea. Consequently, the sediment-starved status characterizes almost the whole Black Sea continental shelf west of the Crimean Peninsula.

The continental shelf continues with a rather steep continental slope with a 5 - 8° inclination in the North-Western part of the Black Sea and 1 - 3° near the Kerch Strait, which represents 27.3% of the bottom surface. Occasionally, the slope gradient may be as high as 20 - 30°. The continental slope is also incised by many submarine valleys and canyons.

The shelf break, marking the transition from the continental shelf to the continental slope, roughly corresponds to the 100 m isobath, reaching 130 m offshore Crimea and Kerch Strait and 150-170 m in the area of the Canionul Viteaz.

Between the foot of the continental slope and the abyssal plain, there is the piedmont, the greatest geomorphological unit – 30.7% of the bottom surface. The piedmont is represented in the North-Western Black Sea by the massive sediment accumulations from two abyssal fans, the abyssal fan of the Danube River and the abyssal fan of the great Ukrainian rivers – Dnieper, Dniester, and Bug. The piedmont descends to approximately 2000 m water depth and has a gradient of 1:40 – 1:1000. Its continuity is interrupted by structures resembling small hillocks.

The centre of the Black Sea depression, at depths greater than 2000 m, is occupied by an abyssal plain. This has a gradient of less than 1:1000 and descends slowly to a maximum depth of 2212 m, South of Yalta. The

abyssal plain is better developed in the Eastern part of the basin, probably as a result of an increased activity of the turbidity currents. The actual sediments are represented by the coccolythic ooze, overlaying sapropelic sediment.

South Dobrogea Coast and Shelf Geology

The three main tectonic units from Dobrogea and the Pre-Dobrogea Depression are separated by major crustal faults. The Sfantu Gheorghe Fault is the tectonic border between the Pre-Dobrogea Depression and North Dobrogea. Bounded southward by the Peceneaga-Camena Fault, North Dobrogea represents the eastern half of the North Dobrogea Cimmerian Orogen, where the Hercynian basement and its Mesozoic cover are exposed. Central and South Dobrogea represent the exposed parts of the East Moesia, the eastern part of the Moesian Platform. Central Dobrogea is an uplifted block between the Peceneaga-Camena and Capidava-Ovidiu Faults, exposing the Late Neoproterozoic and Ediacaran basement of the Moesian Platform and few erosional remnants of its Mesozoic platform cover. Paleozoic deposits are missing from Central Dobrogea, due to erosion or non-deposition. South Dobrogea is a sunken East Moesian block, bounded by the Capidava-Ovidiu and Intramoesian Faults and exposing only the Mesozoic-Cenozoic Moesian cover.

Geological Considerations – Seafloor

Seafloor and near-seafloor faults are generally restricted to the ridge and graben areas. The production pipeline will cross at least three seafloor faults. The assessment of the faults shows they are not seismically active but rather growth faults which move approximately 0.1 to 1.7 mm/yr.

Surficial mass transport deposits occur throughout the slope and infield. These deposits are generally buried by at least 3 m of normally deposited sediment, suggesting that the slope failures are relict and an increase in shear strength below 3 m below mudline. Gassy sediments are present in water depths less than 700 m.

Geotechnical Considerations

Geotechnical investigation performed in 2014 and 2017 in the offshore project area collected shallow geotechnical samples and performed in situ testing to establish soil properties for the shelf, slope, and infield areas.

The geophysical and geotechnical data were integrated to develop anticipated soil profiles for the slope and infield to define soil properties for foundation and pipeline design, including:

- Soil type encountered across the Upslope and Infield Areas are broadly conformable and are grouped into geotechnical units;
- Soil properties – shear strength, water content, unit weight, plastic limit, liquid limit, particle density, coefficient of consolidation.

At the boundary between onshore and near shore, there is an approximately 15 m high cliff next to a 30 m wide beach. The cliff is eroding approximately 0.3 m/year. Nearshore, the limestone outcrops. In some areas, the rock is covered by 0–5 m (locally 10 m) of gravel and sand, or clay. Water depths vary between 0 and 15 m.

6.1.5.2 Sources of pollutants for soil and subsoil

The main sources of potential soil and subsoil pollution during **onshore construction phase** include:

- Accidental leakage of fuels, oils, chemicals, and other liquids from construction machinery or vehicles, and equipment during execution of construction/installation works;
- Improper management of fuels and chemicals at onshore construction sites (NGMS construction site, microtunneling construction site, stringing yard, pipe storage area, etc.);

- Improper use, handling, and storage of materials (e.g., mineral aggregates, concrete, etc.);
- Land clearing, digging and excavation for construction of onshore NGMS and CCR sites, trenching, installation of onshore section of production pipeline and fiber optic cable, and microtunneling construction (e.g., execution of launch shaft and microtunnel);
- Inadequate storage of construction waste, as well as excavated soil or other wastes;
- Uncontrolled discharges of wastewaters;
- Air emissions due to construction vehicles that may lead, as a consequence of rain washing to potential pollution of soil and groundwater.

The main sources of potential seafloor sediments pollution during **offshore drilling, construction/installation, precommissioning and commissioning phase** include:

- Accidental fuel, oil, chemicals, waste, or other materials leakages from drilling platform and support vessels used during drilling, construction and installation, precommissioning, and commissioning works;
- Improper management and discharge of wastewater generated during drilling, construction/ installation, precommissioning and commissioning;
- Dredging/trenching and anchoring in the near shore and offshore areas;
- Inappropriate storage of dredged/excavated material (potential polluted) resulted from dredging/trenching operations;
- Inadequate quality of the material used for backfilling of the excavations/trenches;
- Sea floor installation of offshore infrastructure installation (e.g., production pipeline, flowlines and umbilicals laying, SWP jacket installation, etc.);
- Sea floor settlements of air emissions (e.g., dust) generated during drilling, construction/installation, precommissioning and commissioning phase.

The main sources of potential soil and subsoil pollution during **operation phase of onshore facilities** include:

- Improper use, handling, and storage of fuels and materials at onshore NGMS and CCR sites;
- Improper management of resultant wastes at onshore NGMS and CCR sites;
- Accidental fuels and oils or other materials leakages on soil during operations and maintenance;
- Uncontrolled discharges of wastewaters.

The main sources of potential seafloor sediments pollution during **operation and maintenance of offshore infrastructure**:

- Accidental fuel, oil, chemicals, waste, or other materials leakages from SWP and support vessels used for operations and maintenance activities;
- Improper management and discharge of produced water/wastewater at the SWP and support vessels used for operations and maintenance;
- Support vessels anchoring generating indirect disturbance of sea floor sediments;

- Sea floor settlements of air emissions (e.g., dust) generated during operation and maintenance.

6.1.5.3 Works and equipment for soil and subsoil protection

Onshore

Constructive measures will be implemented at the temporary construction works sites and permanent NGMS and CCR sites and these measures shall contribute to soil and subsoil protection. The main measures to be implemented will include:

- Proper management of topsoil resulting from site vegetation clearance during construction phase; the topsoil will be stripped and stockpiled separately from subsoil for future use in rehabilitation and revegetation;

- Proper storage and management in dedicated areas of excavated soil/drilling cuttings resulting from pipeline installation trenching, launch shaft and microtunnel construction;

- Improvement by desensitization to wetting of ground foundation (0.50 m thickness) at the temporary construction works sites and permanent NGMS and CCR fenced sites; the improvement of the ground foundation will include removal by digging on approximately 50 cm of the loess layer and preparing the ''loss pillow'' by reusing the reusing the material excavated with re-installation in successive layers of 15 - 20 cm thick after compaction;

- Installation of a waterproof geotextile, followed by successive layers of compacted ballast optimal (20 cm), compacted crushed stone (20 cm) and penetrated macadam (10 cm) at the construction works sites (NGMS and CCR construction site, microtunnel construction site);

- CCR fenced site will be provided with a concrete platform around CCR building that is framed by a monolith kerb placed on concrete foundation. The CCR platform full infrastructure includes a waterproof geotextile installed above the improved ground foundation, and successive layers of ballast optimal mixing (20 cm layer), crushed stone (20 cm layer), kraft paper and road concrete layer (20 cm).

- The NGMS technological platform installed within the NGMS fenced site and internal roads to NGMS site and Transgaz tie-in point site will be covered by penetrated macadam. The infrastructure will also include a waterproof geotextile installed above the improved ground foundation, and successive layers of ballast optimal mixing (20 cm layer), crushed stone (20 cm layer) and penetrated macadam (10 cm layer);

- All open surfaces inside NGMS fenced site (excluding technological platform) and block valve fenced site will be covered with crushed gravel;

Other measures to be implemented for soil and subsoil protection during construction and operation phases include:

- Daily checking on the condition of used vehicles, machinery, and equipment;

- Provision of doubled walled tanks and/or secondary containment around equipment that pose fuels, liquids, or chemicals spill hazards (e.g. fuel tanks used to supply the construction equipment, diesel generators, etc.);

- Proper storage of hazardous materials in dedicated indoor warehouses;

- Proper storage of chemicals (e.g. lube oils, grease, hydraulic fluids, and other products used for equipment and vehicles) in dedicated chemical-tight barrels which will be kept on site in minimal quantities;

- Temporary storage of construction waste (e.g. soil cuttings from microtunnel execution) on specially designed areas and disposal of construction waste through authorized operators;
- Proper management of all waste generated during construction and operation phases, including storage of waste in dedicated containers provided with lids, located in appropriate designated areas and periodical disposal thereof by an authorized operator;
- Proper management and disposal of wastewater generated during construction and operation phases;
- Implementation of mitigation measures for stockpiling management and dust control.

Offshore

The main mitigation measures to be implemented for sediments protection during project lifecycle include:

- Develop specific dredging execution plans and monitor turbidity levels;
- Use of dredging equipment that are appropriate to the depths and material types to be dredged;
- Removal and disposal of the dredge/excavated material only to approved locations and in accordance with the provisions of the dredging/trenching plans and regulatory requirements;
- Carrying out the drilling, construction and operation works in accordance with applicable marine environmental and safety regulations;
- Proper maintenance and regular checking of equipment and vessels to eliminate the possibility of any leakages;
- Immediately removing oil products accidentally leaking from operational machinery, by using absorbent materials, which will later be stored in special designated locations;
- Proper management of waste resulted from drilling, construction and installation, and operation phases;
- Proper management and storage of chemicals used during project lifecycle;
- Monitoring and disposal of wastewater streams resulted during project lifecycle in accordance with the provisions of regulatory permits/endorsements issued by the competent authorities.

6.1.6 Protection of terrestrial and aquatic ecosystems

6.1.6.1 Existing situation

6.1.6.1.1 Onshore

The information presented in this section is based on data extracted from scientifical resources relevant for the project area, as well as from the results of the site surveys performed for this project during the period 2018 – 2019.

6.1.6.1.1.1 Onshore Flora

To establish the presence and distribution of vegetation communities on and near the project site, the main spatial source used was the CORINE Land Cover (CLC) 2018 dataset. Land use classes that form the vegetation cover were selected for description using the latest CLC nomenclature (Kosztra et al., 2019). On and near the project site, the following land use classes were identified:

- 122 Road and rail networks and associated land (motorways and railways, including associated installations (stations, platforms, embankments, linear greenery narrower than 100 m);

- 142 Sport and leisure facilities (areas used for sports, leisure and recreation purposes. Camping grounds, sports grounds, leisure parks, golf courses, racecourses, etc. belong to this class, as well as formal parks not surrounded by urban areas);

- 211 Non-irrigated arable land (Cultivated land parcels under rainfed agricultural use for annually harvested non-permanent crops, normally under a crop rotation system, including fallow lands within such crop rotation. Fields with sporadic sprinkler-irrigation with non-permanent devices to support dominant rainfed cultivation are included);

- 222 Fruit trees and berry plantations (cultivated parcels planted with fruit trees and shrubs, intended for fruit production, including nuts, and the planting pattern can be by single or mixed fruit species, both in association with permanently grassy surfaces).

The CLC 2018 dataset did not indicate any natural or seminatural areas on and near the project site.

Field surveys of **flora and habitats** were carried out monthly, in accordance with the *Work Plan for the Onshore Biological Environment Baseline Study*, September 2018, prepared by EPC Consultanţă de mediu SRL under the Neptun Deep project. Vegetation at and near the project site was analyzed during all the appropriate seasons: serotinal <late summer> (August – September 2018), autumnal (September – October 2018), prevernal <early spring> (March – April 2019), vernal <spring> (April – May 2019), and estival <summer> (June – July 2019).

For the vegetation analysis, the method of longitudinal transects supplemented with the phytocoenological relevé (sampling plots) method (Cristea et al., 2004) was used. This method involved identifying the observed plant species and plant communities along a line whose length was determined according to the habitat complexity. In some cases, transects were on the edge of features (e.g., active agriculture field) because that is where the natural vegetation would be located. In other cases, transects were performed on the edge and internal to a feature (e.g., in abandoned agricultural land). For each plot (relevé), the abundance-dominance (AD) index of each species was recorded, representing the spatial relationships between the phytocoenoses that defined each habitat type.

For the taxonomic identification of the plant species, the most recent publications on plant identification published in Romania were used (Ciocârlan, 2009, Sârbu et al., 2013), as well as references regarding the flora of Romania (Flora României, Săvulescu et al., 1952-1976, vol. I-XIII). The identified phytotaxa were grouped according to the systematic classification in use, included in the synthesis papers on the vegetation of Romania (Sanda et al., 2008).

During the field surveys, a total of 157 plant species (both spontaneous and cultivated) were identified on and near the project site. The species were grouped into the representative families and included in the characteristic order. The order with the largest proportion of species was Asterales (20%) <an order of daisy-like flowering plants>, likely due to anemochory (wind dispersal) assisted by pappus[1]. The order Poales <an order of flowering plants including grasses, bromeliads and sedges> was also well represented, registering 13%. This is probably because the flowers of many species are wind pollinated. The largest number of synanthropic[2] plant species were in the following families: *Asteraceae, Brassicaceae, Fabaceae, Rosaceae, Chenopodiaceae.*

Vegetation was sampled in 9 zones corresponding to different land use classes, differentiated by the vegetation communities that define them. These zones are:

[1] Pappus is a downy, bristly, or other tuft like appendage of the achene of certain plants, as for the dandelion and the thistle.
[2] Synanthropes is a term applied to species of wild animals and plants of various kinds that live near, and benefit from, an association with humans and the somewhat artificial habitats that humans create around them.

- Zone 1 - **SH1** (Shelterbelt 1): the forest shelterbelt and shrub area located near the European road E 87 (National Road DN 39);
- Zone 2 - **IC** (Irrigation channel): the irrigation channel located along the future access road that will be constructed during the project implementation;
- Zone 3 - **PO** (Peach orchard): the peach orchard located to the south of the irrigation channel, along the future access road;
- Zone 4 - **STSA** (Small trees and shrubs area along the railway): the area with small trees and shrubs located along the railway line;
- Zone 5 - **AL** (Agricultural lands): lands covered with crops of oilseeds and cereals located to the north of the irrigation channel, on the future NGMS site and also in other areas near the project site;
- Zone 6 - **PCA** (Pipeline corridor area): the land between the railway and the agricultural road (unpaved dirt road) that is near the terraced area on the seashore. This area also has agricultural land, but it was delimited and investigated separately due to the different composition of the vegetation, established due to the fact that the land was uncultivated for about 2 – 3 years (according to Google Earth satellite images);
- Zone 7 - **SH2** (Shelterbelt 2): the forested area near the future NGMS site;
- Zone 8 - **SA** (Sand area): the sand area located along the seashore (beach);
- Zone 9 - **TA** (Terraced area on the seashore): the terraced area located along the coastal line, representing the inland margin.

These zones are presented in Figure 11 and subsequently described.

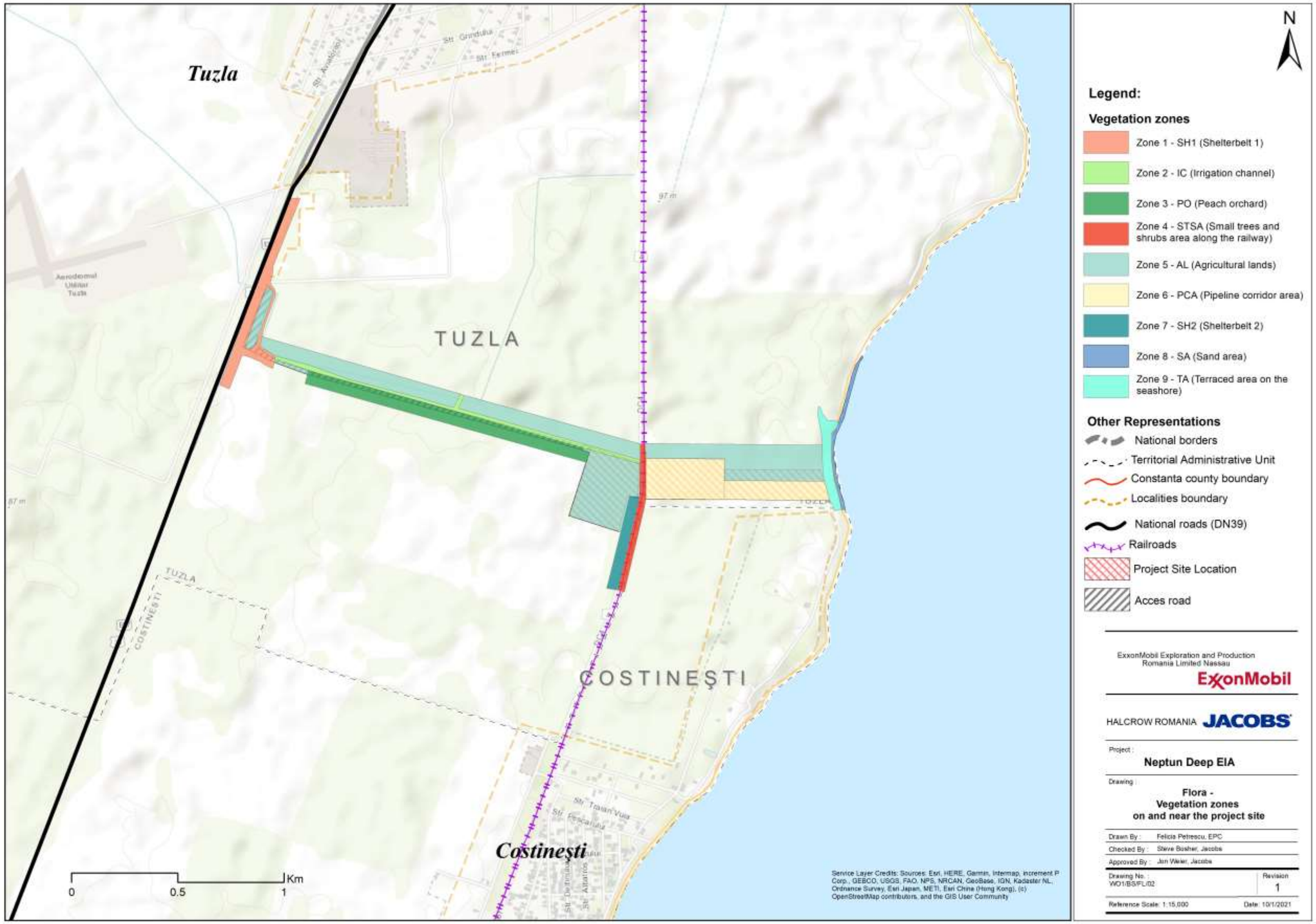


Figure 11 – Vegetation zones on and near the onshore project site analyzed during the baseline surveys

1 SH1 (Shelterbelt 1)

During the field survey, it was observed that the SH1 zone is formed mainly by arboreal and shrub species like *Acer campestre, Acer platanoides, Acer pseudoplatanus, Gleditsia triacanthos, Fraxinus angustifolia, Morus nigra, Quercus robur, Robinia pseudoacacia*, *Crataegus monogyna, Juglans regia, Ligustrum vulgare,* and *Prunus cerasifera.* The herbaceous layer changes depending on the season. Therefore, the observations of the prevernal flora led to the identification of the ephemeral species, like *Ranunculus ficaria* (lesser celandine) and *Muscari neglectum* which are specific to the woodland floor. Most of the observed herbaceous species were dry or in a rosette form. The vernal aspect of the flora was exemplified by species like *Geum urbanum*, *Conium maculatum, Veronica hederifolia, Cradaria draba* (observed at the edge of the shelterbelt), *Euphorbia* sp., *Asperugo procumbens, Valerianella locusta, Lamium purpureum,* and *Allium* sp.. During the estival season, the herbaceous layer was less developed due to the tree canopy. The species with the highest frequency of occurrence were *Sambucus ebulus* (herbaceous species of elder) and *Conium maculatum*.

Near the SH1 zone there is a shrub area, formed by species like *Malus domestica, Prunus cerasifera, Juglans regia, Rosa canina, Crataegus monogyna,* and *Elaeagnus angustifolia*.

2 IC (Irrigation channel)

On the IC zone the most frequent species were identified as being *Prunus cerasifera* and *Crataegus monogyna*, with rare occurrence of *Cerasus avium* and *Prunus persica.* Regarding the herbaceous layer, the species with the highest coverage were *Cardaria draba, Artemisia absinthium, Bromus sterilis, Euphorbia agraria, E. seguieriana, E. cyparisias, Rumex stenophyllus, Ballota nigra, Conium maculatum, Rubus caesius, Calamagrostis epigejos,* and *Sorghum halepense.* The *Lepidietum drabae* plant community was identified on the irrigation channel and in its vicinity, being an association specific to trodden lands, along roads, near households, and on the abandoned land (Sanda et al., 2008). On the length of the irrigation channel, the *Artemisietum absinthii* association is well developed, especially near the orchard, showing a rich organic substrate. The *Setario pumilae-Sorghetum halepensii* plant community was also identified at the edge of the IC zone, a plant community that usually grows on cultivated lands.

The *Balloto nigrae-Malvetum sylvestris*, a ruderal association which grows on lands rich in organic content, has been identified at the beginning of the irrigation channel, located between the railway and orchard in the northern part of the future NGMS site. The *Balloto nigarie-Malvetum Sylvestris* association is characteristic to the habitat R8703 Anthropic communities with *Agropyron repens, Arctium lappa, Artemisia annua* and *Ballota nigra* (national classification) corresponding with 87.2. Ruderal communities (Palearctic classification), having a low conservation value[3], which does not require conservation measures. Other characteristic associations of this habitat on and near the project site were not identified.

An invasive species with high coverage was observed in the IC zone, namely *Vitis vinifera,* which extended on the fence of the orchard and on the shrub vegetation.

3 PO (Peach orchard)

The herbaceous layer in the peach orchard (PO) is formed by ruderal species. In the estival season the dominance of *Sorghum halepense* species was observed (with a high coverage). Rarely, *Fumaria officinalis, Tribulus terrestris, Tragopogon dubius* and *Vicia narbonensis* were observed. The prevernal season in this zone has been exemplified especially by *Ornithogalum umbellatum* (grass lily). On the fence of the peach orchard and on the shrubs in this area *Vitis vinifera* has developed, with a high coverage. Also, on the fence the voluble species *Cynanchum acutum* has a high coverage. The *Setario pumilae - Sorghetum halepensi* plant community has been identified in the area, throughout the entire edge of the PO.

[3] Doniţă et al. (2005)

4 STSA (Small trees and shrubs area along the railway)

Vegetation with shrubs along the railway is not continuous, but mainly in the form of fragmented patches, with relatively compact vegetation only in some places. The recorded species with the highest frequency were *Crataegus monogyna, Rosa canina* and *Elaeagnus angustifolia* (a potentially invasive species).

5 AL (Agricultural lands)

The agricultural lands favored the development of segetal (associated with crop fields) and ruderal plants, typical for arable land or disturbed ground. Most of the identified species are annual species with rapid growth and flowering that occur at the end of a temporarily favorable season (e.g., *Atriplex patula, Fumaria officinalis, Chenopodium album, Polygonum aviculare, Heliotropium europaeus, Xanthium italicum, X. strumarium, Asperugo procumbens*).

The agricultural lands located in the northern part of the irrigation channel area were cultivated with sunflower (*Helianthus annuus*) and wheat (*Triticum* sp.) (observations from April 2019). On the NGMS site, the arable land was cultivated with wheat. On abandoned agricultural land, near the land cultivated with sunflower which will be bypassed by the access road that will be linked to DN 39, the *Conietum maculati* association was identified.

At the edge of the agricultural fields (as well as on the pipeline area) the invasive species *Erigeron canadensis* and *Ambrosia artemisifolia* were observed. These species have a great potential to expand in the area.

6 PCA (Pipeline corridor area)

In the pipeline corridor area (PCA) zone the agricultural land was abandoned for almost 2 years (according to the satellite images provided by Google Earth). In August 2018 (the first month of the field surveys) spontaneous vegetation was observed on the future pipeline site. During the first months of the field surveys the entire pipeline corridor was covered with herbaceous vegetation, which provided habitat for fauna species (especially insects, small mammals, and birds). The composition of the vegetation was formed by ruderal and segetal species. Some of them are invasive, like *Erigeron canadensis* (this species had a significant coverage) and *Ambrosia artemisiifolia*. On the future pipeline site, close to the seashore terrace, the phytochoenosis changes. The number of individuals of the spontaneous species increased. *Echium vulgare, Centaurea diffusa, Stachys annua, Odontites vernus* and species with conservation status such as *Scolymus hispanicus* were observed.

In October 2018, the vegetation in the area corresponding to the future pipeline corridor had been ploughed. During 2019 the vegetation was partially reinstalled. Final observations made in July 2019 showed that the vegetation composition from the pipeline area was similar to the initial observations in August 2018.

The *Setario pumilae-Sorghetum halepensi* plant community identified in this zone showed the previously cultivated character of the area. Also, the *Setario pumilae-Sorghetum halepensi* association was occupying a significant area on the PCA.

7 SH2 (Shelterbelt 2)

The shelterbelt located near the site of the future NGMS is formed of plantations with *Robinia pseudoacacia, Laburnum anagyroides, Sambucus nigra, Juglans regia, Prunus cerasus, Elaeagnus angustifolia, Rosa canina, Gleditsia triachantos, Prunus cerasifera,* and *Crataegus monogyna.* Species such as *Ajuga chamaepytis, Vicia narbonensis, Poa pratensis, Geum urbanum, Gallium humifusum,* and *Sclerochloa dura* were also identified at the edge of the shelterbelt. *Tragopogon dubius, Conium maculatum, Taraxacum officinale,* and *Agrimonia eupatoria* were also recorded in this area.

8 TA (Terraced area)

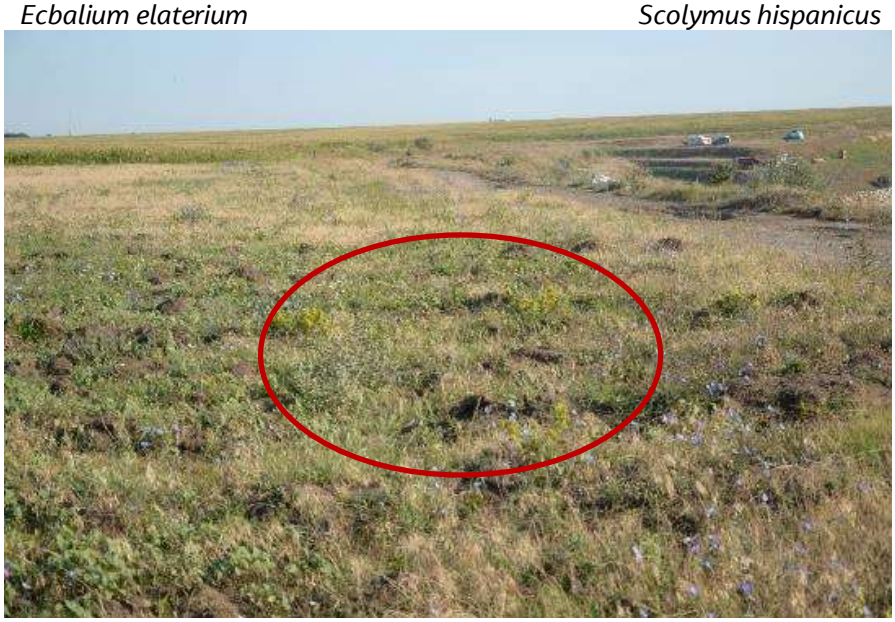
In the terraced area (TA), located towards the seashore, there were plant species observed with conservation status such as *Ecballium elaterium* and *Scolymus hispanicus* (Figure 12). These species are characteristic to R1201 Western pontic communities with *Scolymus hispanicus* and *Ecbalium elaterium*, a specific habitat for Romanian territory (national classification) that has correspondence with the Palearctic classification (class 12 Sea inlets and coastal features) and the EUNIS (European Nature Information System) classification (B3. 3323 Western Pontic low cliff communities). The habitat has a moderate conservation value. The mentioned species do not form phytocenoses, only a few specimens being observed during the field surveys. Other characteristic species of this type of habitat were: *Centaurea diffusa, Echium italicum, Galium humifusum, Convolvulus arvensis,* and *Lolium perenne*. *Scolymus hispanicus* was also observed close to the edge of the uncultivated arable land that represents the future pipeline corridor site. The species develops better at the edge of the agricultural lands located near the terraced area.



Ecbalium elaterium



Scolymus hispanicus



Scolymus hispanicus in the uncultivated arable land (red circle)

Figure 12 – Characteristic species of the R1201 habitat

In May 2019, *Cardaria draba* registered a high coverage in the TA, forming the association Lepidietum drabae Timár 1950 (Syn.: Capsello-Cardarietum drabae) Resmerita et Roman 1975. In this area, another species that also had high coverage was *Phragmites australis*. Regarding the shrubs in this area, only *Eleagnus angustifolia* was observed.

9 SA (Sand area)

On the sand area (SA) psamophilous plant communities were observed, belonging to the *CAKILETEA MARITIMAE* class, which are represented by important taxa like *Cakile maritima* subsp. *euxina, Crambe maritim*a, *Eryngyum maritimum, Argusia* (*Tourneforntia) sibirica,* and *Polygonum oxyspermus* subsp. *raii* (Figure 13). Also observed, *Salsola kali* subsp. *ruthenica*, which forms vegetal communities with the previously mentioned species, and the subendemic species *Leymus racemosus* subsp. *sabulosus*. These communities are specific to the Natura 2000 habitat "1210 Annual vegetation of drift-lines", that corresponds to the habitat R1601 Communities with *Cakile maritima* subsp. *euxina* and *Argusia sibirica* (national classification). The identified plant communities do not have a high degree of coverage, being altered by the activities in the area (especially tourism and grazing).

These important taxa have a great expansion potential. For example, *Argusia sibirica* species was observed at the base of the terraced area, near the access road, between rocks and on sand, occupying small surfaces (it forms patches) (Figure 13). Also, other important species like *Eryngium maritimum*, *Salsola kali* subsp. *ruthenica* and *Crambe maritima* were frequent on the seashore, forming with *Argusia sibirica* the association *Argusietum* (Tournefortietum) *sibiricae* that is characteristic for the 1210 Natura 2000 habitat.

Leymus racemosus subsp. *sabulosus* was observed only in two locations on the seashore. In the first location (28.655278 N, 43.974098 E) most of the characteristic species of the 1210 habitat were found, including *Polygonum oxyspermum* subsp. *raii* (*P. mesembranicum*). In the second location (28.657363 N, 43.979278 E), which is further from the project site, beside the characteristic species of 1210 habitat, the subspontaneous species *Bassia scoparia* (*Kochia scoparia*) was also identified.

Only 3 individuals of *Cakile maritima* (also known as sea rocket) were observed on the seashore in October 2018. According to Sârbu et al. (2013) and Ciocârlan (2009), the optimal period for this species is June - September. During the field survey in June and July 2019 this species was not observed anymore.

In the SA zone only one association was observed, formed by important taxa with conservation status (*Eryngium maritimum, Argusia sibirica, Crambe maritima, Salsola kali* subsp. *ruthenica, Leymus racemosus* subsp. *sabulosus*, *Polygonum oxyspermum* subsp. *raii*).



Vegetation with *Argusia sibirica*



Eryngium maritimum



Crambe maritima



Polygonum oxyspermum subsp. *raii*



Cakile maritima



Vegetation with characteristic species of 1210 Natura 2000 habitat: *Leymus racemosus* subsp. *sabulosus, Eryngium maritimum, Polygonum oxyspermum* subsp. *raii,* and *Salsola kali* subsp. *ruthenica*

Figure 13 - Aspect of the vegetation on the seashore, with characteristic species of the 1210 Natura 2000 habitat

6.1.6.1.1.2 Onshore Fauna

6.1.6.1.1.2.1 Invertebrates

The overall region of Dobrogea has been the subject of several investigations regarding invertebrate fauna. Regarding the protected species, 25 species listed in the annexes of the Habitats Directive occur in Dobrogea, namely: two dragonflies - *Coenagrion ornatum*, *Ophiogomphus cecilia* (Odonata); one bush-cricket - *Saga pedo*; two grasshoppers - *Paracaloptenus caloptenoides*, *Stenobothrus eurasius* (Orthoptera); seven coleopterans - *Bolbelasmus unicornis, Cerambyx cerdo, Lucanus cervus, Morimus funereus, Osmoderma eremita, Pilemia tigrina, Rosalia alpina* (Coleoptera); and 13 lepidopterans - *Apatura metis, Arytrura musculus, Callimorpha quadripunctaria, Catopta thrips, Eriogaster catax, Euphydryas maturna, Hyles hippophaes, Lycaena dispar, Maculinea arion, Pseudophilotes bavius, Parnassius mnemosyne, Proserpinus proserpina* and *Zerynthia polyxena* (Lepidoptera). However, after reviewing the relevant literature we concluded that none of these species was reported in the Tuzla - Costinești areas.

Field surveys for invertebrates were completed in accordance with the Work Plan for the Onshore Biological Environment Baseline Study, September 2018, prepared by EPC Consultanţă de mediu SRL under the Neptun Deep project.

Active and passive field monitoring methods were used. Active methods consisted of choosing and delimiting visual transects that were checked daily during the study period. Passive methods consisted of trapping the

animals alive, followed by identification and release. The field survey methods used were described in the "Guide for monitoring of invertebrate species of community interest in Romania" (Iorgu, 2015).

Cumulatively, 123 invertebrate species were observed during the field surveys: two mantid species, twenty-one orthopterans, two dragonfly species, twelve ant species, forty-four coleopterans, twenty-one butterflies, twenty moths and one Mediterranean banded centipede. The complete list of species identified during the field surveys is presented in Table 25.

Table 25 – List of invertebrate species identified during the field surveys at the onshore project site

Phylum Arthropoda						
Class Insecta						Class Chilopoda
Ord. Mantodea	Ord. Orthoptera	Ord. Odonata	Ord. Hymenoptera	Ord. Coleoptera	Ord. Lepidoptera	Ord. Scolopendromorpha
Fam. Mantidae *Ameles heldreichi* *Mantis religiosa*	**Fam. Tettigoniidae** *Tylopsis lilifolia* *Phaneroptera nana* *Conocephalus fuscus* *Tettigonia viridissima* *Decticus albifrons* *Decticus verrucivorus* *Platycleis affinis* *Platycleis veyseli* *Rhacocleis germanica* **Fam. Gryllidae** *Melanogryllus desertus* *Modicogryllus truncatus* *Oecanthus pellucens* **Fam. Acrididae** *Acrida ungarica* *Acrotylus insubricus* *Calliptamus italicus* *Pezotettix giornae* *Omocestus rufipes* *Chorthippus brunneus* *Chorthippus loratus* *Chorthippus parallelus* *Euchorthippus declivus*	**Fam. Libellulidae** *Sympecma fusca* *Sympetrum meridionale*	**Fam. Formicidae** *Camponotus aethiops* *Camponotus vagus* *Cataglyphis aenescens* *Formica cunicularia* *Lasius (Chtonolasius)* sp. *Lasius (Lasius)* sp. *Lasius alienus* *Messor* sp. *Myrmica* sp. *Plagiolepis pygmaea* *Solenopsis* cf *fugax* *Tetramorium* cf *caespitum*	**Fam. Carabidae** *Amara* sp. *Brachinus* sp. *Calathus* sp. *Calomera littoralis* *Carabus auronites* *Carabus coriaceus* *Carterus* sp. *Ditomus clypeatus* *Harpalus* sp. *Ophonus* sp. *Pseudoophonus* cf *rufipes* *Stenolophus discophorus* **Fam. Scarabeidae** *Anomala* sp. *Aphodius* sp. *Copris lunaris* *Onthophagus amyntas* *Oxythyrea funesta* *Pentodon idiota* *Rhizotrogus aequinoctialis* **Fam. Coccinelidae** *Coccinela septempunctata* *Harmonia axyridis* *Psyllobora vigintiduopunctata* **Fam. Chrysomelidae**	**Fam. Nymphalidae** *Aglais io* *Aglais urticae* *Coenonympha pamphilus* *Lasiommata megera* *Vanessa atalanta* *Vanessa cardui* *Melitaea cinxia* *Melitaea phoebe* **Fam. Papilionidae** *Papilio machaon* **Fam. Pieridae** *Anthocharis cardamines* *Colias* cf *croceus* *Gonepteryx rhamni* *Pieris napi* *Pieris rapae* *Pontia edusa* **Fam. Lycaenidae** *Lampides boeticus* *Lycaena phlaeas* *Lycaena thersamon* *Plebejus argus* *Polyommatus icarus* **Fam. Geometridae** *Charissa* sp. *Chlorissa viridata* *Crocallis elinguaria* *Ematurga atomaria*	**Fam. Scolopendridae** *Scolopendra cingulata*

Phylum Arthropoda						
Class Insecta						Class Chilopoda
Ord. Mantodea	**Ord. Orthoptera**	**Ord. Odonata**	**Ord. Hymenoptera**	**Ord. Coleoptera**	**Ord. Lepidoptera**	**Ord. Scolopendromorpha**
				Chrysolina sanguinolenta *Crepidodera* sp. *Cryptocephalus* cf. *sericeus* *Donacia* sp. **Fam. Tenebrionidae** *Omophlus* sp. *Opatrum sabulosum* *Pedinus* sp. *Podonta* sp. **Fam. Staphylinidae** *Paederus* sp. *Quedius* sp. **Fam. Brentidae** *Apion* sp. **Fam. Elateridae** *Ampedus* sp. **Fam. Mordellidae** *Mordella* sp. **Fam. Cerambycidae** *Chlorophorus varius* **Fam. Histeridae** *Hister quadrimaculatus* **Fam. Curculionidae** *Larinus* sp. *Lixus* sp. *Sphenophorus* sp.	*Lythria purpuraria* *Phaiogramma etruscaria* *Timandra comae* **Fam. Noctuidae** *Acontia trabealis* *Heliothis nubigera* *Mamestra brassicae* *Noctua pronuba* *Prodotis stolida* *Protoschinia scutosa* **Fam. Sphingidae** *Macroglossum stellatarum* **Fam. Crambidae** *Nomophila noctuella* *Pyrausta aurata* **Fam. Erebidae** *Aedia funesta* *Euclidia glyphica* **Fam. Tortricidae** *Epiblema scutulana* **Fam. Notodontidae** *Dicranura ulmi*	

Phylum Arthropoda						
Class Insecta						Class Chilopoda
Ord. Mantodea	Ord. Orthoptera	Ord. Odonata	Ord. Hymenoptera	Ord. Coleoptera	Ord. Lepidoptera	Ord. Scolopendromorpha
				Tanymecus sp. **Fam. Meloidae** *Mylabris variabilis* **Fam. Silphidae** *Nicrophorus* sp. **Fam. Cantharidae** *Rhagonycha fulva*		

6.1.6.1.1.2.2 Reptiles and amphibians

For reptiles and amphibians, the field survey methods used were described in the *"Guide for monitoring of amphibian and reptile species of Community interest in Romania",* elaborated in 2013. The main method employed was the transect method. The main type of transect used was the diurnal visual transect. The method aims at surveying the suitable habitats for reptiles and identifying any reptiles that are present.

Monthly field surveys for reptiles and amphibians were completed in accordance with the *Work Plan for the Onshore Biological Environment Baseline Study*, September 2018, prepared by EPC Consultanta de mediu SRL under the Neptun Deep project. The covered months were August 2018, September 2018, October 2019, March 2019, April 2019, May 2019, June 2019, and July 2019. The same methodology was used throughout the survey sessions in all months.

Reptiles

According to an article published by Cogalniceanu et al. (2013), in Romania there is a total number of 23 species of reptiles. Of these, 20 species can be found in the Dobrogea region. These are: *Emys orbicularis, Testudo graeca, Anguis fragilis, Eremias arguta, Lacerta agilis, Darevskia praticola, Lacerta trilineata, Lacerta viridis, Podarcis muralis, Podarcis tauricus, Ablepharus kitaibelii, Eryx jaculus, Coronella austriaca, Zamenis longissimus, Elaphe sauromates, Dolichophis caspius, Natrix natrix, Natrix tessellate, Vipera ammodytes* and *Vipera ursinii ssp. moldavica* (Cogalniceanu et al., 2013).

Either through observations of individuals or sign, the monthly field survey results showed the presence of *Lacerta viridis, Dolichophis caspius*, and *Testudo graeca* at or near the project site.

For *Lacerta viridis*, twenty-seven individuals were observed at or near the project site. Note that some observations across months could be the same individuals. In addition, there was one observation in May that was likely *Lacerta viridis* but was unconfirmed. The most observations were in the channel near the NGMS, and especially in proximity of the National Road forest. This area, which is characterized by shrubby and overgrown herbaceous vegetation, is ideal for this species.

One *Dolichophis caspius* individual was observed in the area south of the project site, near the fruit orchard and towards Costinesti. The individual was seen about 1.2 km south of the NGMS area, under a rock.

As previously noted, only a *Testudo graeca* carapace was found on the project site, in the forested area near the National Road. While there are patches of suitable habitat in the area near the project site, no live individuals were identified during the field surveys. It could be that the carapace was dropped by a bird of prey or brought from some other place by humans, but caution is recommended during construction, as the species might find areas of suitable habitat on and near the project site.

Amphibians

According to recent research by Cogalniceanu et al. (2014), the amphibian fauna of Romania comprises 19 native species, in the Anura and Urodela orders. According to Cogalniceanu et al. (2013), 12 species are found in the Dobrogea region. These are: *Triturus dobrogicus, Lissotriton vulgaris, Bombina bombina, Pelobates fuscus, Pelobates syriacus, Bufo bufo, Bufotes viridis, Hyla arborea, Rana dalmatina, Pelophylax lessonae, Pelophylax esculentus*, and *Pelophylax ridibundus.*

The only species identified inside the project site and in its vicinity was *Bufotes viridis*. A total of 25 individuals were observed throughout the survey sessions.

The greatest number of observations were near the NGMS forest and on the road from the NGMS to the shoreline. Observations were also made near the project site, especially near the seashore and in the neighboring agricultural fields. It is important to note that these observations could also be of importance for

the project, as *Bufo* species can have a rather high level of mobility, some sources citing a maximum of 2.5 ha (for *Bufo bufo*, a species related to *Bufotes viridis*) (Daversa et al., 2012).

6.1.6.1.1.2.3 Birds

At and near the project site, the **bird** community is represented by dry land species (diurnal and nocturnal) and aquatic marine species. They include sedentary and migratory species (summer guests, winter guests, passage species) and some are of community and/ or national interest.

Field observations of each bird typology involves specific, dedicated methods that can provide the appropriate information to characterize the degree of presence and land use, distribution, population size and understand the favorability of the project site as a feeding/ breeding/ nesting/ migrating area for each group.

Two methods were used to fulfil the scope of the survey: the longitudinal transect method for acquiring data on species using the project site (resident, summer guests, winter guests) and fixed-point method especially for migratory species.

During the monitoring of the avifauna at and near the project site from August 2018 – July 2019, 117 species of birds were identified (Table 26). The table also include information on the conservation status of the bird species observed at and near the project site from August 2018 – July 2019.

Table 26 - List of bird species identified during the field surveys (August 2018 – July 2019) at and near the project site, together with information on their conservation status

No	Scientific name	Phenological status	International Union for Conservation of Nature (IUCN)		Birds Directive	Bern Convention	Bonn Convention
			Europe	EU27			
1.	*Accipiter nisus*	S, OI	LC	LC		III	II
2.	*Acrocephalus palustris*	OV	LC	LC		II	
3.	*Alauda arvensis*	MP	LC	LC	IIB	III	
4.	*Anas acuta*	P, OI	LC	VU	IIA; IIIB	III	II
5.	*Anas platyrhynchos*	MP, OI	LC	LC	IIA; IIIA	III	II
6.	*Anser albifrons*	OI	LC	LC	IIB	III	II
7.	*Anthus campestris*	OV	LC	LC	I	II	
8.	*Anthus pratensis*	P, OV	NT	VU		II	
9.	*Anthus trivialis*	OV	LC	LC		II	
10.	*Apus apus*	OV	LC	LC		III	
11.	*Ardea alba*	OV, RI	LC	LC	I	II	II
12.	*Ardea cinerea*	OV, RI	LC	LC		III	
13.	*Ardea purpurea*	OV	LC	LC	I	II	II
14.	*Asio otus*	S	LC	LC		II	
15.	*Athene noctua*	S	LC	LC		II	
16.	*Branta ruficollis*	OI	NT	NT	I	II	I/II
17.	*Buteo buteo*	MP	LC	LC		III	II
18.	*Buteo rufinus*	P, OV	LC	LC	I	III	II
19.	*Calidris pugnax*	P	LC	EN	I; IIB	III	II
20.	*Carduelis carduelis*	S, OI	LC	LC		II	
21.	*Chloris chloris*	S	LC	LC		II	
22.	*Chroicocephalus ridibundus*	MP	LC	LC	IIB	III	
23.	*Ciconia ciconia*	OV	LC	LC	I	II	II
24.	*Circus aeruginosus*	OV, RI	LC	LC	I	III	II
25.	*Circus macrourus*	P	NT	EN	I	III	II
26.	*Circus pygargus*	OV	LC	LC	I	III	II
27.	*Coloeus monedula*	S	LC	LC	IIB		
28.	*Columba palumbus*	OV, RI	LC	LC	IIA; IIIA		
29.	*Coracias garrulus*	OV	LC	LC	I	II	I, II
30.	*Corvus cornix*	S	LC	LC	IIB	III	

No	Scientific name	Phenological status	International Union for Conservation of Nature (IUCN)		Birds Directive	Bern Convention	Bonn Convention
			Europe	EU27			
31.	*Corvus frugilegus*	S	LC	LC	IIB		
32.	*Coturnix coturnix*	OV	LC	LC	IIB	III	II
33.	*Cuculus canorus*	OV	LC	LC		III	
34.	*Cyanistes caeruleus*	S	LC	LC		II	
35.	*Cygnus olor*	MP	LC	LC	IIB	III	II
36.	*Delichon urbicum*	OV	LC	LC		II	
37.	*Dendrocopos syriacus*	S	LC	LC	I	II	
38.	*Emberiza calandra*	MP	LC	LC		III	
39.	*Emberiza citrinella*	S	LC	LC		II	
40.	*Emberiza hortulana*	OV	LC	LC	I	III	
41.	*Emberiza melanocephala*	OV	LC	LC		II	
42.	*Emberiza schoeniclus*	MP	LC	LC		II	
43.	*Erithacus rubecula*	OV, RI	LC	LC		II	II
44.	*Falco subbuteo*	OV	LC	LC		II	II
45.	*Falco tinnunculus*	MP	LC	LC		II	II
46.	*Falco vespertinus*	OV	NT	VU	I	II	I/II
47.	*Ficedula albicollis*	OV	LC	LC	I	II	II
48.	*Ficedula parva*	OV	LC	LC	I	II	II
49.	*Fringilla coelebs*	MP	LC	LC		III	
50.	*Fringilla montifringilla*	OI	LC	VU		III	
51.	*Fulica atra*	MP	NT	LC	IIA; IIIB	III	
52.	*Galerida cristata*	S	LC	LC		III	
53.	*Gallinago gallinago*	P	LC	LC	IIA; IIIB	III	II
54.	*Gavia arctica*	OI	LC	LC	I	II	II
55.	*Hirundo rustica*	OV	LC	LC		II	
56.	*Hydrocoloeus minutus*	P	NT	LC	I	II	
57.	*Ichthyaetus melanocephalus*	OV	LC	LC	I	II	II
58.	*Iduna pallida*	OV	LC	LC		II	II
59.	*Jynx torquilla*	OV	LC	LC		II	
60.	*Lanius collurio*	OV	LC	LC	I	II	
61.	*Lanius minor*	OV	LC	LC	I	II	
62.	*Lanius senator*	AC	LC	LC		II	
63.	*Larus canus*	OI	LC	LC	IIB	III	

No	Scientific name	Phenological status	International Union for Conservation of Nature (IUCN)		Birds Directive	Bern Convention	Bonn Convention
			Europe	EU27			
64.	*Larus fuscus fuscus*	P, OI	LC	LC	IIB		
65.	*Larus michahellis*	S	LC	LC		III	
66.	*Linaria cannabina*	MP	LC	LC		III	
67.	*Luscinia luscinia*	OV	LC	LC		II	II
68.	*Luscinia megarhynchos*	OV	LC	LC		II	II
69.	*Mareca penelope*	P, OI	LC	VU	IIA; IIIB	III	II
70.	*Mareca strepera*	OV	LC	LC	IIA	III	II
71.	*Melanocorypha calandra*	MP	LC	VU	I	II	
72.	*Merops apiaster*	OV	LC	LC		II	II
73.	*Milvus migrans*	OV	LC	LC	I	III	II
74.	*Motacilla alba*	OV	LC	LC		II	
75.	*Motacilla flava*	OV	LC	LC		II	
76.	*Muscicapa striata*	OV	LC	LC		II	II
77.	*Netta rufina*	OV, RI	LC	LC	IIB	III	II
78.	*Oenanthe isabellina*	OV	LC	LC		II	II
79.	*Oenanthe oenanthe*	OV	LC	LC		II	II
80.	*Oenanthe pleschanka*	OV	LC	LC	I	II	II
81.	*Oriolus oriolus*	OV	LC	LC		II	
82.	*Pandion haliaetus*	P	LC	LC	I	III	II
83.	*Parus major*	S	LC	LC		II	
84.	*Passer domesticus*	S	LC	LC			
85.	*Passer hispaniolensis*	OV	LC	LC		III	
86.	*Passer montanus*	S	LC	LC		III	
87.	*Pelecanus onocrotalus*	OV	LC	LC	I	II	I/II
88.	*Perdix perdix*	S	LC	LC	IIA; IIIA	III	
89.	*Phalacrocorax aristotelis*	AC	LC	NT			
90.	*Phalacrocorax carbo*	OV	LC	LC		III	
91.	*Phasianus colchicus*	S	LC	LC	IIA; IIIA	III	
92.	*Phoenicurus ochruros*	OV	LC	LC		II	II
93.	*Phoenicurus phoenicurus*	OV	LC	LC		II	II
94.	*Phylloscopus collybita*	OV	LC	LC		II	II
95.	*Phylloscopus trochilus*	P, OV	LC	LC		II	II
96.	*Pica pica*	S	LC	LC	IIB		

No	Scientific name	Phenological status	International Union for Conservation of Nature (IUCN)		Birds Directive	Bern Convention	Bonn Convention
			Europe	EU27			
97.	*Plegadis falcinellus*	OV	LC	LC	I	II	II
98.	*Podiceps cristatus*	OV	LC	LC		III	
99.	*Podiceps nigricollis*	OV	LC	LC		II; III	
100.	*Riparia riparia*	OV	LC	LC		II	
101.	*Saxicola rubetra*	OV	LC	LC		II	II
102.	*Sterna hirundo*	OV	LC	LC	I	II	II
103.	*Streptopelia decaocto*	S	LC	LC	IIB	III	
104.	*Streptopelia turtur*	OV	VU	NT	IIB	III	
105.	*Sturnus vulgaris*	MP	LC	LC	IIB		
106.	*Sylvia atricapilla*	OV	LC	LC		II	II
107.	*Sylvia borin*	OV	LC	LC		II	II
108.	*Sylvia communis*	OV	LC	LC		II	II
109.	*Sylvia curruca*	OV	LC	LC		II	II
110.	*Tadorna tadorna*	OV, RI	LC	LC		II	
111.	*Thalasseus sandvicensis*	OV	LC	LC	I	II	II
112.	*Troglodytes troglodytes*	OV, RI	LC	LC		II	
113.	*Turdus merula*	MP	LC	LC	IIB	III	
114.	*Turdus philomelos*	OV	LC	LC	IIB	III	
115.	*Turdus pilaris*	MP, OI	LC	VU	IIB	III	
116.	*Turdus viscivorus*	MP	LC	LC	IIB	III	
117.	*Upupa epops*	OV	LC	LC		II	

Notes:

Phenological status: OV – Summer guest, AC – Accidental species, RI – Species present rarely during the winter, MP – Partially migratory species, OI – Winter guest, P – Species present only during passage/migration, S – Sedentary/ resident species.

IUCN Red List: LC – Least Concern, NT – Near Threatened, VU – Vulnerable, EN – Endangered.

Birds Directive (Directive 2009/147/EC on the conservation of wild birds): I – Annex I Species subject of special conservation measures; IIA – Annex IIA Species that may be hunted in the geographical sea and land area where the Directive applies; IIB – Annex IIB Species that may be hunted only in the Member States in respect of which they are indicated.

Bern Convention (Convention on the Conservation of European Wildlife and Natural Habitats): II – Appendix II Strictly protected fauna species; III - Appendix III Protected fauna species.

Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals): I – Appendix I Endangered migratory species; II – Appendix II Migratory species conserved through Agreements.

6.1.6.1.1.2.4 Bats

Romania harbors 32 bat species of which 29 are found in Dobrogea. Their ecology involves forming small or large colonies for hibernation during the cold season and nursing colonies (formed by females) from May to August, after which they reunite, mate and hibernate. During the spring and autumn periods, colonies tend to change their roosts for more suitable nursing or hibernation locations. Nursing sites are chosen based on food availability and optimal shelters for pups, while hibernacula are chosen based on their temperature range, temperature variation (which needs to be low and constant), group safety, and general climatic conditions (with lower temperature variations during the cold season, compared to nurseries (Murariu, Chişamera, Măntoiu, & Pocora, 2016).

Within the project site, the natural landscape does not offer varied suitable roosting sites, with some small exceptions of loess or limestone cliffs (the Black Sea coast, but only specific cliffs) which are beginning to be altered to stop sea and wind erosion. Nearby forested areas offer little support for bat colonies. They have young trees and a low number of poorly developed tree hollows, which are essential for forest dwelling bats. No bats were found in the tree searches for roosts. The anthropic roosts are the closest potential colony locations for migratory bats which hunt in the open spaces of the project site. Bat home ranges stretch out to 15 - 20 km^2/night, but this area is measured around the roost in potential habitats optimal for each species. The closest distance from the project site to a bat roost of national importance is 20.8 km (Limanu Cave, located near Limanu village), and may represent a large enough distance so that rare species like *Miniopterus scheribersii* will not likely cross the project site during feeding, dispersion, or migration. The species shows a regional migratory behavior, but colonies roosting in the southern part of Dobrogea are present only during the hot period and usually migrate into the Bulgarian karst for hibernation.

Bats are a group of species that are difficult to observe by traditional methods. Field work was focused on identifying bats at and near the project site via ultrasound transects and light searches. Transects were performed during the spring, maternity, swarming, and reproduction periods, in clear sky nights, starting 30 minutes before sunset and continuing to the next day until 1 AM, when bat activity significantly decreases due to their feeding behavior.

The identified species on site were mostly represented by *Pipistrellus nathusii/kuhlii*. The differentiation between *P. nathusii* and *P. kuhlii* is still considered unreliable from ultrasounds alone, therefore the two species are treated as a group. The observations are more likely to be *P. nathusii* given that the species' ecology and habitat preference more align with the open spaces present at and near the project site. The *Nyctalus* species were more abundant during August and September, which may have been indicative of migration through the study area.

Migratory bat species

The project site and areas within 5 km are poorly represented in terms of bat fauna research, given that most of the work has been conducted in historically or nationally important roosts within Dobrogea. A spatial compilation of all the research identified in the study area (25 km from the onshore pipeline metering and custody transfer station) has been synthetized in recent years (Murariu, Chişamera, Măntoiu, & Pocora, 2016). This includes the EPC Consultanţă de mediu species' database, which was developed via another project-based research. Results from the ultrasound study performed for the proposed project were added. The intersection of these spatial databases with the study area yielded the presence of 20 bat species of which 5 are migratory (Table 27).

Table 27 - Species list and abundance of migratory bats* in the study area

No.	Migratory species	Hagieni Tunnel (no. individuals)	Limanu Cave (no. individuals)	No. of Bioacoustics Observations – 25 km Study Area (outside of the Project Site)	No. of Bioacoustics Observations – Project Site
1	*Miniopterus schreibersii*	664	1	-	-
2	*Nyctalus leisleri*	-	-	2	3
3	*Nyctalus noctula*	-	-	4	19
4	*Pipistrellus nathusii/kuhlii*	-	-	117	282
5	*Vespertilio murinus*	-	-	1	-

Notes: * Sightings performed via bioacoustics cannot be treated as number of individuals and are generically marked as 1 per recording. The no. of bioacoustics observations at and near the project site have been performed especially for this project, while the no. of observations in the study area were collected from prior projects and databases and do not contain information from the project site.

The observations were made using roost searches and ultrasound monitoring. Of the 5 migratory bat species, one was found roosting in an abandoned mine (Hagieni Tunnel) and a natural cave system (Limanu Cave). The other 4 were identified via *ultrasounds* in flight.

Sedentary bat species

The intersection of the literature review spatial database within the study area and the results obtained by the ultrasound study performed at and near the project site yielded the presence of 15 sedentary bat species, as shown in Table 28.

Table 28 - Species list and abundance from the literature review and project site field survey of the sedentary bats in the study area

No.	Sedentary species	Hagieni Tunnel	Buildings	Limanu Cave	No. of Bioacoustics Observations – 25 km Study Area (outside of the Project Site)	No. of Bioacoustics Observations – Project Site
1	*Eptesicus serotinus*	-	-	1	1	-
2	*Hypsugo savii*	-	-	-	1	-
3	*Myotis capaccinii*	1	-	-	-	-
4	*Myotis daubentonii*	10	--	100	-	-
5	*Myotis emarginatus*	6	-	-	-	-
6	*Myotis myotis*	-	-	1	-	-
7	*Myotis mystacinus*	-	-	1	-	-
8	*Pipistrellus kuhlii*	-	432	-	6	-
9	*Pipistrellus pipistrellus*	-	-	-	2	1
10	*Pipistrellus pygmaeus*	-	-	-	1	-
11	*Plecotus auritus*	2	1	1	-	-
12	*Plecotus austriacus*	-	-	1	-	-
13	*Rhinolophus ferrumequinum*	2	-	64	3	-
14	*Rhinolophus hipposideros*	1	-	26	-	-
15	*Rhinolophus mehelyi*	1	-	80	-	-

Notes: * Sightings performed via bioacoustics cannot be treated as number of individuals and are generically marked as 1 per recording. The no. of bioacoustics observations at and near the project site have been performed especially for this project, while the no. of observations in the study area were collected from prior projects and databases and do not contain information from the project site.

The observations were made using both roost searches and ultrasound monitoring. Of the 15 sedentary bat species, 7 were found roosting in an abandoned mine (Hagieni Tunnel), 9 in a natural cave system (Limanu Cave), 2 in buildings (Constanţa City) and 14 were identified via ultrasounds in flight.

6.1.6.1.1.2.5 Mammals (other than bats)

Different studies on the mammals from Dobrogea dealt with subjects such as: ecological observations on small mammals from Valu lui Traian (Ausländer and Hellwing, 1957a; Hellwing and Schnapp, 1960; Schnapp, 1968); variability and biology of the species *Sicista subtilis* (Ausländer and Hellwing, 1957b); rodents from northwest Dobrogea (Popescu, 1968); food of *Meles meles* (Popescu and Sin, 1968); distribution and scientific and practical importance of the mammals of Dobrogea (Marches, 1970); and novel fauna in Southern Dobrogea (Iana, 1970).

A mammal species distribution database in Dobrogea region does not exist, despite the numerous studies noted above. In the last twenty years, only papers compiling distributions of a single species have been published, such as: *Mesocricetus newtoni* (Hamar and Schutowa, 1966); *Martes foina* (Cuzic and Marinov, 2002; Kiss et al., 2012b, 2014), *Castor fiber* (Kiss et al., 2012a, 2014), *Canis lupus* (Kiss, 2004), *Martes martes* (Kiss et al., 2012c, 2013, 2014), *Mustela lutreola* (Cuzic and Marinov, 2004), *Sicista nordmanni* (Ausländer and Hellwing, 1957b); or papers addressing a particular restricted geographic area (Ausländer and Hellwing, 1957a; Hellwing and Schnapp, 1960; Iana, 1970; Marches, 1970; Popescu, 1968; Răduleţ and Stănescu, 1996; Chiriac and Barbu, 1962; Marches et al., 1954; Murariu, 1996, 2006; Cuzic and Cuzic, 2008).

Monthly field surveys for mammal species during the period August 2018 - July 2019 were completed in accordance with the *Work Plan for the Onshore Biological Environment Baseline Study*, September 2018, prepared by EPC Consultanţă de mediu SRL under the Neptun Deep project. Any observed individuals and any signs of presence, consisting of excrements, distinguishable tracks or used galleries (dens), were marked by GPS and photographed. Another method used during the field surveys was camera trapping. An additional method applied on a limited number of 2019 of field survey days was the live-trapping (pitfall traps) method.

25 terrestrial mammal species were identified by observation and/or signs at or near the project site (Table 29). Four of the identified species (i.e., *Mesocricetus newtoni, Spermophilus citellus, Mustela eversmanii, Cricetus cricetus*) are species of community interest and one of the identified species (*Nannospalax leucodon*) is a species of national interest.

Overall, the best mammal habitats identified were the patches of natural vegetation near the project site, but the project site and the surrounding agricultural fields also represent favorable habitats for several species, especially rodents. Dens of *Meles meles, Vulpes vulpes* and *Canis aureus* were identified on the irrigation channels located along the project site and in the area of the orchard. Also, numerous galleries of rodent species and species belonging to the order Eulipotyphla were identified at and near the project site.

Table 29 - List of mammal species identified during the field surveys on and near the project site

No.	Order	Scientific name	Common name
1.	Eulipotyphla	*Erinaceus roumanicus*	Northern White-breasted Hedgehog
2.		*Crocidura leucodon*	Bicoloured White-toothed Shrew
3.		*Sorex araneus*	Common Shrew
4.		*Talpa europaea*	European Mole
5.	Rodentia	*Mesocricetus newtoni*	Romanian Hamster
6.		*Cricetus cricetus*	Common Hamster
7.		*Mus musculus*	House Mouse
8.		*Mus spicilegus*	Steppe Mouse
9.		*Rattus norvegicus*	Brown Rat
10.		*Apodemus sylvaticus*	Wood Mouse

No.	Order	Scientific name	Common name
11.		*Apodemus* sp.	-
12.		*Microtus arvalis*	Common Vole
13.		*Microtus levis*	East European Vole
14.		*Microtus* sp.	-
15.		*Spermophilus citellus*	European Ground Squirrel
16.		*Nannospalax leucodon*	Lesser Blind Mole Rat
17.	Lagomorpha	*Lepus europaeus*	European Hare (Brown Hare)
18.	Carnivora	*Martes foina*	Stone Marten
19.		*Vulpes vulpes*	Red Fox
20.		*Meles meles*	European Badger
21.		*Canis aureus*	Golden Jackal
22.		*Mustela eversmanii*	Steppe Polecat
23.		*Mustela putorius*	European Polecat
24.	Cetartiodactyla	*Phocoena phocoena**	Common Porpoise
25.		*Delphinus delphis**	Short-beaked Common Dolphin
26.		*Sus scrofa*	Wild Boar
27.		*Capreolus capreolus*	European Roe Deer

Note:
* Marine species. Both dolphin species (Common Porpoise - *Phocoena phocoena* and Short-beaked Common Dolphin - *Delphinus delphis*) have been observed in the coastal area (terrestrial) and consisted of skeletal remains. The remains were brought by different mesocarnivorous mammals from the seashore.

6.1.6.1.2 Offshore

The information presented in this section is based on data / samples collected in the field in the project area (in the coastal and offshore areas).

The data / samples are collected by NIMRD "Grigore Antipa" within the research and monitoring activities carried out for:

- National Marine Monitoring Program (for the implementation of the MSFD and Habitat Directives);
- Romanian annual report on the national data collection program for fisheries;
- Scientific research projects;
- Marine environment monitoring program during drilling campaigns executed in the Neptun block during 2012-2015;
- Dedicated baseline environmental study carried out along the pipeline route and the location of the SWP and wells, conducted in 2017 and 2021;
- Study on habitats and benthic species carried out along the pipeline route in 2021;
- Scientific research papers and reports of the projects carried out in the project area;
- NIMRD "Grigore Antipa" databases containing information on biological parameters covering the period 2010-2018.

6.1.6.1.2.1 Marine zones

Marine benthic zones identified in the area of Neptun Deep project, as defined and recognized by EUNIS are (Figure 14):

- **Littoral** – defined as the shore area, where periodic exposure and submersion by tides is normal, or in micro-tidal marine ecosystems (such as the Black Sea), habitats which are normally water-covered, but intermittently exposed due to the action of wind or atmospheric pressure changes (as hydro littoral). It can include the splash zone, rockpools and (relatively) waterlogged saltmarshes (soft substrata) and saline brackish pools found in the supralittoral zone above the mean water level in non-tidal waters. The littoral zone comprises the supralittoral and midlittoral system. The project coastal area is represented both as sedimentary and rocky substrata with specific flora and fauna associations.

- **Infralittoral** – defined as the zone where there is sufficient light for green algae and vascular plants such as *Zostera* spp to grow and be dominant. The lower limit has traditionally been considered to coincide with 1% light penetration. The limit of the resistance of photophilic algae and *Zostera* spp vary with the latitude and water turbidity. Off Romanian coasts, this zone ranges between 0.5 and 12 m depth, due to the Danube inflow of fine sediments. The project also crosses the infralittoral zone.

- **Circalittoral** – defined as sub-tidal or non-tidal waters with insufficient light penetration for vascular plants and photophilic (green) algae to grow, but red and brown algae can also grow, and they may be dominant, although usually this zone is dominated by fauna. The light penetration, which coincides with the lower limit of the circalittoral, and which is marked by the growth limit of red crustose coralline algae, varies between authors and studies, but is typically 0.01% or lower. Considering the high turbidity of the Black Sea, especially in its north- western part, the lower limit of the circalittoral cannot be considered by phytal gradient. Therefore, taking into consideration the physical and chemical peculiarities of the Black Sea, the lower limit of the circalittoral is defined as between 100 and 120 m, meaning the lower limit where the *Modiolula phaseolina* community presents its typical characteristics with the occurrence of living adults. A more recent classification splits the circalittoral according to phytal / hydrodynamic gradients into circalittoral and offshore circalittoral. Thus, the offshore circalittoral (in some classifications called "deep circalittoral" or "deep shelf") is characterized by insufficient light for photosynthesis and little variation in temperature. In Romanian waters, the upper circalittoral is characterized by the occurrence of the mussel *Mytilus galloprovincialis* at depths between 25-60m and the lower circalittoral by the *Modiolula phaseolina* community from 60 to 100-120m, as mentioned above. Both types of circalittoral are found in the Project area.

- **Bathyal** – zone corresponds to the continental slope between the edge of continental shelf (typically at 180 – 200 m depth) and the abyssal plain. The "shelf break" is typically at 180 – 200 m depth. This zone has been divided into upper and lower bathyal. Recently the bathyal zone is defined as the oceanic zone at depths of 200-2000 m, lying to seaward of the shallower neritic zone, and landward of the deeper abyssal zone. The upper limit of the bathyal zone is marked by the edge of the continental shelf. In marine ecology, it is the region of the continental slope and rise, which can be geologically active, and includes trenches and submarine canyons, with underwater erosion producing avalanches. In the Black Sea, the upper bathyal has been found to be populated by deep-water fauna, but the deeper zones have been found to be azoic (without life). Therefore, in the Black Sea the upper bathyal is defined as the periazoic zone, which is a characteristic of the Black Sea. The project pipeline itself does not cross the bathyal zone.

- **Periazoic** – zone occupies the external margin of the continental shelf in the Black Sea and, in some places, where the shelf is narrowing, even the upper portion of the continental slope. From a biological point of view, this zone supports an atypical community of *Modiolula phaseolina*, with rare and only juvenile individuals in its upper layer, or a community without molluscs, and a lower layer with *Bougainvillia*, which become scarcer with increasing depth.

- **Abyssal** – the zone is the plain below the continental shelf. In the Black Sea, the lower bathyal and abyssal zones are completely azoic.

Marine pelagic zone spans through the whole water column and it is the largest habitat from the Black Sea. This habitat is dependent on the river inputs and the movements of water masses and the complex interactions between biological and physical processes. Plankton communities as phytoplankton and zooplankton constitute an important component of such habitats. Plankton species have fast turn-over rates and therefore respond quickly to changes in the environment. Moreover, plankton plays an important role in the functioning of marine ecosystems and in biogeochemical cycles because they are a key component of the trophodynamics of pelagic ecosystems. The communities' composition provides a good indication of the status of pelagic ecosystems, responding to a variety of pressures, in particular nutrient enrichment, NIS, alteration in hydrographical conditions and contaminants.

Black Sea habitats around offshore project site location are presented in Figure 15.

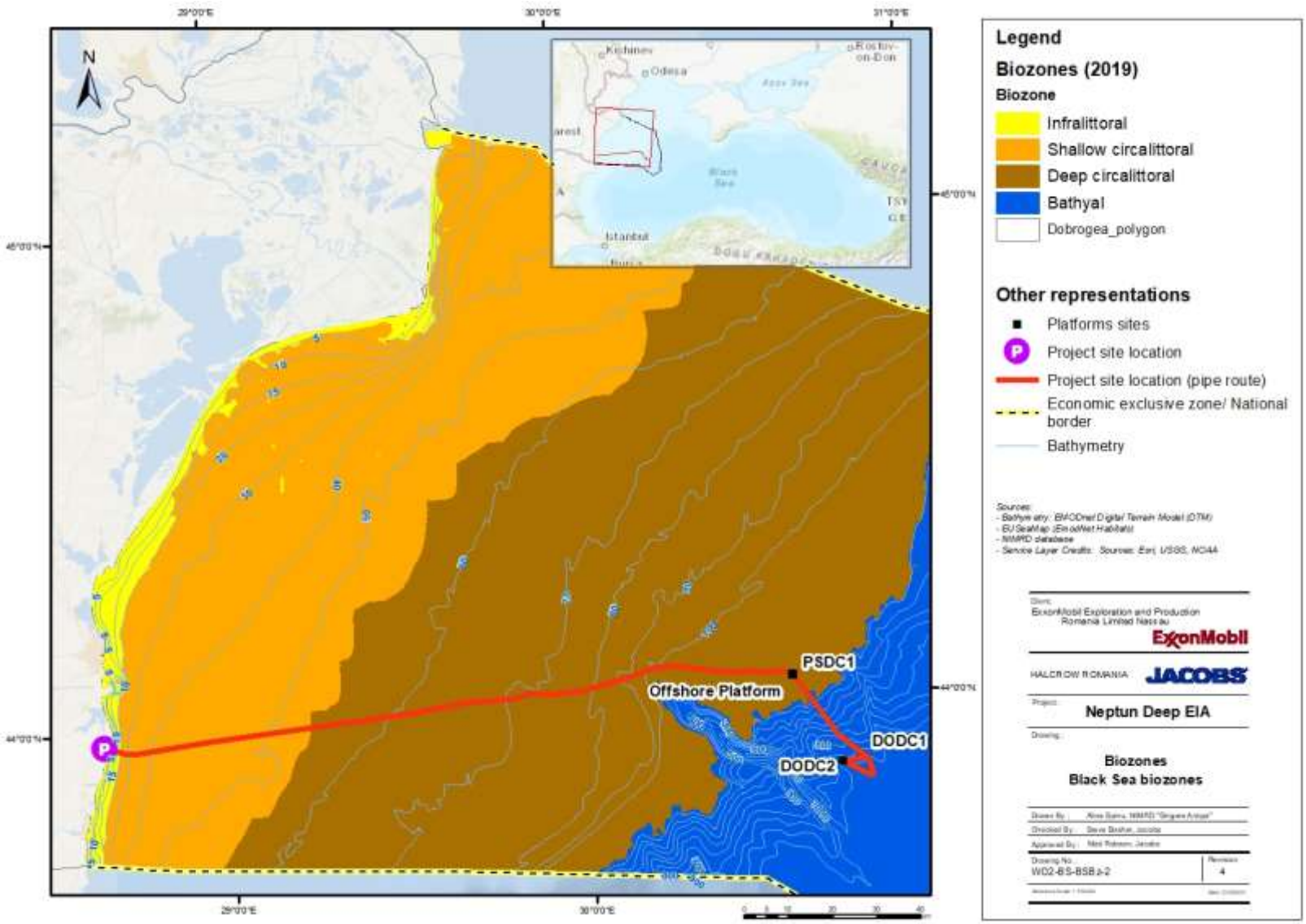


Figure 14 - Marine benthic zones around project location

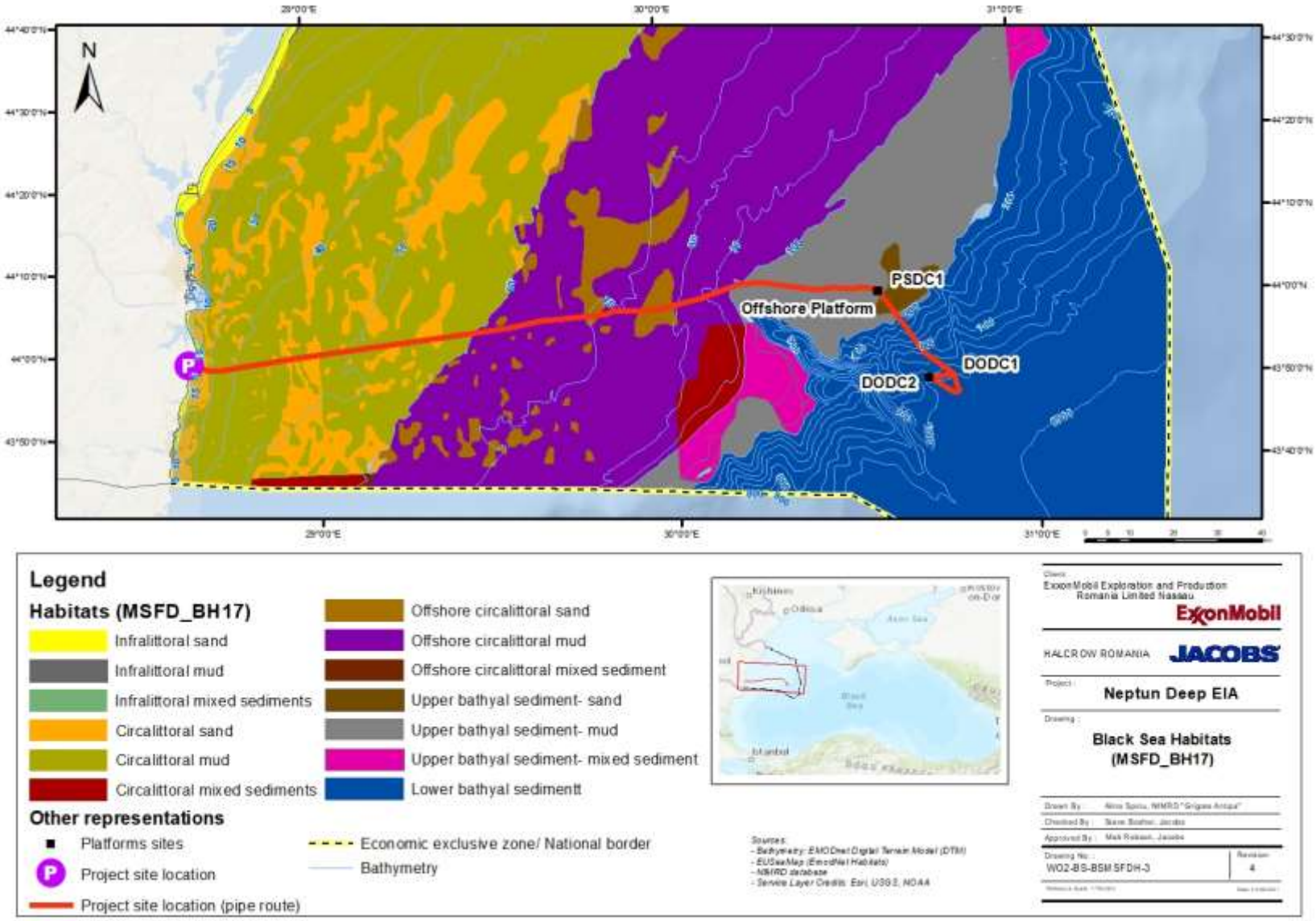


Figure 15 - Marine habitats around project location

6.1.6.1.2.2 Planktonic community

6.1.6.1.2.2.1 Phytoplankton

Phytoplankton or microalgae are autotrophic organisms, able to fix solar energy through the process of photosynthesis, and with the help of chlorophyll and carotenoid pigments, transform the inorganic chemicals into a complex of organic substances, the result being the production of carbohydrates, proteins, fats, carbon dioxide and water.

Due to this property, phytoplankton organisms are primary producers, the autotrophic species being the main source of organic matter in marine basins. The entire biological production of a body of water will depend on the value of this source, the phytoplankton being the first link of the trophic chain, which is the basic food for all consumers found at higher trophic levels such as zooplankton and fish.

From a taxonomic point of view, the main groups of marine phytoplankton are diatoms, dinoflagellates, euglenophytes, cyanobacteria, chrysophytes and cryptophytes. In the Black Sea, the phytoplankton includes about 750 species, 100 of which are bentho-planktonic diatoms. The diversity of pelagic phytocoenoses depends on salinity, temperature, nutrients, and hydrodynamics (influencing mixing), which distinguish deep-sea pelagic areas, shallow areas, coastal lagoons and estuaries.

For the identification of all key phytoplankton species that could potentially be located within the Project area, this area was divided into:

- Coastal waters (between 5 and 20 m water depth);
- Marine waters (between 20 and 100 m water depth);
- Offshore waters: (from 100 to 1000 m water depth).

A total of 150 phytoplankton species were identified within the Neptun Deep Project area. The highest diversity was found in the offshore waters (136 species) and the lowest in coastal waters (40 species). In the marine waters, 84 species were found. Dinoflagellates were the dominant group representing 44-47.6 % of the total number of species identified in all the Project area. The diatoms were the second most abundant group within the community with 25-28.6% of the total number of species found within the Project area. The chlorophytes ranked third in the phytoplankton community structure, comprising a maximum of 10.6% of species in offshore waters. The remaining groups (e.g., cyanobacteria, chrysophytes, cryptophytes and euglenophytes) had a lower diversity representing between one and seven percent of species with a maximum of 10-15 species in offshore waters. Taxonomic composition of the phytoplankton communities during 2015-2016 in the project area is presented In Figure 16.

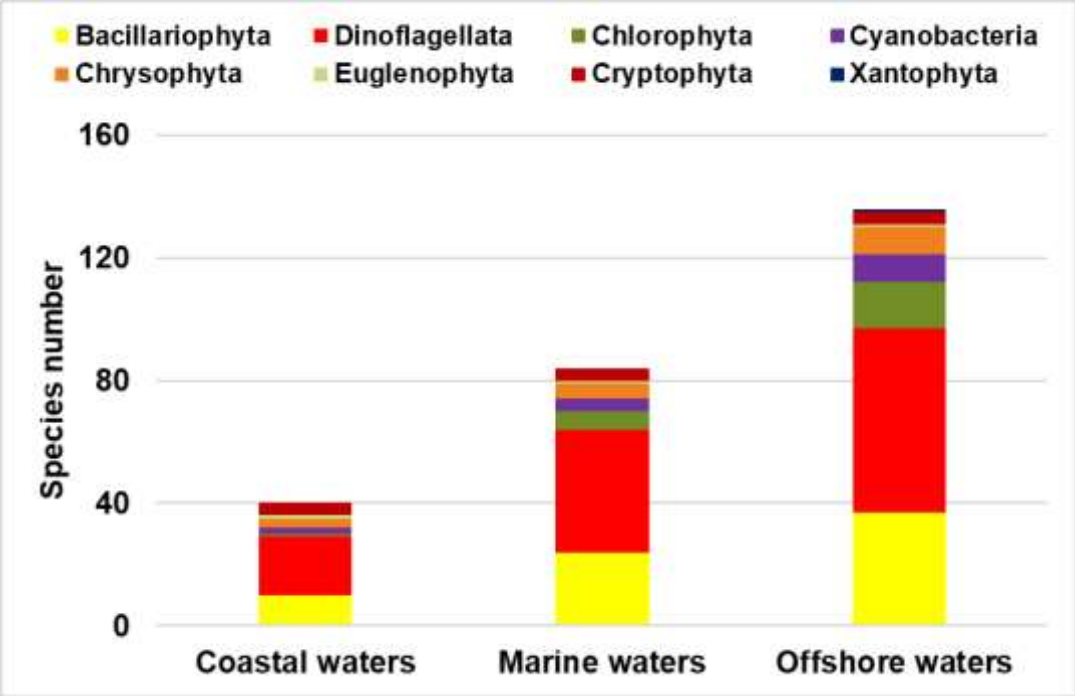


Figure 16 - Taxonomic composition of the phytoplankton communities during 2015-2016 in the project area

6.1.6.1.2.2.2 Zooplankton

Zooplankton encompasses an array of microscopic animals and comprise representatives of almost all major taxa, particularly the invertebrates, that passively drift in the water column. Zooplankton represents an important trophic link in the marine food web, connecting the primary producers with the consumers at higher levels. Zooplankton play a role in controlling the population of the phytoplankton while also serving as food for a variety of larger pelagic organisms including fish.

In general, there is a uniformity in zooplankton community structure with seasonal changes of peculiar species association. Zooplankton taxonomic composition is comprising mainly of copepods, cladocerans, meroplanktonic larvae of benthic invertebrates, *Noctiluca scintillans* a pigment-less dinoflagellate alga and gelatinous species.

Based on the data collected, in the project area a total number of 31 species were described (Table 30).

Table 30 - List of zooplankton species identified in Neptun Deep Project area

No	Taxon
1	*Noctiluca scintillans* (Macart.) Kof. & Sw.
2	Polychaeta (larvae)
3	*Bosmina (Bosmina) longirostris (O. F. Müller, 1785)*
4	*Chydorus sphaericus* (O.F. Müller, 1785)
5	*Daphnia longispina* O.F. Müller, 1785
6	*Evadne spinifera* O.F. Müller, 1867
7	*Penilia avirostris* Dana, 1849
8	*Pleopis polyphemoides* (Leucart, 1859)
9	*Pseudevadne tergestina* (Claus, 1877)
10	*Acartia (Acartiura) clausi* Giesbrecht, 1889
11	*Anomalocera patersoni* Templeton, 1837
12	*Calanus euxinus* Hulsemann, 1991
13	*Centropages ponticus* Karavaev, 1895

No	Taxon
14	*Paracalanus parvus* (Claus, 1863)
15	*Pontella mediterranea* (Claus, 1863)
16	*Pseudocalanus elongatus* (Boeck, 1872)
17	*Oithona similis* Claus, 1863
18	*Oithona davisae* Ferrari F.D. and Orsi, 1984
19	*Harpacticoida sp.*
20	Cirripedia (larvae: nauplia, cypris)
21	Decapoda (larvae: zoea, megalopa)
22	*Mesopodopsis slabberi* van Beneden,1861
23	Gastropoda (larvae)
24	Bivalvia (larvae)
25	*Parasagitta setosa* (Müller, 1847)
26	*Oikopleura (Vexillaria) dioica* Fol, 1872
27	*Aurelia aurita* (Linnaeus, 1758)
28	*Rhizostoma pulmo* (Macri, 1778)
29	*Beroe ovata* (Bruguière, 1789)
30	*Mnemiopsis leidyi* (A. Agassiz, 1865)
31	*Pleurobrachia pileus* (O. F. Müller, 1776)

6.1.6.1.2.2.1 Benthic flora

The benthic flora or macrophytobenthos refers to large plants (macrophytes) growing on the seabed and comprises macroalgae (seaweeds) and the seagrasses (marine vascular plants). These large primary producers are an essential part of marine ecosystems, creating substrates and habitats for other marine organisms. Together with phytoplankton, macrophytobenthos contribute to nutrient cycling and primary production of marine ecosystems. Their sensitivity to changes in environmental conditions and their ability to concentrate chemical elements from the environment make them useful bio indicators of pollution. It is considered that long-term changes in the status of water bodies can be detected by monitoring marine plant communities.

Macrophytes are among the first organisms to respond to deterioration in marine environmental conditions; through diversity decrease and change in structure of macroalgae and seagrass communities.

Macrophytes are attached organisms, inhabiting coastal biotopes and many can withstand anthropogenic impacts within the coastal zone. Some species have long life cycles and others are relatively fast growing. Besides opportunistic species, there are also large dominant species, which form an indicatory community for the quality of the marine environment such as those belonging to *Cystoseira*, *Zostera*, and *Phyllophora* genera.

The macroalgae are a unique domain able to maintain the ecological balance in the marine coastal environment. The widespread reduction and disappearance of algal species over recent decades in the Black Sea due to the influence of anthropogenic pressures, caused a disruption of the function of marine coastal ecosystems and their food chains, reduction of the zoobenthic communities, including various fish species.

Over recent decades along the Romanian Black Sea shore, the phytobenthic communities have suffered a serious decline as a result of the cumulative action of some unfavorable natural and anthropogenic factors.

Benthic flora in the Project area is dominated by opportunistic, fast growing macroalgal species, but historically more sensitive, perennial species were present (macroalgae and marine phanerogams), which have since disappeared. The nearest presence of *Cystoseira*, is 17 km to the south of the Project area, *Zostera* 18 km to the south and *Phyllophora* at 25 km to the north.

In the Project area the dominant species of flora are the opportunistic macroalgal species. The dominant taxa are the green algae, especially the photophilic association *Ulva - Cladophora*. The species identified in the past years within the Project area are presented in Table 31. The areas were characterized by the exclusive presence of macroalgal species with a fast-developmental cycle and a high reproductive capacity.

Table 31 - Macroalgae species identified along Eforie Sud – Tuzla – Costinesti during 2015 – 2018

Phyllum	Macroalgae species	Eforie Sud	Tuzla	Costinesti
Chlorophyta	*Cladophora albida*			*
	Cladophora sericea	*	*	
	Cladophora vagabunda	*	*	*
	Ulva intestinalis	*	*	*
	Ulva flexuosa	*		
	Ulva rigida	*	*	*
Rhodophyta	*Callithamnion corymbosum*		*	
	Ceramium diaphanum var. *elegans*	*	*	*
	Ceramium virgatum	*	*	*
	Polysiphonia denudata	*		

6.1.6.1.2.2.2 Benthic fauna

Benthic fauna or Zoobenthos (i.e., bottom dwelling animal species) are an important component of marine ecosystems. The larval stages of many benthic organisms are an essential part of the zooplankton and the adult forms are an important part of the food chain, particularly for benthic fish species, and a valuable resource for people. They are also important in ecosystem processes. For example, filter feeding, and detritivore organisms contribute to the cycling of organic matter and when present in sufficient numbers may impact water quality.

Many benthic organisms are sensitive to changes in environmental conditions. This is particularly true for sessile forms (attached or immobile species) that cannot avoid adverse impacts or species that require very specific environmental conditions such as oxygen or nutrient levels. Some species can adapt to environmental change, while others are able to relocate to areas with more favorable conditions.

The composition of the zoobenthic community is largely determined by settlement of larvae from the water column, patterns of which are highly variable in marine systems, and by the physical nature of the benthos, particularly the nature of sediments including particle size and sorting. In addition to these structuring forces several other environmental and ecological factors determine the structure of benthic communities.

The most common species encountered in the project area belong to 3 major taxonomic groups: Polychaeta, Mollusca and Crustacea. Additionally, an echinoderm species, *Amphiura stepanovi*, is quite common in the project area.

Polychaeta include forms such as sand worms, tube worms, and clam worms. The most common species of Polychaeta found in the project area are *Nephtys hombergii* and *Melinna palmata*.

All molluscs in the Black Sea are benthic, with a selective behavior related to substrate type (e.g., *Polyplacophora* species live exclusively on hard or shelly substrata), gastropods live on all substrate types, and bivalves are sedentary on different substrate in the epi- or endobenthos (living on or within the substrate).

The most common molluscs in the project area are *Rapana venosa*, *Mytilus galloprovincialis, Modiolula phaseolina, Steromphala divaricate*, *Donax trunculus*, and *Polititapes aureus*.

The subphylum Crustacea is a diverse group that includes crabs, lobsters, shrimps, ostracods, barnacles and woodlice. The Crustacea is the most diverse group of arthropods after the insects, including over 800 families, and many subgroups. They play a key role in the trophic chain, mainly as primary consumers (filter-feeders and detritus-feeders), mediating energy and matter transfer to higher trophic levels in marine, oceanic and freshwater trophic chains.

The most common species found within the Project area are *Ampelisca diadema*, *Upogebia pusilla*, *Diogenes pugilator*, *Carcinus aestuarii*, *Eriphia verrucose*, and *Pachygrapsus marmoratus*.

6.1.6.1.2.2.3 Fish population

Main fish species of economic importance present in the project area are *Sprattus sprattus* (Sprat), *Engraulis encrasicolus* (European anchovy), Trachurus mediterraneus (Mediterranean horse mackerel), Psetta maeotica (Black Sea turbot), , *Belone belone* (Garfish), *Liza aurata* (Golden grey mullet), *Mugil cephalus* (Flathead grey mullet), *Mullus barbatus* (Red mullet), *Mullus* surmuletus (Striped red mullet), Gobius niger (Black goby), Mesogobius batrachocephalus (Knout goby), Neogobius melanostomus (Round goby), *Pomatomus saltatrix* (Bluefish), *Alosa tanaica* (Black Sea shad) and *Alosa immaculata* (Pontic shad) are species of community interest present in the Annex 1 of Habitat Directive.

Other fish species potentially found within the project area are *Huso huso*, *Acipenser gueldenstaedtii*, *Acipenser stellatus*, *Anguilla anguilla, Raja clavate, Salmo labrax, Gasterosteus aculeatus, Merlangius merlangus, Syngnathus tenuirostris, Syngnathus typhle, Syngnathus variegatus, Nerophis ophidion, Hippocampus guttulatus, Atherina boyeri, Umbrina cirrosa, Symphodus cinereus, Symphodus ocellatus, Symphodus roissali, Symphodus rostratus, Symphodus tinca, Ctenolabrus rupestris, Coris julis, Trachinus draco, Uranoscopus scaber, Uranoscopus scaber, Uranoscopus scaber, Parablennius tentacularis, Gymnammodytes cicerelus, Ponticola platyrostris, Proterorhinus marmoratus, Aphia minuta, Scorpaena porcus, Chelidonichthys lucerna*, and *Pegusa lascaris*.

6.1.6.1.2.2.4 Cetacean

Cetacean fauna in the Black Sea includes three species: The Black Sea harbour porpoise (*Phocoena phocoena relicta*), the Black Sea common dolphin (*Delphinus delphis ponticus*) and the Black Sea bottlenose dolphin (*Tursiops truncatus ponticus*). All three species are covered by various conservation designations including Annex IV of the European Habitats Directive and therefore require strict protection by EU member states. Based on expert and anecdotal observations in the Project area, the most frequently observed species were the Black Sea harbour porpoise and Black Sea bottlenose dolphin (especially in the coastal area of the project), but the Black Sea common dolphin, is also considered likely to be present in the offshore area.

Their presence within the project area would depend primarily on the season and on the availability of prey.

6.1.6.2 Identification of sensitive areas that may be affected by the project

6.1.6.2.1 Onshore

The onshore part of the project site does not intersect any natural protected area. Near the eastern boundary of the onshore project site lies the Natura 2000 Special Protection Area ROSPA0076 Marea Neagră, designated for the protection of 37 aquatic species (including marine species), and the Natura 2000 Site of Community Importance ROSCI0273 Zona marină de la Capul Tuzla.

Additional information on the relation of the project site and the Natura 2000 sites is presented in Section 12 of the Presentation memorandum.

The closest natural protected area of national importance is the nature reserve Techirghiol Lake (RONPA0937), located at approximately 5 km distance north from the project site.

As identified during the baseline surveys, from the flora point of view the most sensitive areas of the onshore part of the project is represented by the shore area, where characteristic species of the Natura 2000 habitat 1210 Annual vegetation of drift-lines were identified. In this area the pipeline crossing will be trenchless, using the microtunnelling method.

In terms of bird species, breeding and sedentary species were observed, which are characteristic to agricultural ecosystems and steppe areas. In addition, aquatic species and wintering and migratory birds, mostly common for the Dobrogea region, were also observed. It is important to note the presence in migration of the species *Larus fuscus fuscus*, which is rather rarely observed in Romania. At the seashore, bird concentrations occurred

during the winter months, providing evidence that the shore is good for shelter and food. The type and number of bird species observed during this period reflected the type of habitats and the agricultural and anthropic activities from the seashore or nearby villages. The numbers and observed species at and near the project site varied from one period to the next, especially during the agricultural working periods (the ploughing season). During summer and autumn, the presence of a large number of yellow-legged gulls (*Larus michahellis*) was observed, feeding on the ploughed fields which contain grubs and small mammals.

The onshore part of the project site is represented mainly by agricultural land. Although numerous fauna species were identified on the project site, including species of community interest, the site does not represent a sensitive area, similar areas being located on the neighboring lands. Overall, the best fauna species habitats identified were the patches of natural vegetation near the project site, but the project site and the surrounding agricultural fields also represent favorable habitats for several species, especially rodents. Dens of *Meles meles*, *Vulpes vulpes* and *Canis aureus* were identified on the irrigation channels located along the project site and in the area of the orchard. The irrigation channel located along the future access road (which will be part of a separate project) represents an important area for the fauna species, due to the fact that some natural elements are still present here. The irrigation channel will not be affected by the proposed construction works.

6.1.6.2.2 Offshore

The following Natura 2000 sites under the Habitats Directive have been identified as potentially being affected by the project development:

- ROSCI0197 - Plaja submersă Eforie Nord – Eforie Sud;
- ROSCI0273 - Zona marină de la Capul Tuzla;
- ROSCI0293 - Costinești - 23 August;
- ROSCI0281 – Cap Aurora;
- ROSCI0311 - Canionul Viteaz.

The following Natura 2000 sites under the Birds Directive have been identified as potentially being affected by the project development:

- ROSPA0076 – Marea Neagră.

The following Natura 2000 habitats are present within the Natura 2000 sites under the Habitats Directive[4]:

- **ROSCI0197 – Plaja submersă Eforie Nord – Eforie Sud**

  1110 – Sandbanks which are slightly covered by sea water all the time

  1140 – Sandflats and mudflats not covered at low tide

  1170 – Reefs

- **ROSCI0273 – Zona marină de la Capul Tuzla**

  1110 – Sandbanks which are slightly covered by sea water all the time

  1140 – Sandflats and mudflats not covered at low tide

  1170 – Reefs

[4] NATURA 2000 - STANDARD DATA FORM

8330 – Submerged or partially submerged sea caves

- **ROSCI0293 - Costinești - 23 August**

  1110 - Sandbanks which are slightly covered by sea water all the time

  1140: Sandflats and mudflats not covered at low tide

  1170 - Reefs

  8330 - Submerged or partially submerged sea caves

- **ROSCI0281 – Cap Aurora**

  1110 - Sandbanks which are slightly covered by sea water all the time

  1170 - Reefs

  1180 - Submarine structures made by leaking gases

  8330 - Submerged or partially submerged sea caves

- **ROSCI0311 - Canionul Viteaz**

  1170 - Reefs

  1180 - Submarine structures made by leaking gases

The following sensitive species are present within the Natura 2000 sites under the Habitats and Birds Directives[5]:

- **ROSCI0197 – Plaja submersă Eforie Nord – Eforie Sud**

  4125 – *Alosa immaculata* (Pontic shad) – IUCN status – LC (least concern)

  4127 - *Alosa tanaica* (Black Sea shad) – IUCN status – LC (least concern)

  1351 – *Phocoena phocoena* (Harbour porpoise) – IUCN status – EN (endangered)

  1349 - *Tursiops truncates* (Bottlenose dolphin) – IUCN status – EN (endangered)

- **ROSCI0273 – Zona marină de la Capul Tuzla**

  4125 – *Alosa immaculata* (Pontic shad) – IUCN status – LC (least concern)

  4127 - *Alosa tanaica* (Black Sea shad) – IUCN status – LC (least concern)

  1351 – *Phocoena phocoena* (Harbour porpoise) – IUCN status – EN (endangered)

  1349 - *Tursiops truncates* (Bottlenose dolphin) – IUCN status – EN (endangered)

- **ROSCI0293 - Costinești - 23 August**

[5] NATURA 2000 - STANDARD DATA FORM

4125 - *Alosa immaculata* – IUCN status – LC (least concern)

4127 - *Alosa tanaica* – IUCN status – LC (least concern)

1349 - *Tursiops truncatus* – IUCN status – EN (endangered)

1351 - *Phocoena phocoena* – IUCN status – EN (endangered)

- ROSCI0281 – Cap Aurora

4125 - *Alosa immaculata* – IUCN status – LC (least concern)

4127 - *Alosa tanaica* – IUCN status – LC (least concern)

1349 - *Tursiops truncatus* – IUCN status – EN (endangered)

1351 - *Phocoena phocoena* – IUCN status – EN (endangered)

- **ROSCI0311 - Canionul Viteaz**

1349 – *Tursiops truncatus* – IUCN status – EN (endangered)

- **ROSPA0076 – Marea Neagră**

A396 - Branta ruficollis

A196 - Chlidonias hybridus

A197 - Chlidonias niger

A038 - Cygnus cygnus

A002 - Gavia arctica

A001 - Gavia stellata

A189 - Gelochelidon nilotica

A180 - Larus genei

A176 - Larus melanocephalus

A177 - Larus minutus

A068 - Mergus albellus

A020 - Pelecanus crispus

A170 - Phalaropus lobatus

A464 - Puffinus yelkouan

A195 - Sterna albifrons

A190 - Sterna caspia

A193 - Sterna hirundo

A191 - Sterna sandvicensis

Other species of birds not listed in Annex 1 of Bird Directive: A050 - Anas penelope, A053 - Anas platyrhynchos, A051 - Anas strepera, A059 - Aythya ferina, A061 - Aythya fuligula, A067 - Bucephala clangula, A125 - Fulica atra, A156 - Limosa limosa, A070 - Mergus merganser, A069 - Mergus serrator, A017 - Phalacrocorax carbo, A005 - Podiceps cristatus, A006 - Podiceps grisegena, A008 - Podiceps nigricollis, A004 - Tachybaptus ruficollis.

Additional information on the relation of the project site and the Natura 2000 sites is presented in Section 12 of this Presentation memorandum.

6.1.6.3 Works, equipment, and measures for the protection of biodiversity, nature monuments and protected areas

6.1.6.3.1 Onshore

During the construction phase, the main measures recommended for the protection of biodiversity are:

- Installing of temporary fences around the construction areas and conducting of periodic surveys (a daily frequency is recommended) for the identification and eventual relocation of any fauna species (especially reptiles and amphibians);
- Limitation of the access of fauna species onto the construction roads, to avoid vehicle-related mortality. This can be achieved by installing small temporary fences along the road edges;
- Materials should not be stored in areas where they are available to become hiding places for fauna species (especially reptiles, in particular snakes). It is recommended that the materials are sealed or stored in enclosures which do not allow the entrance of animals;
- No open pits, ditches, trenches or potential traps for amphibians, reptiles and small mammals are to be left uncovered or without an escape route. It is recommended that, at a minimum, any construction works of this type to include a ramp for the escape of any trapped animals that may have fallen inside the structure if feasible;
- Limit the areas of stagnant water in the construction site in order to avoid the installation of amphibians (any area with stagnant water can encourage the presence of amphibians, as they could be used as breeding ponds);
- The clearing of the existing vegetation (especially vegetation along the irrigation channel and in shelterbelts) should be minimized;
- Reduction of the noise generated by the project construction activities;
- Avoid affecting the dens of mammals present in the irrigation channels;
- In order to reduce the impact on bats, on the construction site it is recommended that all lights point downwards and that cold temperature lights will be used (LED lights), to attract fewer insects;
- Imposing of speed limitation on the access roads (preferably maximum 15 km/h) in order to avoid vehicle-related mortality, both for terrestrial and flying species;
- Restoration of the areas affected by construction works and an adequate landscaping on the project site, including flora species suitable for invertebrate species, with focus on pollinators.

During the operation phase, the main measures recommended for the protection of biodiversity are:

- In order to reduce the impact on bats, on the NGMS site it is recommended that all lights point downwards and that cold temperature lights will be used (LED lights), to attract fewer insects;
- To improve the habitat conditions for bats on the project site and to compensate for the hunting habitat loss, bat roosts are recommended to be installed close to the forested area and also close to the sea. The roosts should be installed in clusters of 5 units per site, at a distance of 3 m one from the other, at 5 - 6 m above ground, on poles. Schwegler bat houses are to be considered as an option, as the woodcrete material has one of the best rates of bat colonization.
- Grills with a mesh of maximum 1x1 cm should be mounted in any opening of the facility (e.g., tubes, exhausts, building corners), to prevent the animals for seeking shelter or forming colonies in unwanted places, which can harm them and cause unforeseen damage;
- To reduce the barrier effect of the project, it is recommended that a native tree curtain be planted around the NGMS site, delimiting the project site, offering the animals an optimal travel route and reducing the noise levels;
- Any gas exhaust which will be mounted in the field must contain a venting system which will quickly disperse the gases and heat in the atmosphere, to avoid a deadly trap effect for any flying animals;
- Imposing of speed limitation on the access roads (preferably maximum 15 km/h) in order to avoid vehicle-related mortality, both for terrestrial and flying species.

The complete list of avoidance, prevention and mitigation measures will be included in the Environmental studies.

6.1.6.3.2 Offshore

During the construction phase, the main measures recommended for the protection of biodiversity are:

- Appropriate lighting management on vessels and during the construction of SWP, in the period of bird migration (between the end of March and the end of May, as well as mid of September to the end of October);
- Reduce vessels speed during presence of marine mammals or birds on the water surface;
- Implementation of ACCOBAMS methodological guidance on underwater noise mitigation measures for coastal excavations and SWP piling activities;
- Monitoring of water quality in the vicinity of marine protected areas;
- Construction activities in the coastal area outside fish migration period;
- Management plans for the ballast waters of the vessels arriving from other seas and hull cleaning to avoid introduction of new species.

During the operation phase, the main measures recommended for the protection of biodiversity are:

- Use of the best available equipment and technologies to reduce the noise and vibration generated by the SWP;
- Evaluate the toxicity of produced water discharged in the sea in order to adjust the concentration to the level of no effect;

- Schedule maintenance activities for the pipeline and SWP to a minimum (reduce vessels movement to minimum necessary).

The complete list of avoidance, prevention and mitigation measures will be included in the EIA Report.

6.1.7 Protection of human settlements and other public interest objectives

6.1.7.1 Identification of public interest objectives

The area proposed for construction/installation of the onshore facilities of the Neptun Deep project is located in the southern part of the administrative territory of Tuzla commune, Constanta County, close to the northern limit of the administrative territory of Costinesti commune. The project site has currently agricultural land use (although agricultural activities ceased since acquisition of the land by the beneficiaries) and no presence of objectives likely to be of public interest was identified in the closest proximity of the project site.

Private dwellings located within the administrative territory of Costinesti commune were identified to the south and southeast in proximity of the onshore project site. The closest dwellings are located at approximately 100 m south from the limit of the site proposed for installation of the production pipeline and onshore entry point of the microtunnel shore crossing, respectively at approximately 350 m south-east from the limit of the site proposed for installation of NGMS, at the date of present document.

The closest existing human settlements and other built-up objectives located within the administrative territory of Tuzla commune were identified at more than 1 km distance to the north – west and north of the onshore project site.

Tuzla Airport is located to the northwest of the western limit of the onshore site at approximately 2 km distance.

The onshore project site was investigated for presence of potential archaeological sites during the archaeological surveys performed in 2018. According to the findings of the Archaeological Diagnostic Report prepared by the Museum of National History and Archaeology from Constanta (MINAC), the onshore site is located within an area with low archaeological potential, without conclusive archaeological traces.

The closest archaeological objective is represented by Costinescu Mound located at approximately 500 m distance to the north-west corner of the onshore project site.

The project site is partially located within the archaeological protection area of the Romanian shelf of the Black Sea coast (CT-l-s-A-02561 *''Platforma continentala a litoralului romanesc al Marii Negre"*).

The offshore non-invasive underwater investigations performed within the offshore project site, as part of the procedure for preparation of final Archaeological Diagnostic Report, identified four wooden wrecks that present a certain historical and archaeological potential and require a protection area of 50 m.

Another four targets, which were located at significant depths that could not be technically visualized during these investigations, have been provided with a protected area similarly to the one provided for the four identified wooden wrecks (50 m protection area), pending completion of new investigations for confirmation or negation of artifacts presence. The distance between the protection area limit of these targets and the gas pipeline varies from 63 m to 225 m.

Other existing cultural resources and archaeological sites located in the area of the onshore and offshore project sites were presented in *Chapter 5.3. Location of the site in relation to the cultural heritage*.

There is a cultural landmark proximate to the onshore project area. The Lighthouse of Tuzla is the oldest lighthouse on the Romanian seashore. This fully operational lighthouse was erected in 1900 by the French company Barbier, Bernard & Turrene. It is located in Cape Tuzla, at more than 2 km north-east from the project site.

Religious places were identified on the administrative territory of Tuzla and Costinesti commune, within 5 km radius of the onshore project site, including:

- Four religious places of worship located in Tuzla commune (the Agape Tuzla Baptist Church, the mosque of Tuzla, the New Orthodox Church, and the St. Catherine Church) located at more than 2 km north of the onshore project site;
- Two religious places of worship located in Costinesti commune (the St. John Baptist Cathedral and St. Demetrius Church) located at more than 2 km south of the onshore project site.

6.1.7.2 Works, equipment, and measures for the protection of human settlements and protected and / or publicly protected objects

The main good practice and mitigation measures that should be considered for the protection of human settlements and other public interest objectives:

- Consideration of seasonal work restrictions for certain project components during construction phase due to the onshore project site proximity to residential areas and touristic areas;
- Implementation of noise abatement and dust control measures at the construction works sites due to the proximity of the residential and touristic areas;
- Informing people living or working in close proximity of the onshore construction works sites about the nature, timing, and duration of particular construction activities and construction works sites reinstatement prior to the commencement of construction works;
- Archaeological supervision by an authorized archaeologist will be ensured during execution of onshore excavation works, as required by the endorsement issued by Constanta County Cultural Directorate;
- If any artefacts or unknown archaeological sites are identified during the execution of offshore construction works, in accordance with Law 256/2018, the Beneficiary must ensure a protection zone of 50 m around the identified archaeological finding and must inform the Ministry of Culture about the protection zone by sending the Stereo 70 coordinates, in 72 hours after the protection zone was delimited;
- Installation of warning signs / safety signaling in the area of construction sites;
- Installation of a vegetation perimetral screen at the NGMS and CCR sites to reduce the overall visual impact on the surrounding communities;
- All support vessels used during project lifecycle will be adequately illuminated at night or in foggy conditions;
- Provision of navigation aids at the SWP.

6.1.8 Waste prevention and reduction program of generated waste on site during project construction and operation, including disposal

6.1.8.1 List and quantities of the generated waste

The main type of wastes generated during the **construction and installation works** are as follows:

Non-hazardous waste

- Bulk Solids (Uncontaminated) – Barite, Dessicant, Silica (code 01 05 99);
- Bulk Solids (Uncontaminated) - Blast Media (code 12 01 17);
- Waste paper and cardboard packaging (code 15 01 01), recyclable domestic trash - plastic (code 15 01 02), waste wood (code 15 01 03), recyclable domestic trash - metal (code 15 01 04);
- Dry Filters (code 15 02 03);
- Glycol (code 16 01 15);
- Alkaline batteries (code 16 06 04);
- Electrical/electronic waste (code 16 02 16),
- Household Waste (code 20 03 01);
- Scrap metal (code 20 01 40);
- Recyclable domestic trash – Glass (code 20 01 02).

Hazardous waste

- Potentially contaminated sediments from reservoirs (code 05 01 03*);
- Paint waste (code 08 01 11*);
- Bulk Solids (Uncontaminated) – Cement (code 11 01 98*);
- Used lube oil/motor oil (code 13 02 05*);
- Oil sludge/Tank bottom sludge (code 13 05 02*);
- Contaminated hydrocarbons (contaminated crude, diesel, etc.) (code 13 07 03*);
- Contaminated drums, containers, packaging (metal and plastic) (code 15 01 10*);
- Drums from caustic solutions, solvents; empty pipe dope containers, chemical sacks, cans of dried paint (code 15 01 10*);
- Oily Debris - Oil spill clean-up waste, chemical spill clean-up waste, and PPE; rags, contaminated absorbers (code 15 02 02*);
- Oily Debris - Oily filters (code 16 01 07*);
- Hazardous components from electrical & electronic equipment (code 16 02 15*);
- Lead Acid batteries (code 16 06 01*);

- Nickel-Cadmium (code 16 06 02*);
- Mercury (code 16 06 03*);
- Oily water, Vessel Tank Cleanout, Wash water (code 16 10 01*);
- Oily Debris - Oily sediments (soil mixed with oil) (code 17 05 03*);
- Medical waste (code 18 01 03*);
- Unused or contaminated solvents/chemicals (code 20 01 13*).

The estimated quantities of waste that will be generated during the construction and installation phase are presented in *Appendix G. Lists of estimated waste*.

The main type of wastes generated during **drilling** works are as follows:

Non-hazardous waste

- Fresh water based drilling fluid (code 01 05 04);
- Salt water based drilling fluid (brine) (code 01 05 08);
- Bulk Solids (Uncontaminated) – Barite (code 01 05 99);
- Tonners (code 08 03 18);
- Waste paper and cardboard (code 15 01 01); Plastic (code 15 01 02); Waste wood (15 01 03);
- Antigel Glycol (code 16 01 15);
- Electric and electronic equipment (code 16 02 16);
- Alkaline batteries (code 16 06 04);
- Recyclable domestic trash – Glass (20 01 02);
- Cooking oil (code 20 01 25);
- Electric and electronic equipment (code 20 01 36);
- Scrap metal (code 20 01 40);
- Household Waste (code 20 03 01).

Hazardous waste

- Non-aqueous based drill cuttings (01 05 05*);
- Dried paint (code 08 01 11*);
- Bulk Solids (Uncontaminated) - Cement waste (code 11 01 98*);
- Machine gear and lubricating oils (code 13 02 05*);
- Engine used oil (code 13 02 08*);

- Bilge oil (code 13 04 03*);
- Sludge from oil-water separators (waste containing oil) (code 13 05 02*);
- Other fuel including mixtures (Heli and diesel fuel) (code 13 07 03*);
- Emulsions (code 13 08 02*);
- Drums contaminated with hazardous substances; Sack Waste (contaminated) (code 15 01 10*);
- Contaminated rags, absorbers (code 15 02 02*);
- Oily filters (code 16 01 07*);
- Hazardous components from electrical & electronic equipment (toners, cartridges) (code 16 02 15*);
- Methanol (code 16 03 03*);
- Acid batteries, dry cell batteries (code 16 06 01*);
- Oily Waters - Slops containing used drilling fluids (NAF), cement spacer, chemical additives, wash water; Oil contaminated completion fluids (code 16 10 01*);
- Oily sediments (soil mixed with oil) (code 17 05 03*);
- Medical waste (code 18 01 03*).

The estimated quantities of drilling waste are presented in Appendix G.

The main type of wastes generated during **operation phase** are as follows:

Non-hazardous waste

- Bulk Solids (Uncontaminated) – Barite, Desiccant, Silica (code 01 05 99);
- Bulk Solids (Uncontaminated) – Blast Media (code 12 01 17);
- Waste paper and cardboard (code 15 01 01), recyclable domestic trash - plastic (code 15 01 02), waste wood (code 15 01 03), recyclable domestic trash - metal (code 15 01 04);
- Dry Filters (code 15 02 03);
- Glycol (code 16 01 15);
- Electrical/electronic waste (code 16 02 16);
- Alkaline batteries (code 16 06 04);
- Recyclable domestic trash – Glass (code 20 01 02);
- Scrap metal (code 20 01 40);
- Household Waste (code 20 03 01).

Hazardous waste

- Potentially Contaminated Reservoir Sediments (code 05 01 03*);
- Paint waste (code 08 01 11*);
- Bulk Solids (Uncontaminated) – Cement (code 11 01 98*);
- Used lube oil/motor oil (code 13 02 05*);
- Oil sludge/Tank bottom sludge (oily waste) (code 13 05 02*);
- Contaminated hydrocarbons (contaminated crude, diesel, etc.) (code 13 07 03*);
- Contaminated drums, containers, packaging (metal and plastic) (code 15 01 10*);
- Drums from caustic solutions, solvents; empty pipe dope containers, chemical sacks, cans of dried paint (code 15 01 10*);
- Oily Debris - Oil spill clean-up waste, chemical spill clean-up waste, PPEs; rags, contaminated absorbers (code 15 02 02*);
- Oily Debris - Oily filters (code 16 01 07*);
- Hazardous components from electrical & electronic equipment (code 16 02 15*);
- Lead Acid batteries (code 16 06 01*);
- Nickel-Cadmium (code 16 06 02*);
- Mercury (code 16 06 03*);
- Oily water, Vessel Tank Cleanout, Wash water (code 16 10 01*);
- Oily Debris - Oily sediments (soil mixed with oil) (code 17 05 03*);
- Medical waste (code 18 01 03*);
- Unused or contaminated solvents/chemicals (code 20 01 13*).

The estimated quantities of waste that will be generated during the operation phase are presented in Appendix G.

6.1.8.2 Waste Management Plan

All waste streams (hazardous and non-hazardous), that will be generated during all project phases will be managed in accordance with the Romanian and international requirements and standards applicable to onshore and offshore operations to ensure appropriate management of waste streams, preserve the health of personnel and protect the environment.

The fundamental requirements of an efficient waste management are based on the following key principles:

- Using only those waste management processes and methods that do not endanger human life and the environment;
- "The polluter pays" principle;

- The manufacturer's responsibility principle;
- Using the best practices and cost-effective technologies available.

Waste collecting, segregation, storage, disposal, or recycling activities must not present any risks to personnel health or to the environment (e.g., air, water, land, vegetation, or fauna), considering noise pollution, unpleasant smell or affecting the landscape in any way.

Waste collecting, segregation, storage, disposal, or recycling shall be performed according to physical and chemical properties, compatibility group, recycling potential as well as the nature of fire-fighting substances used for each category in case of fire.

The approach to be adopted by EMEPRL for overall waste management is in accordance with ExxonMobil "Exploration and Production Waste Management Guidelines" namely:

- Plan early to eliminate waste;
- Recycle materials wherever possible; and
- Disposal is the final option.

The Waste Management Plan - WMP will be implemented with regard to the Waste Management Hierarchy, as illustrated in Figure 17, which ranks different types of waste management activity in order of desirability. It states that waste avoidance is the most preferable option, followed by minimization of quantities and hazards of waste generated. Next, it indicates that reuse, recovery, and recycling will be preferred over treatment of waste and that disposal will be considered as a last resort.

Each waste stream will be managed according to the following hierarchy of techniques, in which the technique chosen will be the first in the hierarchy that is safe and practicable.

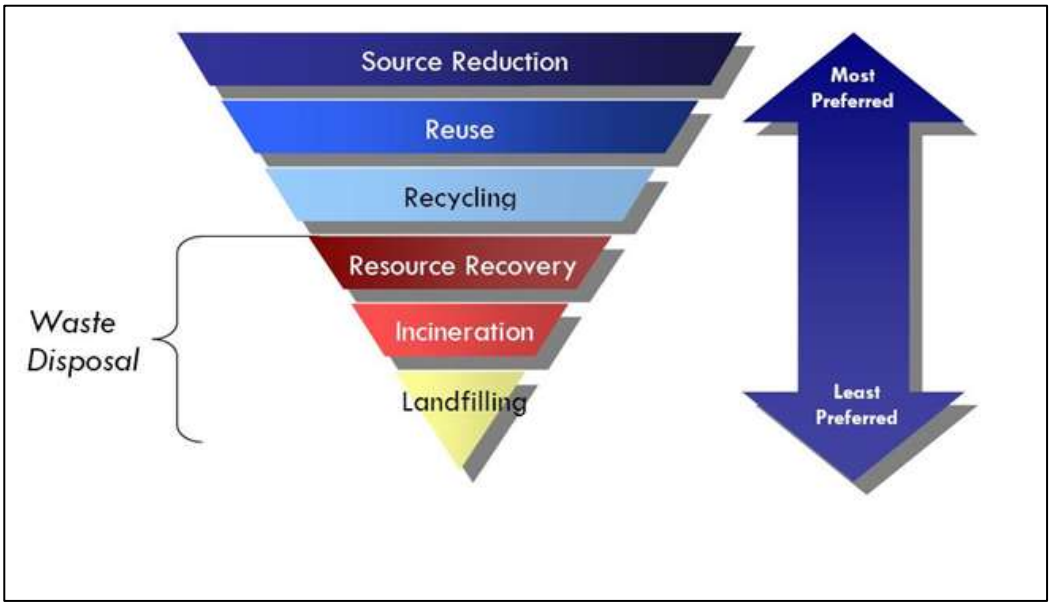


Figure 17 - Waste Management Hierarchy

Whenever equipment, materials and goods are purchased, the company must encourage its suppliers to apply the principle of changing all old packaging (i.e., boxes, bottles, cans) for minimizing, even from the initial phases, the generation of waste. Also, special attention should be given to the equipment, materials and goods that contain a minimum amount of packaging or contain recyclable packaging for minimizing common waste quantities generated within working places.

Reducing wastes generated within working places can be done also by ensuring some practical measures, as follows:

- Purchasing consumables that are packaged so to produce a minimum amount of packaging waste;
- Using re-usable packing;
- Avoiding single use articles for serving meals or cleaning (shall be replaced with articles that can be washed / reused); and
- Avoiding articles and packaging that are not biodegradable or re-usable.

Special attention shall be given to hazardous goods handling. In these cases, proper measure for preventing any accidental spillage shall be taken, according to the relevant requirements. Furthermore, the hazardous goods packaging shall be handled, stored, and transported exactly the same as if they were dangerous goods, following the same restrictions and exemptions as the goods.

6.1.8.3 Program for prevention and reduction of the quantities of waste generated

The Waste Management Hierarchy shall be considered when options are available, as illustrated in Figure 18, which ranks different types of waste management activity in order of desirability. The same waste management hierarchy is to be followed in for the prevention and minimization program development in accordance with the *National Strategy on Waste Management* and as specified in the *European Waste Prevention – Handbook: Guidelines on Waste Prevention Programmes*.

Therefore, each waste stream shall be managed according to the following hierarchy of techniques, in which the technique chosen will be the first in the hierarchy that is safe and practicable. The Waste Prevention and Minimization Program - WPMP should be regarded as a continuous process of program preparation, implementation, monitoring, evaluation, and adaptation as shown in Figure 18:

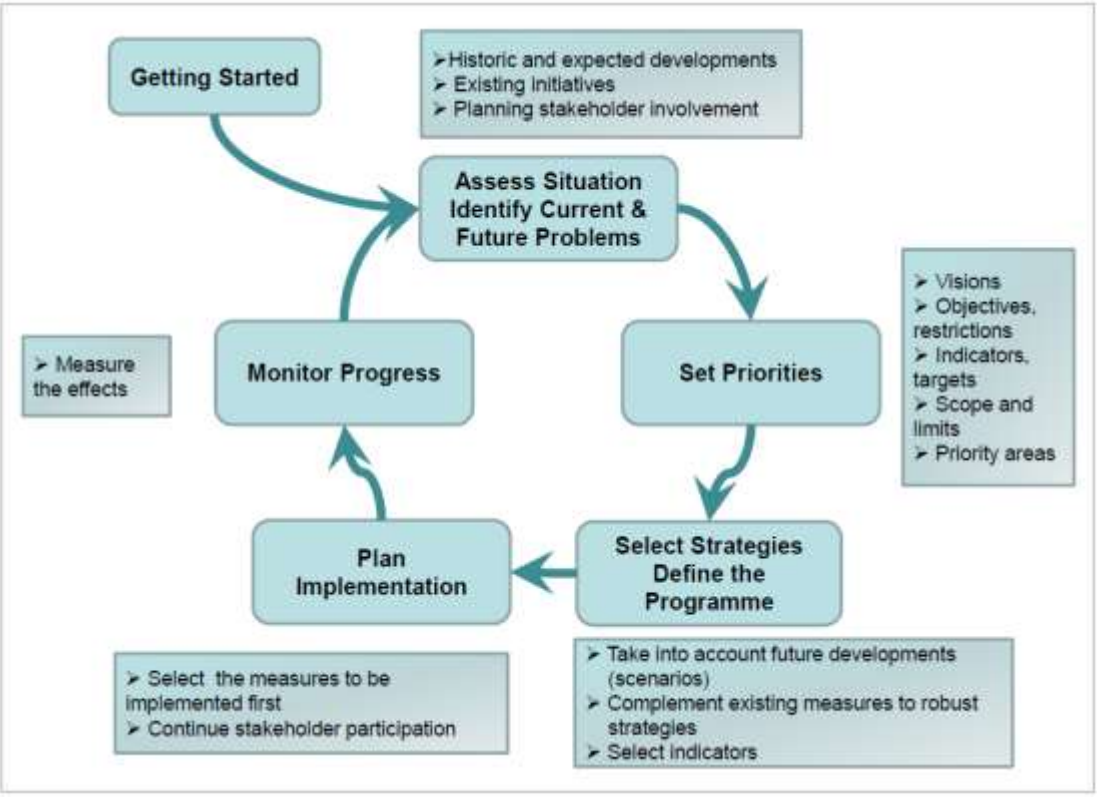


Figure 18 – The WPMP as an on-going process

During project phases it is essential to establish a practical and prioritized set of targets by looking at each waste category. The selected targets and measures will allow the WPMP to achieve its purpose to motivate parties in becoming more resource efficient and using less pollutants, to get them involved and encourage them and to enable them to minimize and prevent unnecessary waste. Targets should consider existing measures in waste management, requirements for optimum technological results and available services that can help EMEPRL achieve selected qualitative or quantitative targets.

Quantitative targets proposed consist of percentage of quantity of waste avoided versus quantity of input material or product used in the activities.

Qualitative targets consist of preventing the use of hazardous materials, reducing the hazardous content of waste generated or selecting a better destination for a particular waste stream (re-use versus recycling). For example, reducing the ratio between the quantity of waste recycled and quantity reused may be a practical target for certain waste streams such as electrical & electronic equipment waste (WEEE), wood packaging, etc. For each waste stream, a look at using less hazardous input materials or with a longer lifespan, for those input materials that are non-essential is needed.

These targets will be accompanied by awareness campaigns and procedural measures, focused on the certain waste streams where there is opportunity for improvement and Key Performance Indicators for monitoring progress.

6.1.9 Management of hazardous chemicals and substances

6.1.9.1 Hazardous substances and chemicals used and / or produced

Chemicals will be used during performance of drilling operations, construction and installation works, and project operation and maintenance activities.

The main chemicals estimated to be used during drilling phase include products for preparation of water based and non-aqueous drilling fluid (e.g., Barite, Natrium bromide, Viscosifier, etc.), well cementing (e.g., Fluid Loss Control, Antifoam, Blended Cement, etc.) and completions (e.g., Gelling Agent, Hydrate Inhibitor, Corrosion Inhibitor, Defoamer, Demulsifier, etc.), and blow out preventer control and anti-freeze protection.

The main chemicals estimated to be used during construction/installation works include hydrotest chemical for pipeline and flowline hydrotesting, chemicals for piping and equipment painting and coating (e.g., coating paint, paint thinner, etc.), nitrogen to facilitate purging of hydrotest water from equipment, chemicals needed during equipment installation (e.g., lubricants, adhesive, etc.), chemicals needed for onshore construction vehicles (e.g., fuels, grease, lubricant oils), and naval diesel fuel for offshore vessels.

The main chemicals estimated to be used during operation and maintenance phase include diesel fuel for onshore back up power generator, fuels for offshore operations and maintenance vessels, Triethylene glycol for gas dehydration system, chemicals injected for flow assurance (methanol, corrosion inhibitor, scale inhibitor, antifoam), nitrogen to facilitate purging of equipment, hydraulic fluids for hydraulic power units, and minimal amounts of biocide for occasional cleaning of the open drain system (including storage tank).

The lists of estimated chemicals to be used during drilling, construction/installation, and operation phases are presented in Appendix H. List of estimated chemicals. The lists include information on chemical description, use, quantities, risk and hazard phrases, and precautionary and security.

Other specific information related to estimated chemicals (e.g., composition, physical and chemical properties, toxicological and ecological information, exposure controls, handling and storage, disposal considerations, transport information, etc.) are presented in the Safety Data Sheet of each chemical attached in Appendix I. Chemicals Safety Data Sheets.

6.1.9.2 Management of hazardous substances and chemicals and protection measures of the environmental factors and human health

6.1.9.2.1 Construction

The chemicals necessary for onshore and shore crossing construction/installation (e.g., lube oils, paint, thinners, etc.) will be procured from authorized suppliers and temporarily stored at the onshore construction sites.

The chemicals necessary for offshore drilling and construction/installation (e.g., drilling fluids chemicals, pipelines precommissioning chemicals) will be procured from authorized suppliers and temporarily stored at the designated onshore project quayside location (Constanta area shore base). The chemicals will be further transported to the offshore drilling/construction/installation sites by specialized installation vessels.

All chemicals will be properly stored in dedicated storage areas at the onshore construction works sites, and onboard of offshore vessels and drilling rig, and will be managed in accordance with legal provisions and material safety data sheets requirements.

6.1.9.2.2 Operation

Fuels

The diesel for onshore standby power generator used to provide backup power to both CCR and NGMS will be stored in a small diesel fuel tank sized to support 3 days of continuous operation at full load. The fuel tank will be installed/incorporated within the standby generator. If required (e.g. power outage), the diesel tank will be supplied regularly by fuel trucks.

TEG

For start-up (initial fill) and makeup purposed during normal operations, the TEG will be stored in a storage tank of 200 m^3 storage volume installed in one of jacket legs at the SWP. The TEG storage tank has been designed with enough capacity to accommodate the total volume of the TEG inventory in the Gas Dehydration/Drying and Regeneration System in case of a requirement.

TEG will be delivered to the SWP by supply boats and a hose connection will be used to unload TEG from supply boats to TEG storage tank.

TEG storage tank will be blanketed with fuel gas. Lean TEG storage pump supplies lean TEG from TEG storage tank to TEG surge drum. This is a caisson type flooded suction centrifugal pump (hydraulic driven) which is located within a caisson. The caisson is connected to the jacket leg at the bottom and hence level in the caisson equalizes with storage tank (jacket leg) level. The pump will also start/stop based on TEG surge drum level on-off control. A minimum flow control is provided for the pump protection.

Chemical Injection System

An offshore chemical injection system is required to provide chemical injection capabilities to assist production, separation, and protection inside piping and equipment. Injection is performed continuously or intermittently during normal operations, operational upsets, and startup/re-start operations.

The chemical injection system implemented at the SWP is designed to reliably supply the chemicals required to be injected at pre-determined injection points. Methanol (well start-up and restart only), scale inhibitor, and corrosion inhibitor (Domino only) are required chemicals to be injected in the subsea system for flow assurance and material integrity. Antifoam is the only potential topside performance chemical at this time. Each chemical is provided with a flow meter for individual injection points to allow setting of dosing requirements.

Methanol

Methanol injection is required to prevent hydrates in the non-heated portions of the subsea production system during shutdown and start-up conditions. In case of a shutdown, the tree and wellbore of each well are inhibited by bullheading (forcibly pumping fluids into the formation) methanol (MeOH) into the wellbore. In addition, MeOH will be injected to treat the jumpers, manifolds, unheated sections of the flowlines, and the riser base to prevent hydrate formation inside piping.

For operations startup, electric heating will be used to heat the Domino and Pelican South flowlines to the Heated Safe Operating Temperature (H-SOT). After the flowlines achieve H-SOT, the wells will be started with methanol injection at the tree upstream of the choke. Methanol injection to the wellhead will be terminated when the wellhead, well jumper, manifold header and flowline jumper are heated to the hydrate formation temperature inside piping.

The methanol injection system includes:

- 2 methanol storage tanks of 200 m^3 each located in the jacket legs;
- 2 x 100% Methanol storage pumps;
- 2 x 100% Methanol pre-filters;
- 2 x 100% Methanol injection pumps;
- Methanol injection pump inlet and discharge pulsation dampeners.

The methanol will be stored in the two storage tanks installed in two interconnected jacket legs of the platforms Marine loading hoses will be provided for methanol transfer from boat. During a loading event, there is an audible alarm at the loading station on high liquid level in the jacket leg. Each leg will have an inspection port. Methanol storage pumps located in the caisson are used to transfer methanol from the jacket leg to the methanol pre-filters. Methanol pre-filters are cartridge type filters and are used to filter particles down to 10 microns.

The flowrate required for the methanol system is 11 m^3 per hour in order to sweep any water from the production piping and jumpers in the subsea system. To provide reliability, the methanol storage and injection pumps will be fully spared at a 2 by 100% configuration.

Scale inhibitor, corrosion inhibitor and defoamer

Corrosion inhibitor will be injected into the manifold while antifoam injection is provided upstream of the Production Separator. Injection of scale inhibitor downhole into each production well will be provided to mitigate expected scale formation. Scale inhibitor injection will be supplied from the SWP and distributed through the umbilicals to the subsea field.

The scale inhibitor, corrosion inhibitor and antifoam will be stored in a single, segmented (4 compartments) storage tank with double external walls to provide an additional level of containment, with one chemical occupying one slot of the tank. The segmented tank will have an additional slot for a future chemical. The single segmented tank has been designed with the following dimensions: 10,650 mm length x 3,000 mm width x 4,500 mm height.

A spare tank and pump will be allocated for currently unidentified chemical injection needs. The chemical injection pump will use suction for the chemical in the chemical storage tank and then pump it through the subsea umbilical to the subsea wells, manifolds, and flowlines.

The chemicals storage and injection package will include the following equipment:

- Corrosion inhibitor: tank, dampener, pump, filter;
- Scale inhibitor: tank, dampener, pump, filter;
- Antifoam: tank, tank heater, dampener, pump, filter;
- Spare chemical: tank, dampener, pump, filter.

Storage capacity for each chemical (corrosion inhibitor, scale inhibitor, antifoam, spare chemical) is based on 6 months of continuous usage with a 10% contingency. The working volume required for 6 months of supply of each chemical tank compartment is presented below:

- Corrosion inhibitor tank compartment: 28 m^3;
- Scale inhibitor tank compartment: 30.4 m^3;
- Antifoam tank compartment: 25.9 m^3;
- Spare chemical tank compartment: 25.9 m^3.

The storage tanks are intended to be filled by gravity using totes. The dedicated storage tanks will be arranged to allow gravity feed into the tanks from totes or iso-containers positioned in any portion of the upper deck laydown area having crane access rather than a designated area. It is anticipated that these totes will be lifted onto the platform in half-height shipping baskets or similar shipping containers instead of individually to minimize the number of lifts. Hoses shall be used to connect from the totes to the filling lines without removal of the totes from the shipping basket. Filling lines and fittings shall be color-coded and provided with specialized lock mechanism identifiable for each chemical type to prevent cross-connection.

The chemical injection pump will take suction from chemical storage tank and then pump the chemical either through the subsea umbilical to the subsea wells, manifolds, and flowlines or through tubing to the topside injection point. Connections between the chemical injection package and the umbilical termination at the hang-off shall be provided. The chemical injection package will be provided with a single skid drip pan for all tanks and pumps.

Nitrogen Purging

Pressurized nitrogen bottles will be provided along with a distribution header to facilitate purging of equipment such as pig traps. The nitrogen system also provides snuffing capability to the emergency relief vent and is sized to provide a minimum of three snuffing attempts in addition to maintenance purging.

Total number of nitrogen cylinders currently recommended is 21 based upon all snuffs and purging. However, purging will be only performed when people are on board, while snuffing is an unlikely but critical event whichneeds to be able to be operated remotely.

Hydraulic Fluids

Two separate HPUs will be provided on the SWP, respectively: one utilizing an aqueous motive fluid and a second utilizing an environmentally safe, low volatility mineral oil.

The aqueous hydraulic power unit provides pressurized hydraulic fluid for operation of the subsea hydraulic power system as well as actuation of the large bore shutdown valves topside.

The subsea HPU consists of a supply and return tank, a circulation/transfer pump, 2 x 100% service pumps for both the high pressure and low pressure service, accumulator banks for both the high pressure and low pressure services, and distribution for both the high pressure and low pressure services.

The supply tank provides suction to all four service pumps and is sized to allow for operation of over three months without resupply. The return tank allows for filling of new hydraulic fluid, return of topside valve hydraulic fluid, and transfer of clean hydraulic fluid to the supply tank. It is sized to allow the entire system volume to be depressurized plus a given margin.

The circulation/transfer pump is configured to flow from the return tank, through a set of filters, and then back to the return tank until a specified level of fluid cleanliness is achieved. Once achieved, the discharge can be rerouted to the supply tank for transferring of the clean fluid for use.

Each service, both high pressure and low pressure, has an independent set of pumps that are separately isolated in case of leakage. The positive displacement pumps feed accumulator banks dedicated to each service. Downstream of the accumulator banks are distribution panels supplying hydraulic fluid to each control line of the umbilical. The distribution panels allow for remote isolation, depressurization (or dumping) of hydraulic pressure.

The mineral oil hydraulic power unit provides drive fluid to the hydraulically driven caisson pumps serving the jacket leg storage.

The caisson pump HPU consists of, at a minimum, a single reservoir, 2 x 100% service pumps, a cooler, and a filter. The service pumps are to be rotary type with the ability to recycle back to the reservoir without driving any particular pump. The system must be operated at a minimum temperature with energy from the pumps providing the required heat to achieve that temperature prior to initiating drive to any of the caisson pumps. To prevent overheating once the required temperature is achieved, an air cooler is provided on the return line. A filter shall also be incorporated in the circulation path to maintain cleanliness of the system.

Biocide

Maintenance chemicals will not be routinely injected in the open drain system; however, every 5 years or as needed, the open drain system including the storage tank will be flushed with a biocide. During this cleaning activity, all fluids captured in the open drain system will be pumped to storage tank(s) on the maintenance vessel for proper onshore disposal at an approved wastewater management facility.

6.2 Use of natural resources, especially soil, land, water, and biodiversity

During the construction works only materials complying with the national regulations in force, as well as national legislation and standards harmonized with European Union legislation shall be used.

The use of natural resources during construction works will be indirect, as their use will be made through suppliers of building materials, including the use of mineral aggregates, wood, and oil refined fuels.

During the operation phase, natural resources will be used in the situation when maintenance works will be necessary.

7. Description of the environmental aspects likely to be significantly affected by the project

7.1 Nature of impact on environmental components

7.1.1 Impact on water

The potential impacts on the quality and quantitative regime of water during construction/installation works are represented by:

- Water pollution due to accidental leakage of wastewater;
- Water pollution due to accidental fuel, oil, chemicals, and other liquids leakage from construction vehicles, equipment, and facilities;
- Water pollution due to improper management of waste, fuels, chemicals and used materials at onshore and offshore construction sites;
- Water pollution due to improper discharge of fluids and wastewater produced during drilling, construction/installation, precommissioning and commissioning phase;
- Water pollution due to fuel and materials leakage following support vessel accidents;
- Water pollution due to execution of shore crossing, near shore and offshore dredging and trenching works that generate temporary increase in suspended sediments levels or turbidity;
- Water pollution due to improper quality and use of material used for backfilling of nearshore and offshore excavations and trenches.

The potential impacts on the quality and quantitative regime of water during operation of the Neptun deep Project are represented by:

- Water pollution due to accidental leakage of wastewater resulting from operation of NGMS and CCR sites;
- Water pollution due to improper management of waste, fuels, and other materials at onshore NGMS and CCR sites;
- Water pollution due to improper discharge of fluids and wastewaters resulted during operation of offshore infrastructure (produced water, well restart fluids, subsea valve actuator fluids, platform drains water, domestic wastewater and rainwater generated by the operations and maintenance support vessels);
- Water pollution due to accidental fuel, oil, chemicals, waste, or other materials leakages into the Black Sea during operations and maintenance activities at the offshore infrastructure and from support vessels;
- Water pollution due to fuel and materials leakage following support vessels accidents.

Compliance with the safety measures provided in the project design and a proper maintenance program for vehicles and equipment will reduce to a minimum the risk of accidental leakage of fuel, chemicals and waste waters during project construction and operation phases. The potential impact is estimated to be negative, direct and on short term.

A potential impact on water quality resulting from the discharge of wastewater and/or the debris resulting from drilling activities and from carrying out dredging/trenching activities. These could lead to a change in water quality around the drilling and dredging/trenching units (mainly increased turbidity). This potential impact may be negative, direct, and on short term.

Discharge of fluids and wastewater resulted during operation of offshore infrastructure (produced water, well restart fluids, subsea valve actuator fluids, platform drains water) could lead to potential negative impact on the Black Sea water. This potential impact is estimated to be negative, direct, and on long term.

The vessels used during offshore construction and operation will comply with the International Convention for the Prevention of Pollution from Ships (MARPOL) thus reducing the risk of a potential impact due to discharges from ships. This potential impact is estimated to be negative, direct, and on short term.

Accidental collision between ships and /or ships and SWP, leading to unplanned discharges of pollutants into the water, is very low probability, but if an incident should occur, safety plans specific to possible contamination will be activated. This potential impact is estimated to be negative, direct, and on short term.

7.1.2 Impact on air quality

The potential impacts on the quality of air during construction/installation works consist of:

- Air pollution with particulate matter (dust) due to earthwork movements (vegetation clearance, soil excavation, fillings), traffic on unpaved roads and construction materials (ballast, sand);
- Air pollution with NOx, SO_2, CO, particulate matter, heavy metals, (Cd, Ni, Cr) and hazardous pollutants for air because of the internal combustion engines of the ships, vehicles and equipment needed to perform the construction/installation works.

The potential impacts on the quality of air during operation of the Neptun Deep Project consist of:

- Air pollution with emissions associated with onshore (one diesel generator) and offshore (three Solar Centaur 50 gas turbine generators and a gas driven Essential Service Generator) power generation;
- Air pollution with emissions associated with onshore venting and offshore flaring and venting;
- Air pollution with emissions associated with internal combustion engines of the helicopters, ships and vehicles used for the operation phase.

Dust and emissions from construction vehicles and equipment

The dust emissions are often strongly varying one day to another, depending on the activity level, the specific operations, and the dominant meteorological conditions.

The emissions regime of the combustion engines is dependent on the activity level and specific operations, having an important variability from one day to another and from one process phase to another.

Due to the temporary nature of construction works, and with appropriate mitigation measures, it is estimated that the potential impact of the construction works on the air quality in the area will be negative, direct, and on short term.

Emissions from power generation during onshore and offshore operations

The Solar Centaur 50 gas turbines to be installed at the SWP will be equipped with Low NOx systems - DLE (at 100% load the Centaur 50 has 25 ppmvd NO_x at 15% O_2. That is within the IFC guideline of 42 ppm at 15% O_2 for gas turbine electric generation. It is estimated that the potential impact from offshore power generator is unlikely and long term.

The onshore diesel generator and the offshore gas driven Essential Service Generator will only be used in the event of an emergency when the main power source (gas turbines for offshore and local electrical network for onshore) is not available. Due to the limited running time of these two generators, it is considered that the potential impact is unlikely, and short term.

Emissions from flaring and venting

The main function of the flaring system is to safely dispose of low-pressure gas from the process (mainly TEG regeneration) and the main function of the onshore and offshore venting systems is to safely release high pressure gas in case of non-routine events (e.g., if the flow is blocked in the export pipeline, or in case of upset in the process). These releases are for short duration only and may happen a few times per year.

Due to the dispersive nature of the offshore environment and the lack of receptors in the vicinity of the offshore infrastructure, locally elevated concentrations of emissions will be short lived and are unlikely to be detectable except in the immediate vicinity of the activities in normal operating conditions. Direct emissions of CH_4 during venting represent GHG emissions. It is considered that the potential impact of the flaring and venting on the air quality will be negative, direct, and on short term.

The venting system at NGMS will be used during operation period only in case of malfunction and in case of scheduled and planned maintenance for depressurization the NGMS pipes. Due to the low quantities of gas released during these venting events it is estimated that the potential impact of the onshore venting on the air quality will be negative, direct, and on short term.

Emissions from transport and maintenance activities

In normal operating conditions, it is envisaged that an offshore maintenance activity will occur every 3 months (4 times per year) using support vessels. Helicopters will be used only in case of an emergency at the SWP and are not considered an important air pollution source given their limited use. Because CCR and NGMS will be operated by only two persons at a time, the number of vehicles used for transport will be limited.

The emissions specific for the fuel burning in internal combustion engines and the main pollutants are represented by NOx, CO, SO_2, and particulate matter.

Due to relatively low frequency of the terrestrial and naval traffic, the air quality potential impact is estimated to be unlikely as they would have limited impact on the current baseline.

7.1.3 Noise and vibration

The main potential impacts associated with the noise and vibration during the construction and installation works execution, are represented by:

- Discomfort for the local population and for the tourists by noise and vibration produced by the onshore construction/installation vehicles and equipment;
- Disturbance of fauna species activity by noise and vibration produced by the onshore construction/installation vehicles and equipment;
- Disturbance or death by collision of fish and mammals as a result of noise and vibration generated during coastal excavations, offshore installation construction, drilling, and used vessels.

The main potential impacts associated with the noise and vibrations during the operation, are represented by:

- Discomfort for the local population and for the tourists by noise and vibration produced by the CCR and NGMS equipment;
- Disturbance of fauna species activity by noise and vibration produced by the SWP and maintenance vessels;

For the human population, prolonged exposure to noise can lead to serious health effects mediated by the human endocrine system and by the brain, such as sleep disturbance, cardiovascular diseases, annoyance (a feeling of discomfort affecting general well-being), cognitive impairment and mental health problems. It can also cause direct effects such as tinnitus. Indirect impacts may also be associated to noise, which may lead to economic losses (e.g., due to a decrease of tourists in the area) and depreciation of real-estate values.

During the construction/installation stage technological and operational measures will be implemented for reducing the noise associated with the works and as much as possible the works will be performed outside the tourist season period. The noise sources will have a temporary character and duration, they will manifest locally and intermittently. The potential impact of the noise and vibration is estimated to be negative, direct and on short term.

During offshore construction and installation, the majority of vessels (pipelaying ships, drill rig, dredging) will be anchored or moving at slow speeds thus reducing the probability of collision with fish and mammals. The potential impact of the noise and vibration is estimated to be negative, direct, and short term.

During operation the offshore produced noise and vibration will occur at great distance (approximately 160 km) from the shore. The design criteria for SWP is to use low noise generation equipment and the maintenance ships to only take 4 trips per year. The potential impact of the noise and vibration generated offshore is estimated to be negative, direct, and long term.

During the operating phase the noise sources present on the CCR and NGMS site will be continuous and permanent. The CCR and NGMS sites will be surrounded by screening consisting of trees, plants, shrubs and fencing that would decrease the intensity of the noise produced here. The potential impact of the noise and vibration generated onshore is estimated to be negative, direct, and long term.

7.1.4 Impact on soil and subsoil

The main potential impacts on the quality of soil and subsoil during construction/installation works are represented by:

- Soil pollution due to accidental fuel, oil, chemicals, and other liquids leakage from construction vehicles and equipment;
- Soil pollution due to improper management of waste, fuels, chemicals and used materials at onshore construction sites;
- Soil pollution due to accidental discharges of fluids and wastewaters from construction works site;
- Seafloor sediments pollution due to accidental fuel, oil, chemicals, waste, or other materials leakages from drilling platform and support vessels used during drilling, construction and installation, pre-commissioning, and commissioning works;
- Seafloor sediments pollution due to improper management and discharge of wastewater generated during drilling, construction/ installation, precommissioning and commissioning.

The main potential impacts on the quality of soil and subsoil during operation phase include:

- Soil pollution due to accidental fuel and oil or other material leakages on soil during operations and maintenance;
- Soil pollution due to accidental discharges of resultant wastewaters at CCR site;
- Seafloor sediments pollution due to accidental fuel, oil, chemicals, waste, or other materials leakages from SWP and support vessels used for operations and maintenance activities;
- Seafloor sediments pollution due to improper management and discharge of produced water/wastewater at the SWP and support vessels used for operations and maintenance.

Compliance with the safety measures provided in the project design and a proper maintenance program for vehicles and equipment will reduce to a minimum the risk of accidental leakage of fuel, chemicals and waste waters during onshore construction and operation. In case of accidental leakage, the vehicle/equipment will be turn off until the leakage is remediated, and pollution retention materials will be used to limit and remove the spillage. It is estimated that this potential impact will be negative, direct, and short term.

A potential impact on Black Sea floor sediments quality can result due to discharge of wastewater and/or the debris resulting from drilling activities and from dredging activities. These could lead to a local change in sediment quality around the drilling and dredging units, but this change will be on short term and reversible. It is estimated that this potential impact will be negative, direct, and short term.

Discharge of fluids and wastewater resultant during operation of offshore infrastructure (produced water, well restart fluids, subsea valve actuator fluids, platform drains water) could lead to potential negative impact on the seafloor sediments. It is estimated that potential impact on the sea floor is mainly limited to the proximity of discharge point and will be negative, direct, and long term.

The vessels used during offshore construction and operation will comply to MARPOL provisions thus reducing the risk of a potential impact on the seafloor sediments due to discharges from ships. It is estimated that this potential impact will be negative, direct, and short term.

7.1.5 Impact on biodiversity

Onshore Biodiversity

The main potential impacts on onshore biodiversity during the execution of the construction and installation works are represented by:

- Habitat loss for fauna species, especially feeding areas, due to the use of land areas during construction;
- Habitat alteration due to the temporary works, as well as due to air pollution. Habitat alteration is also generated by favoring the dispersal of invasive non-native plant species, both in areas where vegetation has been removed and in unaffected areas, by anthropocoria due to the movement of equipment and human presence on the site;
- Disturbance of fauna species activity, due to human presence, noise, and lighting, especially during breeding and nesting periods;
- Increase in fauna species mortality mainly in the case of species with reduced mobility, such as amphibians and reptiles, following interventions by excavations or compacting of soil, as well as a result of collision with the traffic.

The potential impacts on biodiversity during the construction phase are estimated to be negative, direct and indirect, short and medium term, with the exception of the habitat loss for fauna species, which will be negative, direct and permanent.

The main potential impacts on onshore biodiversity during the operation phase are represented by:

- Disturbance of fauna species activity, due to noise, lighting, and human presence;
- Increase in fauna species mortality mainly in the case of species with reduced mobility, such as amphibians and reptiles, as a result of collision with the traffic;
- Habitat alteration, generated by favoring the dispersal of invasive non-native plant species, by anthropocoria, due to the movement of equipment and human presence on the site.

The potential impacts on biodiversity during the operation phase are estimated to be negative, direct and indirect and long term.

Offshore Biodiversity

The potential impacts on offshore biodiversity during execution of the works were identified by taking into consideration different activities during the construction and installation of offshore components of the project and how they might interact with different biological components of the environment, and it can be defined by:

- Disturbance and loss of habitats and associated species by the construction and installation works (coastal excavations, pipeline placement on the seabed, offshore platform, submarine extraction installations, ships anchoring, etc.). The potential impact is estimated to be direct, negative, with a low magnitude, reversible (disturbed habitat is estimated to be recolonized after the impact will stop in one to two years based on the reproduction cycle of benthic organisms).
- Change of benthic habitat types by installing new hard substrates on the seabed (e.g., offshore submarine installations, pipeline). The potential impact is estimated to be direct, positive, with a low magnitude and will manifest during the entire lifecycle of the project (it is estimated that the new hard substrate represented by the underwater installations will be colonized in five years based on the reproduction cycle of benthic organisms).
- Disturbance of all organisms and habitats in case of accidental pollution with hydrocarbons or other chemicals discharged into the sea. The potential impact is estimated to be direct, negative, with a high magnitude, and reversible.
- Disturbance or death by collision of fish and mammals as a result of noise and vibration generated during coastal excavations, offshore installation and construction, drilling, and used vessels. The potential impact is estimated to be direct, negative, with a very low magnitude, and irreversible.
- Disturbance of fish breeding and feeding habitats, especially demersal species. The potential impact is estimated to be direct, negative, with a low magnitude, and reversible.
- Potential introduction of invasive species. The potential impact is estimated to be direct, negative, with a high magnitude, and irreversible.

The main potential impacts on offshore biodiversity during the operation phase are represented by:

- Disturbance of marine mammals and birds due to presence of SWP - the potential impact is estimated to be direct, negative, with a low magnitude, and will be reversible after decommissioning.
- Disturbance to marine species due to presence of maintenance vessels – the potential impact is estimated to be direct, negative, with a low magnitude, and will be reversible after decommissioning;
- Disturbance to pelagic habitat due to produced water discharge – the potential impact is estimated to be direct, negative, with a low magnitude, and will be reversible after decommissioning.

7.1.6 Impact on population and human health

The main potential impacts on population and human health during the construction and installation works execution, are represented by:

- Discomfort for the local population and for the tourists due to noise and vibrations produced by the onshore construction/installation vehicles and equipment;
- Air pollution with particulate matter (dust) due to earthwork movements (vegetation clearance, soil excavation, fillings), traffic on unpaved roads and construction materials (ballast, sand);
- Air pollution with emissions from internal combustion engines of the ships, vehicles and equipment needed to perform the construction/installation works;
- Potential accidents as a result of people accessing the construction works sites;
- Employment of local population during construction/ installation works.

The main potential impacts on population and human health during operation phase, are represented by:

- Discomfort for the local population and for the tourists due to noise and vibrations produced by the CCR and NGMS equipment;
- Potential accidents as a result of people accessing the NGMS and CCR sites;
- Potential impact on the fishing activity due to presence of the subsea components of the Neptun Deep Project;
- Potential water pollution due to fuel and other liquids leakage following support vessels accidents.

The closest dwellings are located at approximately 100 m south from the limit of the site proposed for installation of the production pipeline and onshore entry point of the microtunnel shore crossing. Work restrictions (working outside the tourist season) during construction phase due to the onshore project site proximity to residential areas and touristic areas will be implemented to reduce the potential impact. Noise abatement and dust control measures during construction works phase will be implemented. The onshore construction works are anticipated to be completed in approximately one year. It is estimated that this potential impact will be negative, direct, and on short term.

The emissions from vehicles and ships used during construction phase is dependent on the activity level and specific operations, having an important variability from a day to another and from a process phase to another. Due to the temporary nature of construction works and to the relatively small scale of the project, and with appropriate mitigation measures, it is estimated that the potential impact on population and human health will be negative, direct, and on short term.

Construction works sites will be fenced and warning signs / safety signaling will be installed in the area of the construction sites. People living or working in close proximity to the onshore construction works sites will be informed about the nature, timing, and duration of construction activities. The potential impact on population and human health due people accessing the works site it is estimated to be negative, direct, and on short term.

It is currently anticipated that Romanian companies and local population will be employed as much as possible during onshore construction/installation works. This will contribute on short term to the local economy and to lower the unemployment level within in the project area. The potential impact will be positive, direct, and on short term.

The closest dwellings are located at approximately 350 m south-east from the limit of site proposed for installation of NGMS. The CCR and NGMS sites will be surrounded by green screening (trees, plants, shrubs) and fencing that will decrees the noise intensity produced by operation of CCR and NGMS. The potential impact is estimated to be negative, direct, and long term.

The subsea equipment and facilities situated in normal fishing grounds will be protected against trawl activities thus reducing the possible impact on fishing activities. The potential impact on fishing activities is estimated to be negative, direct, and short term.

The support vessels used during project operation will be adequately illuminated at night or in foggy conditions and SWP will be fitted with navigation aids and Automatic Identification System to alert 3rd parties about the presence of SWP. Potential accidental collision between ships and /or ships and SWP is improbable, but if an incident would occur, safety plans specific to possible contamination will be activated. This potential impact is estimated to be negative, direct, and short term.

7.1.7 Impact on historical and cultural heritage

Information about existing historical and cultural objectives and archaeological sites located in the area of the onshore and offshore project sites were presented in *Chapter 5.3. Location of the site in relation to the cultural heritage* and *Chapter 6.1.7.1 Identification of public interest objectives.*

The main potential impacts on the historical and cultural heritage during the construction/installation phase are represented by:

- Damage to onshore archeological artefacts due to earthwork movements (e.g., vegetation clearance, soil excavation);
- Damage to local historical and cultural objectives due to vibrations from onshore construction works;
- Damage to offshore archeological artefacts due to subsea construction and installation works (coastal excavations, pipeline placement on the seabed, offshore platform installation, submarine extraction installations, ships anchoring).
- All onshore excavation works will be supervised by an authorized archaeologist, as required by the endorsement issued by Constanta County Cultural Directorate. If any artefacts or archaeological sites will be identified during the execution of construction works, all works will be ceased and the archaeologist present on site will be consulted and all regulatory protective measures will be implemented.
- According to the Offshore Law, if any artefacts or unknown archaeological sites are identified during the execution of offshore construction works, the Beneficiary must ensure a protection zone of 50 m around the identified archaeological finding and must inform the Ministry of Culture about the protection zone by sending the Stereo 70 coordinates, in 72 hours after the protection zone was delimited.

The potential impact of onshore and offshore construction works on archeological artefacts is estimated to be negative, direct, and short term.

Due to the location of the existing onshore and offshore historical and cultural heritage objectives, as well as the results of the archeological diagnostic surveys, the potential impact during the operation phase is estimated to be unlikely.

7.1.8 Impact on landscape and visual environment

The main potential impacts on the landscape and visual environment during the construction/installation phase are represented by:

- Visual impact for the tourists and locals due to the presence of the onshore construction equipment and vehicles;
- Disturbance of the natural landscape during construction works (temporary works and temporary construction facilities).

Mitigation measures will be adopted during onshore construction works. It is anticipated that the works will be performed with restrictions (e.g., working outside the tourist season if possible) due to the onshore project site proximity to residential areas and touristic areas. The entire land impacted by the temporary onshore construction works will be restored to its initial state at the end of the works and the temporary construction facilities will be removed. The potential impact of onshore construction works on landscape is estimated to be negative, direct and on short term.

The presence of the NGMS and CCR will potentially impact the landscape and the visual environment due to the site proximity to residential areas and touristic areas. In order to mitigate this potential impact, during the design phase were considered provisions for landscaping, including installation of a green screening (planting of trees, shrubs) for the CCR and NGMS sites and seeding the rest of the onshore project area. The onshore potential impact during operation it is estimated to be negative, direct and long term.

The SWP is located at approximately 160 km from the Romanian seashore and this area is not a common area for leisure and tourist boat trip routes. It is estimated that the presence of the SWP will have no potential negative impact on the landscape or the visual environment.

7.1.9 Impact of the project on climate change

The main potential impacts on the climate change during the construction/installation phase are represented by GHG emissions from internal combustion engines of the ships, vehicles and equipment needed to perform the construction/installation works.

The main potential impacts on the climate change during operation of the Neptun Deep Project are represented:

- GHG emissions associated with onshore (one diesel generator) and offshore (three Solar Centaur 50 gas turbine generators and a gas driven Essential Service Generator) power generation;
- GHG emissions associated with onshore venting and offshore flaring and venting;
- GHG emissions from internal combustion engines of the helicopters, ships and vehicles used during the operation phase.

GHG emissions from construction vehicles and equipment

The GHG emissions regime of combustion engines is dependent on the activity level and have an important variability from a day to another and from a process phase to another. Due to the temporary nature of

construction works and to the relatively small scale of the onshore project, and with appropriate mitigation measures, it is estimated that the potential impact of the construction works on the climate change in the area will be negative, direct, and short term.

GHG emissions from power generation

A BAT study was conducted before the final design solution for offshore power generation (Solar Centaur 50 gas turbines with Low NOx systems – DLE) was chosen from the analyzed options, considering the GHG emissions. The potential impact on climate change from offshore power generator is estimated to be negative, direct, and long term.

The onshore diesel generator and the offshore gas driven Essential Service Generator will be used intermittently during operation, in case of an emergency. Due to the limited running time of these two generators, it is estimated that the potential impact on climate change is unlikely and on short term.

GHG emissions from flaring and venting

A BAT study was conducted before the final design solution for flaring and venting offshore was chosen from the analyzed options, considering the GHG and other air emissions. Direct emissions of CH_4 during venting represent GHG emissions. It is estimated that the potential impact of the flaring and venting on the climate change will be negative, direct, and short term.

The venting system at NGMS represent a source of GHG and other air emissions. Direct emissions of CH_4 during venting represent GHG emissions. It is estimated that the potential impact of the onshore venting on the climate change will be negative, direct, and short term.

GHG emissions from transport and maintenance activities

During operation, it is envisaged an offshore maintenance activity of 4 times per year using support vessels. Helicopters will be used only in case of an emergency at the SWP. Since CCR and NGMS are operated by only two personnel at a time, the number of vehicles used for transport will be low.

All vehicles will be required to have an updated and regular maintenance record and verification in order to comply with the national legal provisions (including engine emissions). Also, the ships to be used for maintenance activities will comply to national and international regulations regarding the fuel used in order to limit the engines emissions. Due to reduced frequency of the terrestrial and naval traffic, it is estimated that the potential impact on the climate change will be negative, direct, and short term.

7.1.10 Impact of climate change on the project

The climate in the Neptun Deep Project area is warm and temperate with hot summers. It is also fully humid, as the environment is costal being adjacent to the Black Sea. Therefore, the relative humidity spans between 80% and 88% in August and December, respectively, and presenting small monthly variations. The prevailing winds blow from the west and the north, with mean annual speeds spanning between 4 and 6.5 m/s.

The mean monthly maximum and minimum temperature spans from -2.1°C in January to 26.3°C in July, whereas the mean annual temperature is 11.7°C.

The maximum temperature ever recorded in Constanta area was on the 10th July 1927 and was 38.5^{0}C.

The mean annual precipitation is 406.9 mm, presenting its minimum during February (26.8 mm) and maximum during November (44.4 mm). However, the maximum 24-hour precipitation is recorded during August and October, identifying more events with higher precipitation intensity. The mean maximum number of days with rainfall recorded, fall into December (10.3 days), whereas the mean maximum number of days with snowfall recorded, fall into January (5.4 days).

Analysis performed on data collected from meteorological stations (between 1961 and 2012) highlights significant changes in the temperature and precipitation regimes in Romania with the following characteristics:

- Upward trends in seasonal temperature are statistically significant (at 90 % level of confidence) over almost all Romanian territory in spring and summer (2^0C); in winter, temperatures are increasing in parts of Southern, central and North Eastern regions of Romania;
- Upward trends in autumn temperature are statistically significant (at 90 % level of confidence) only in a limited area in the Eastern part of the country.
- Downward trends in the seasonal amount of precipitation are present over mountain areas and over Southern and Eastern parts of Romania, in summer, spring and winter (at a confidence level of 90%);
- Significant upward trends (at 90 % level of confidence) in autumn precipitation are present in areas from Northern and central part of Romania; upward significant trends are also present in the South-Eastern part of the country.

During design phase the main climate and metocean conditions were considered. The main metocean conditions considered are wind, waves and water current. Due to the significant distance that the offshore project site spans, the area was broken into five regions and metocean criteria were developed for each (Figure 19).

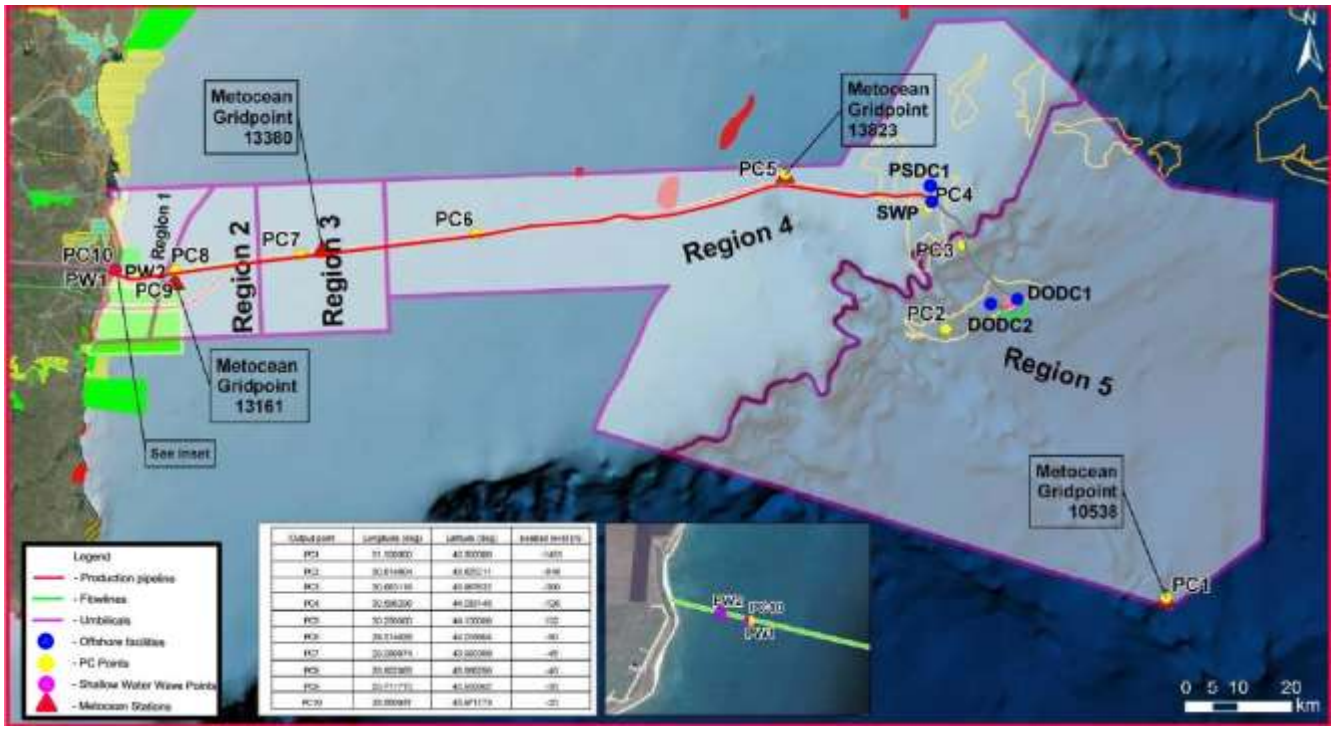


Figure 19 - Map of metocean criteria region separations for Neptun Deep Project

Wave criteria were developed by the ExxonMobil Upstream Research Company (URC) using the GROW-FINE-BS (Global Reanalysis of Ocean Waves Fine Black Sea) hindcast wave data. Based on extreme wave criteria, dominant wave directions are between south and west. In the nearshore region, dominant wave conditions are towards the west or coastline. In the platform location area on the shelf, the dominant wave conditions are towards the southwest and down the slope towards the south.

Extreme wind criteria were developed by URC using the GROW-FINE-BS hindcast wind data. Prevailing wind conditions are from the northern sectors for all locations in the offshore project development area.

Annual normalized vertical current profile is based upon the NEMO-BLS model simulation results. Annual normalized vertical surface current profile was developed only for region 4 that contains the SWP location wile bottom current profiles were developed for all regions of the offshore project site.

The main potential impact of climate change on the project is the occurrence of extreme weather conditions that can damage the Neptun Deep facilities, for example storms, tornadoes, floods, very low temperatures. It is estimated that the potential impact of the climate change on the project during the construction and operation phases will be negative, direct, and long term.

7.2 Impact extent

It is estimated that the potential impact on the environmental components during the project construction and installation, and operation phases will be local. It is estimated that generally, the impact will be unlikely if construction, operation and maintenance plans, procedures and schedules are properly followed.

7.3 Impact magnitude and complexity

It is estimated that the overall potential impact on the environmental components during the project construction and installation will be unlikely, negative, local, and short term and the potential impact on the environmental components during the operation phase will be negative, local, and long term.

7.4 Impact probability

By following the provisions of project design and construction, operation, and maintenance plans/procedures/ schedules and by implementing the measures to reduce and mitigate the potential impact on environment, the probability of any events that could impact the environmental components during project lifecycle, will be reduced.

7.5 Impact duration, frequency, and reversibility

It is estimated that the overall potential impact on environmental components during the construction/installation phase will be short term (for the duration of the construction works), low intensity, and reversible.

It is estimated that the potential impact on environmental components during the operation phase will be long term (for the project life duration approximately 20 years), low intensity, and nonreversible.

7.6 Measures to avoid, reduce or mitigate the significant impact on the environment

Measures to avoid, reduce or mitigate the potential impact of the project on the environmental components are:

- Compliance with the safety measures provided in the project design and a proper maintenance program for vehicles and equipment;
- Using daily wetting for the areas where earth works are performed and for temporary construction site roads in order to reduce the dust emissions;
- Speed restrictions for the temporary construction site roads in order to reduce the dust emissions;
- Construction/installation works will be performed outside tourist season period;
- Construction works sites will be fenced and warning signs / safety signaling will be installed in the area of the construction sites;

- All onshore excavation works will be supervised by an authorized archaeologist;
- Using vehicles and equipment that comply with the noise and vibrations regulations;
- Screening consisting of trees, plants, shrubs and fencing for NGMS and CCR sites;
- The vessels used during offshore construction and operation will comply with MARPOL and other relevant national and international regulations regarding the fuel used in order to limit the engines emissions;
- Support vessels used during project operation will be adequately illuminated at night or in foggy conditions and SWP will be fitted with navigation aids and Automatic Identification System to alert 3rd parties about the presence of SWP;
- Reduced frequency of the naval traffic for offshore maintenance due to adopting an unmanned solution for the SWP;
- Design criteria for SWP is to use low noise generation equipment;
- Using gas turbines equipped with Low NOx systems – DLE for offshore power generation (best alternative according to BAT study);
- Using combination of flaring and venting for offshore operation (best alternative according to BAT study);
- Safety plans specific to possible contamination as a ship to ship or ship to SWP collision and specific spill response plan;
- Compliance with the discharge conditions for wastewater according to Romanian regulation and competent authorities' approval.

7.7 Transboundary impact

A potential transboundary impact could occur as a result of:

- International waters pollution due to fuel and materials leakage following support or construction vessels accidents due to the direction of winds and waves in the offshore project area;
- International waters pollution due to technical accidents at SWP and/or subsea equipment's (wells, pipeline, flowlines);
- International waters pollution due to accidental discharge of improper quality fluids and wastewater resulted during operation of offshore infrastructure (produced water, well restart fluids, subsea valve actuator fluids, platform drains water, domestic wastewater and rainwater generated by the operations and maintenance support vessels).

The nearest international border to the onshore project site is represented by Bulgarian territory border situated more than 25 km south of the southern-most edge of the onshore project site. The offshore components are located north of the limit between Romania and Bulgaria EEZ. The closest offshore components to the EEZ limit are the DODC1 and DODC2 are located at approximately 35 km north from the south limit of Romania's EEZ (bordering the Bulgaria's EEZ) in the Black Sea.

The support and construction vessels used will be adequately illuminated at night or in foggy conditions and SWP will be fitted with navigation aids and Automatic Identification System to alert third parties about the presence of SWP. No oil transport ships will be involved in the project construction or operation phases thus limiting the amplitude of oil pollution in case of a ship-to-ship collision. Accidental collision between ships and

/or ships and SWP, is very low, but if an incident would occur, safety plans specific to possible contamination will be activated. This potential impact will be negative, direct, and short term.

The gas extracted by the Neptun Deep project is a dry gas without associated oil. In case of a technical accident at the SWP and/or subsea equipment no oil contamination will occur.

Wastewater discharges will comply with the national legislation, international conventions, the results of the study performed by NIMRD "Grigore Antipa" concerning the maximum concentrations at which the project effluents do not generate adverse effects to marine environment, and competent authorities' approvals. It is anticipated that the impact of the offshore wastewater discharging will be limited to the area of the discharge point thus limiting the potential impact on the international waters.

8. Provisions for environmental monitoring

The monitoring of the impact that the project will have on the environmental components has the role of confirming or invalidating the quantifications of the residual impact made before the implementation of the project, to quantify the efficiency of the proposed avoidance and mitigation measures and to identify new areas where implementation of impact mitigation measures is necessary.

The monitoring program of the main environmental components will be proposed to be performed in three stages:

- Before starting the construction and installation works (pre-construction monitoring);
- During the construction and installation works (during construction monitoring);
- During the operation phase (post-construction monitoring).

The main purpose of the monitoring program will be to track and estimate the evolution in time of the effects produced by the project construction works and operation and to allow adaptation if certain environmental conditions change different way, comparing with the baseline conditions.

The monitoring program will include details about:

- Construction works execution schedule;
- Environmental components, monitoring criteria, sub-criteria;
- Location of monitoring points;
- Monitored indicators, methodology and frequency;

Wave and current readings will also be measured.

The environmental components that may be required to be included in the monitoring program are:

- Water quality;
- Sea floor sediment quality;
- Soil quality;
- Air quality;
- Noise and vibration levels;

- Biological features (e.g., plankton, including phytoplankton, zooplankton and ichthyoplankton), benthos, fish, birds, and mammals; habitats of fauna species, invasive plants species (list of species, locations of presence, trends in their distribution, etc.).

Ecological monitoring is necessary to verify the predicted impacts of the project, to demonstrate the efficacy of mitigation and to document the recovery of impacted receptors from temporary impacts.

If impacts are detected during construction, additional post-construction monitoring will be developed for the project.

The discharged produced water into the Black Sea waters will be monitored for oil in water content, salinity, and other parameters as per requirements of a specific monitoring plan approved by the competent authorities.

The monitoring activities will focus on the environmental components on which it is expected to generate significant forms of impacts, in all stages of the project (construction, operation and decommissioning). The components and points at which the monitoring activities will be carried out will be established within the subsequent stages of the procedure for obtaining the Environmental Agreement.

9. Link to other normative acts and / or plans / programs / strategies / planning documents

9.1 Justification of the project classification according to the provisions of other national normative acts transposing the Community legislation

Environmental Impact Assessment (EIA)

The assessment of the impact of a project on the environment is regulated in Romania by the following normative acts:

- Law no. 292/2018 in force since 09 January 2019, on the assessment of the impact of certain public and private projects on the environment (EIA Law), repealing GD no. 445/2009 and Order no. 135/2010 approving the Methodology for the implementation of the environmental impact assessment for public and private projects; Law no. 292/2018 transposes the provisions of 2011/92/EU Directive on the assessment of the effects of certain public and private projects on the environment, as amended by 2014/52/EU Directive, which entered in force on 15 May 2014;

- Order no. 269/2020 approving the general guide for the stages of the environmental impact assessment procedure, the guide for environmental impact assessment in a transboundary context and other specific guidelines for different areas and categories of projects;

- Law no. 86/2000 on the ratification of the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, signed at Aarhus on 25 June 1998.

Neptun Deep project falls under the provisions of Annex 1, Article 14 and Annex 2, Article 10 i and 10 a from Law no. 292/2018.

If a project can have a potential cross-border impact, the following regulations apply:

- Law no. 22/2001 ratifying the Convention on environmental impact assessment in a transboundary context, adopted, in Espoo on 25 of February 1991;

- Order no. 864/2002 approving the Environmental Impact Assessment procedure in a transboundary context and public participation to the decisions on transboundary impact projects.

Neptun Deep project falls under the provisions of Annex 1, Article 15 from Law no. 22/2001.

Water management

The provisions of the Water Framework Directive - WFD 2000/60/EC, as subsequently amended and supplemented, have been transposed into the Romanian legislation by the Water Law no. 107/1996, with subsequent amendments and completions. Water Law no. 107/1996 stipulates the general framework for water management in Romania and it was amended and supplemented by a series of normative acts such as:

- Law no. 310/2004 amending and supplementing the Water Law no. 107/1996 (definitions, provisions, annexes to the Framework Directive 2000/60/EC);
- Law no. 112/2006 amending and supplementing the Water Law no. 107/1996 (pollution control, sand and gravel extraction, waterway dredging, water and aquatic ecosystems protection, flood protection, etc.);
- Law no. 196/2015 for the modification and completion of the Water Law no. 107/1996 (list of priority substances);
- Decision no. 570/2016 regarding the approval of the Program for the gradual elimination of discharges, emissions and losses of priority hazardous substances and other measures for the main pollutants (amendments to the list of priority substances in the Water Law No. 107/1996).

Neptun Deep project falls under the provisions of Article 48 and Article 54 from the Water Law No. 107/1996.

- The quality of surface water is regulated by Order no. 161/2006 for the approval of the Normative regarding the classification of surface water quality for establishing the ecological status of the water bodies.
- NTPA-001/2002 - The norm regarding the establishment of the loading limits with pollutants of industrial and urban wastewater at the discharge in natural receptors, from 28.02.2002 amended by GD 352/2005 and GD 210/2007 establishes the general quality conditions of all categories of wastewater, before their discharge into natural receptors, as well as the permissible limit values of the main quality indicators of these waters. The scope of this regulation includes industrial and urban wastewater that has been treated or not. Wastewater discharge conditions established according to art. 2 of the norm are provided in table no. 1 of this normative.

Air quality

The Air Framework Directive 2008/50/EC has been transposed into Romanian legislation by the Law no. 104/2011 on the ambient air quality, modified and completed by the Decision no. 336/2015, Decision no. 806/2016, and Law no. 203/2018.

The law establishes in Annex no. 2, all urban agglomerations and areas for the assessment and management of ambient air quality. Pollutants for which ambient air quality assessment, including emissions from mobile sources, are provided in Annex no. 1, while the requirements for the assessment of sulfur dioxide, nitrogen dioxide, nitrogen oxides, particulate matter PM_{10} and $PM_{2.5}$, lead, benzene, carbon monoxide, ozone, arsenic, cadmium, nickel and benzo (a) pyrene, are provided in Annex no. 3.

Biodiversity and Protected Areas

Regarding the conservation of biodiversity and the protected areas regime, Romania has joined the following European and international conventions:

- Convention on Biological Diversity adopted at the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992, ratified by Law no. 58/1994 published in the Official Gazette on 2 August 1994;

- Convention on Wetlands of International Importance especially as Waterfowl Habitat, signed at Ramsar in 1971 and amended by the Paris Protocol of 3 December 1982, to which Romania adhered by Law no. 5/1991 published in the Official Gazette on 26 January 1991;

- Convention on the Conservation of Wildlife and Natural Habitats in Europe, adopted in Berne in 1979, to which Romania adhered by Law no. 13/1993 published in the Official Gazette on 25 March 1993.

The natural protected areas of national or international interest were identified by Law no. 5/2000 with subsequent modifications approving the National Territory Plan - Section III - Protected Areas, which provides the obligation of the central and local public administration authorities to indicate these areas in the territory planning documentation at the levels of counties, municipalities, towns and communes.

By GD no. 2151/2004 on the establishment of the protected natural habitat regime for new areas, a number of national and natural parks have been defined together with scientific reserves, nature monuments, nature reserves and special bird's protection areas. The list of protected natural areas was subsequently extended by GD no. 1581/2005, GD nr. 1143/2007, GD no. 1066/2010 and GD no. 1217/2010.

In 2007, Directive 92/43/EEC (Habitats Directive) and Directive 2009/147/EC (Birds Directive) were transposed into Romanian legislation by the Government Emergency Ordinance - GEO no. 57/2007 on the regime of natural protected areas, conservation of natural habitats, wild flora and fauna, approved by Law no. 49/2011, with subsequent amendments and completions.

GEO no. 57/2007 establishes the categories of natural protected areas, natural habitats types, wild flora and fauna species and other natural heritage assets subject to the special protection, conservation and sustainable use regime, their identification, establishment, organization, development, and regime of the national network of protected natural areas, their management, protection and conservation measures, responsibilities and attributions. Also, it provides that if a project subject to an environmental impact assessment could significantly affect a protected natural area of Community interest, it must also be subject to an appropriate assessment of the potential effects on the protected natural area of Community interest, taking into account its conservation objectives.

- Neptun Deep project falls under the provisions of Article 28 from GEO no. 57/2007.

Starting with April 2020 Ministry of Environment, Waters and Forests approved the Order no. 488/2020 on the approval of the List of endangered marine species on the Romanian Black Sea coast for their protection and conservation.

Waste Management

The Waste Directive 2008/98/EC issued by European Parliament and Council is transposed into Romanian legislation by the Emergency Ordinance no. 92/2021 concerning waste regime issued by the Romanian Government. The purpose of this regulatory document is to ensure a high level of environmental and public health protection by implementation of specific measures for:

- Prevention and mitigation of waste generation and proper waste management;

- Mitigation of negative impacts generated by waste generation and management;

- Mitigation of overall effects generated by use of resources and increasing the efficiency of their use.

This regulatory document includes provisions on waste hierarchy, waste classification and codification, waste prevention, waste recovery, waste disposal, waste management, waste evidence and reporting, and other waste related topics.

Neptun Deep Project must comply with the specific requirements of this waste management regulation during all project phases.

Offshore works

The main normative acts regulating the offshore works within the Romanian Black Sea territorial waters include:

- Law no. 256/2018 on some measures necessary for the implementation of oil operations by holders of oil agreements on offshore oil perimeters (*Offshore Law*) amended by GEO no. 106/2020;
- Law no. 165/2016 on the safety of offshore oil operations amended by GO no. 11/2017, GO no. 17/2017 and Law no. 203/2018.

Law no. 256/2018 establishes some necessary measures for the implementation of oil operations of exploration, development, exploitation, and abandonment of oil fields, as well as works / wells related to oil operations, carried out by the holders of oil agreements on offshore oil perimeters, in accordance with the provisions of the oil agreements concluded between the holders and the National Agency for Mineral Resources (ANRM).

Law no. 165/2016 aims to establish the minimum requirements necessary to prevent major accidents and limit the consequences of such accidents involving oil operations in the Black Sea areas under Romanian jurisdiction.

The International Convention for the Prevention of Pollution from Ships (MARPOL) is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes.

The MARPOL Convention was adopted on 2nd of November 1973 at IMO. The Protocol of 1978 was adopted in response to a spate of tanker accidents in 1976-1977. As the 1973 MARPOL Convention had not yet entered into force, the 1978 MARPOL Protocol absorbed the parent Convention. The combined instrument entered into force on 2nd of October 1983. In 1997, a Protocol was adopted to amend the Convention and a new Annex VI was added which entered into force on 19th of May 2005. MARPOL has been updated by amendments through the years. Romania acceded to the protocol by Law no. 6/1993.

The Convention includes regulations aimed at preventing and minimizing pollution from ships - both accidental pollution and that from routine operations - and currently includes six technical Annexes.

The Convention on the protection of the Black Sea against pollution from 21st of April 1992 aims to make progress in protecting the Black Sea marine environment and conserving its living resources in the territorial sea and the EEZ of each contracting party.

Participants at the convention are Republic of Bulgaria, Georgia, Romania, Russian Federation (in force since 15th of January 1994), Republic of Turkey (in force since 29th of March 1994), and Ukraine (in force since 14th of April 1994).

The Convention contains three Protocols:

- Protocol on the protection of the marine environment of the Black Sea against pollution from land-based sources;
- Protocol on cooperation in combating pollution of oil and other harmful substances by the Black Sea marine environment in emergency situations;
- Protocol on the protection of the Black Sea marine environment against landfill pollution.

The Marine Strategy Framework Directive (2008/56/EC) (MSFD) was transposed into national legislation by GEO no. 71/2010 on the establishment of the Marine Environment Strategy and adopted by Law no. 6/2011 approving the GEO no. 71/2010 on establishing the strategy for the marine environment amended by Law no. 205/2013 and Law no. 279/2018.

Romania, as an EU member state, must fulfill the obligations stipulated in the Marine Strategy Framework Directive, respectively to make every effort to improve and maintain the good state of the Black Sea marine ecosystem.

9.2 Indication on any plan/scheme/strategy/planning document from which the project is part, including the approving regulatory document

Neptun Deep is a proposed offshore natural gas development in the Neptun Deep block, located in the Romanian portion of the Black Sea. ExxonMobil, as the operator, and OMV Petrom, as a 50% partner are the participants in the Neptun Deep project (confirmation letter from ANRM is attached in Appendix A). OMV Petrom holds the rights to explore for hydrocarbons in the XIX Neptun Deep license. The purpose of the two Beneficiaries is to sustainably develop the gas resources of the Neptun Deep fields, with a focus on environmental protection during development and operation of the facilities, objective aligned with the Romanian Energy Strategy 2019-2030, with an outlook to 2050.

For the onshore component, the Beneficiaries have developed the PUZ – Zonal Urbanism Plan for Construction of the NGMS, Control Center, Access Road and Underground Pipe Laying for Natural Gaz Transport, for which it has obtained Decision no 100 dated 16th of November 2020 issued by the Tuzla City Hall Local Council.

10. Works for organization of construction site

Temporary facilities/works are required for installation/construction of above-mentioned onshore permanent facilities, and these include:

- Temporary road railway crossing;
- NGMS and CCR Construction Works Site Organization, including administrative containers, parking area, precommissioning pad, material and chemical storage area, and temporary construction road;
- Microtunneling Construction Works Site Organization, including launch shaft area, pipeline stringing yard, pipe storage area, welding area and temporary access roads to the construction works site.

The main characteristics of the onshore temporary works that are subject of this presentation memorandum are summarized in the following paragraphs. The onshore construction works sites and other temporary facilities are shown in Appendix C.

10.1 Description of the works required for the organization of the construction site

10.1.1 Temporary Road Railway Crossing

A temporary road railway crossing will be constructed at km 248+983.25 of Constanta – Mangalia railway line to support pipeline shore crossing and other construction activities on the east side of the railroad tracks (Appendix C).

The communal road DC 4, railway line Constanta – Mangalia and local earth road De 277 will be impacted by the temporary railroad crossing works. The temporary railroad crossing and related connections to local roads (communal road DC4 and local earth road De277) will occupy a total surface of 1,030 m^2.

The temporary railway crossing will be made with reinforced concrete slabs approved by Romanian Railway Authority (AFER) in accordance with the provisions of Instruction no. I314 *"Instruction of norms and tolerances for the construction and maintenance of the railway"*. The execution of the working corridor will include removal of the vegetal soil layer from outside the railway embankment on a thickness of 30 cm.

The temporary railroad crossing will be removed once construction is complete.

10.1.2 NGMS and CCR Construction Works Site

A construction works site organization will be required to support construction/installation of the NGMS, CCR and other related facilities.

The following is a listing of main areas and facilities included at the NGMS and CCR construction works site organization, as shown on the Site Organization and Temporary Works Layout Plan (Appendix C):

- A temporary precommissioning pad of 5,379 m^2 that also accommodates:
    - A material storage indoor warehouse (19.480 m x 12.110 m, respectively 8 containers of 2.435 x 12.110 m) installed within the temporary precommissioning pad area;
    - A chemical storage fenced area of 48 m^2 installed within the temporary precommissioning pad area;
    - A fuel tank of 7.5 m^3 installed within the temporary precommissioning pad area;
- An area having a surface of 3,261 m^2 that includes the following facilities:
    - A containerized administrative area, including contractor office area, client office area, dining hall area, first aid area, toilet and shower facilities and a guard house area;
    - A temporary site organization road of 408 m^2;
    - A wastewater septic tank of 20 m^3 volume;
    - A water supply tank of 12 m^3 volume;
- A temporary parking area of 1,130 m^2.

The total surface occupied by the construction works site organization (including administrative containers, parking area, pre-commissioning pad, construction road, etc.) is 9,770 m^2.

The infrastructure of temporary areas inside the NGMS Construction Site (administrative containerized area, temporary parking area, precommissioning area, material and chemical storage area, construction road) will include:

- Removal of the vegetal soil layer on a thickness of 30 cm;
- Improvement of the terrain foundation by desensitization to wetting, including:
    - Removal by digging of the loess layer on approximately 50 cm;
    - Preparation of the so-called "loss pillow" by reusing the excavated material with re-operation in successive layers of 15-20 cm thickness and compaction;
- Installation of a waterproof geotextile;
- Installation of 20 cm layer of compacted ballast optimal mixing sort 0-63 mm;
- Installation of 20 cm layer of compacted crushed stone, sort 0-63 mm;
- Installation of 10 cm layer of penetrated macadam.

Drainage slopes will be ensured to prevent onsite stagnation of rainwater.

Perimeter security fencing will be installed around construction works site organization. The fence will be made of 60 x 40 x 4 steel poles positioned at 2.5 m apart, in concrete foundation. Between the poles will be fixed the edged mesh made of galvanized steel wire 2,000 x 2,500 mm with 4 mm diameter, meshes size 200 x 50 mm. Catching of galvanized wire mesh will be with TAR system (galvanized edged fence panel fixing clamp) or similar, corner area requiring catching on both directions.

The security fencing will have pedestrian gates and two pieces car access gates with the poles located at 4 m distance. The gates will be provided with locking system. The gate hinges will be welded and provided with anti-lifting devices. The steel elements, other than those entirely embedded in concrete or hot deep galvanized, will be prepared and treated anticorrosive. Cars access gates will have a personnel emergency exit gate each.

10.1.3 Microtunnelling Construction Site

Temporary facilities/works are required for execution of shore crossing underground microtunnel and installation of GPP and FOC into the tunnel.

The total surface temporarily occupied by the microtunneling execution related facilities/works is **24,639 m^2.** The main areas (Appendix C*)* required for execution of shore crossing underground microtunnel and installation of GPP and FOC include:

- The main microtunneling construction site (including launch shaft area) of 5,850 m^2;
- Pipe storage area of 450 m^2; and
- Pipeline stringing yard (also includes a welding area) of 18,339 m^2;
- Temporary access roads to support construction access to microtunneling site and pipeline stringing and storage areas of 9,499 m^2.

The infrastructure works required for execution of above-mentioned temporary areas (microtunnel construction site, pipeline stringing yard, temporary construction access roads) will include:

- Removal of the vegetal soil layer on a thickness of 30 cm;
- Improvement of the terrain foundation by desensitization to wetting, including:
    - Removal by digging of the loess layer on approximately 50 cm;
    - Preparation of the so-called "loss pillow" by reusing the excavated material with re-operation in successive layers of 15-20 cm thickness and compaction;
- Installation of a waterproof geotextile;
- Installation of 20 cm layer of compacted ballast optimal mixing sort 0-63 mm;
- Installation of 20 cm layer of compacted crushed stone, sort 0-63 mm;
- Installation of 10 cm layer of penetrated macadam.

Drainage slopes will be ensured to prevent onsite stagnation of rainwater.

A description of each above-mentioned temporary area is presented below.

Microtunneling Construction Works Site (Launch Shaft Area)

The main facilities/equipment installed at the fenced microtunneling construction site (Appendix C) include:

- Tunnel Boring Machine steering cabin of 2.4 width x 4.5 m length;
- Jacking Pipe Storage area of 16.5 m width x 17 m length;
- Gantry Crane of 12 m maximum height for unloading and installation of pipes;
- Hydraulic Power Unit of 2.35 m width x 5.6 m length;
- Diesel Generators of 2.35 m width x 5.6 m length;
- Recycling unit of 9.5 m width x 16 m length;
- Two Bentonite Silos of 2.85 m diameter and 21 m maximum height;
- Mixing Unit of 2.45 m width x 12 m length;
- Buffer Tank of 2.45 m width x 6 m length;
- Water Storage Tank of 15 m diameter and 1,000 m^3 volume;
- Pump Unit of 2.45 width x 6 m length;
- Workshop container area of 6.055 m x 29.220 m, including 12 containers of 2.435 m width x 6.055 m length each;
- Jacking equipment, storage container area of 6.055 m x 9.740 m, including 4 containers of 2.435 m width x 6.055 m length each;
- Office, sanitary facilities, first aid containers area of 12.110 m x 14.610 m, including 12 containers of 2.435 m width x 6.055 m length each;
- Crew containers area of 12.110 m x 7.305 m, including 6 containers of 2.435 m width x 6.055 m length each;
- Two containerized steel tanks of 30 m^3 volume each for collection of excess water from drilling fluid preparation; each tank will have the following dimensions: 6 m x 2.5 m x 2 m.

A storage area of 6,120 m^2 (255 m x 24 m size) will be installed for storage of vegetal sol excavated from the entire site (a volume of 18,400 m^3 vegetal soil). The storage area will be installed to the south of the pipeline installation corridor.

A storage area of 1,100 m^2 (55 m x 20 m size) will be installed adjacent to the launch shaft area for storage of excavated soil (a volume of approximatelly 3,270 m^3) from the construction of launch shaft. From the total volume of excavated soil, a volume of approximatelly 1900 m^3 will be used for backfilling of the shaft at the completion of construction works and the remaining volume of approximatelly 1,370 m^3 will be transported and disposed to a licensed disposal facility.

The drilling cuttings resulted from the tunneling process will be separated from the drilling fluid in the separation plant (recycling unit) and will be temporarily stored on site within separation plant area before being transported and disposed to a licensed disposal facility. The dumping area within the separation plant will be surrounded by a berm and sealed with a PE foil to prevent residual drilling fluid draining to the soil. Alternatively, the dumping area can be constructed with a concrete floor.

Perimeter security fencing will be installed around the main construction site organization. The fencing system of the microtunnel construction site will be similar with the one installed at the NGMS construction works site. The microtunnel/launch shaft construction site will be provided with cars access sliding gate.

Pipe storage area

Individual pipes will be transported to site for temporary storage within pipe storage area. The pipe storage area (30 m length x 15 m width) will be installed on a total surface of 450 m^2. No perimetral fencing will be provided around the pipe storage area.

The pipes of 12 m length will be stored in two rows stack and a lifting equipment will be used for pipe handling. The lifting equipment (truck crane) will have a maximum arm height of 20 m. The surface inside pipe storage area will be covered with crushed stone with penetrated macadam. A temporary load bearing foundation made or sand/gravel with wood mats of 30 cm thickness will be installed to support pipe storage.

Pipeline stringing yard

During the tunnel construction, assembly of the pipeline for its installation into the tunnel will be carried out inside the string yard area. The pipeline stringing yard will be installed on a total surface of 18,339 m^2. No perimetral fencing will be provided around the pipeline stringing yard. The pipeline stringing yard will also accommodate the following areas/facilities:

- A welding area of 100 m^2 (20 m length x 5 m width);
- A tools storage area of 75 m^2 (15 m length x 5 m width);
- Office containers of 12.110 m x 2.435 m (2 containers, each of 6.055 m length x 2.435 m width).

The limited overall string yard length requires the preparation of the pipeline as five partial strings. During the installation process, these strings will be moved laterally and welded together at the forward end of the string yard.

The surfaces inside the stringing yard will be covered by crushed stone with penetrated macadam.

Temporary construction access roads

The temporary roads will be constructed of crushed stone with penetrated macadam and will provide access to the microtunnel execution area and pipeline stringing and storage area. The total surface temporarily occupied by the construction site access roads is **9,499 m^2**. The temporary access roads will have a total length of 1,357 m and a width of 7 m along the entire road length.

The temporary roads will be removed once construction is complete and the land will be restored to its original state.

10.2 Location of the construction site organization

The temporary railroad crossing will be located immediately east of the NGMS and CCR site. Stereo 70 and WGS84/TM30NE coordinates of the area impacted by the temporary railroad crossing are listed in Table 32.

Table 32 – Temporary Railroad Crossing Coordinates

No	Stereo 70 Coordinates		WGS84 / TM30NE Coordinates	
	North (m)	East (m)	North (m)	East (m)
1	281611.3	792478.5	4870004.900	391232.310
2	281589.6	792478.3	4869983.270	391230.780
3	281576.7	792525.6	4869967.500	391277.160
4	281598.5	792525.6	4869989.250	391278.490

The NGMS and CCR construction works site will be located within the S1 site (cadastral number 109216) owned by OMV Petrom with superficies rights for EMEPRL. Stereo 70 and WGS84/TM30NE coordinates of the area impacted by the NGMS and CCR construction works site are listed in Table 33.

Table 33 – NGMS and CCR Construction Works Site Coordinates

No	Stereo 70 Coordinates		WGS84 / TM30NE Coordinates	
	North (m)	East (m)	North (m)	East (m)
1	281621.0	792384.6	4870020.330	391139.260
2	281594.8	792476.0	4869988.600	391228.800
3	281515.6	792476.0	4869909.610	391223.950
4	281516.3	792364.0	4869917.180	391112.290
5	281566.7	792364.0	4869967.440	391115.380
6	281566.7	792374.2	4869966.820	391125.550
7	281592.0	792381.1	4869991.620	391133.990
8	281593.2	792377.1	4869993.070	391130.070

The temporary facilities/works (microtunnel construction site, pipeline stringing yard, pipeline storage area, and temporary access roads) required for microtunnel execution and installation of GPP and FOC into the tunnel will be mostly installed within the S3 site (cadastral number 109659) and S4 site (cadastral numbers 109792 and 100819) owned by OMV Petrom S.A. with superficies rights for EMEPRL. Local earth road De259/4 will be partially impacted by the temporary construction works site facilities.

Stereo 70 and WGS84/TM30NE coordinates of the main microtunnel construction fenced site are listed in Table 34.

Table 34 – Main Microtunnel Construction Works Site Coordinates

No	Stereo 70 Coordinates		WGS84 / TM30NE Coordinates	
	North (m)	East (m)	North (m)	East (m)
1	281522.9	793181.6	4869873.620	391928.080
2	281522.4	793246.7	4869869.130	391992.970
3	281432.5	793245.9	4869779.530	391986.660
4	281433.1	793180.7	4869784.120	391921.670

Stereo 70 and WGS84/TM30NE coordinates of the pipe storage area are listed in Table 35.

Table 35 – Stringing Yard Coordinates

No	Stereo 70 Coordinates		WGS84 / TM30NE Coordinates	
	North (m)	East (m)	North (m)	East (m)
1	281587.6	792536.6	4869977.700	391288.800
2	281617.5	792542.6	4870007.150	391296.610
3	281558.3	793029.9	4869918.230	391778.960
4	281522.8	793181.6	4869873.520	391928.070
5	281509.4	793181.5	4869860.170	391927.150

Stereo 70 and WGS84/TM30NE coordinates of the pipe storage area are listed in Table 36.

Table 36 – Pipe Storage Area Coordinates

No	Stereo 70 Coordinates		WGS84 / TM30NE Coordinates	
	North (m)	East (m)	North (m)	East (m)
1	281543.8	792840.1	4869915.410	391588.790
2	281528.9	792838.3	4869900.660	391586.080
3	281525.3	792868.1	4869895.240	391615.580
4	281540.2	792869.9	4869909.990	391618.290

Stereo 70 and WGS84/TM30NE coordinates of the temporary access roads to the microtunnel construction site, pipe storage area and pipeline stringing yard are listed in Table 37.

Table 37 - Temporary Access Roads Coordinates

No	Stereo 70 Coordinates		WGS84 / TM30NE Coordinates	
	North (m)	East (m)	North (m)	East (m)
1	281590.5	792525.8	4869981.250	391278.200
2	281583.5	792525.8	4869974.270	391277.770
3	281580.9	792535.6	4869971.080	391287.390
4	281580.6	792536.6	4869970.780	391287.370
5	281580.5	792537.6	4869970.560	391289.360
6	281579.5	792545.9	4869969.050	391297.570
7	281574.5	792586.4	4869961.580	391337.660
8	281573.5	792590.3	4869960.350	391341.490
9	281570.9	792594.5	4869957.500	391345.520
10	281568.1	792597.1	4869954.540	391347.940
11	281565.1	792598.8	4869951.450	391349.450
12	281559.7	792600.2	4869945.980	391350.510
13	281556.6	792600.3	4869942.880	391350.420
14	281462.9	792600.4	4869849.430	391344.780
15	281460.7	792600.5	4869847.230	391344.740
16	281458.4	792600.8	4869844.910	391344.900
17	281455.2	792601.6	4869841.670	391345.500
18	281451.7	792603.1	4869838.090	391346.780
19	281448.4	792605.1	4869834.680	391348.570
20	281446.0	792607.3	4869832.150	391350.620
21	281443.3	792610.5	4869829.260	391353.650
22	281441.7	792613.0	4869827.510	391356.040

No	Stereo 70 Coordinates		WGS84 / TM30NE Coordinates	
	North (m)	East (m)	North (m)	East (m)
23	281440.1	792616.9	4869825.680	391359.830
24	281439.3	792620.9	4869824.630	391363.770
25	281439.1	792623.3	4869824.290	391366.150
26	281439.1	792624.7	4869824.200	391367.550
27	281439.1	792628.1	4869823.990	391370.940
28	281439.1	793161.6	4869791.280	391902.990
29	281439.1	793164.9	4869791.080	391906.290
30	281439.2	793168.1	4869790.980	391909.480
31	281439.9	793172.3	4869791.420	391913.710
32	281440.8	793175.7	4869792.110	391917.160
33	281442.1	793179.0	4869793.200	391920.530
34	281442.9	793180.8	4869793.890	391922.380
35	281451.1	793180.9	4869802.060	391922.980
36	281450.3	793179.6	4869801.340	391921.630
37	281449.6	793178.4	4869800.720	391920.390
38	281448.6	793176.6	4869799.830	391918.540
39	281448.0	793175.0	4869799.330	391916.900
40	281447.5	793173.5	4869798.930	391915.380
41	281446.9	793171.6	4869798.440	391913.450
42	281446.5	793169.3	4869798.190	391911.130
43	281446.2	793167.6	4869797.990	391909.410
44	281446.1	793166.0	4869797.990	391907.810
45	281446.1	793162.1	4869798.230	391903.920
46	281446.1	792624.4	4869831.200	391367.680
47	281446.4	792620.6	4869831.730	391363.910
48	281447.4	792617.3	4869832.930	391360.680
49	281450.2	792612.9	4869835.990	391356.460
50	281452.4	792610.9	4869838.310	391354.600
51	281456.7	792608.5	4869842.750	391352.470
52	281460.7	792607.5	4869846.800	391351.720
53	281462.8	792607.4	4869848.900	391351.750
54	281466.1	792607.4	4869852.190	391351.950
55	281556.0	792607.4	4869941.840	391357.470
56	281559.2	792607.4	4869945.040	391357.660
57	281561.0	792607.2	4869946.840	391357.570
58	281565.0	792606.4	4869950.880	391357.020
59	281567.9	792605.3	4869953.840	391356.100
60	281569.8	792604.4	4869955.790	391355.320
61	281570.9	792603.7	4869956.930	391354.690
62	281571.3	792603.6	4869957.340	391354.610
63	281571.7	792603.7	4869957.730	391354.740
64	281572.0	792603.9	4869958.020	391354.960
65	281572.3	792604.2	4869958.300	391355.270
66	281572.3	792604.6	4869958.270	391355.670
67	281572.2	792605.4	4869958.120	391356.470

No	Stereo 70 Coordinates		WGS84 / TM30NE Coordinates	
	North (m)	East (m)	North (m)	East (m)
68	281509.5	793122.4	4869863.890	391868.220
69	281506.3	793148.8	4869859.080	391894.350
70	281504.5	793163.5	4869856.380	391908.900
71	281504.0	793167.9	4869855.620	391913.260
72	281503.5	793170.6	4869854.950	391915.920
73	281502.9	793172.9	4869854.210	391918.180
74	281501.9	793175.6	4869853.050	391920.810
75	281501.1	793177.4	4869852.140	391922.550
76	281500.0	793179.4	4869850.920	391924.480
77	281498.8	793181.4	4869849.600	391926.400
78	281506.9	793181.5	4869857.670	391927.000
79	281507.5	793180.3	4869858.350	391925.840
80	281508.2	793178.8	4869859.140	391924.380
81	281508.7	793177.5	4869859.710	391923.120
82	281509.1	793176.4	4869860.180	391922.050
83	281509.6	793175.0	4869860.760	391920.680
84	281510.0	793173.5	4869861.260	391919.210
85	281510.5	793171.2	4869861.260	391919.210
86	281510.7	793169.9	4869862.170	391915.660
87	281510.9	793169.0	4869862.430	391914.780
88	281511.2	793166.7	4869862.870	391912.500
89	281587.6	792536.6	4869977.700	391288.800
90	281590.5	792525.8	4869981.250	391278.200

10.3 Describe the environmental impact of the construction site organization works

The potential impacts on the environmental components of the construction/installation works for construction sites organizations are:

- Water and soil pollution due to accidental leakage of fuel, oil, chemicals, and other liquids from construction vehicles and equipment;
- Air pollution with particulate matter (dust) due to earthwork movements (terrain cleaning, soil excavation, fillings), traffic on unpaved roads and construction materials (ballast, sand);
- Air pollution with NOx, SO_2, CO, particulate matter, heavy metals, (Cd, Ni, Cr) and HAP as a result of the internal combustion engines vehicles and equipment used;
- Discomfort for the local population and for the tourists by noise and vibration produced by construction/installation vehicles and equipment;
- Accidents as a result of people accessing the works site;
- Employment of local population during construction sites works;
- Disturbance of fauna species activity by noise and vibration produced by the construction/installation vehicles and equipment;

- Habitat loss for fauna species, especially feeding areas, due to the use of land areas during construction sites works;
- Disturbance of fauna species activity, due to human presence, noise, and lighting, especially during breeding and nesting periods;
- Increase in fauna species mortality mainly in the case of species with reduced mobility, such as amphibians and reptiles, following interventions by excavations or compacting of soil, as well as a result of collision with the traffic;
- Visual impact on the tourist and locals due to the presence of the onshore construction equipment and vehicles;
- Disturbance of the natural landscape during construction sites works.

Compliance with the safety measures provided in the project design and a proper maintenance program for vehicles and equipment will reduce to a minimum the risk of accidental leakage of fuel, chemicals and other liquids during construction sites works. This potential impact on water and soil will be negative, direct and on short term.

Due to the temporary nature of construction sites works and to the relatively small scale, it is considered that the potential impact of the construction sites works on the air quality in the area will be negative, direct and on short term.

Work restrictions (working outside the tourist season) during construction phase due to the onshore project site proximity to residential areas and touristic areas will be implemented to reduce the potential impact. Noise abatement and dust control measures during construction sites works phase will be implemented. This potential impact will be negative, direct and on short term.

Construction works sites will be fenced and warning signs / safety signaling will be installed in the area of the construction sites. People living or working in close proximity to the onshore construction works sites will be informed about the nature, timing, and duration of construction activities. The potential impact on population and human health due people accessing the works site will be negative, direct and on short term.

Romanian companies and local population will be employed during onshore construction/installation works as much as possible. This will contribute on short term to the local economy and to lower the unemployment in the project area. The potential impact will be positive, direct and on short term.

The presence of disturbing factors for the fauna in the area during construction sites works will be short term. The potential impact of the presence of vehicles equipment and personnel will be negative direct and indirect and on short term.

All the excavation, realized on site during construction sites works, deep enough to represent a danger to local fauna will be fenced with plastic mesh to stop the access of fauna to the excavations and will be fitted with egress slopes, if feasible. The potential impact due to land excavations will be negative, indirect and on short term.

At the completion of construction works, the land temporary impacted by the construction works will be reinstated to its original conditions. The potential impact due to land occupied by the construction sites works will be negative, indirect and on short term.

Vehicles used during construction sites works will have speed limits on site thus may limit the danger of collision with the local fauna. The potential impact will be negative, direct and on short term.

The construction sites works will be realized with restrictions (working outside the tourist season) due to the onshore project site proximity to residential areas and touristic areas. All the terrain disturbed by the temporary onshore construction works will be return to the initial state at the end of the works and the temporary facilities removed. These measures will mitigate the potential impact on landscape and visual environment. The potential impact of onshore construction sites works will be negative, direct and on short term.

10.4 Sources of pollutants and installations for retaining, discharging, and dispersing pollutants in the environment during site construction organization

The main sources of potential pollution for soil and water during construction sites works include:

- Improper management of wastewater resulted during execution of construction sites works (e.g., domestic wastewater generated, produced water resulting from launch shaft and microtunnel execution);
- Improper management of soil resulted from construction site preparation and civil works (e.g., tunnel and launch shaft execution);
- Improper management of waste generated on the construction works sites (e.g., construction waste from microtunnel execution);
- Accidental fuel, oil, chemicals, and other liquids leakage from construction vehicles and equipment.

The construction works sites will be provided with specific construction facilities and measures for protection of environmental features (water, soil, air, etc.), such us: water supply facilities (e.g., fresh water tanks), wastewater management facilities (e.g. domestic wastewater tanks), waste, chemicals and fuels management facilities, and dust suppression measures.

A washing trucks facility will be installed within the proposed access road area before connection with the national road DN 39. ***The washing trucks facility is not part of the project scope described in this technical memorandum and will be subject to a separate permitting procedure.***

A summary of the main facilities and measures included at the construction works site is presented in the paragraphs below.

NGMS and CCR Construction Site

The construction works site will be provided with temporary water supply and storage facilities (freshwater tank of 12 m3 fabricated of galvanized steel, thermally insulated, and electrically heated) supplied by water trucks based on specific agreements signed with certified contractors. No water connections to local utilities network are planned during construction phase. The delivery of water to the sanitary installations of the containers will be done with submersible pumps with built-in electronic control system. The pumps will be pre-equipped with electronic control units with which to perform the start / stop and protection operations in case of lack of water in the tank, preventing pump failure.

The drinking water for staff will be obtained from commercial sources (bottled water).

Temporary wastewater management facilities (e.g., wastewater storage tank of 20 m^3) will be available at the construction works site. The wastewater storage tank will be periodically emptied by trucks and transported to and disposed of at authorized disposal facilities based on specific agreements signed with certified contractors. No sewer connections to local utilities are planned.

Power for the NGMS construction works site will be sourced from the local power provider (ENEL) through an electrical power transformer that will be installed on site. The electrical power connection project is not part of

the project scope described in this technical memorandum and will be subject to a separate permitting procedure.

The chemical storage area will be fenced and will have a total surface of 48 m^2 (8 m length x 6 m width). The chemicals (lube oils, grease, hydraulic fluids and other petroleum products for equipment and vehicles) will be stored on chemical-tight barrels which will be kept on site in minimal quantities and will be supplied as many times as needed.

The fueling of the equipment on site will be done with specialized trucks for this activity. The fuel will be transported on site with tanker trucks by local distributors and will be stored into the fuel tank of 7,5 m^3 installed onsite. The fuel tank will be mounted on a steel ledge platform with the possibility of collecting leaks.

Microtunnel Construction Site

The water needs during microtunnel construction/pipeline installation phase include drinking water for staff, sanitary water for site offices and crews (e.g., showers, toilets) and process water for construction/installation works (e.g., tunneling process, pipeline installation and testing, etc.).

The drinking water for staff will be obtained from commercial sources (bottled water).

A freshwater tank of 12 m^3 fabricated of galvanized steel, thermally insulated, and electrically heated, will be provided at the microtunneling construction site for domestic/sanitary water use.

A water storage tank of 15 m diameter and 1,000 m^3 volume will be installed at microtunnel construction site in order to provide water needs for execution process of shore crossing underground microtunnel.

The temporary water supply and storage facilities will be supplied by water trucks based on specific agreements signed with certified contractors. No water connections to local utilities network are planned during construction phase.

The main wastewater/produced water streams include domestic wastewater (graywater, blackwater) from administrative areas and produced water generated from construction/installation works (e.g., microtunneling, pipeline hydrotesting, etc.).

A domestic wastewater storage tank of 20 m^3 volume will be installed at the microtunnel construction site. The wastewater storage tank will be periodically emptied by trucks and wastewater transported to and disposed of at authorized disposal facilities based on specific agreements signed with certified contractors. No sewer connections to local utilities are planned.

Displaced tunnel water (sea water) resulting from tunnel backfilling will be collected on the microtunneling construction site, tested, and drained to the Black Sea via FOC conduit, upon approval of discharge parameters by the authorities.

Three power diesel generators will be installed at the microtunneling construction works site and will provide power to tunneling related equipment and facilities, and administrative offices. One diesel generator will be installed at the pipeline stringing yard and will provide power for pipe assembly related facilities.

The diesel generators will be regularly supplied with fuel from certified fuel tank trucks based on specific agreements signed with certified contractors.

The main sources of potential pollution for air during construction sites works include:

- Particulate matter (dust) due to earthwork movements (terrain cleaning, soil excavation, fillings), traffic on unpaved roads and construction materials (ballast, sand);

- NOx, SO_2, CO, particulate matter, heavy metals, (Cd, Ni, Cr) and HAP as a result of the internal combustion engines vehicles and equipment used.

Dust measures during construction works phase will be implemented in order to limit the dust emissions due to earthwork movements and traffic on unpaved roads.

The vehicles and equipment used for construction sites works will comply with the national laws and regulation regarding engine exhaust limits and will be equipped with the required exhaust systems (ex. diesel particulate filter, catalytic convertors etc.).

The main sources of potential pollution regarding noise and vibration during construction sites works is represented by the noise and vibration produced by vehicles and equipment (i.e., generators) used.

Noise control measures (i.e., noise panels, mufflers for vehicles and equipment) during construction works phase will be implemented in order to limit the potential impact on population and biodiversity.

The main sources of potential visual and landscape pollution are represented by the temporary construction and works required for construction sites.

Upon completion of the project construction and installation works, site restoration works (e.g., removal/demolition of temporary infrastructure, building, facilities, and equipment installed at the construction works sites; management of wastewater, waste, chemicals and materials in accordance with legal provisions, site rehabilitation and restoration to the original land quality) will be carried out in areas impacted by the onshore construction and installation works. In addition, once access to the shore crossing and beach side of the railroad is no longer required, the temporary rail crossing road will be decommissioned and restored to the initial condition.

10.5 Facilities and measures to control emissions of pollutants into the environment

The main measures and facilities to control and mitigate the emission of pollutants into the environment that will be implemented at the construction works sites are:

- No wastewater treatment or pre-treatment plants will be installed at the onshore construction works sites (NGMS and CCR construction site and microtunnel construction site). The wastewater generated will be collected on site by storage tanks that will be periodically emptied by trucks and wastewater transported to and disposed of at authorized disposal facilities based on specific agreements signed with certified contractors;

- Compliance with the safety measures provided in the project design and a proper maintenance program for vehicles and equipment will reduce to a minimum the risk of accidental leakage of fuel, chemicals and other liquids during construction sites works. In case of accidental leakage, the vehicle/equipment will be turn off until the leakage is remediated, and pollution retention materials will be used to limit the spillage;

- The chemicals will be stored in chemical-tight barrels in minimal quantities in a fenced chemical storage area and will be supplied on site as many times as needed;

- Waste collection spaces will be arranged for selective collection. The waste will be collected and disposed of by authorized companies in compliance with all legal norms in force.

- The temporary roads will be covered with penetrated macadam and dust control measures during construction works phase will be implemented in order to limit the dust emissions;

- The vehicles and equipment used for construction sites works will comply with the national laws and regulation regarding engine exhaust limits and will be equipped with the required exhaust systems (ex. diesel particulate filter, catalytic convertors etc.);

- Vehicles used during construction sites works will have speed limits on site thus may limit the danger of collision with the local fauna;

- Noise abatement measures like noise panels, mufflers for vehicles and equipment will be implemented during construction works phase;

- Work restrictions (working outside the tourist season) during construction phase due to the onshore project site proximity to residential areas and touristic areas will be implemented for certain project components to reduce the potential impact;

- All the excavation, realized on site during construction sites works, deep enough to represent a danger to local fauna will be fenced with plastic mesh to stop the access of fauna to the excavations and will be fitted with egress slopes, if feasible;

- Upon completion of the construction works, the land impacted by the construction works will be reinstated to its original conditions;

- Construction works sites will be fenced and warning signs / safety signaling will be installed in the area of the construction sites;

- People living or working in close proximity to the onshore construction works sites will be informed about the nature, timing, and duration of construction activities.

11. Site restoration works

11.1 Proposed works for site rehabilitation upon completion of the investment, in case of accidents and / or cessation of activity

Upon completion of offshore construction and commissioning, no site restoration works are needed for offshore components of Neptun Deep Project (SWP, drilling centers, flowlines, and offshore production pipeline).

For the onshore components of the Neptun Deep project, upon completion of the construction works several activities will be undertaken for site restoration such as:

Removal of equipment and facilities installed at the NGMS and microtunneling construction works sites

- All the facilities and equipment from NGMS and microtunneling construction works sites represented by containers (office containers, welfare containers, etc.), skid equipment (pumps, generators, etc.) will be loaded by crane onto trailers and transported off site.

- The temporary foundations will be demolished by excavation and breached down with sledgehammers. The resulting concrete waste will be disposed of to an authorized landfill.

- The holes resulted from excavating the temporary foundations will be backfilled with soil, the last 30 cm to surface will be filled with topsoil.

Removal/demolition of the temporary construction infrastructure

- All the temporary construction infrastructure (construction roads, temporary railway crossing, technological platforms, parking areas, storage areas, etc.) will be demolished upon completion of construction works.
- Graders will be used to dismantle the layers of penetrated macadam, gravel and crushed gravel and break the layers consistency.
- The resulting mix of gravel will be load into trucks using front loaders or excavators and transported off site for appropriate disposal or recycling.
- The areas occupied by the temporary infrastructure will be back filled with soil, the last 30 cm to surface will be filled with topsoil.

All areas disturbed by the construction and installation works will be restored by:

- Scarifying, backfilling, and levelling, as appropriate.
- Where contamination is identified, the site will be rehabilitated, and contaminated material will be managed in accordance with legal provisions.
- Site revegetation (use of grass seeds, fertilizers, etc., as appropriate).

The project will operate for an estimated period of 20+ years. At the end of project life, the onshore, shore crossing and offshore facilities will be decommissioned/abandoned (upon requirements) and the sites will be restored to original use. The demolition/decommissioning/abandonment and restoration works will be performed based on a specific plan and in accordance with the specific permitting, construction, and environmental legal provisions and applicable standards/guidelines in force at the end of project life.

Shut down of all production processes will be conducted prior to execution of decommissioning/abandonment works.

The NGMS and CCR sites (including related facilities such as internal roads, technological platforms, etc.) will be decommissioned and the sites will be restored to the original use. The onshore decommissioning and restoration works will include demolition/removal of buildings, facilities, equipment, and utilities, collection and proper management of fluids, wastewater, waste and chemicals, rehabilitation, and restoration to original use of the land impacted by the onshore production facilities.

The GPP and FOC will be decommissioned/abandoned in accordance with legal provisions in force at the project end life. As a minimum, the GPP will be emptied before decommissioning/abandonment.

The offshore facilities (SWP, GPP, FOC, flowlines, umbilicals and other subsea equipment) will be decommissioned/abandoned in accordance with the specific decommissioning/abandonment plan. The main steps of the offshore decommissioning/abandonment include:

- Decommissioning/removal of topsides and jacket from offshore location for recovery or reuse;
- Decommissioning/abandonment of subsea trees, manifolds, flowlines, controls;
- Decommissioning/abandonment of gas production pipeline;
- Decommissioning/abandonment of FOC.

All subsea structures above the mudline are designed such that they can be retrieved upon abandonment in the event that 'abandon in place' is not permitted. Piles and mud mats will not be retrievable, but they can be cut at or below the mudline if required by Romanian regulations for abandonment of the field.

At a minimum when abandoned, the pipelines will be emptied of service fluids, purged, separated from any in-service piping, and effectively sealed.

Records will be maintained of all components that are abandoned in place. Such records will include locations and lengths for each pipe diameter and, where practical, burial depth. When considering abandonment of the pipeline, the uses of the area involved shall be assessed at the time of abandonment to determine if removal of any portions of the pipeline is required.

11.2 Prevention and response in case of accidental pollution

Accidental pollution can occur during construction and installation phase as well as during the operation phase.

Main risks of accidental pollution during construction phase are:

- Onshore:
    - Potential accidental pollution of soil and surface waters (Black Sea) with waste waters from the construction works sites;
    - Potential accidental pollution of soil with fuel and oils from the site construction equipment because of accidental breakdowns and/or leakages;
- Offshore:
    - Potential accidental pollution of surface water (Black Sea) with waste waters from the offshore construction and transport vessels;
    - Potential accidental pollution of surface water (Black Sea) with fuel and oils from the construction vessels because of accidental breakdowns and/or leakages.

Main risks of accidental pollution during operation phase are:

- Onshore:
    - Potential accidental pollution of soil with waste waters from the CCR;
    - Potential accidental pollution of soil with fuel and oils from the maintenance equipment and personnel vehicles as a result of accidental breakdowns and/or leakages;
    - Potential explosion and fire because of accidental gas leaks.
- Offshore:
    - Potential accidental pollution of surface waters (Black Sea) with waste waters from the offshore maintenance and transport vessels;
    - Potential accidental pollution of surface water (Black Sea) with fuel and oils from the maintenance vessels as a result of accidental breakdowns and/or leakages;
    - Potential explosion and fire as a result of accidental gas leaks;

- Potential accidental pollution of surface water (Black Sea) due to jacket leg storage loss of containment due to internal/external corrosion of storage tanks, stress corrosion cracking in MeOH storage tank and collision of supply boat or 3rd party vessel with the jacket leg.

In order to minimize and/or mitigate the risks described above, the following measures will be taken during **construction and installation works**:

- Wastewater spills from construction works sites:
  - During onshore construction, the construction works sites will be provided with temporary wastewater management facilities that will be periodically emptied by trucks and disposed of too authorized disposal facilities based on specific agreements signed with certified contractors. In case of accidental spills from the wastewater system, the use of facilities will be stopped until the leaks are remediated, and the spill will be cleaned up accordingly.
- Fuel and oils leak from the site construction equipment:
  - Preventive maintenance operation will be required for all equipment used during construction and spill absorbent materials will be available on site. In case of accidental spills, the contaminated soil will be excavated and disposed of accordingly to an authorized waste facility.
  - Prior to granting access on construction works sites, all equipment, transport vehicles, cranes, machinery, etc. will be checked for integrity and compliance.
  - The construction equipment will be fueled on site from a 7.5 m^3 fuel tank. According to good industry practice, to minimize the leak risk the tank will be provided with double walls and/or be fitted with a secondary containment system capable of retention of the tank entire fuel volume to minimize the leak risk.
- Wastewater spills and fuel and oils leak from offshore construction and installation vessels:
  - The vessels used during offshore construction and installation will comply with MARPOL provisions – Annex IV: Prevention of Pollution by Sewage from Ships and Annex I: Regulations for the Prevention of Pollution by Oil.

In order to minimize and/or mitigate the risks described above the following measures will be taken during **operation**:

- Pollution of soil with waste waters from the CCR:
  - The CCR area will be provided with a standalone domestic wastewater (septic) tank. No sewer connections to local utilities are planned. The domestic wastewater tank will be an underground septic tank for gravity drainage from CCR building facilities. In case of accidental spills from the wastewater system, the use of facilities will be stopped until the leaks are remediated, and the spill will be cleaned up accordingly.
- Pollution of soil with fuel and oils from the maintenance equipment and personnel vehicles:
  - The personnel vehicles will be parked inside CCR fenced site. A rainwater drainage tank will be installed adjacent to the south-east corner of CCR site on a total surface of 25 m2. The tank will collect the rainwater that drains through concrete areas inside CCR fenced site. In case of fuel and/or oil leaks from the vehicles, the contaminants will be collected into the rainwater collection tank which will allow a good and easy management and remediation of the spill.

- Explosion and fire because of accidental gas leaks onshore:
    - In case of accidental gas leaks because of a technical malfunction the main risk is represented by an explosion followed by fire. The implementation of a rigorous maintenance schedule will minimize the risk of technical malfunction and since the NGMS is an open-air system, no accumulation of gas can occur thus mitigating the risk of an explosion.
    - The main location for a potential NGMS gas leak accumulation are represented by CCR building and LER. To mitigate the risk of an explosion and fire, the two buildings will be fitted with smoke and gas detectors.
    - In case of a system leak and/or fire at NGMS, the Loss Prevention and Fire Protection Systems will automatically isolate the NGMS system from the production pipeline and the NTS system and will depressurize the NGMS pipes through the NGMS vent stack.
- Wastewater spills and fuel and oils leak from offshore operation vessels:
    - The vessels used during offshore operation phase will comply to MARPOL provisions – Annex IV: Prevention of Pollution by Sewage from Ships and Annex I: Regulations for the Prevention of Pollution by Oil.
- Explosion and fire as a result of accidental gas leaks offshore:
    - In case of a gas leak on the SWP this can accumulate in different areas of the platform (LER, temporary shelter, DEH room, turbine enclosures, essential generator and gas processing and dehydration equipment), resulting in possible explosion and fire.
    - In order to mitigate these risks, the areas mentioned above will be fitted with gas, flame and heat detectors and automated fire suppression systems either gas (LER, DEH room) or water based (turbine enclosure, essential generator).
    - Also, the SWP will be fitted with Facilities Loss Prevention and Fire Protection Systems that has as its objective to minimize the probability and size of potential hydrocarbon and toxic releases, reduce the likelihood of igniting flammable releases, provide early detection of fires, limit event escalation and minimize damage to the environment and limit damage to assets, provide a means for extinguishing incipient fires.
    - In case of a fire, the primary response will be automatic shutdown of the installation, blocking or isolation of hydrocarbons systems, vapor depressurization and activating the gaseous, foam, and/or water mist fire suppression in applicable enclosures and/or areas, as appropriate.
- Jacket leg storage loss of containment - in order to mitigate the risks of jacket leg storage loss of containment, the following design criteria and measures will be taken:
    - Internal corrosion mitigation - a rigorous quality plan for Cathodic Protection and application of coating for jacket leg storage tanks was developed.
    - External corrosion mitigation - it was ensured that the Equipment Strategy and/or SWP Surveillance Plans confirm inclusion of inspection of jacket leg tanks and caisson external inspection in the same campaign as the inspection of above-water riser section.
    - Stress corrosion cracking in MeOH storage tank - a seamless pipe will be used for interconnections and caisson pipe.
    - Mitigation for vessels collision with the jacket - the jacket legs will be equipped with bumpers to minimize consequence due to boat collision. Also, the SWP will have a 500 m exclusion zone

for 3rd parties and will be equipped with an Automatic Identification System to alert 3rd parties about the presence of SWP.

11.3 Restoration of the initial conditions / rehabilitation for future land use

For the offshore site area, no restoration to initial conditions of the land is considered necessary, unless required by regulation.

The site restoration works will mainly include:

- Removal of buildings and facilities installed at the NGMS and CCR;
- Clearing the land of all materials and categories of waste;
- Removal/demolition of the technological platforms, parking areas, storage areas, etc.) by excavating the gravel, crushed stone, and penetrated macadam layers, etc.;
- Where contamination is identified, the site will be rehabilitated, and contaminated material will be managed in accordance with legal provisions;
- Rehabilitation (scarifying, backfilling, levelling as appropriate) of all disturbed areas with the last 30 cm to natural terrain level filled with topsoil.
- Site revegetation (use of grass seeds, fertilizers, as appropriate);
- Performance of a pedological study to confirm the soil quality class.

The restoration works will be carried out by the appointed Contractors, under direct supervision of the Beneficiary, and will be executed in compliance with the relevant national permitting and environmental regulations in force at that time.

12. Information on natural protected areas of community interest

12.1 Location of the project towards natural protected areas of community interest. Name and code of protected areas of community interest

12.1.1 Onshore site

The closest natural protected areas of community interest (Natura 2000 sites) to the onshore location of the project (sites S1, S3 and S4 owned by Project Beneficiaries), potentially impacted by its implementation, are represented by ROSPA0076 Marea Neagră (Black Sea) and ROSCI0273 Zona marină de la Capul Tuzla (Marine area from Tuzla cape), located at about 60 m east from the onshore area of the project (Figure no. 20). The closest part of the project to the Natura 2000 sites is represented by the corridor where the underground production pipeline will be executed.

Other Natura 2000 sites are located more than 3 km from the onshore site at the project. No effects generated by the project likely to impact these sites have been identified.

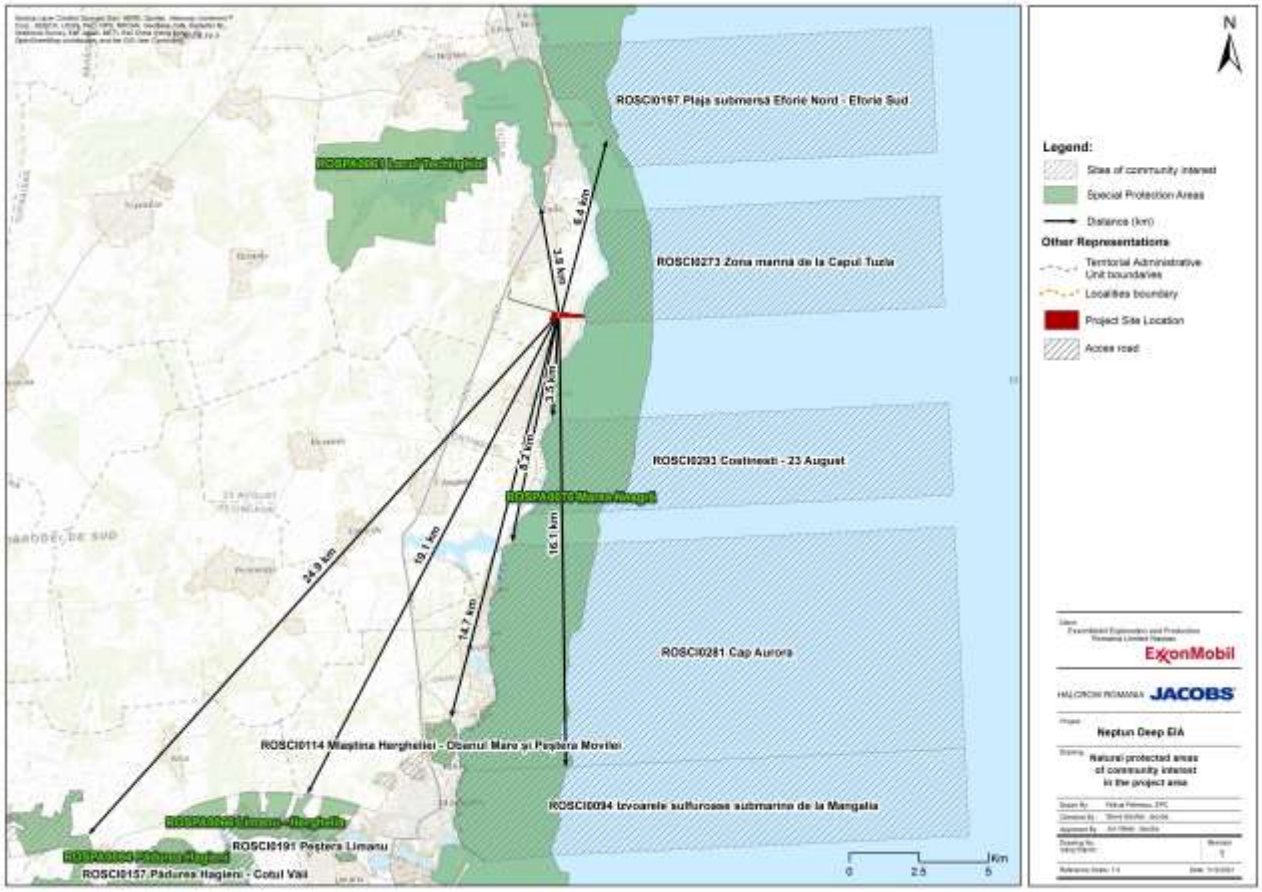


Figure 20 – Location of the onshore section of the project in relation to the Natura 2000 sites

12.1.2 Coastal and Offshore site

Along the Romanian coast there are nine sites of community interest and a special area for birds (Figure no. 21). Based on the description of the environmental aspects that may be potentially impacted by the project, as presented in Chapter 7, there are only two sites that will be impacted by the implementation of the project, respectively: ROSCI0273 Zona marină de la Capul Tuzla that is crossed by the GPP and FOC microtunnel (Figure no. 22) in the southwest corner on a length of about 600 m, and ROSPA0076 Marea Neagră that is crossed by GPP and FOC over a length of approx. 2.5 km. The rest of the protected areas are located at enough distance not to be impacted by the project activities.

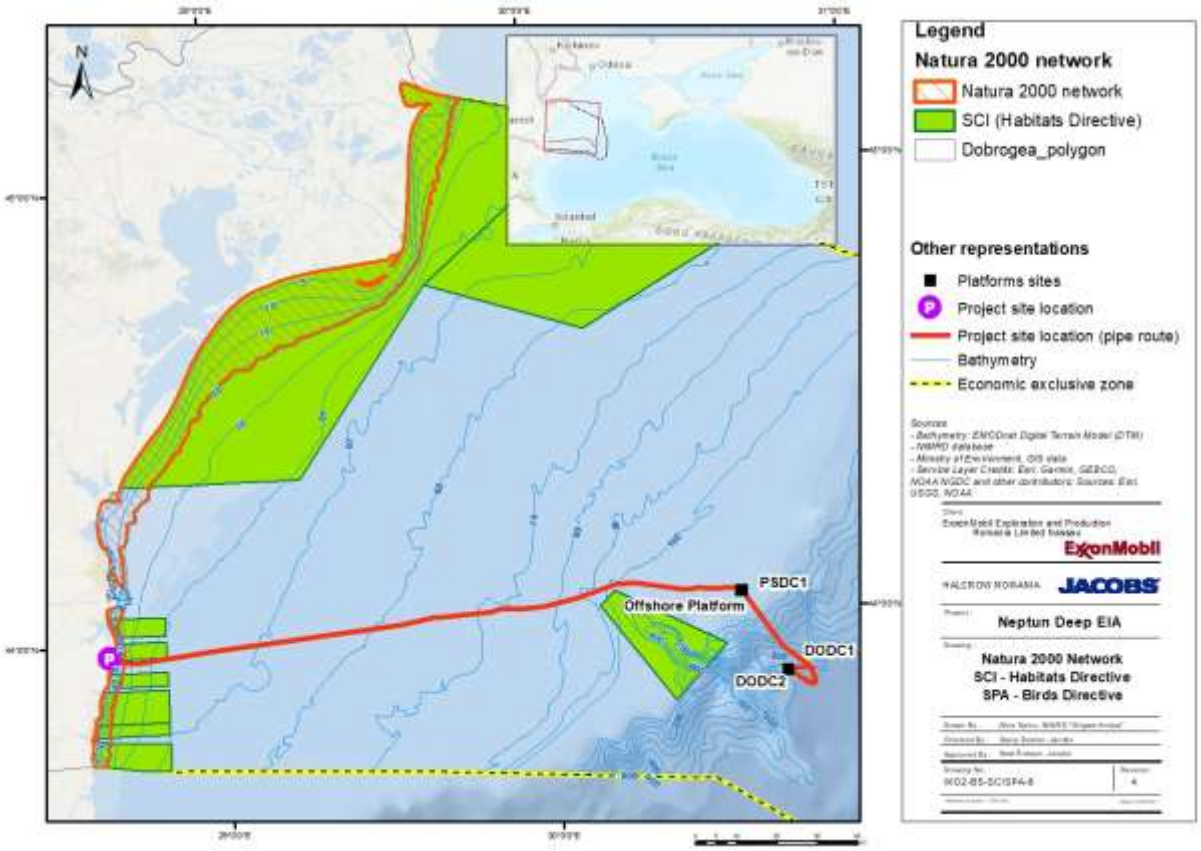


Figure 21 – Natura 2000 sites from project area

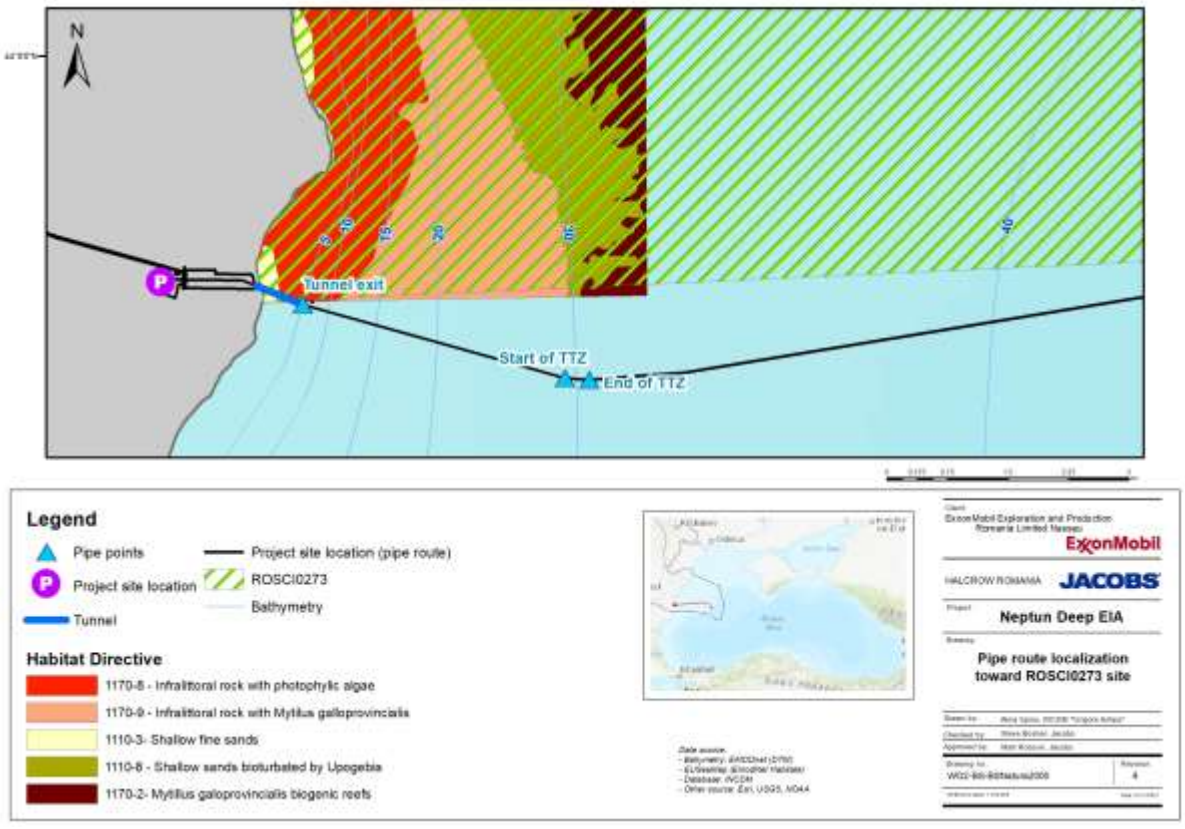


Figure 22 – Location of the shore crossing microtunnel in relation with ROSCI0273 Natura 2000 site

12.2 Justification of the direct link of the project and its need for the conservation management of the protected natural areas of community interest

The project is not directly related to the management of the conservation of natural protected areas of community interest.

12.3 Presence and number / areas covered by species and habitats of community interest in the project area

12.3.1 General Elements

The information presented in this Section is based on data provided by the latest standard data forms of Natura 2000 sites, Site management plans, specific conservation objectives prepared for the sites, publicly available information and field data and information collection activities.

12.3.1.1 ROSCI0273 Zona marina de la Capul Tuzla

Located to the north and east of the project, ROSCI0273 - Zona marină Capul Tuzla is a Site of Community Importance, according to the Habitats Directive 92/43 / EEC, established by Decision 2009/92 / EC, that originally covered an area of 1,738 ha.

Through Order no. 46/2016 of the Ministry of Environment, Waters and Forests, regarding natural protected area regime and the establishment of Sites of Community Importance as part of the European ecological network Natura 2000 in Romania, the total area of ROSCI0273 site increased to 4,946.8 ha.

Cape Tuzla is a high cliff with access to the sea that continues with a rocky underwater promontory. The marine habitats for which the site was declared are of particular importance: reefs, sandbanks permanently covered by a small layer of seawater, sands and swampy areas not covered by refluxing seawater (Table no. 38).

In the Cape Tuzla area, the rocky reef bottom has the largest extension to the offshore area and the most varied and rugged relief in the Romanian sector of the Black Sea. Therefore, it contains the most diverse range of microhabitats of this type and, consequently, a very diverse aquatic fauna and flora. The area is not yet affected by major anthropogenic impacts and is not favorable for navigation due to the very rugged underwater relief.

The species mentioned by the Article 4 of Directive 2009/147/EC and the species listed in the Annex II of Directive 92/43/EEC are presented in the Table no. 39.

Table 38 – Habitat types present within the site (information from NATURA 2000 - STANDARD DATA FORM updated in September 2021)

No.	Habitat type	Surface (ha)
1	1110 Sandbanks which are slightly covered by sea water all the time	450
2	1140 Mudflats and sandflats not covered by seawater at low tide	2
3	1170 Reefs	1285
4	8330 Submerged or partially submerged sea caves	0.7

Table 39 – Species listed in the Article 4 of Directive 2009/147/EC and species listed in Annex II of Directive 92/43/EEC (information from NATURA 2000 - STANDARD DATA FORM updated in September 2021)

No	Species code	Scientific name	Population information		
			Type of presence	Min.	Max.
1	4125	*Alosa immaculata*	Permanent	100	1000
2	4127	*Alosa tanaica*	Permanent		1000
3	1351	*Phocoena phocoena relicta*	Permanent/ concentrations	5	20
4	1349	*Tursiops truncatus ponticus*	Permanent/ concentrations	5	20

Management plan

The site has a management plan approved by the Order no. 1433/2016 of the Ministry of Environment, Waters and Forests. However, the plan covers only the old smaller surface site of 1,738 ha.

Specific conservation objectives

For the ROSCI0273 Natura 2000 site, the National Agency for Natural Protected Areas (ANANP) established the Specific Conservation Objectives, approved by Decision no. 490 / 06.10.2021 (attached in Annex A).

12.3.1.2 ROSPA0076 Marea Neagră

The site is located in the coastal area of Neptun Deep Project, and is crossed for a length of 2,5 km. ROSPA0076 Black Sea represents a Site of Community Importance, according to the 79/409/EEC Birds Directive, directly nominated Special Protection Area (SPA) for birds through Governmental Decision no. 1284/2007 regarding the declaration of avifaunistic protected areas as an integrating part of the Natura 2000 European ecological network in Romania. The site has a total surface of 149.143,9 ha.

This site accomodates an important flocks of protected bird species (Table no. 40). The site is important only during migration and wintering of birds. During the migration period, the site hosts more than 20,000 specimens of pond birds.

Table 40 – Birds species and regular migration birds listed by the Annex I of Directive 2009/147/EC (information from NATURA 2000 - STANDARD DATA FORM updated on September 2021)

No	Code	Scientific Name	Population information		
			Type of presence	Min, (individuals)	Max, (individuals)
B	A050	*Anas penelope*	concentrations	1,200	1,500
B	A053	*Anas platyrhynchos*	wintering	7,000	9,000
B	A051	*Anas strepera*	wintering	340	410
B	A059	*Aythya ferina*	wintering	18,000	20,000
B	A061	*Aythya fuligula*	wintering	6,300	7,450
B	A396	*Branta ruficollis*	concentrations	200	300
B	A067	*Bucephala clangula*	wintering	1,500	3,000
B	A196	*Chlidonias hybridus*	concentrations	4,000	5,000
B	A197	*Chlidonias niger*	concentrations	120	140
B	A038	*Cygnus cygnus*	wintering	1,000	1,500
B	A125	*Fulica atra*	wintering	25,000	40,000
B	A002	*Gavia arctica*	wintering	250	300
B	A001	*Gavia stellata*	wintering	100	200
B	A189	*Gelochelidon nilotica*	concentrations	320	350
B	A459	*Larus cachinnans*	concentrations	25,000	30,000
B	A182	*Larus canus*	concentrations	12,000	15,000
B	A183	*Larus fuscus*	concentrations	200	400
B	A180	*Larus genei*	concentrations	1,000	1,500
B	A176	*Larus melanocephalus*	concentrations	12,000	15,000
B	A177	*Larus minutus*	concentrations	10,000	12,000
B	A179	*Larus ridibundus*	concentrations	20,000	50,000
B	A156	*Limosa limosa*	concentrations	2,000	5,000
B	A068	*Mergus albellus*	wintering	1,000	1,500
B	A070	*Mergus merganser*	wintering	120	180
B	A069	*Mergus serrator*	concentrations	230	340
B	A020	*Pelecanus crispus*	concentrations	70	120
B	A017	*Phalacrocorax carbo*	wintering	10,000	27,000

No	Code	Scientific Name	Population information		
			Type of presence	Min, (individuals)	Max, (individuals)
B	A170	*Phalaropus lobatus*	concentrations	700	1,200
B	A005	*Podiceps cristatus*	concentrations	4,500	6,000
B	A006	*Podiceps grisegena*	concentrations	500	1,000
B	A008	*Podiceps nigricollis*	wintering	2,000	20,000
B	A464	*Puffinus yelkouan*	concentrations	1,000	17,000
B	A195	*Sterna albifrons*	concentrations	300	500
B	A190	*Sterna caspia*	concentrations	500	1,000
B	A193	*Sterna hirundo*	concentrations	8,000	10,000
B	A191	*Sterna sandvicensis*	concentrations	5,200	6,000
B	A004	*Tachybaptus ruficollis*	concentrations	1,200	1,500

Management plan

The site has a management plan approved through Order no. 1197/2016 of the Ministry of Environment, Waters and Forests.

Specific conservation objectives

For the ROSPA0076 Natura 2000 site, ANANP established the Specific Conservation Objectives, approved by Decision no. 535 / 05.11.2020 (attached in Annex A).

12.3.2 Habitats and species of community interest in Natura 2000 sites in the project area

Marine habitats of community interest

1110-3 Shallow fine sands (Figure no. 23) - Along the Romanian coast, this habitat occurs from the Danube outflow down to Vama Veche, wherever sandy beaches are found. The substrate is made of fine sands mixed with shell and pebble debris, stretching out from shore to the 5-6 m isobath. To the south, at Tuzla, Mangalia, under a more stable salinity regime, this habitat is characterised by the biocenosis of *Donax trunculus*, with abundant populations of this bivalve. Due to the high energy environment, the associated fauna is not very diverse, with only the gastropod *Tritia nerite* and the crustaceans *Liocarcinus vernalis* and *Diogenes pugilator*, although abundances may be higher.



Figure 23 – 1110-3 Shallow fine sands (photo: A. Filimon)

1110-4 Well sorted sands (Figure no. 24) - This habitat is located immediately adjacent to shallow fine sands, from 5-6 m to 10-15 m depth. The substrate comprises homogenous granulometry sands, which are less affected by wave movement. The silt content of the sediment increases with depth. The typical species are the molluscs *Chamelea gallina, Tellina tenuis, Anadara kagoshimensis, Cerastoderma glaucum, Tritia neritea, Tritia nitida;* the crustaceans *Liocarcinus vernalis* and *Diogenes pugilator*, the fish *Gymnammodytes cicerelus, Trachinus draco, Uranoscopus scaber, Callionymus sp., and Pomatoschistus sp*.



Figure 24 – 1110-3 Well sorted sands (after: Zaharia et al., 2008)

1110-5 Wave-lashed coarse sands and fine gravels (Figure no. 25) - They are found in the small bays of exposed natural rocky coasts and do not exceed a few tens of centimeters deep. It is in the form of very narrow submerged beaches, formed by coarse sand and gravel from the degradation of the rock, continuously reshaped by waves.



Figure 25 – 1110-5 Wave-lashed coarse sands and fine gravels (after: Zaharia et al., 2008)

1110-6 Infralittoral cobbles (Figure no. 26) - They are found in places, along the naturally exposed rocky coasts, between the depths of 0.5 and 2.5 m. Such submerged beaches are partially covered with round and flattened stones, buckets, usually calcareous, white, shaped by waves. . They occur only in areas with strong hydrodynamics and are populated by isopod crustaceans, amphipods and *Xantho poressa* crab. During periods of calm, benthic diatoms develop abundantly on cobblestone and are eaten by mullets (*Liza* spp.).



Figure 26 – 1110-6 Infralittoral cobbles (after: Zaharia et al., 2008)

1110-9 Sandy muds and muddy sands bioturbated by Upogebia (Figure no. 27) - This habitat forms a continuous belt along the Romanian Black Sea coast, on sandy muds located between 10-30 m in depth. The substrate is riddled with numerous galleries of the filter-feeding decapod crustacean *Upogebia pusilla*, which penetrate 0.2-1.0 m deep, depending on the consistency of the sediment. The density of filter-feeding mollusks occurring in this habitat is decreased through competition and larval predation by *Upogebia*. Other species, especially small commensals which inhabit the burrows of *Upogebia*, are facilitated.



Figure 27 – 1110-9 Sandy muds and muddy sands bioturbated by Upogebia (photo: A. Filimon)

1140-1 Supralittoral sands with or without fast-drying drift lines (Figure no. 28) - It occupies the part of the beach that is not watered by waves except during storms. The deposits are made of materials brought from the sea, of plant origin (tree trunks, pieces of wood, remains of terrestrial and marsh plants, algae, leaves), animal (carcasses of aquatic animals, insects, drowned terrestrial animals) or anthropogenic (waste solids), as well as dense foam from marine plankton. The fauna consists of isopod crustaceans and especially insects.



Figure 28 – 1140-1 Supralittoral sands with or without fast-drying drift lines (after: Zaharia et al., 2008)

1140-2 Supralittoral slow-drying drift lines (Figure no. 29) - Present on the shores formed by boulders or cobblestones beaches, Agigea, Tuzla, Mangalia, Vama Veche. It occupies the part that is not watered by waves except during storms of the shores formed by boulders or cobblestones beaches. They accumulate in the spaces between them the residues described above, but also the moisture, so that the deposits are difficult to dry. Fauna is made up of detritivores, decomposers and their predators.



Figure 29 – 1140-2 Supralittoral slow-drying drift lines (after: Zaharia et al., 2008)

1140-3 Midlittoral sands (Figure no. 30) - Present on all sandy beaches on the Romanian coast. It occupies the strip of sand on the shore, on which the waves break. Depending on the degree of agitation of the sea, it can be wider or narrower, but in the Black Sea it is limited anyway due to the negligible amplitude of the tides. The sand is loose, coarse and mixed with the remains of shells and pebbles. The characteristic species for the beaches in the south of the Romanian coast (Eforie, Costinesti, Mangalia, Vama Veche) is the bivalve *Donacilla cornea*, and for the beaches on the Danube Delta the amphipod *Euxinia maeoticus*.



Figure 30 – 1140-3 Midlittoral sands (photo: A. Filimon)

1140-4 Midlittoral detritus on shingle and boulders - The habitat is present in the mediolitoral of the rocky shores, on the substrate of boulders, cobblestones or gravel, in continuity with the supralittoral detrital deposits with slow drying, 1140-2. The shore consists of boulders, cobblestones, and gravel, which accumulate mainly dead algae. When the amount of organic compounds is in excess, the habitat degrades; hypoxia and anoxia can occur locally, affecting habitats and biota in the contiguous infralittoral. The fauna is represented by isopods of the genera *Idotea* and *Sphaeroma* and by the crab *Pachygrapsus marmoratus*.

1170-2 Mytilus galloprovincialis biogenic reefs - Mussel reefs occur on sedimentary substrate: mud, sand, sedge or mixture, most commonly between 35 and 60 m isobaths. Biogenic *Mytilus galloprovincialis* reefs consist of mussel shoals whose shells have accumulated over time, forming a hard support raised above the surrounding sediments, mud, sand, sedge or mixture, on which the mussel colonies live. This type of reef is unique due to the crucial ecological role of mussel banks in self-purifying the ecosystem and achieving benthic-pelagic coupling.

1170-4 Boulders and blocks - The habitat appears in the mediolitoral and infralittoral of the rocky shores, at the foot of the cliffs made of hard rocks. The stone blocks can be rolled and eroded by the movements of the waves. The structural complexity of the spaces between the blocks and the darkness, attract an unusually diverse fauna for such shallow depths. This habitat offers a mosaic of microhabitats, allowing the presence near the shore of some species that usually live in the deeper waters. In the Romanian Black Sea, this habitat is found in the few places with natural rocky shores Agigea, Tuzla, Costinesti, Vama Veche. The breakwater of the port of Constanța and Mangalia can be considered the artificial variant of this type of habitat.

1170-5 Supralittoral rock - This habitat is situated in the splash zone above high water level and is sprayed by waves during storms. The vertical extent depends on wave regime, solar exposure, and slope. Harsh conditions make this habitat suitable only for a few species: *Verrucaria lichen* crusts, the periwinkle *Melaraphe neritoidis*, isopod crustaceans and the crab *Pachygrapsus marmoratus*. In eutrophic, organically polluted areas, the habitat can be covered with a film of epi- and endolytic cyanophyceae.

1170-6 Upper midlittoral rock (Figure no. 31) - The upper midlittoral rock is in the upper part of the splash zone is not permanently covered by water, being intermittently wetted by strong waves. The most characteristic species is the barnacle *Chthamalus stellatus,* rarely at the Romanian seaside.



Figure 31 – 1170-6 Upper midlittoral rock (photo: F. Timofte)

1170-7 Lower midlittoral rock (Figure no. 32) - is located in the lower part of the splash zone and covered by water most of the time. High and constant humidity, strong hydrodynamics and strong light are the dominant environmental factors in this habitat. The flora consists of encrusting coral algae, *Lithophyllum incrustans* and articulated *Corallina officinalis*, ephemeral macrophytic algae such as *Ulva compressa*, *Cladophora* sp., *Ceramium* sp. The characteristic fauna is dominated by the ciriped crustacean *Amphibalanus improvisus*, the actinia *Diadumene lineata*, the bivalves *Mytilus galloprovincialis* and *Mytilaster lineatus*, to which are added bryozoans, amphipod and isopod crustaceans, *Eriphia verrucosa* crabs and *Pachygrapsus marmoratus*. In clean waters the habitat is easily recognizable by the dense belts formed by the calcareous alga *Corallina officinalis* and the bivalve *Mytilaster lineatus*, and in waters with high organic load their place is taken by *Ulva compressa* and *Amphibalanus improvisus*.



Figure 32 – 1170-7 Lower midlittoral rock (photo: F. Timofte)

1170-8 Infralittoral rock with photophilic algae (Figure no. 33) It begins immediately below the lower mediolittoral level, where the emersion are only accidental, and extends to the lower limit of the spread of photophilous algae and marine phanerogams. This lower limit is conditioned by the penetration of light and therefore extremely variable depending on the topography and transparency of the water. In general, on the Romanian coast this limit is around 10-15 m deep, but in areas with high turbidity it can be less than 1 m. The rocky substrate between these limits is covered with rich and varied populations of photophilous algae. They

comprise numerous facies differentiated according to the dominant algal associations, which vary according to the season. Of these, the most valuable for conservation is the coastal belts formed by the perennial brown alga *Cystoseira barbata*. They grow between 0.2-4 m deep, only in areas with clear, clean water and relatively sheltered from waves. *Cystoseira* stems are solid, resistant, elastic, reach 1.5-2 m long and form true dense "forests", whose structural and permanent complexity over time allow the development of a rich and diverse fauna, which includes many rare or endangered species.

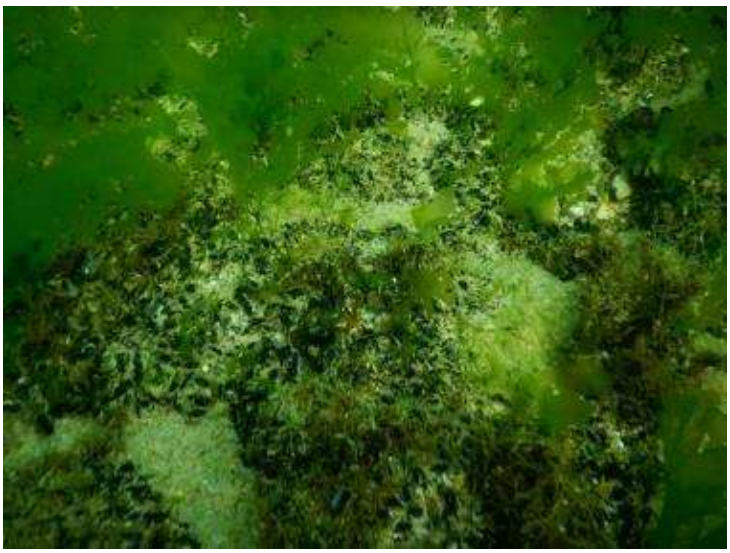


Figure 33 – 1170-8 Infralittoral rock with photophilic algae (photo: A. Filimon)

1170-9: Infralittoral rock with Mytilus galloprovincialis (Figure no. 34) - *Mytilus galloprovincialis* mussels that cover the rocky bottom are also present in the previous habitat, but become dominant starting from its lower limit, continuing as a compact carpet to the lower limit of the rocky substrate distribution at 30-35 m depth. The fauna is diverse, comprising numerous species of sponges, hydrozoans, polychaete worms, mollusks, crustaceans, ascidians and fish, characteristic only of this habitat, some being rare or protected.



Figure 34 – 1170-9: Infralittoral rock with *Mytilus galloprovincialis* (photo: A. Filimon)

8330 Submerged or partially submerged sea caves (Figure no. 35) - In the Romanian Black Sea, this habitat corresponds to vertical walls, overhangs, caves and tunnels. Light and hydrodynamics are reduced or linear, which generates a stable but selective environment for the groups of organisms that can grow here. The flora is poorly represented, only the sciaphilous algae *Hildebrandtia proptotypus* and *Phyllophora crispa* can grow

under the overhangs and at the entrance of the galleries. The fauna is dominated by sponges, cnidarians, bryozoans, ascidians, myside crustaceans and decapods and cave fish.



Figure 35 – 8330 Submerged or partially submerged sea caves (after: Zaharia et al., 2008)

Marine species of community interest

Alosa tanaica (Grimm, 1901)

Anadromous marine species (Figure no. 36) has a wide distribution in the Black Sea, populating the Romanian co (Figure no. 37), Bulgarian, Russian, Ukrainian and Anatolian coasts. In the Danube to the Iron Gates, in the Dnieper to the weirs and mouths of the Dniester. Eurihalin species, wintering in the sea, does not form pure flocks, being mixed with other species, it appears near the sea shore, in spring at temperatures of 6 ° C. Reproduction takes place from late April to early June. Withdrawal of young and adults at sea takes place between August and September.



Figure 36 – *Alosa tanaica* (photo: INCDM)

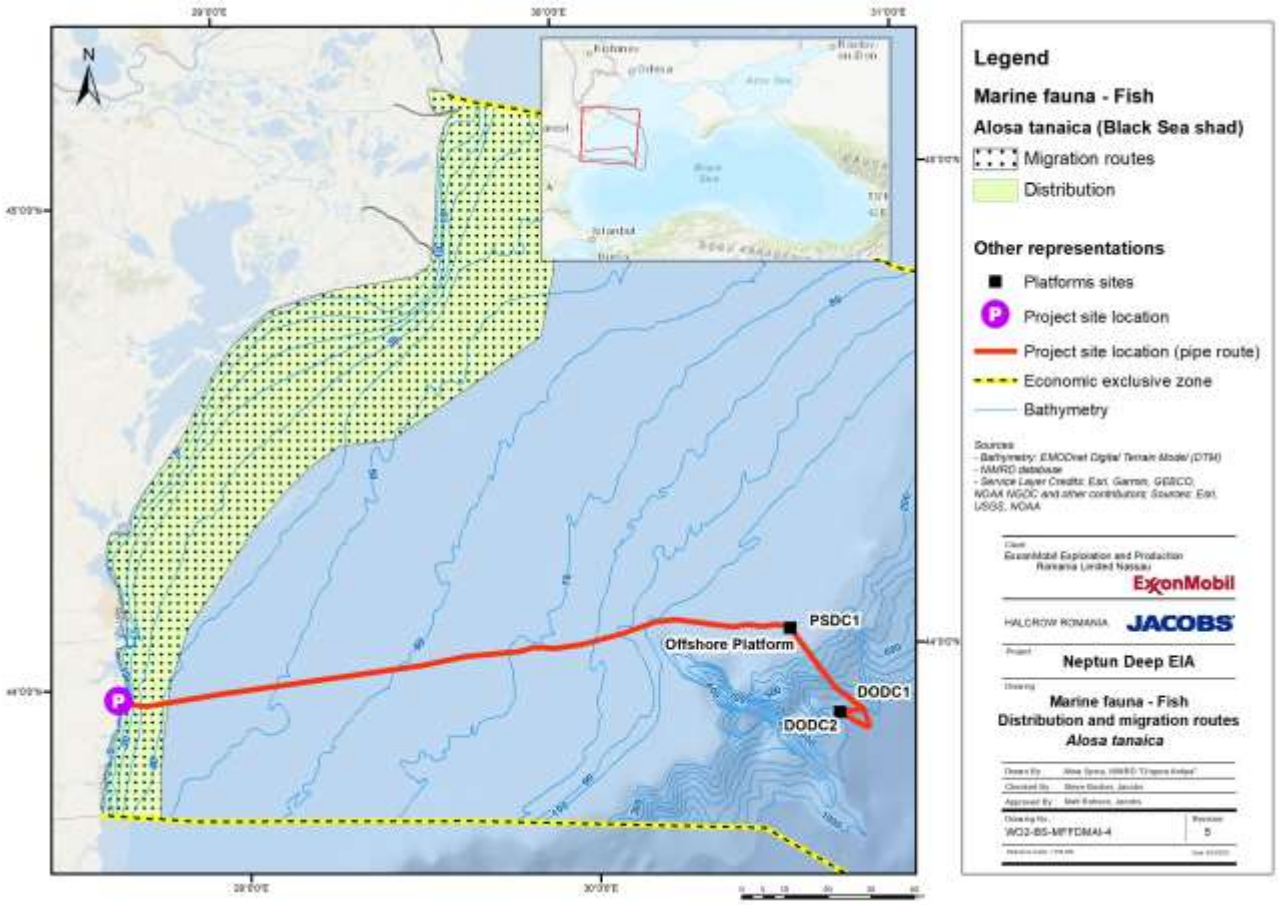


Figure 37 – Distribution of *Alosa tanaica* at romanai littoral

Alosa immaculata (Bennett, 1835)

Cryophilic pelagic species (Figure no. 38). Adults approach the shore only during breeding migration, in February-April, when it is present in all sites (Figure no. 39). The young can often be found in coastal waters.



Figure 38 – *Alosa immaculata* (photo: INCDM)

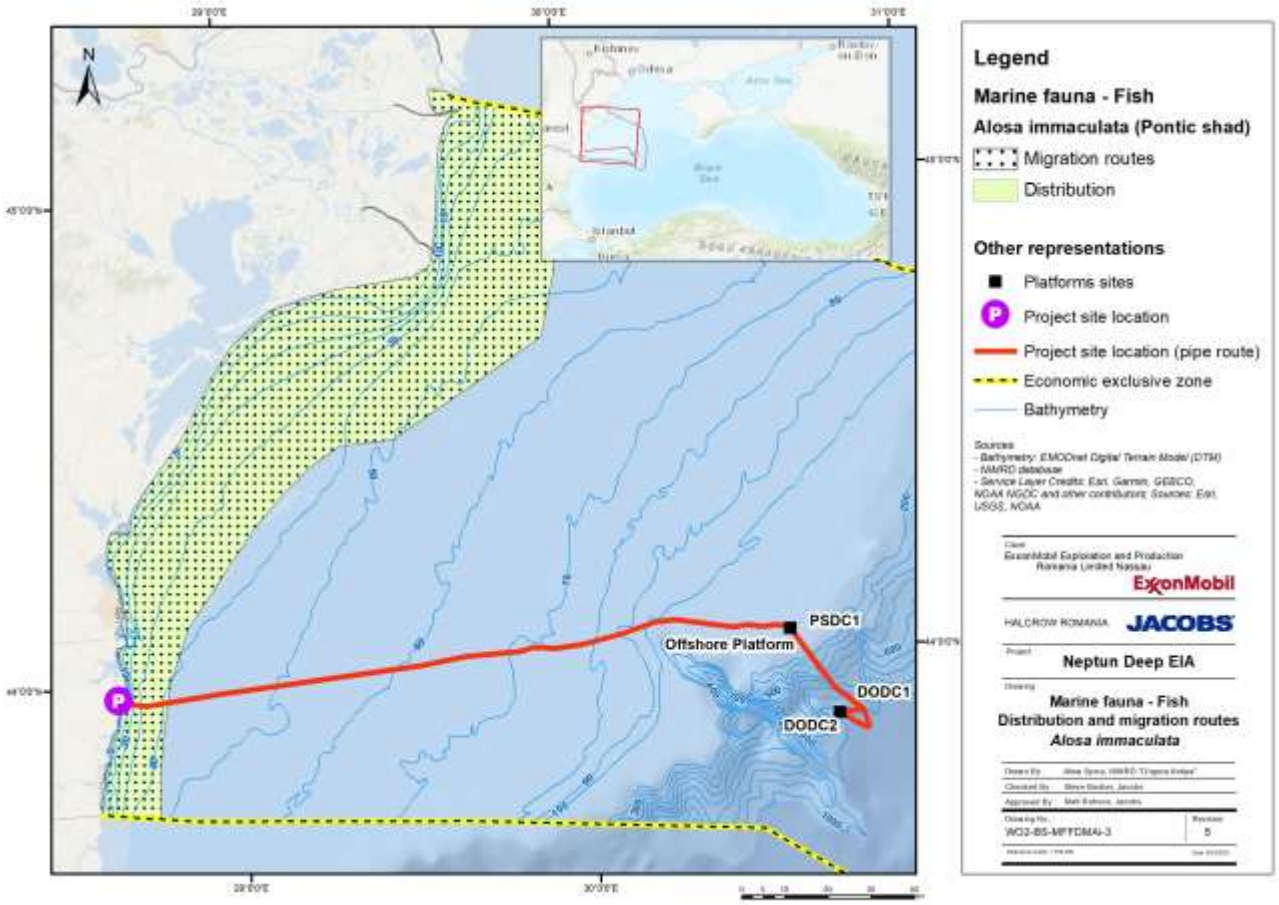


Figure 39 – Distribution of *Alosa immaculata* on the Romanian littoral

Phocoena phocoena relicta (Abel, 1905)

The coastal waters, relatively shallow of the Black Sea, constitute the typical area for the species Phocoena phocoena ssp. Relicta (porpoise) (Figure no. 40). Near the Romanian coast (Figure no. 41), the species can be observed from April to November, most often in front of the mouth of the Danube. It can be seen even in ports in search of food. After lactation, both juveniles and adults feed on small species of benthic fish (gobies), pelagic species (anchovies, groundnuts) and benthic invertebrates.



Figure 40 – *Phocoena phocoena relicta* (beached specimen), (photo: INCDM)

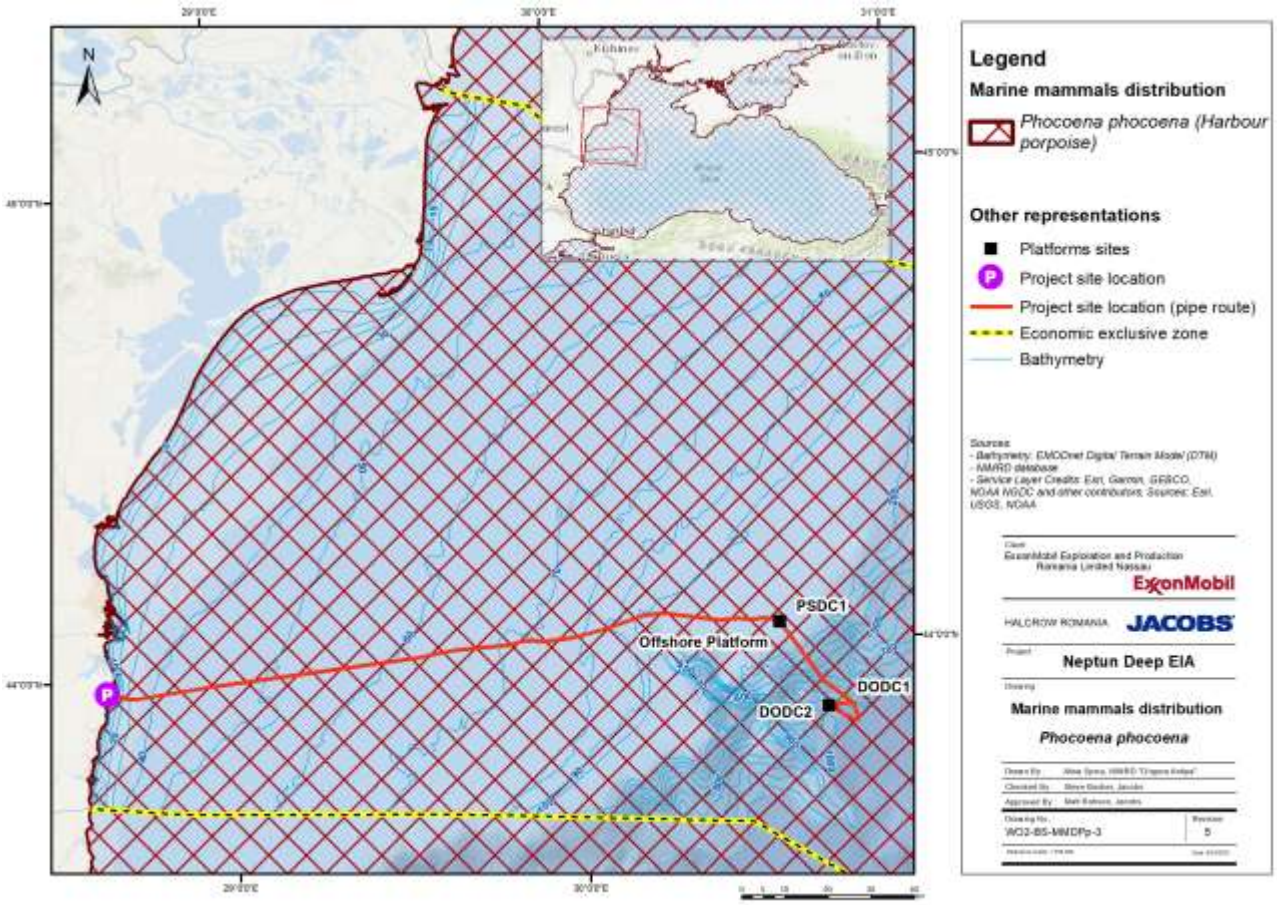


Figure 41 – Distribution of *Phocoena phocoena relicta* on the Romanian littoral

Tursiops truncatus ponticus (Barabasch, 1940)

Tursiops truncatus ssp. *ponticus* (afalin) (Figure no. 42) it is the most frequently observed species, due on the one hand to its coastal habitat, but also to its higher capacity to live in captivity. It is the most robust pontic species, reaching up to 3.3 m in length, with a very long average life (20-30 years) and high fertility. The species is common throughout the Black Sea continental shelf, but can occasionally occur in the open sea and very rarely in the Sea of Azov. On the Romanian coast (Figure no. 43) it can be observed from the end of June to the end of August; in November it leaves Romanian waters, migrating to the shores of Crimea and Anatolia. Afalin can be associated in flocks of 30-500 specimens; adults and juveniles always associate in flocks. In spring, they appear near the shore in search of food, represented by most species of pelagic fish, small or large: anchovy, cod, turbot, mullet, etc.



Figure 42 – *Tursiops truncatus ponticus* (photo: INCDM)

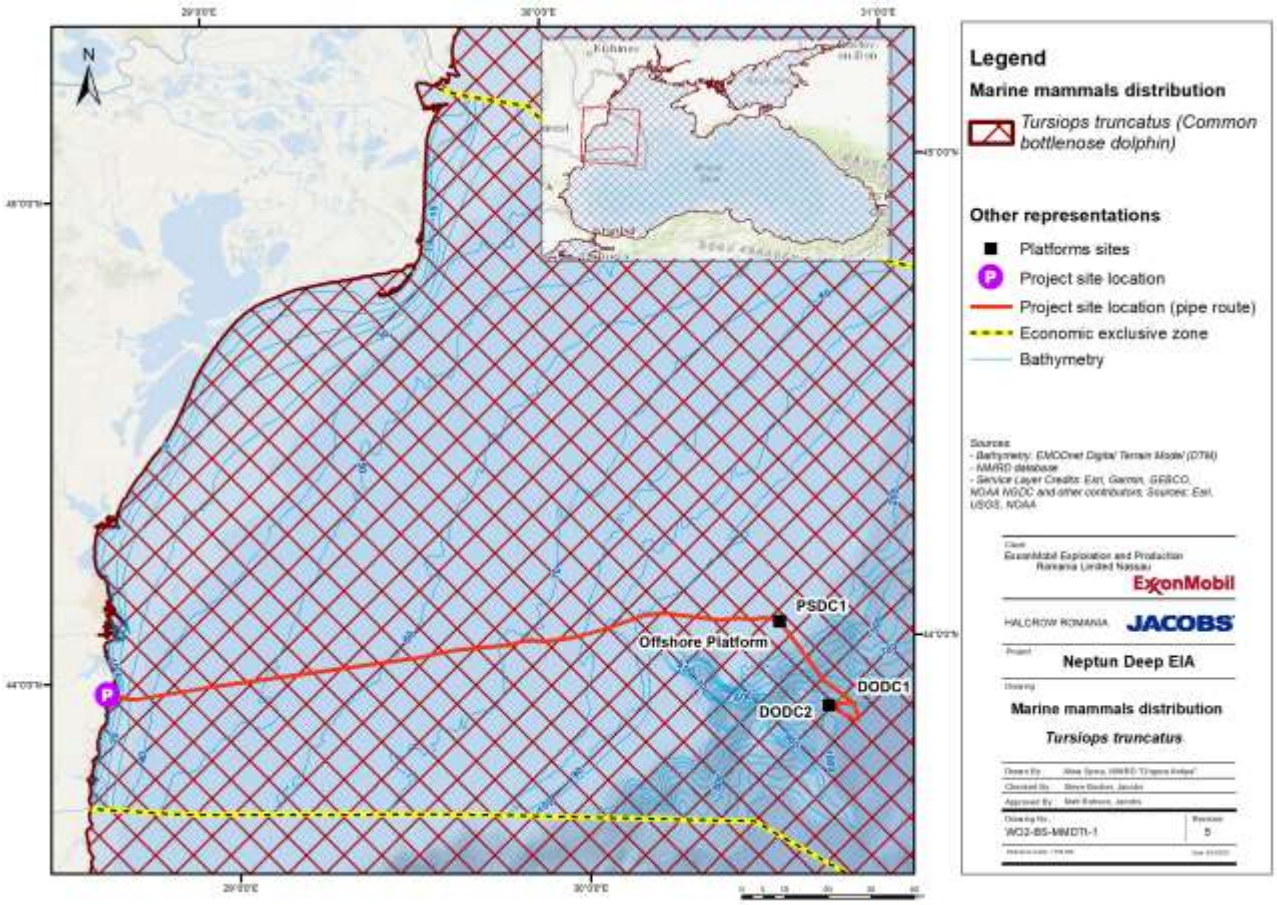


Figure 43 – Distribution of *Tursiops truncatus ponticus* on the Romanian littoral

Species of birds of community interest

The ROSPA0076 Marea Neagră Natura 2000 site is housing a large number of bird species. The location of their favorable habitats in relation to the project site is presented in the assessment table based on the Site-Specific Conservation Objectives established for the Natura 2000 site (Chapter 12.4).

12.4 Assessment of the potential impact of the project on the species and habitats in the natural protected areas of community interest

12.4.1 Identification of potential impacts and forms of impact

The potential impact on natural protected areas of community interest during the execution of the works is represented by:

- Local and temporary increase in turbidity that will generate a decrease in oxygen concentration in the excavation area;
- Local growth of nutrients and possibly pollutants present in sediments that are resuspended during excavation;
- Potential disturbance of habitats during excavation activities in the coastal area due to the sedimentation process of the excavated sediments;
- Potential habitat disturbances and losses during coastal excavation activities due to ship anchors and chains maneuvering;

- Disruption and loss of benthic flora and fauna in the excavated areas;
- Potential disturbance of migratory fish species (Alosa) if coastal activities are undertaken during the migration season (spring);
- Potential disturbance to birds due to the presence of vessels in the marine feeding area;
- Direct disturbance of fish and marine mammals due to noise generated by excavation activities;
- Loss of feeding habitats areas for the bird species from ROSPA0076, due to the land occupation during construction and operation phases (for the entire lifetime of the project);
- Alteration of habitats (feeding habitats for the bird species from ROSPA0076) due to the temporary works, as well as due to air emissions. Habitat alteration is also generated by favoring the dispersal of invasive non-native plant species, both in areas where vegetation has been removed and in non-impacted areas, by anthropocoria due to equipment traffic and human presence on the site;
- Disturbance of bird species activity from ROSPA0076 due to human presence, noise and lighting;
- Increase in bird species mortality, mainly as a result of interventions by digging / excavation or soil compaction, as well as as a result of collision with traffic.

The potential impact on natural protected areas of community interest during the operation period is represented by:

- Disturbance of bird species activity from ROSPA0076, due to noise, lighting and human presence in the area of onshore facilities;
- Increase in bird species mortality as a result of collision with traffic.

12.4.2 Impact prediction

The requirements included in the Circular Letter of the Ministry of Environment, Waters and Forests (MMAP) no. 4654 / 02.07.2020 were considered in order to estimate the potential impact of the project on the habitats and species from the two Natura 2000 sites potentially impacted by the project.

The analysis was performed based on the Site-Specific Conservation Objectives (SCOs) established by ANANP for the two Natura 2000 sites by Decisions no. 490 / 06.10.2021 (ROSCI0273) and no. 535 / 05.11.2020 (ROSPA0076) (attached in Annex A). The results of the analysis are presented in the tabular format requested according to the MMAP Circular.

The analysis was performed for each habitat and species of community interest, at the level of each of the parameters that define the SCOs, taking into account the effects generated by the implementation and operation of the project.

In the screening stage, the purpose of the analysis is to estimate the potential impact generated by the project, without taking into consideration of measures required to avoid and mitigate the impact.

The estimation of the potential impact on SCOs was performed by running of the following steps:

1. Analysis of the objectives, parameters and targets set for each of the habitats and species of community interest included in SCOs;
2. Case-by-case analysis for each habitat and species of the parameters that could be impacted by the proposed project, carried out as follows:

a) Identification of the likelihood of impacting the component (habitat / species): Is the habitat / habitat of the species intersected? Is it located in the area of manifestation of an effect generated by the project? Can individuals of the species reach the project area? Can the project impact one of the ecological functions of the habitat / species?;

b) Identification of the likelihood of impacting the parameter: is there a cause-effect relationship between the project activities and the analyzed parameter (eg physical or chemical interactions)?

3. Justification for the likelihood that each parameter related to SCOs may or may not be impacted by the project;

4. Estimation / quantification (where possible) of the degree of impacting the parameter;

5. Assessment of the significance of the impact, using mainly the classes 'significant / insignificant'. The assessment of significance was generally made on the basis of the following parameters:

    a) Quantitative - the percentage of impacting from the target value;

    b) Qualitative:

        i. If the central or marginal area of the habitat is impacted;

        ii. Conservation status at the level of the site and at the level of the biogeographical region;

        iii. Presence in other Natura 2000 sites;

        iv. Species bordering the distribution range.

    c) Ecological functions:

        i. Maintaining / restoring ecological connectivity;

        ii. Maintaining critical physico-chemical parameters, such as water level.

For the ROSPA0076 Natura 2000 site, no potential significant impacts were identified following the analysis without taking into account measures to avoid and mitigate the impact. At this stage, a significant impact on the 1170-Recifi habitat was assessed for the ROSCI0273 Natura 2000 site, requiring a detailed analysis in the subsequent stages of the EIA procedure.

The assessment tables (Tables no. 41 and 42) also include a first proposal for impact mitigation measures, but these are only preliminary and will be finalized in the later stages of the EIA procedure, after a detailed assessment of the impact on habitats and species from the two Natura 2000 sites.

Table 41 –Estimation of the potential impact on SCO - ROSCI0273 Zona marină de la Capul Tuzla

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Location of the project	Spatial data source	Source of information	State of conservation	Conservation objectives	Parameters	Parameter unit of measurement	Target value	Is it possible to be impacted by the project?	Explanation for the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (without measures)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
1	Habitats	1110	Sandbanks which are slightly covered by sea water all the time	The habitat is unevenly distributed along the entire Romanian coast and on the entire continental shelf. It is present in the project area, and within the site the habitat is present at a distance of about 60 m from the exit point of the tunnel on the seabed. The tunnel crosses the site at a depth of 10 to 24 m below the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining a favorable conservation status	Habitat area	Ha	450	Yes	Excavation activities in the coastal area, even if they are not carried out within the perimeter of the ROSCI0273 site, will contribute to the smothering of the habitat.	1-5 ha	Insignificant	The area where the works are to be carried out is an area with intense hydrodynamic activity. It is an area where intense coastal erosion took place, which contributed to bringing sedimentary material of terrigenous origin into the water mass. At each storm, sediment resuspension and turbidity increase in the area for long periods of time. The habitat is periodically impacted by the smothering process.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out an anchoring plan to minimize the use of anchors within ROSCI0273.
2	Habitats	1110	Sandbanks which are slightly covered by sea water all the time	The habitat is unevenly distributed along the entire Romanian coast and on the entire continental shelf. It is present in the project area, and within the site the habitat is present at a distance of about 60 m from the exit point of the tunnel on the seabed. The tunnel crosses the site at a depth of 10 to 24 m below the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining a favorable conservation status	Characteristic invertebrate species	Species abundance / square meter	At least 30	Yes	Excavation activities in the coastal area, even if not carried out within the perimeter of the ROSCI0273 site, will contribute to the increase of local turbidity and the decrease of oxygen concentration. These events will be manifested on a small area and strictly during the works. Sedimentation of the suspended material in the water mass and the occurrence of hypoxic episodes can contribute to the mortality of immobile or reduced mobility benthic organisms.	1-5 organisms / m^2	Insignificant	The area where the works are to be carried out is an area with intense hydrodynamic activity. It is an area where intense coastal erosion took place, which contributed to bringing sedimentary material of terrigenous origin into the water mass. At each storm there is a resuspension of sediments and increased turbidity in the area for long periods of time. Organisms in the area are adapted to these conditions and can survive periods of high turbidity. Thus, due to these adaptations, the number of impacted / dead organisms will be very small.	Carrying out excavation works in the shore area only during periods of great calm.
3	Habitats	1110	Sandbanks which are slightly covered by sea water all the time	The habitat is unevenly distributed along the entire Romanian coast and on the entire continental shelf. It is present in the project area, and within the site the habitat is present at a distance of about 60 m from the exit point of the tunnel on the seabed. The tunnel crosses the site at a depth of 10 to 24 m below the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining a favorable conservation status	Species indicating disturbances	Present/absent	Absent	No	Green algae are naturally present in the ROSCI0273 site. The resuspension of nutrients in the sediment will be accompanied by increased turbidity, which will limit the penetration of light into the water and thus will not stimulate the development of green algae.	–	–	–	–
4	Habitats	1110	Sandbanks which are slightly covered by sea water all the time	The habitat is unevenly distributed along the entire Romanian coast and on the entire continental shelf. It is present in the project area, and within the site the habitat is present at a distance of about 60 m	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining a favorable conservation status	Water depth	m	At least 0,5	No	The activities carried out by the project in the vicinity of the ROSCI0273 site will not contribute to the modification of the site bathymetry. Habitat 1110 and its subtypes will remain permanently covered by water.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Location of the project	Spatial data source	Source of information	State of conservation	Conservation objectives	Parameters	Parameter unit of measurement	Target value	Is it possible to be impacted by the project?	Explanation for the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (without measures)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
				from the exit point of the tunnel on the seabed. The tunnel crosses the site at a depth of 10 to 24 m below the seabed.													
5	Habitats	1110	Sandbanks which are slightly covered by sea water all the time	The habitat is unevenly distributed along the entire Romanian coast and on the entire continental shelf. It is present in the project area, and within the site the habitat is present at a distance of about 60 m from the exit point of the tunnel on the seabed. The tunnel crosses the site at a depth of 10 to 24 m below the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining a favorable conservation status	Ecological status of water based on physico-chemical indicators	Ecological status qualifier	At least good ecological status	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments will be resuspended in water, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.
6	Habitats	1110	Sandbanks which are slightly covered by sea water all the time	The habitat is unevenly distributed along the entire Romanian coast and on the entire continental shelf. It is present in the project area, and within the site the habitat is present at a distance of about 60 m from the exit point of the tunnel on the seabed. The tunnel crosses the site at a depth of 10 to 24 m below the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining a favorable conservation status	Ecological status of water based on ecological indicators	Ecological status qualifier	At least good ecological status	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological status of water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm.
7	Habitats	1170	Reef	The habitat is unevenly distributed along the entire Romanian coast and on the entire continental shelf. It is present in the project area, and within the site the habitat is present at a distance of about 60 m	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining a favorable conservation status	Habitat area	ha	At 1285	YES	During the excavation activities in the shore area, barges will be used, which will have anchors on the seabed to maintain the working position. In work areas that are less than 100 m from ROSCI0273, some anchors will be left on the	Approx. 14 ha	Significant	During the excavation work, the barge on which the work equipment is located is kept in the working position with the help of anchors. Some of the anchors will be launched inside the ROSCI0273 site. Anchors reaching the bottom of the water will locally disturb the sediment. The barge will be	Carrying out an anchoring plan to minimize the use of anchors in ROSCI0273. Maintaining the anchor chains in tension while performing barge movement maneuvers to reduce the area impacted by chain drag.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Location of the project	Spatial data source	Source of information	State of conservation	Conservation objectives	Parameters	Parameter unit of measurement	Target value	Is it possible to be impacted by the project?	Explanation for the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (without measures)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
				from the exit point of the tunnel on the seabed. The tunnel crosses the site at a depth of 10 to 24 m below the seabed.									bottom of the water, inside the site.			repositioned gradually by changing the tension of the anchor chains. This activity will generate a friction / abrasion of the anchor chain over a length of about 30% of their length. Thus, as a result of these activities, the handling of anchors and chains will impact an area of approx. 14 ha of habitat 1170. The impact is temporary and reversible. Habitat 1170 will recolonize with neighboring organisms in about 1-2 years.	
8	Habitats	1170	Reef	The habitat is unevenly distributed along the entire Romanian coast and on the entire continental shelf. It is present in the project area, and within the site the habitat is present at a distance of about 60 m from the exit point of the tunnel on the seabed. The tunnel crosses the site at a depth of 10 to 24 m below the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining a favorable conservation status	Area of habitat subtypes Surface subtype 1110-9	ha	Must be defined within 3 years. At least 586.23	NO	The activities carried out by the project in the vicinity of the ROSCI0273 site will not contribute to the loss or modification of the habitat subtype 1170-9 and will not contribute to the modification of the conservation status.	–	–	–	–
9	Habitats	1170	Reef	The habitat is unevenly distributed along the entire Romanian coast and on the entire continental shelf. It is present in the project area, and within the site the habitat is present at a distance of about 60 m from the exit point of the tunnel on the seabed. The tunnel crosses the site at a depth of 10 to 24 m below the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining a favorable conservation status	Habitat spatial integrity / connectivity	number of fragments	At least 2	NO	The project activities in the vicinity of the ROSCI0273 site will not contribute to habitat fragmentation. Excavation activities are carried out off-site. There will be no permanent constructions on the site.	–	–	–	–
10	Habitats	1170	Reef	The habitat is unevenly distributed along the entire Romanian coast and on the entire continental shelf. It is present in the project area, and within the site the habitat is present at a distance of about 60 m from the exit point of the tunnel on the seabed. The tunnel crosses the site at a depth of 10 to 24 m below the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining a favorable conservation status	Presence of disturbance indicator species	Present/absent	0	NO	Green algae are naturally present in the ROSCI0273 site. The resuspension of nutrients in the sediment will be accompanied by increased turbidity, which will limit the penetration of light into the water and thus will not stimulate the development of green algae.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Location of the project	Spatial data source	Source of information	State of conservation	Conservation objectives	Parameters	Parameter unit of measurement	Target value	Is it possible to be impacted by the project?	Explanation for the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (without measures)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
11	Habitats	1170	Reef	The habitat is unevenly distributed along the entire Romanian coast and on the entire continental shelf. It is present in the project area, and within the site the habitat is present at a distance of about 60 m from the exit point of the tunnel on the seabed. The tunnel crosses the site at a depth of 10 to 24 m below the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining a favorable conservation status	Ecological status of water based on physico-chemical indicators	Ecological status qualifier	At least good ecological status	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments will be resuspended in water, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.
12	Habitats	1170	Reef	The habitat is unevenly distributed along the entire Romanian coast and on the entire continental shelf. It is present in the project area, and within the site the habitat is present at a distance of about 60 m from the exit point of the tunnel on the seabed. The tunnel crosses the site at a depth of 10 to 24 m below the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining a favorable conservation status	Ecological status of water based on ecological indicators	Ecological status qualifier	At least good ecological status	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological status of water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm.
13	Habitats	8330	Submerged or partially submerged sea caves	The habitat is mentioned in the site file as having an area of 0.7 ha. To date, no mapping of the distribution of this habitat within the site has been made. The closest location of this habitat to the project is at least 60 m from the exit point of the tunnel on the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unknown	Maintaining a favorable conservation status	Habitat area	ha	At least 0,7	NO	The activities carried out by the project are not likely to impact the surface of habitat 8330. The activities of sub-crossing the shore area through drilling activities (microtunnel) are carried out at a sufficiently deep depth (10-24 m below the seabed), so as not to impact habitat 8330. Also, excavation activities near the site will not cause habitat clogging.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Location of the project	Spatial data source	Source of information	State of conservation	Conservation objectives	Parameters	Parameter unit of measurement	Target value	Is it possible to be impacted by the project?	Explanation for the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (without measures)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
14	Habitats	8330	Submerged or partially submerged sea caves	The habitat is mentioned in the site file as having an area of 0.7 ha. To date, no mapping of the distribution of this habitat within the site has been made. The closest location of this habitat to the project is at least 60 m from the exit point of the tunnel on the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unknown	Maintaining a favorable conservation status	Number of caves	nr.	At least 7	NO	The activities carried out by the project are not likely to impact the surface of habitat 8330. The activities of sub-crossing the shore area through drilling activities (microtunnel) are carried out at a sufficiently deep depth (10-24 m below the seabed), so as not to impact habitat 8330. Geological studies carried out along the future tunnel route in the shore area did not reveal the presence of sea caves.	-	-	-	-
15	Habitats	8330	Submerged or partially submerged sea caves	The habitat is mentioned in the site file as having an area of 0.7 ha. To date, no mapping of the distribution of this habitat within the site has been made. The closest location of this habitat to the project is at least 60 m from the exit point of the tunnel on the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unknown	Maintaining a favorable conservation status	The internal dimensions of the caves	m	Must be defined within 2 years	NO	The project activities in the area of the site will not lead to changes in the size of the caves. The turbidity generated by the excavation activities in the vicinity of the site will not cause clogging of habitat 8330.	-	-	-	-
16	Habitats	8330	Submerged or partially submerged sea caves	The habitat is mentioned in the site file as having an area of 0.7 ha. To date, no mapping of the distribution of this habitat within the site has been made. The closest location of this habitat to the project is at least 60 m from the exit point of the tunnel on the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unknown	Maintaining a favorable conservation status	Number of species in the characteristic biocenoses in the site	Number of species	Must be defined within 2 years	YES	Excavation activities in the coastal area, even if not carried out within the perimeter of the ROSCI0273 site, will contribute to the increase of local turbidity and the decrease of oxygen concentration. These events will be manifested on a small area and strictly during the works. Sedimentation of the suspended material in the water mass and the occurrence of hypoxic episodes can contribute to the mortality of immobile or reduced mobility benthic organisms.	-	Insignificant	The area where the works are to be carried out is an area with intense hydrodynamic activity. It is an area where intense coastal erosion has taken place which has contributed to bringing sedimentary material of terrigenous origin into the water mass. At each storm, sediment resuspension and turbidity increase in the area for long periods of time. Organisms in the area are generally organisms adapted to these conditions and can survive periods of high turbidity.	Carrying out excavation works in the shore area only during periods of great calm.
17	Habitats	8330	Submerged or partially submerged sea caves	The habitat is mentioned in the site file as having an area of 0.7 ha. To date, no mapping of the distribution of this habitat within the site has been made. The closest location of this habitat to the project is at least 60 m from the exit point of the tunnel on the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unknown	Maintaining a favorable conservation status	Spatial model of characteristic biocenoses	Types of biocenoses and their distribution inside individual caves	Must be defined within 2 years	YES	Excavation activities in the coastal area, even if not carried out within the perimeter of the ROSCI0273 site, will contribute to the increase of local turbidity and the decrease of oxygen concentration. These events will be manifested on a small area and strictly during the works. Sedimentation of the suspended material in the water mass and the	-	Insignificant	The area where the works are to be carried out is an area with intense hydrodynamic activity. It is an area where intense coastal erosion has taken place which has contributed to bringing sedimentary material of terrigenous origin into the water mass. At each storm, sediment resuspension and turbidity increase in the area for long periods of time. Organisms in the area are generally organisms adapted to these	Carrying out excavation works in the shore area only during periods of great calm.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Location of the project	Spatial data source	Source of information	State of conservation	Conservation objectives	Parameters	Parameter unit of measurement	Target value	Is it possible to be impacted by the project?	Explanation for the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (without measures)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
													occurrence of hypoxic episodes can contribute to the mortality of immobile or reduced mobility benthic organisms.			conditions and can survive periods of high turbidity.	
18	Habitats	8330	Submerged or partially submerged sea caves	The habitat is mentioned in the site file as having an area of 0.7 ha. To date, no mapping of the distribution of this habitat within the site has been made. The closest location of this habitat to the project is at least 60 m from the exit point of the tunnel on the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unknown	Maintaining a favorable conservation status	Population density of *Halichondria panicea* in habitat	Number of colonies 1 m^2	At least 1	YES	Excavation activities in the coastal area, even if not carried out within the perimeter of the ROSCI0273 site, will contribute to the increase of local turbidity and the decrease of oxygen concentration. These events will be manifested on a small area and strictly during the works. Sedimentation of the suspended material in the water mass and the occurrence of hypoxic episodes can contribute to the mortality of immobile or reduced mobility benthic organisms.	1-10 colonies	Insignificant	The area where the works are to be carried out is an area with intense hydrodynamic activity. It is an area where intense coastal erosion has taken place which has contributed to bringing sedimentary material of terrigenous origin into the water mass. At each storm, sediment resuspension and turbidity increase in the area for long periods of time. Organisms in the area are generally organisms adapted to these conditions and can survive periods of high turbidity.	Carrying out excavation works in the shore area only during periods of great calm.
19	Habitats	8330	Submerged or partially submerged sea caves	The habitat is mentioned in the site file as having an area of 0.7 ha. To date, no mapping of the distribution of this habitat within the site has been made. The closest location of this habitat to the project is at least 60 m from the exit point of the tunnel on the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unknown	Maintaining a favorable conservation status	Frequency of *Hemimysis serrata* in caves	%	At least 80	YES	Excavation activities in the coastal area, even if not carried out within the perimeter of the ROSCI0273 site, will contribute to the increase of local turbidity and the decrease of oxygen concentration. These events will be manifested on a small area and strictly during the works. Sedimentation of the suspended material in the water mass and the occurrence of hypoxic episodes can contribute to the mortality of immobile or reduced mobility benthic organisms.	1-5%	Insignificant	The area where the works are to be carried out is an area with intense hydrodynamic activity. It is an area where intense coastal erosion has taken place which has contributed to bringing sedimentary material of terrigenous origin into the water mass. At each storm, sediment resuspension and turbidity increase in the area for long periods of time. Organisms in the area are generally organisms adapted to these conditions and can survive periods of high turbidity.	Carrying out excavation works in the shore area only during periods of great calm.
20	Habitats	8330	Submerged or partially submerged sea caves	The habitat is mentioned in the site file as having an area of 0.7 ha. To date, no mapping of the distribution of this habitat within the site has been made. The closest location of this habitat to the project is at least 60 m from the exit point of the tunnel on the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unknown	Maintaining a favorable conservation status	Ecological status of water based on physico-chemical indicators	Ecological status qualifier	At least good ecological status	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments will be resuspended in water, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments.	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Location of the project	Spatial data source	Source of information	State of conservation	Conservation objectives	Parameters	Parameter unit of measurement	Target value	Is it possible to be impacted by the project?	Explanation for the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (without measures)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
													There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.				
21	Habitats	8330	Submerged or partially submerged sea caves	The habitat is mentioned in the site file as having an area of 0.7 ha. To date, no mapping of the distribution of this habitat within the site has been made. The closest location of this habitat to the project is at least 60 m from the exit point of the tunnel on the seabed.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unknown	Maintaining a favorable conservation status	Ecological status of water based on ecological indicators	Ecological status qualifier	At least good ecological status	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological status of water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm.
22	Fish	4125	*Alosa immaculata*	The species is present along the entire Romanian coast, up to the isobath of 40-50 m. It migrates from south to north, towards the mouth of the Danube, in spring. The species is present on the entire surface of the site and on the entire surface of the project, up to a water depth of 40-50 m.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining conservation status	Management plan	Number of individuals	Must be defined within 3 years	NO	The activities carried out by the project near the ROSCI 0273 site are not likely to impact the size of the population of *Alosa Immaculata*. Excavation activities, through the generated turbidity, can create a temporary barrier in the migration path of the species. This barrier will not prevent the migration of the species to the reporting areas represented by the rivers in the northwest of the Black Sea.	–	–	–	–
23	Fish	4125	*Alosa immaculata*	The species is present along the entire Romanian coast, up to the isobath of 40-50 m. It migrates from south to north, towards the mouth of the Danube, in spring. The species is present on the entire surface of the site and on the entire surface of the project, up to a water depth of 40-50 m.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining conservation status	Age class composition of the population	Presence of juveniles caught in beach fishing with nets (individuals / capture)	At least 3	NO	Project activities cannot influence the presence of juveniles in catches. The presence of juveniles is dependent on the degree of reproduction and catches.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Location of the project	Spatial data source	Source of information	State of conservation	Conservation objectives	Parameters	Parameter unit of measurement	Target value	Is it possible to be impacted by the project?	Explanation for the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (without measures)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
24	Fish	4125	*Alosa immaculata*	The species is present along the entire Romanian coast, up to the isobath of 40-50 m. It migrates from south to north, towards the mouth of the Danube, in spring. The species is present on the entire surface of the site and on the entire surface of the project, up to a water depth of 40-50 m.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining conservation status	Habitat area suitable for the species	ha	Must be defined within 3 years	NO	Project activities will not contribute to habitat degradation.	–	–	–	–
25	Fish	4125	*Alosa immaculata*	The species is present along the entire Romanian coast, up to the isobath of 40-50 m. It migrates from south to north, towards the mouth of the Danube, in spring. The species is present on the entire surface of the site and on the entire surface of the project, up to a water depth of 40-50 m.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining conservation status	Invasive / non-native fish species	Presence / absence Abundance	0 Absence	NO	The vessels used in the project will not contribute to the introduction of invasive / non-native fish species. In accordance with the IMO Convention on the Management of Ballast Water and Sediment, ships coming from other regions of the globe in the Black Sea exchange periodic ballast water as well as at the entrance to the Black Sea (at a distance of at least 200 miles). of the port of destination).	–	–	–	–
26	Fish	4125	*Alosa immaculata*	The species is present along the entire Romanian coast, up to the isobath of 40-50 m. It migrates from south to north, towards the mouth of the Danube, in spring. The species is present on the entire surface of the site and on the entire surface of the project, up to a water depth of 40-50 m.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining conservation status	Ecological status of the water body based on physical-chemical indicators	Ecological status qualifier	At least good ecological status	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.
27	Fish	4125	*Alosa immaculata*	The species is present along the entire Romanian coast, up to the isobath of 40-50 m. It migrates from south to north, towards the mouth of the Danube, in spring.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining conservation status	Ecological status of the water body based on ecological indicators	Ecological status qualifier	At least good ecological status	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal	The activities carried out within the project will not contribute to the deterioration of	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of	Carrying out excavation works in the shore area only during periods of great calm.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Location of the project	Spatial data source	Source of information	State of conservation	Conservation objectives	Parameters	Parameter unit of measurement	Target value	Is it possible to be impacted by the project?	Explanation for the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (without measures)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
				The species is present on the entire surface of the site and on the entire surface of the project, up to a water depth of 40-50 m.									following the excavation activities in the coastal area.	the state of the biological elements that define the ecological status of water bodies.		benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	
28	Fish	4127	*Alosa tanaica*	The species is present along the entire Romanian coast up to the 40-50 m isobath. It migrates from south to north, towards the mouth of the Danube, in spring. The species is present on the entire surface of the site and on the entire surface of the project up to a water depth of 40-50 m.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining conservation status	Population size	Number of individuals	Must be defined within 3 years	NO	The activities carried out by the project near the ROSCI 0273 site are not likely to impact the size of the population of *Alosa tanaica*. Excavation activities, through the turbidity generated, can create a temporary barrier to the migration of the species. This barrier will not prevent the migration of the species to the breeding areas represented by the rivers in the northwest of the Black Sea.	-	-	-	-
29	Fish	4127	*Alosa tanaica*	The species is present along the entire Romanian coast up to the 40-50 m isobath. It migrates from south to north, towards the mouth of the Danube, in spring. The species is present on the entire surface of the site and on the entire surface of the project up to a water depth of 40-50 m.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining conservation status	Population density	Number of individuals / 100 m^2	Must be defined within 3 years	NO	The activities carried out by the project near the ROSCI 0273 site are not likely to impact the population density of Alosa tanaica. Excavation activities, through the turbidity generated, can create a temporary barrier to the migration of the species. This barrier will not prevent the migration of the species to the breeding areas represented by the rivers in the northwest of the Black Sea.	-	-	-	-
30	Fish	4127	*Alosa tanaica*	The species is present along the entire Romanian coast up to the 40-50 m isobath. It migrates from south to north, towards the mouth of the Danube, in spring. The species is present on the entire surface of the site and on the entire surface of the project up	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining conservation status	Composition by age classes of the population	Presence of juveniles caught in beach fishing with nets (individuals / capture)	At least 3	NO	Project activities cannot influence the presence of juveniles in catches. The presence of juveniles is dependent on the degree of reproduction and catches.	-	-	-	-

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Location of the project	Spatial data source	Source of information	State of conservation	Conservation objectives	Parameters	Parameter unit of measurement	Target value	Is it possible to be impacted by the project?	Explanation for the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (without measures)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
				to a water depth of 40-50 m.													
31	Fish	4127	*Alosa tanaica*	The species is present along the entire Romanian coast up to the 40-50 m isobath. It migrates from south to north, towards the mouth of the Danube, in spring. The species is present on the entire surface of the site and on the entire surface of the project up to a water depth of 40-50 m..	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining conservation status	Habitat area	ha	Must be defined within 3 years	NO	Project activities will not contribute to habitat degradation.	–	–	–	–
32	Fish	4127	*Alosa tanaica*	The species is present along the entire Romanian coast up to the 40-50 m isobath. It migrates from south to north, towards the mouth of the Danube, in spring. The species is present on the entire surface of the site and on the entire surface of the project up to a water depth of 40-50 m.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining conservation status	Invasive / non-native fish species	Presence / absence Abundance	O absence	NO	The vessels used in the project will not contribute to the introduction of invasive / non-native fish species. In accordance with the IMO Convention on the Management of Ballast Water and Sediment, ships coming from other regions of the globe in the Black Sea exchange periodic ballast water as well as at the entrance to the Black Sea (at a distance of at least 200 miles of the port of destination).	–	–	–	–
33	Fish	4127	*Alosa tanaica*	The species is present along the entire Romanian coast up to the 40-50 m isobath. It migrates from south to north, towards the mouth of the Danube, in spring. The species is present on the entire surface of the site and on the entire surface of the project up to a water depth of 40-50 m.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining conservation status	Ecological status of the water body based on physico-chemical indicators	Ecological status qualifier	At least good ecological status	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Location of the project	Spatial data source	Source of information	State of conservation	Conservation objectives	Parameters	Parameter unit of measurement	Target value	Is it possible to be impacted by the project?	Explanation for the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (without measures)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
34	Fish	4127	*Alosa tanaica*	The species is present along the entire Romanian coast up to the 40-50 m isobath. It migrates from south to north, towards the mouth of the Danube, in spring. The species is present on the entire surface of the site and on the entire surface of the project up to a water depth of 40-50 m.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Favorable	Maintaining conservation status	Ecological status of the water body based on ecological indicators	Ecological status qualifier	At least good ecological status	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological status of water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm.
35	Marine mammals	1349	*Tursiops truncatus*	The species is present on the entire Romanian continental shelf. It is present on the entire surface of the site and can be found on the entire surface of the project.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unfavorable - inadequate	Improving conservation status	Population size	Number of individuals	At least 20	YES	The specimens of *Tursiops truncatus ponticus* will avoid the area where the works will take place due to the vibrations and noise produced by the tunnel drilling and excavation activities.	The number of specimens of *Tursiops truncatus ponticus* present in the shore area will be temporarily reduced. Only during the works.	Insignificant	Within the construction activities in the shore area, the main activities generating vibrations and noise are the activities of drilling the tunnel that crosses the cliff and the shallow area and the excavation activities of the ditch for the pipeline, in the area with a depth of 7-20 m. During these activities, specimens of *Tursiops trucatus ponticus* will be removed from the area where the work is being carried out. The specimens of *Tursiops trucatus ponticus* will not be impacted by the noise and vibrations produced and will return to the area after the cessation of construction activities.	Imposition of an exclusion zone for marine mammals. The excavation works will start only if in the exclusion zone of 500 m around the works, no dolphins are present after an observation period of 20 minutes.
36	Marine mammals	1349	*Tursiops truncatus*	The species is present on the entire Romanian continental shelf. It is present on the entire surface of the site and can be found on the entire surface of the project.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unfavorable - inadequate	Improving conservation status	Population size trend	The trend of breeding units	Stable or growing	NO	The activities carried out in the vicinity of the ROSCI0273 site will not contribute to impacting the size of the population.	–	–	–	–
37	Marine mammals	1349	*Tursiops truncatus*	The species is present on the entire Romanian continental shelf. It is present on the entire surface of the site and can be found on the entire surface of the project.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unfavorable - inadequate	Improving conservation status	Population structure	Age class structure	The presence of all generations	NO	The activities carried out in the vicinity of the ROSCI0273 site will not contribute to impacting the structure by age classes of the population.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Location of the project	Spatial data source	Source of information	State of conservation	Conservation objectives	Parameters	Parameter unit of measurement	Target value	Is it possible to be impacted by the project?	Explanation for the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (without measures)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
38	Marine mammals	1349	*Tursiops truncatus*	The species is present on the entire Romanian continental shelf. It is present on the entire surface of the site and can be found on the entire surface of the project.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unfavorable - inadequate	Improving conservation status	Habitat area	Ha	At least 4.900	NO	The activities carried out in the vicinity of the ROSCI0273 site will not impact the conservation status of the habitats.	–	–	–	–
39	Marine mammals	1349	*Tursiops truncatus*	The species is present on the entire Romanian continental shelf. It is present on the entire surface of the site and can be found on the entire surface of the project.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unfavorable - inadequate	Improving conservation status	Distribution pattern	Spatial and temporal pattern, intensity of habitat use	No significant decrease in spatial, temporal pattern or intensity of use of habitats other than those resulting from natural variations	YES	The specimens of *Tursiops truncatus ponticus* will avoid the area where the works will take place due to the vibrations and noise produced by the tunnel drilling and excavation activities.	Significant change in the pattern of spatial, temporal distribution and intensity of habitat use	Insignificant	Within the construction activities in the shore area, the main activities generating vibrations and noise are the drilling activities of the tunnel that crosses the cliff and the shallow area and the excavation activities of the ditch for the pipeline, from the depth area 7-20 m. During these activities, specimens of *Tursiops trucatus ponticus* will be removed from the area where the work is being carried out. The specimens of *Tursiops trucatus ponticus* will return to the area after the cessation of construction activities.	Imposition of an exclusion zone for marine mammals. The excavation works will start only if in the exclusion zone of 500 m around the works, no dolphins are present after an observation period of 20 minutes.
40	Marine mammals	1349	*Tursiops truncatus*	The species is present on the entire Romanian continental shelf. It is present on the entire surface of the site and can be found on the entire surface of the project.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unfavorable - inadequate	Improving conservation status	The size and diversity of prey species	Number of fish species Abundance of fish species	Must be defined within 2 years	YES	The activities carried out within the project will result in the temporary removal of fish species from the works area.	The activities carried out within the project will result in the temporary removal of fish species from the works area.	Insignificant	The construction activities that will take place near the ROSCI 0273 site will contribute to the temporary increase of turbidity, as well as to the generation of vibrations and noises in the aquatic environment. These will have the direct consequence of removing fish populations from the works area. The removal will be temporary during the works and does not cause mortality among fish species, these being organisms with high mobility.	Compliance with the estimated deadlines for carrying out the works.
41	Marine mammals	1349	*Tursiops truncatus*	The species is present on the entire Romanian continental shelf. It is present on the entire surface of the site and can be found on the entire surface of the project.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unfavorable - inadequate	Improving conservation status	Ecological status of the water body based on physico-chemical indicators	Ecological status qualifier	At least good ecological status	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Location of the project	Spatial data source	Source of information	State of conservation	Conservation objectives	Parameters	Parameter unit of measurement	Target value	Is it possible to be impacted by the project?	Explanation for the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (without measures)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
													machinery or ships involved in the construction process.				
42	Marine mammals	1349	*Tursiops truncatus*	The species is present on the entire Romanian continental shelf. It is present on the entire surface of the site and can be found on the entire surface of the project.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unfavorable - inadequate	Improving conservation status	Ecological status of the water body based on ecological indicators	Ecological status qualifier	At least good ecological status	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological status of water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm.
43	Marine mammals	1351	*Phocoena phocoena*	The species is present on the entire Romanian continental shelf. It is present on the entire surface of the site and can be found on the entire surface of the project.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unfavorable - inadequate	Improving conservation status	Population size	Number of individuals	At least 20	YES	Specimens of *Phocoena phocoena relicta* will avoid the area where the works will be carried out due to the vibrations and noise produced by the tunnel drilling and excavation activities.	The number of specimens of *Phocoena phocoena relicta* present in the shore area will be temporarily reduced. Only during the works.	Insignificant	Within the construction activities in the shore area, the main activities generating vibrations and noise are the activities of drilling the tunnel that crosses the cliff and the shallow area and the excavation activities of the ditch for the pipeline in the depth area of 7-20 m. during the period of carrying out these activities, the specimens of *Phocoena phocoena relicta* will move away from the area where the works are being carried out. The specimens of *Phocoena phocoena relicta* will not be impacted by the noise and vibrations produced and will return to the area after the cessation of construction activities.	Imposition of an exclusion zone for marine mammals. The excavation works will start only if in the exclusion zone of 500 m around the works, no dolphins are present after an observation period of 20 minutes.
44	Marine mammals	1351	*Phocoena phocoena*	The species is present on the entire Romanian continental shelf. It is present on the entire surface of the site and can be found on the entire surface of the project.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unfavorable - inadequate	Improving conservation status	Population size trend	The trend of breeding units	Stable or growing	NO	The activities carried out in the vicinity of the ROSCI0273 site will not contribute to impacting the size of the population.	–	–	–	–
45	Marine mammals	1351	*Phocoena phocoena*	The species is present on the entire Romanian continental shelf. It is present on the entire surface of the site and can	Management plan	Management plan Specific Conservation	Unfavorable - inadequate	Improving conservation status	Population structure	Age class structure	The presence of all generations	NO	The activities carried out in the vicinity of the ROSCI0273 site will not contribute to impacting the age structure of the population.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Location of the project	Spatial data source	Source of information	State of conservation	Conservation objectives	Parameters	Parameter unit of measurement	Target value	Is it possible to be impacted by the project?	Explanation for the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (without measures)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
				be found on the entire surface of the project.		Objectives (SCOs)											
46	Marine mammals	1351	*Phocoena phocoena*	The species is present on the entire Romanian continental shelf. It is present on the entire surface of the site and can be found on the entire surface of the project.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unfavorable - inadequate	Improving conservation status	Habitat area	Ha	At least 4.900	NO	The activities carried out in the vicinity of the ROSCI0273 site will not impact the conservation status of the habitats.	–	–	–	–
47	Marine mammals	1351	*Phocoena phocoena*	The species is present on the entire Romanian continental shelf. It is present on the entire surface of the site and can be found on the entire surface of the project.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unfavorable - inadequate	Improving conservation status	Distribution pattern	Spatial and temporal pattern, intensity of habitat use	No significant decrease in spatial, temporal pattern or intensity of use of habitats other than those resulting from natural variations	YES	Specimens of *Phocoena phocoena relicta* will avoid the area where the works will take place due to the vibrations and noise produced by the tunnel drilling and excavation activities.	Significant change in the pattern of spatial, temporal distribution and intensity of habitat use	Insignificant	Within the construction activities in the shore area, the main activities generating vibrations and noise are the activities of drilling the tunnel that crosses the cliff and the shallow area and the excavation activities of the ditch for the pipeline in the depth area of 7-20 m. during the period of carrying out these activities, the specimens of *Phocoena phocoena relicta* will move away from the area where the works are being carried out. Specimens of *Phocoena phocoena relicta* will return to the area after the cessation of construction activities.	Imposition of an exclusion zone for marine mammals. The excavation works will start only if in the exclusion zone of 500 m around the works, no dolphins are present after an observation period of 20 minutes.
48	Marine mammals	1351	*Phocoena phocoena*	The species is present on the entire Romanian continental shelf. It is present on the entire surface of the site and can be found on the entire surface of the project.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unfavorable - inadequate	Improving conservation status	The size and diversity of prey species	Number of fish species Abundance of fish species	Must be defined within 2 years	YES	The activities carried out within the project will result in the temporary removal of fish species from the works area.	Temporary decrease in the presence of fish species in the works area.	Insignificant	The construction activities that will take place near the ROSCI 0273 site will contribute to the temporary increase of turbidity, as well as to the generation of vibrations and noises in the aquatic environment. These will have the direct consequence of removing fish populations from the works area. The removal will be temporary, during the works and does not cause mortality among fish species, these being organisms with high mobility.	Compliance with the estimated deadlines for carrying out the works.
49	Marine mammals	1351	*Phocoena phocoena*	The species is present on the entire Romanian continental shelf. It is present on the entire surface of the site and can be found on the entire surface of the project.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unfavorable - inadequate	Improving conservation status	Ecological status of the water body based on physico-chemical indicators	Ecological status qualifier	At least good ecological status	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the temporary and local increase of	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Location of the project	Spatial data source	Source of information	State of conservation	Conservation objectives	Parameters	Parameter unit of measurement	Target value	Is it possible to be impacted by the project?	Explanation for the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (without measures)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
													nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.	of the water bodies.		following the implementation of the project.	
50	Marine mammals	1351	*Phocoena phocoena*	The species is present on the entire Romanian continental shelf. It is present on the entire surface of the site and can be found on the entire surface of the project.	Management plan	Management plan Specific Conservation Objectives (SCOs)	Unfavorable - inadequate	Improving conservation status	Ecological status of the water body based on ecological indicators	Ecological status qualifier	At least good ecological status	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological status of water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm.

Table 42 – Estimation of the potential impact on SCO - ROSPA0076 Marea Neagră

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
1	Birds	A396	*Branta ruficollis*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	The size of the passage population	Number of individuals	200	300	250	YES	Possibility of accidental casualties during the execution of the works, as a result of the collision with the site traffic.	1 individual in more than 5 years	Insignificant	The species can use the project area in the passage, for rest and feeding. The risk of mortality is very low but may occur accidentally during construction due to a collision with site traffic. The number of accidental victims would be small, insignificant in the number of species in the site. The assessment of the significance of the impact also considers the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	During the construction period, on the construction site, the movement of the vehicles involved in the works will be done with low speeds (<20 km / h).
2	Birds	A396	*Branta ruficollis*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	The surface of the water	ha	31100	31100	31100	NO	The project will not impact this parameter. There will be no permanent constructions in the area of the protected area. There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
3	Birds	A396	*Branta ruficollis*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Surface of feeding habitat	ha	Site specific	Site specific	Site specific	YES	Permanent occupation of feeding habitat in the shore area, outside the protected area, by GMT constructions.	approx. 2 ha	Insignificant	The area of lost feeding habitat is small compared to the availability of agricultural land in the project area.	Cultivation of plants characteristic of the coastal area on the lands owned by the project and which are not covered by constructions related to the land installations.
4	Birds	A196	*Chlidonias hybridus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	The size of the passage population	Number of individuals	4000	5000	4500	YES	Possibility of accidental casualties during the execution of the works, as a result of the collision with the site traffic.	1 individual in more than 2 years	Insignificant	The species can use the project area in the passage, for rest and feeding. The risk of mortality is very low but may occur accidentally during construction due to a collision with site traffic. The number of accidental victims would be small, insignificant in the number of species in the site. The assessment of the significance of the impact also considers the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	During the construction period, on the construction site, the movement of the vehicles involved in the works will be done with low speeds (<20 km / h).
5	Birds	A196	*Chlidonias hybridus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	40500	40500	40500	NO	The project will not impact this parameter. There will be no permanent constructions in the area of the protected area (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																	activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.				
6	Birds	A196	*Chlidonias hybridus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
7	Birds	A196	*Chlidonias hybridus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on ecological indicators (macroinvertebrates, phytobenthos, phytoplankton, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological state of the water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of calm sea.
8	Birds	A197	*Chlidonias niger*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	The size of the passage population	Number of individuals	120	140	130	YES	Possibility of accidental casualties during the execution of the works, as a result of the collision with the site traffic.	1 individual in more than 2 years	Insignificant	The species can use the project area in the passage, for rest and feeding. The risk of mortality is very low but may occur accidentally during construction due to a collision with site traffic. The number of accidental victims would be small, insignificant in the number of species in the site. The assessment of the significance of the impact also considers the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	During the construction period, on the construction site, the movement of the vehicles involved in the works will be done with low speeds (<20 km / h).

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
9	Birds	A197	*Chlidonias niger*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	95000	95000	95000	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area. There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–
10	Birds	A197	*Chlidonias niger*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																	contamination with oil or fuel from machinery or ships involved in the construction process.				
11	Birds	A197	*Chlidonias niger*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on ecological indicators (macroinvertebrates, phytobenthos, phytoplankton, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological state of the water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of calm sea.
12	Birds	A038	*Cygnus cygnus*	W - wintering	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	The size of the passage population	Number of individuals	1000	1500	1250	NO	The species is not reported in the Management Plan as being present in the project implementation area. Its presence in the project area was not reported in the field activities either. Victims are	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
					the site in the project area, being reported at approx. 6 km south and 16.5 km north of the project area.												unlikely to appear as a result of the activities required to carry out and operate the project.				
13	Birds	A038	*Cygnus cygnus*	W - wintering	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported at approx. 6 km south and 16.5 km north of the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	The surface of the water	ha	62200	62200	62200	NO	The project will not permanently occupy the water gloss. There will be no permanent constructions in the area of the protected area. There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–
14	Birds	A038	*Cygnus cygnus*	W - wintering	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported at approx. 6 km south and 16.5 km north of the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	3251	3251	3251	NO	The project will not lead to the permanent occupation of the feeding habitat in the shore area, outside the protected area, located in the vicinity of the distribution areas of the species, nor of the aquatic habitats in the site.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
15	Birds	A002	*Gavia arctica*	W - wintering	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	The size of the passage population	Number of individuals	230	300	265	YES	Possibility of accidental casualties during the execution of the works, as a result of the collision with the site traffic.	1 individual in more than 5 years	Insignificant	The species can use the project area in the passage. The risk of mortality is very low but may occur accidentally during construction due to a collision with site traffic. The number of accidental victims would be small, insignificant in the number of species in the site. The assessment of the significance of the impact also takes into account the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	During the construction period, on the construction site, the movement of the vehicles involved in the works will be done with low speeds (<20 km / h).
16	Birds	A002	*Gavia arctica*	W - wintering	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	105100	105100	105100	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area. There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
17	Birds	A002	*Gavia arctica*	W - wintering	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.
18	Birds	A002	*Gavia arctica*	W - wintering	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on ecological indicators (macroinvertebrates, phytobenthos, phytoplankton, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological state of the water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological	Carrying out excavation works in the shore area only during periods of calm sea.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																				status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	
19	Birds	A001	*Gavia stellata*	W - wintering	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	The size of the passage population	Number of individuals	100	200	150	YES	Possibility of accidental casualties during the execution of the works, as a result of the collision with the site traffic.	1 in more than 7 years	Insignificant	The species can use the project area in the passage. The risk of mortality is very low but may occur accidentally during construction due to a collision with site traffic. The number of accidental victims would be small, insignificant in the number of species in the site. The assessment of the significance of the impact also considers the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	During the construction period, on the construction site, the movement of the vehicles involved in the works will be done with low speeds (<20 km / h).
20	Birds	A001	*Gavia stellata*	W - wintering	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	113600	113600	113600	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area. There will be a temporary occupation of the water surface by the barges and support vessels involved in the	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																	excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.				
21	Birds	A001	*Gavia stellata*	W - wintering	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
22	Birds	A001	*Gavia stellata*	W - wintering	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on ecological indicators (macroinvertebrates, phytobenthos, phytoplankton, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological state of the water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of calm sea.
23	Birds	A189	*Gelochelidon nilotica*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported over 20 km north of the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	The size of the passage population	Number of individuals	320	350	335	NU	The species is not reported in the Management Plan as being present in the project implementation area. Its presence in the project area was not reported in the field activities either. Victims are unlikely to appear as a result of the activities required to carry out and operate the project.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
24	Birds	A189	*Gelochelidon nilotica*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported over 20 km north of the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	55800	55800	55800	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area. There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–
25	Birds	A189	*Gelochelidon nilotica*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported over 20 km north of the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	NO	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out, at a great distance from the distribution area of the species in the site. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the temporary and local increase of nutrients and	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																	possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process. The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.				
26	Birds	A189	*Gelochelidon nilotica*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported over 20 km north of the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on ecological indicators (macroinvertebrates, phytobenthos, phytoplankton, organic and inorganic micro-pollutants)	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	Class 5 (bad)	NO	In case of existence in the area of phytobenthal specimens (macroalgae and angiosperms) or macrozoobenthal organisms, there is a risk of their mechanical removal following excavation activities in the coastal area, at a great distance from the distribution area of the species in the site. The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological state of the water bodies.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
27	Birds	A180	*Larus genei*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported at approx. 5 km south and over 37 km north of the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	The size of the passage population	Number of individuals	1000	1500	1250	NO	The species is not reported in the Management Plan as being present in the project implementation area. Its presence in the project area was not reported in the field activities either. Victims are unlikely to appear as a result of the activities required to carry out and operate the project.	–	–	–	–
28	Birds	A180	*Larus genei*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported at approx. 5 km south and over 37 km north of the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	43100	43100	43100	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area. There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
29	Birds	A180	*Larus genei*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported at approx. 5 km south and over 37 km north of the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.
30	Birds	A180	*Larus genei*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported at approx. 5 km south and over 37 km north of the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on ecological indicators (macroinvertebrates, phytobenthos, phytoplankton, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological state of the water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological	Carrying out excavation works in the shore area only during periods of calm sea.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																				status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	
31	Birds	A176	*Larus melanocephalus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	The size of the passage population	Number of individuals	12000	15000	13500	YES	Possibility of accidental casualties during the execution of the works, as a result of the collision with the site traffic.	1 individ/year	Insignificant	The species can use the project area in the passage, for rest and feeding. The risk of mortality is very low, but may occur accidentally during construction due to a collision with site traffic. The number of accidental victims would be small, insignificant in the number of species in the site. The assessment of the significance of the impact also takes into account the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	During the construction period, on the construction site, the movement of the vehicles involved in the works will be done with low speeds (<20 km / h).

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
32	Birds	A176	*Larus melanocephalus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	107300	107300	107300	YES	Permanent occupation of feeding habitat in the shore area, outside the protected area, by GMS constructions.	approx. 2 ha	Insignificant	The area of lost feeding habitat is small compared to the availability of agricultural land in the project area. The project will not impact the aquatic habitat for feeding and rest. There will be no permanent constructions inside the site (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	Cultivation of plants characteristic of the coastal area on the lands owned by the project and which are not covered by constructions related to the land installations.
33	Birds	A176	*Larus melanocephalus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
34	Birds	A176	*Larus melanocephalus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on ecological indicators (macroinvertebrates, phytobenthos, phytoplankton, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological state of the water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of calm sea.
35	Birds	A177	*Larus minutus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	The size of the passage population	Number of individuals	10000	12000	11000	YES	Possibility of accidental casualties during the execution of the works, as a result of the collision with the site traffic	1 individual/year	Insignificant	The species can use the project area in the passage, for rest and feeding. The risk of mortality is very low, but may occur accidentally during construction due to a collision with site traffic. The number of accidental victims would be small, insignificant in the number of species in the site. The assessment of the significance of the impact also takes into account the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	During the construction period, on the construction site, the movement of the vehicles involved in the works will be done with low speeds (<20 km / h).

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36	Birds	A177	*Larus minutus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	102900	102900	102900	YES	Permanent occupation of feeding habitat in the shore area, outside the protected area, by GMS constructions.	approx. 2 ha	Insignificant	The area of lost feeding habitat is small compared to the availability of agricultural land in the project area. The project will not impact the aquatic habitat for feeding and rest. There will be no permanent constructions inside the site (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	Cultivation of plants characteristic of the coastal area on the lands owned by the project and which are not covered by constructions related to the land installations.
37	Birds	A177	*Larus minutus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
38	Birds	A177	*Larus minutus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on ecological indicators (macroinvertebrates, phytobenthos, phytoplankton, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological state of the water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of calm sea.
39	Birds	A068	*Mergus albellus*	W - wintering	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported over 15 km south and over 16 km north of project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	The size of the passage population	Number of individuals	1000	1500	1250	NO	The species is not reported in the Management Plan as being present in the project implementation area. Its presence in the project area was not reported in the field activities either. Victims are unlikely to appear as a result of the activities required to carry out and operate the project.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
40	Birds	A069	*Mergus albellus*	W - wintering	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported over 15 km south and over 16 km north of project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	58900	58900	58900	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha. The species feeds in shallow waters up to 2 m. The project activities will take place in waters with a depth of over 7 m.	–	–	–	–
41	Birds	A070	*Mergus albellus*	W - wintering	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported over 15 km south and over 16 km north of project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																	temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.				
42	Birds	A071	*Mergus albellus*	W - wintering	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported over 15 km south and over 16 km north of project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on ecological indicators (macroinvertebrates, phytobenthos, phytoplankton, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological state of the water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of calm sea.
43	Birds	A020	*Pelecanus crispus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	The size of the passage population	Number of individuals	70	120	95	NO	The species is not reported in the Management Plan as being present in the project implementation area. Its presence in the project area was not reported in the field activities either. Victims are	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
					the site in the project area, being reported over 35 km north of the project area.												unlikely to appear as a result of the activities required to carry out and operate the project.				
44	Birds	A020	*Pelecanus crispus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported over 35 km north of the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	80400	80400	80400	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–
45	Birds	A020	*Pelecanus crispus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported over 35 km north of the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																	contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.				
46	Birds	A020	*Pelecanus crispus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not present in the site in the project area, being reported over 35 km north of the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on ecological indicators (macroinvertebrates, phytobenthos, phytoplankton, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological state of the water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of calm sea.
47	Birds	A170	*Phalaropus lobatus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	The size of the passage population	Number of individuals	700	1200	950	NO	The species is not reported in the Management Plan as being present in the project implementation area. Its presence in the project area was not reported in the field activities either.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
					is not reported on the site in the project area.												Victims are unlikely to appear as a result of the activities required to carry out and operate the project.					
48	Birds	A170	*Phalaropus lobatus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	25000	25000	25000	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	_	_	_	_
49	Birds	A170	*Phalaropus lobatus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																	contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.				
50	Birds	A170	*Phalaropus lobatus*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on ecological indicators (macroinvertebrates, phytobenthos, phytoplankton, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological state of the water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of calm sea.
51	Birds	A464	*Puffinus yelkouau*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	The size of the passage population	Number of individuals	10000	17000	13500	NO	The species is not reported in the Management Plan as being present in the project implementation area. Its presence in the project area was not reported in the field activities either.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
					is not reported on the site in the project area, being present at over 120 km north.												Victims are unlikely to appear as a result of the activities required to carry out and operate the project.				
52	Birds	A464	*Puffinus yelkouau*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not reported on the site in the project area, being present at over 120 km north.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	1500	1500	1500	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–
53	Birds	A464	*Puffinus yelkouau*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not reported on the site in the project area, being present at over 120 km north.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	Favorable	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	NO	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out, at a great distance from the distribution area of the species in the site. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations,	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																	sediments in the water will be resuspended, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process. The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.				
54	Birds	A464	*Puffinus yelkouau*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is not reported on the site in the project area, being present at over 120 km north.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	NO	In case of existence in the area of phytobenthal specimens (macroalgae and angiosperms) or macrozoobenthal organisms, there is a risk of their mechanical removal following excavation activities in the coastal area, at a great distance from the distribution area of the species in the site. The activities carried out within the project will not contribute to the deterioration of	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																	the state of the biological elements that define the ecological status of water bodies.				
55	Birds	A195	*Sterna albifrons*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	Maintenance of the conservation status	The size of the passage population	Number of individuals	300	500	400	YES	Possibility of accidental casualties during the execution of the works, as a result of the collision with the site traffic	1 individual in more than 10 years	Insignificant	The species can use the project area in the passage, for rest and feeding. The risk of mortality is very low, but may occur accidentally during construction due to a collision with site traffic. The number of accidental victims would be small, insignificant in the number of species in the site. The assessment of the significance of the impact also takes into account the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	During the construction period, on the construction site, the movement of the vehicles involved in the works will be done with low speeds (<20 km / h).
56	Birds	A195	*Sterna albifrons*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	26300	26300	26300	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																	activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.				
57	Birds	A195	*Sterna albifrons*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies..	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
58	Birds	A195	*Sterna albifrons*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	Maintenance of the conservation status	Water quality based on ecological indicators (macroinvertebrates, phytobenthos, phytoplankton, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological state of the water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of calm sea.
59	Birds	A190	*Stema caspia*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	Maintenance of the conservation status	The size of the passage population	Number of individuals	500	1000	750	YES	Possibility of accidental casualties during the execution of the works, as a result of the collision with the site traffic	1 individual over 5 years	Insignificant	The species can use the project area in the passage, for rest and feeding. The risk of mortality is very low, but may occur accidentally during construction due to a collision with site traffic. The number of accidental victims would be small, insignificant in the number of species in the site. The assessment of the significance of the impact also takes into account the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	During the construction period, on the construction site, the movement of the vehicles involved in the works will be done with low speeds (<20 km / h).

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
60	Birds	A190	*Stema caspia*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	92400	92400	92400	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–
61	Birds	A190	*Stema caspia*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies..	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																	accidental contamination with oil or fuel from machinery or ships involved in the construction process.				
62	Birds	A190	*Stema caspia*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	Maintenance of the conservation status	Water quality based on ecological indicators (macroinvertebrates, phytobenthos, phytoplankton, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological state of the water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of calm sea.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
63	Birds	A193	*Sterna hirundo*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	Maintenance of the conservation status	The size of the passage population	Number of individuals	8000	10000	9000	YES	Possibility of accidental casualties during the execution of the works, as a result of the collision with the site traffic	1 individual over 5 years	Insignificant	The species can use the project area in the passage, for rest and feeding. The risk of mortality is very low, but may occur accidentally during construction due to a collision with site traffic. The number of accidental victims would be small, insignificant in the number of species in the site. The assessment of the significance of the impact also takes into account the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	During the construction period, on the construction site, the movement of the vehicles involved in the works will be done with low speeds (<20 km / h).
64	Birds	A193	*Sterna hirundo*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	131900	131900	131900	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
65	Birds	A193	*Sterna hirundo*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.
66	Birds	A193	*Sterna hirundo*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	Maintenance of the conservation status	Water quality based on ecological indicators (macroinvertebrates, phytobenthos, phytoplankton, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	In the case of the existence in the area of phytobenthal specimens (macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	The activities carried out within the project will not contribute to the deterioration of the state of the biological elements that define the ecological state of the water bodies.	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological	Carrying out excavation works in the shore area only during periods of calm sea.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																				status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	
67	Birds	A191	*Sterna sandvicensis*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	Maintenance of the conservation status	The size of the passage population	Number of individuals	5200	6000	5600	YES	Possibility of accidental casualties during the execution of the works, as a result of the collision with the site traffic	1 individual over 5 years	Insignificant	The species can use the project area in the passage, for rest and feeding. The risk of mortality is very low but may occur accidentally during construction due to a collision with site traffic. The number of accidental victims would be small, insignificant in the number of species in the site. The assessment of the significance of the impact also takes into account the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	During the construction period, on the construction site, the movement of the vehicles involved in the works will be done with low speeds (<20 km / h).
68	Birds	A191	*Sterna sandvicensis*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	Maintenance of the conservation status	Surface of feeding and resting habitat	ha	92800	92800	92800	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																	in the offshore area. The temporarily occupied area will not exceed 1 ha.				
69	Birds	A191	*Sterna sandvicensis*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	Maintenance of the conservation status	Water quality based on physico-chemical indicators (oxygen regime, nutrients, salinity, metals, organic and inorganic micro-pollutants)	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	The activities in the shore area will contribute to the increase of the local turbidity in the area where the excavations will be carried out. The increase in turbidity may have the temporary effect of lowering the oxygen concentration. Also, following the excavations, sediments in the water will be resuspended, which will also contribute to the temporary and local increase of nutrients and possibly of some pollutants present in the sediments. There is a risk of accidental contamination with oil or fuel from machinery or ships involved in the construction process.	The activities carried out within the project will not contribute to the deterioration of the chemical state and of the physico-chemical elements that define the ecological state of the water bodies.	Insignificant	The temporary increase of the turbidity and the concentration of the nutrients by the resuspension of the sediments will not contribute to the modification of the physico-chemical indicators that characterize the ecological state of the water body. Thus, the good chemical status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	Carrying out excavation works in the shore area only during periods of great calm. Carrying out intervention plans in case of accidental pollution. Presence on board barges and ships of intervention equipment in case of accidental pollution.
70	Birds	A191	*Sterna sandvicensis*	passage	According to the information from the Management Plan and the distribution maps,	Species listed in Annex 1 of the	Management plan, Romania's reports based on	Management plan and SCO	unknown	Maintenance of the conservation status	Water quality based on ecological indicators (macroinvertebrat	Water quality class	Class 5 (bad)	Class 1 (very good)	Class 2 (good)	YES	In the case of the existence in the area of phytobenthal specimens	The activities carried out within the project will not contribute to	Insignificant	Increased turbidity through the resuspension of sediments and nutrients will lead to a decrease in the degree of light penetration	Carrying out excavation works in the shore area only during periods of calm sea.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
					as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Birds Directive	art. 12 of the Birds Directive				es, phytobenthos, phytoplankton, organic and inorganic micro-pollutants)						(macroalgae and angiosperms) or of macrozoobenthal organisms, there is a risk of their mechanical removal following the excavation activities in the coastal area.	the deterioration of the state of the biological elements that define the ecological state of the water bodies.		into the water column and a decrease in the buoyancy of phytoplankton. The impact on communities of benthic and planktonic organisms is temporary, reversible and will impact a small area of approx. 1-2 ha. These temporary changes will not contribute to the alteration of the quality of the biological elements that characterize the ecological state of the water body. Thus, the moderate ecological status according to the "Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters" will not change following the implementation of the project.	
71	Birds	A050	*Anas penelope*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	The size of the passage population	Number of individuals	Undefined	Undefined	Undefined	YES	For the supply of electricity to NGMS, it will be necessary to build a power line that can lead to a risk of collision and electric shock (separate project - cumulative impact).	1 individual over 5 years	Insignificant	The risk of collision and electric shock exists, but the probability of some victims is very low. Even in the event of an accidental collision / electric shock, the impact on the population cannot be significant. The assessment of the significance of the impact also considers the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	All power lines built to supply power to the project objectives will be built underground, and where not possible will be provided with facilities to avoid electric shock to birds as well as visible beacons to reduce the risk of collision.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
72	Birds	A050	*Anas penelope*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	Surface of feeding and resting habitat	ha	58900	58900	58900	YES	Permanent occupation of the feeding habitat in the shore area, outside the protected area, by the constructions related to NGMS. The species generally feeds on aquatic invertebrates and plants. Occasionally, it also feeds in the terrestrial area, depending on the availability of food.	approx. 2 ha	Insignificant	The area of the lost feeding habitat is small. The main food source of the whistling duck is aquatic plants. Alternatively, depending on availability, it can also consume terrestrial plants.	Cultivation of plants characteristic of the coastal area on the lands owned by the project and which are not covered by constructions related to the land installations.
73	Birds	A053	*Anas platyrhyuchos*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	The size of the passage population	Number of individuals	Undefined	Undefined	Undefined	YES	For the supply of electricity to NGMS, it will be necessary to build a power line that can lead to a risk of collision and electric shock (separate project - cumulative impact).	1 individual over 5 years	Insignificant	The risk of collision and electric shock exists, but the probability of some victims is very low. Even in the event of an accidental collision / electric shock, the impact on the population cannot be significant. The assessment of the significance of the impact also considers the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	All power lines built to supply power to the project objectives will be built underground, and where not possible will be provided with facilities to avoid electric shock to birds as well as visible beacons to reduce the risk of collision.
74	Birds	A053	*Anas platyrhyuchos*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	Surface of feeding and resting habitat	ha	58900	58900	58900	YES	Permanent occupation of the feeding habitat in the shore area, outside the protected area, by the constructions related to NGMS. The species generally feeds on aquatic invertebrates and plants. Occasionally, it also feeds in the	approx. 2 ha	Insignificant	The area of the lost feeding habitat is small. The main food source of the whistling duck is aquatic plants. Alternatively, depending on availability, it can also consume terrestrial plants.	Cultivation of plants characteristic of the coastal area on the lands owned by the project and which are not covered by constructions related to the land installations.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																	terrestrial area, depending on the availability of food.				
75	Birds	A051	*Anas strepera*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	The size of the passage population	Number of individuals	Undefined	Undefined	Undefined	YES	For the supply of electricity to NGMS it will be necessary to build a power line that can lead to a risk of collision and electric shock (separate project - cumulative impact).	1 individual over 5 years	Insignificant	The risk of collision and electric shock exists, but the probability of some victims is very low. Even in the event of an accidental collision / electric shock, the impact on the population cannot be significant. The assessment of the significance of the impact also considers the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	All power lines built to supply power to the project objectives will be built underground, and where not possible will be provided with facilities to avoid electric shock to birds as well as visible beacons to reduce the risk of collision.
76	Birds	A051	*Anas strepera*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	Surface of feeding and resting habitat	ha	58900	58900	58900	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																	shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.				
77	Birds	A059	*Aythya ferina*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	The size of the passage population	Number of individuals	Undefined	Undefined	Undefined	YES	For the supply of electricity to NGMS, it will be necessary to build a power line that can lead to a risk of collision and electric shock (separate project - cumulative impact).	1 individual over 5 years	Insignificant	The risk of collision and electric shock exists, but the probability of some victims is very low. Even in the event of an accidental collision / electric shock, the impact on the population cannot be significant. The assessment of the significance of the impact also considers the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	All power lines built to supply power to the project objectives will be built underground, and where not possible will be provided with facilities to avoid electric shock to birds as well as visible beacons to reduce the risk of collision.
78	Birds	A059	*Aythya ferina*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	Surface of feeding and resting habitat	ha	58900	58900	58900	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																	temporarily occupied area will not exceed 1 ha.				
79	Birds	A061	*Aythya fuligula*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	The size of the passage population	Number of individuals	Undefined	Undefined	Undefined	YES	For the supply of electricity to NGMS, it will be necessary to build a power line that can lead to a risk of collision and electric shock (separate project - cumulative impact).	1 individual over 5 years	Insignificant	The risk of collision and electric shock exists, but the probability of some victims is very low. Even in the event of an accidental collision / electric shock, the impact on the population cannot be significant. The assessment of the significance of the impact also considers the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	All power lines built to supply power to the project objectives will be built underground, and where not possible will be provided with facilities to avoid electric shock to birds as well as visible beacons to reduce the risk of collision.
80	Birds	A061	*Aythya fuligula*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	Surface of feeding and resting habitat	ha	58900	58900	58900	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–

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81	Birds	A067	*Bucephala clangula*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	The size of the passage population	Number of individuals	Undefined	Undefined	Undefined	YES	For the supply of electricity to NGMS, it will be necessary to build a power line that can lead to a risk of collision and electric shock (separate project - cumulative impact).	1 individual over 5 years	Insignificant	The risk of collision and electric shock exists, but the probability of some victims is very low. Even in the event of an accidental collision / electric shock, the impact on the population cannot be significant. The assessment of the significance of the impact also considers the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	All power lines built to supply power to the project objectives will be built underground, and where not possible will be provided with facilities to avoid electric shock to birds as well as visible beacons to reduce the risk of collision.
82	Birds	A067	*Bucephala clangula*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	Surface of feeding and resting habitat	ha	58900	58900	58900	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–

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83	Birds	A125	*Fulica atra (A723)*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	The size of the passage population	Number of individuals	Undefined	Undefined	Undefined	YES	For the supply of electricity to NGMS it will be necessary to build a power line that can lead to a risk of collision and electric shock (separate project - cumulative impact).	1 individual over 5 years	Insignificant	The risk of collision and electric shock exists, but the probability of some victims is very low. Even in the event of an accidental collision / electric shock, the impact on the population cannot be significant. The assessment of the significance of the impact also considers the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	All power lines built to supply power to the project objectives will be built underground, and where not possible will be provided with facilities to avoid electric shock to birds as well as visible beacons to reduce the risk of collision.
84	Birds	A125	*Fulica atra (A723)*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	Surface of feeding and resting habitat	ha	58900	58900	58900	YES	Permanent occupation of the feeding habitat in the shore area, outside the protected area, by the constructions related to NGMS. The species generally feeds on aquatic invertebrates and plants. Occasionally, it also feeds in the terrestrial area, depending on the availability of food.	approx. 2 ha	Insignificant	The area of the lost feeding habitat is small. The main food source of the whistling duck is aquatic plants. Alternatively, depending on availability, it can also consume terrestrial plants.	Cultivation of plants characteristic of the coastal area on the lands owned by the project and which are not covered by constructions related to the land installations.
85	Birds	A156	*Limosa limosa (A614-B)*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	The size of the passage population	Number of individuals	Undefined	Undefined	Undefined	NO	The species is not reported as being present in the project implementation area. Victims are unlikely to appear as a result of the activities required to carry out and operate the project.	–	–	–	–

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86	Birds	A156	*Limosa limosa (A614-B)*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	Surface of feeding and resting habitat	ha	58900	58900	58900	YES	Permanent occupation of the feeding habitat in the shore area, outside the protected area, by the constructions related to NGMS. The species generally feeds on aquatic invertebrates and plants. Occasionally, it also feeds in the terrestrial area, depending on the availability of food.	approx. 2 ha	Insignificant	The area of the lost feeding habitat is small. The main food source of the whistling duck is aquatic plants. Alternatively, depending on availability, it can also consume terrestrial plants.	Cultivation of plants characteristic of the coastal area on the lands owned by the project and which are not covered by constructions related to the land installations.
87	Birds	A070	*Mergus merganser (A654-A)*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	The size of the passage population	Number of individuals	Undefined	Undefined	Undefined	NO	The species is not reported as being present in the project implementation area. Victims are unlikely to appear as a result of the activities required to carry out and operate the project.	–	–	–	–
88	Birds	A070	*Mergus merganser (A654-A)*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	Surface of feeding and resting habitat	ha	58900	58900	58900	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area. There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore	–	–	–	–

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																	area. The temporarily occupied area will not exceed 1 ha.				
89	Birds	A069	*Mergus serrator*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	The size of the passage population	Number of individuals	Undefined	Undefined	Undefined	NO	The species is not reported as being present in the project implementation area. Victims are unlikely to appear as a result of the activities required to carry out and operate the project.	–	–	–	–
90	Birds	A069	*Mergus serrator*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	Surface of feeding and resting habitat	ha	58900	58900	58900	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area. There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–

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91	Birds	A017	*Phalacrocorax carbo (A391)*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	The size of the passage population	Number of individuals	Undefined	Undefined	Undefined	YES	For the supply of electricity to NGMS, it will be necessary to build a power line that can lead to a risk of collision and electric shock (separate project - cumulative impact).	1 individual over 5 years	Insignificant	The risk of collision and electric shock exists, but the probability of some victims is very low. Even in the event of an accidental collision / electric shock, the impact on the population cannot be significant. The assessment of the significance of the impact also considers the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	All power lines built to supply power to the project objectives will be built underground, and where not possible will be provided with facilities to avoid electric shock to birds as well as visible beacons to reduce the risk of collision.
92	Birds	A017	*Phalacrocorax carbo (A391)*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	Surface of feeding and resting habitat	ha	58900	58900	58900	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area. There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–

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93	Birds	A005	*Podiceps cristatus (A691)*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	The size of the passage population	Number of individuals	Undefined	Undefined	Undefined	YES	For the supply of electricity to NGMS, it will be necessary to build a power line that can lead to a risk of collision and electric shock (separate project - cumulative impact).	1 individual over 5 years	Insignificant	The risk of collision and electric shock exists, but the probability of some victims is very low. Even in the event of an accidental collision / electric shock, the impact on the population cannot be significant. The assessment of the significance of the impact also considers the contribution of other pressures and threats regarding the population size of the species. The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	All power lines built to supply power to the project objectives will be built underground, and where not possible will be provided with facilities to avoid electric shock to birds as well as visible beacons to reduce the risk of collision.
94	Birds	A005	*Podiceps cristatus (A691)*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	Surface of feeding and resting habitat	ha	58900	58900	58900	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
95	Birds	A006	*Podiceps grisegena*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	The size of the passage population	Number of individuals	Undefined	Undefined	Undefined	NO	The species is not reported as being present in the project implementation area. Victims are unlikely to appear as a result of the activities required to carry out and operate the project.	–	–	–	–
96	Birds	A006	*Podiceps grisegena*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	Surface of feeding and resting habitat	ha	58900	58900	58900	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area. There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–
97	Birds	A008	*Podiceps nigricollis (A692)*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	The size of the passage population	Number of individuals	Undefined	Undefined	Undefined	YES	For the supply of electricity to NGMS, it will be necessary to build a power line that can lead to a risk of collision and electric shock (separate project - cumulative impact).	1 individual over 5 years	Insignificant	The risk of collision and electric shock exists, but the probability of some victims is very low. Even in the event of an accidental collision / electric shock, the impact on the population cannot be significant. The assessment of the significance of the impact also considers the contribution of other pressures and threats regarding the population size of the species.	All power lines built to supply power to the project objectives will be built underground, and where not possible will be provided with facilities to avoid electric shock to birds as well as visible beacons to reduce the risk of collision.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																				The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	
98	Birds	A008	*Podiceps nigricollis (A692)*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	Surface of feeding and resting habitat	ha	58900	58900	58900	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area. There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–
99	Birds	A004	*Tachybaptus ruficollis (A690)*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	The size of the passage population	Number of individuals	Undefined	Undefined	Undefined	YES	For the supply of electricity to NGMS, it will be necessary to build a power line that can lead to a risk of collision and electric shock (separate project - cumulative impact).	1 individual over 5 years	Insignificant	The risk of collision and electric shock exists, but the probability of some victims is very low. Even in the event of an accidental collision / electric shock, the impact on the population cannot be significant. The assessment of the significance of the impact also considers the contribution of other pressures and threats regarding the population size of the species.	All power lines built to supply power to the project objectives will be built underground, and where not possible will be provided with facilities to avoid electric shock to birds as well as visible beacons to reduce the risk of collision.

No.	Natura 2000 component	Natura 2000 Code	Scientific name	Presence type (birds only)	Location of the project	Annex I (for birds only)	Spatial data source	Source of information	State of conservation	Conservation objectives	parameters	Parameter unit of measurement	Current (minimum)	Current (maxim)	Target value	Is it possible to be impacted by the project?	Explanation of the possibility of being impacted	Quantification of impacts (u.m.)	Potential impact (no action)	Justification of the estimated impact	Measures taken to ensure insignificant residual impacts
																				The type of activities that will take place on the surface of the site (marine area) and the equipment used will not contribute to the occurrence of mortality among bird populations.	
100	Birds	A004	*Tachybaptus ruficollis (A690)*	passage	According to the information from the Management Plan and the distribution maps, as well as the information reported by Romania for the Birds Directive in 2013, the species is reported on the site in the project area.	Specie Species listed in Annex 1 of the Birds Directive	Management plan, Romania's reports based on art. 12 of the Birds Directive	Management plan and SCO	unknown	maintaining or improving the conservation status	Surface of feeding and resting habitat	ha	58900	58900	58900	NO	The project will not impact the feeding and resting habitat. There will be no permanent constructions in the area of the protected area (marine area). There will be a temporary occupation of the water surface by the barges and support vessels involved in the excavation activities in the shore area and in the activities of placing the pipes in the offshore area. The temporarily occupied area will not exceed 1 ha.	–	–	–	–

12.4.3 Cumulative impact

The assessment of the cumulative impact generated by the implementation of the Neptun Deep project on habitats and protected species related to Natura 2000 sites ROSPA0076 Marea Neagră and ROSCI0273 Zona marină de la Capul Tuzla, was conducted considering other projects or activities in the area generating impact, ongoing or proposed and expected to take place at the same time as the Neptune Deep project. Projects that were completed but whose impacts may still be felt in the area of action or which manifested themselves on a larger area that also covered the areas of the two evaluated sites were also considered in this documentation. Existing and proposed projects / activities considered in the cumulative impact assessment include:

- Neptun Deep Project;
- Project "REDUCTION OF COASTAL EROSION, PHASE II (2014-2020)" - Protection and rehabilitation of coastal structures in the area of Eforie Sud and Center;
- Project "REDUCTION OF COASTAL EROSION, PHASE II (2014-2020)" - Protection and rehabilitation of coastal structures in the Costinesti area;
- The project „Consolidation works of the cliffs in the area of Tuzla locality, Constanța county";
- Midia Natural Gas Development Project;
- Pressures and threats as defined in the Management Plan and Site Data Sheet of ROSPA0076 Marea Neagră and ROSCI0273 Zona marină de la Capul Tuzla:
    - Construction: coastal and maritime, including pipelines, oil infrastructure and wind farms. Coastal protection works;
    - Tourism, recreational navigation and maritime sports, motor boats on site;
    - Pollution;
    - Uncontrolled disposal of garbage by tourists;
    - Exploration and extraction of mineral resources: oil and gas, sand, gravel;
    - Wildlife collection / sampling.

The conclusions of the cumulative impact on the ROSPA0076 Marea Neagră and ROSCI0273 Zona marină de la Capul Tuzla sites related habitats and species, as resulted from the process of assessing the cumulative impact generated by the implementation of the Neptun Deep project, are the following:

- Insignificant cumulative impact for habitat 1110;
- Insignificant cumulative impact for habitat 1140;
- Significant cumulative impact for habitat 1170;
- No cumulative impact for habitat 8330;
- Insignificant cumulative impact for species *Alosa immaculata*;
- Insignificant cumulative impact for species *Alosa tanaica*;
- Insignificant cumulative impact for species *Tursiops truncatus*;

- Insignificant cumulative impact for species *Phocoena phocoena*;
- Insignificant cumulative impact for birds from ROSPA0076 Marea Neagră.

Details of the results of the cumulative evaluation process are presented below in Table no. 43.

Table 43 – Estimation of the cumulative impact on ROSPA0076 Marea Neagră and ROSCI0273 Zona marină de la Capul Tuzla

Natura 2000 site name	Habitat/Species		Pressures and threats generated by the proposed project and other projects					Pressures and threats according to the Management Plan and the Site Sheet of the ROSPA0076 Marea Neagră and ROSCI0273 Zona marină de la Capul Tuzla Sites						Cumulative impact
			Neptun Deep Project	"REDUCTION OF COASTAL EROSION, PHASE II (2014-2020)" - Protection and rehabilitation of coastal structures in the area of Eforie Sud and Center	"REDUCTION OF COASTAL EROSION, PHASE II (2014-2020)" - Protection and rehabilitation of coastal structures in the Costinesti area	Cliff consolidation works in the area of Tuzla locality, Constanta county	Midia Natural Gas Development Project	Construction: coastal and maritime, including pipelines, oil infrastructure and wind farms. Coastal protection works	Tourism, recreational navigation and maritime sports, motor boats on site	Pollution	Uncontrolled disposal of garbage by tourists	Exploration and extraction of mineral resources: oil and gas, sand, gravel	Wildlife collection / sampling	
ROSCI 0273 Zona marină Capul Tuzla	Habitats	1110	Indirect temporary disturbance of habitat 1110 at the ROSCI0273 site due to turbidity generated by excavation works.	Temporary loss of habitat 1110 (approximately 110 ha) in the area of the site ROSCI0197 Plaja submersă Eforie Nord - Eforie Sud. According to the project assessment, the SCI0273 Zona marină de la Capul Tuzla will not be affected / impacted. Ongoing project.	Habitat loss (approximately 30 ha) in the area of the site ROSCI 0283 Costinești-23 August. According to the project assessment, the SCI0273 Zona marină de la Capul Tuzla will not be affected / impacted.	Temporary disturbance of habitat 1110. Restoration interval 1 year. The project is partially completed in 2009. The works in the SCI0273 Zona marină de la Capul Tuzla are completed. The habitat affected by this project has been restored.	Temporary disturbance of habitat 1110 due to the process of installing the gas pipeline. Recovery interval 1 year. The pipeline installation works have been completed. The habitat is being rebuilt.	Temporary disturbance or loss of habitat.	No impact.	Insignificant impact.	Insignificant impact.	Insignificant impact. Disturbance / temporary habitat loss. It is not allowed to extract mineral resources (sand) from the site.	Insignificant impact.	Insignificant cumulative impact for habitat 1110 from SCI0273 Zona marină de la Capul Tuzla.
		1140	The habitat will not be affected by the project works.	Habitat loss (approximately 2 ha) in the area of the site ROSCI0197 Plaja submersă Eforie Nord - Eforie Sud. According to the project assessment, the SCI0273 Zona marină de la Capul Tuzla will not be affected / impacted. Ongoing project.	Temporary habitat loss (approximately 2 ha) in the area of the ROSCI 0283 Costinești-23 August. According to the project assessment, the SCI0273 Zona marină de la Capul Tuzla site will not be affected / impacted.	The habitat was completely lost in the SCI0273 Zona marină de la Capul Tuzla Site during the works. At this time the habitat has partially recovered. There is no information about the restored surface of this habitat in the SCI0273 Zona marină de la Capul Tuzla. site	The habitat was not affected by the project works.	Temporary disturbance or loss of habitat.	No impact.	Insignificant impact.	Insignificant impact.	Insignificant impact. Disturbance / temporary habitat loss. It is not allowed to extract mineral resources (sand) from the site.	Insignificant impact.	Insignificant cumulative impact for habitat 1140 from SCI0273 Zona marină de la Capul Tuzla.
		1170	Approximately 14 ha will be disturbed by the anchors and chains of the ships involved in the excavation process. Habitat will not be lost and fragmented. The impact is temporary and reversible in about 1-2 years.	Habitat loss (approximately 20 ha) in the area of the site ROSCI0197 Plaja submersă Eforie Nord - Eforie Sud. According to the project evaluation, the SCI0273 Zona marină de la Capul Tuzla will not be affected / impacted. Ongoing project.	Habitat loss (approximately 1 hectare) in the area of the ROSCI 0283 Costinești-23 August. According to the project assessment, the SCI0273 Zona marină de la Capul Tuzla will not be affected / impacted.	Temporary habitat disturbance 1170. Restoration interval 1 year. The project is partially completed in 2009. The works in the SCI0273 Zona marină de la Capul Tuzla are completed. The habitat affected by this project has been restored.	Temporary disturbance of habitat 1170 due to the process of installing the gas pipeline. Recovery interval 1-2 years. The pipeline installation works have been completed. The habitat is in the process of restoration.	Temporary disturbance or loss of habitat.	Insignificant impact.	Insignificant impact.	Insignificant impact.	Insignificant impact. Disturbance / temporary habitat loss. It is not allowed to extract mineral resources (sand) from the site.	Insignificant impact.	Significant cumulative impact for habitat 1170 from SCI0273 Zona marină de la Capul Tuzla.
		8330	The habitat will not be affected by the project works.	Not present in the project area	The habitat will not be affected by the project works.	The habitat was not affected by the project works.	Not present in the project area.	No impact	No impact.	Insignificant impact.	Insignificant impact.	Insignificant impact.	Insignificant impact.	No cumulative impact for habitat 8330 from SCI0273 Zona marină de la Capul Tuzla.

Natura 2000 site name	Habitat/Species		Pressures and threats generated by the proposed project and other projects					Pressures and threats according to the Management Plan and the Site Sheet of the ROSPA0076 Marea Neagră and ROSCI0273 Zona marină de la Capul Tuzla Sites						Cumulative impact
			Neptun Deep Project	"REDUCTION OF COASTAL EROSION, PHASE II (2014-2020)" - Protection and rehabilitation of coastal structures in the area of Eforie Sud and Center	"REDUCTION OF COASTAL EROSION, PHASE II (2014-2020)" - Protection and rehabilitation of coastal structures in the Costinesti area	Cliff consolidation works in the area of Tuzla locality, Constanta county	Midia Natural Gas Development Project	Construction: coastal and maritime, including pipelines, oil infrastructure and wind farms. Coastal protection works	Tourism, recreational navigation and maritime sports, motor boats on site	Pollution	Uncontrolled disposal of garbage by tourists	Exploration and extraction of mineral resources: oil and gas, sand, gravel	Wildlife collection / sampling	
	Fish	*Alosa immaculata*	Temporary disturbance due to turbidity and noise generated by excavation works if the works are carried out during the migration period of the species (spring).	Temporary disturbance due to turbidity. The works are also carried out during the fish migration period. Ongoing project.	Temporary disturbance due to turbidity. The works will also take place during the fish migration period.	The species was not affected by the project works.	Temporary disturbance due to turbidity generated by the installation of the gas pipeline. The pipeline installation works have been completed.	Temporary disturbance of the species.	Temporary disturbance of the species.	Temporary disturbance of the species.	Temporary disturbance of the species.	Temporary disturbance of the species.	Insignificant impact	Insignificant cumulative impact for *Alosa immaculata*.
		Alosa tanaica	Temporary disturbance due to turbidity and noise generated by excavation works if the works are carried out during the migration period of the species (spring).	Temporary disturbance due to turbidity. The works are also carried out during the fish migration period. Ongoing project.	Temporary disturbance due to turbidity. The works will also take place during the fish migration period.	The species was not affected by the project works.	Temporary disturbance due to turbidity generated by the installation of the gas pipeline. The pipeline installation works have been completed.	Temporary disturbance of the species.	Temporary disturbance of the species.	Temporary disturbance of the species.	Temporary disturbance of the species.	Temporary disturbance of the species.	Insignificant impact	Insignificant cumulative impact for *Alosa tanaica*.
	Marina mammals	*Tursiops trucatus*	Temporary disturbance due to turbidity and noise generated by excavation work. Temporary loss of feeding areas covered by the project works.	Temporary disturbance due to turbidity and noise generated by excavation work. Temporary loss of feeding areas covered by the project works. Ongoing project.	Temporary disturbance due to turbidity and noise generated by excavation work. Temporary loss of feeding areas covered by the project works.	The species was not affected by the project works	Temporary disturbance due to turbidity generated by the installation of the gas pipeline. The pipeline installation works have been completed.	Temporary disturbance of the species.	Temporary disturbance of the species. Possible accidents and even deaths.	Temporary disturbance of the species. Possible accidents and even deaths.	Temporary disturbance of the species. Possible accidents and even deaths.	Temporary disturbance of the species.	Insignificant impact	Insignificant cumulative impact for *Tursiops truncatus*.
		Phocoena phocoena	Temporary disturbance due to turbidity and noise generated by excavation work. Temporary loss of feeding areas covered by the project works.	Temporary disturbance due to turbidity and noise generated by excavation work. Temporary loss of feeding areas covered by the project works. Ongoing project.	Temporary disturbance due to turbidity and noise generated by excavation work. Temporary loss of feeding areas covered by the project works.	The species was not affected by the project works	Temporary disturbance due to turbidity generated by the installation of the gas pipeline. The pipeline installation works have been completed.	Temporary disturbance of the species.	Temporary disturbance of the species. Possible accidents and even deaths.	Temporary disturbance of the species. Possible accidents and even deaths.	Temporary disturbance of the species. Possible accidents and even deaths.	Temporary disturbance of the species.	Insignificant impact	Insignificant cumulative impact for *Phocoena phocoena*.
ROSPA0076 Marea Neagră	Bird species listed in Annex I to the Birds Directive	*Branta ruficollis, Chlidonias hybridus, Chlidonias niger, Cygnus cygnus, Gavia arctica, Gavia*	Permanent occupation of an area of approximately 2 ha of the feeding habitat in the shore area, outside	Temporary occupation of an area of feeding habitat in the shore area, outside the area protected by the site organization. Possibility of accidental casualties during the execution of the works, as	Temporary occupation of an area of feeding habitat in the shore area, outside the area protected by the site organization. Possibility of accidental casualties during the	Partially completed project. The impact generated by the work performed was recovered.	The works in the coastal area for the installation of the gas pipeline have been completed. The impact generated by the	Temporary disturbance of the species. Possible accidents and even deaths.	Temporary disturbance of the species. Possible accidents and even deaths.	Temporary disturbance of the species. Possible accidents and even deaths.	Temporary disturbance of the species. Possible accidents and even deaths.	Temporary disturbance of the species.	Insignificant impact	Insignificant cumulative impact for bird species.

Natura 2000 site name	Habitat/Species		Pressures and threats generated by the proposed project and other projects					Pressures and threats according to the Management Plan and the Site Sheet of the ROSPA0076 Marea Neagră and ROSCI0273 Zona marină de la Capul Tuzla Sites						Cumulative impact
			Neptun Deep Project	"REDUCTION OF COASTAL EROSION, PHASE II (2014-2020)" - Protection and rehabilitation of coastal structures in the area of Eforie Sud and Center	"REDUCTION OF COASTAL EROSION, PHASE II (2014-2020)" - Protection and rehabilitation of coastal structures in the Costinesti area	Cliff consolidation works in the area of Tuzla locality, Constanta county	Midia Natural Gas Development Project	Construction: coastal and maritime, including pipelines, oil infrastructure and wind farms. Coastal protection works	Tourism, recreational navigation and maritime sports, motor boats on site	Pollution	Uncontrolled disposal of garbage by tourists	Exploration and extraction of mineral resources: oil and gas, sand, gravel	Wildlife collection / sampling	
		stellata, Gelochelidon nilotica, Larus genei, Larus melanocephalus, Larus minutus, Mergus albellus, Pelecanus crispus, Phalaropus lobatus, Puffinus yelkouau, Sterna albifrons, Stema caspia, Sterna hirundo, Sterna sandvicensis	the protected area, by the constructions related to GMS. Possibility of accidental casualties during the execution of the works, as a result of the collision with the site traffic.	a result of the collision with the site traffic. Ongoing project.	execution of the works, as a result of the collision with the site traffic.		project has recovered.							
	Species of birds with regular migration not listed in Annex I to the Birds Directive	*Anas penelope, Anas platyrhyuchos, Anas strepera, Aythya ferina, Aythya fuligula, Bucephala clangula, Fulica atra, Fulica atra, Limosa limosa, Mergus merganser, Mergus serrator, Phalacrocorax carbo, Podiceps cristatus, Podiceps grisegena, Podiceps nigricollis, Tachybaptus ruficollis.*	Permanent occupation of an area of approximately 2 ha of the feeding habitat in the shore area, outside the protected area, by the constructions related to GMS. Possibility of accidental casualties during the execution of the works, as a result of the collision with the site traffic.	Temporary occupation of an area of feeding habitat in the shore area, outside the area protected by the site organization. Possibility of accidental casualties during the execution of the works, as a result of the collision with the site traffic. Ongoing project.	Temporary occupation of an area of feeding habitat in the shore area, outside the area protected by the site organization. Possibility of accidental casualties during the execution of the works, as a result of the collision with the site traffic.	Partially completed project. The impact generated by the work performed was recovered.	The works in the coastal area for the installation of the gas pipeline have been completed. The impact generated by the project has recovered.	Temporary disturbance of the species. Possible accidents and even deaths.	Temporary disturbance of the species. Possible accidents and even deaths.	Temporary disturbance of the species. Possible accidents and even deaths.	Temporary disturbance of the species. Possible accidents and even deaths.	Temporary disturbance of the species.	Insignificant impact	Insignificant cumulative impact for bird species.

13. Aspects regarding the impact of the project on water bodies

13.1 Water Framework Directive

The WFD aims to protect and optimize the quality of aquatic ecosystems and their sustainable use. It establishes a framework to enhance protection and improve the aquatic environment of inland, transitional, and coastal waters. The general objectives of the WFD are to achieve "good status" of all waters by 2015 and prevent any further deterioration of status. The concept of water status includes both "ecological status" and "chemical status".

In order to achieve the environmental objectives, the WFD provides for the development of a program of measures. The classification system provided for in the WFD on water quality includes five categories of conditions: very good, good, moderate, poor, and bad. "Very good condition" defines those conditions associated with the absence of human pressure or very weak anthropogenic pressure. This is also called the "reference condition", as it represents the best state that can be obtained and is the reference element. These reference conditions are specific depending on the type of water, so they differ from one type of water to another. The quality assessment is based on the degree of deviation from these reference conditions, in accordance with the definitions in the Directive: "Good condition" reflects a "slight" deviation, "moderate condition" reflects a moderate level of deviation and so on.

The assessment of status is based on qualitative biological, chemical and hydromorphological elements. In the case of transitional and coastal waters, the biological elements to be considered include phytoplankton, aquatic flora, benthic invertebrate fauna and ichthyofauna. Hydromorphological qualitative elements have characteristics such as exposure to waves, the structure of the area delimited by the tide or the variation of depth. The chemicals to be included in the assessment are transparency, salinity, oxygenation conditions, nutrients and specific pollutants.

13.2 Project location

13.2.1 Onshore

Hydrographic basin

The project site is located in the Dobrogea – Litoral hydrographic basin.

Water course: name and cadastral code

The onshore project location does not intersect any surface water courses (rivers or streams). The closest water courses and the distances between them and the onshore project site are presented in Table 44 and their location is shown in Figure 44.

Table 44 - Description of nearby water courses

Name of the Water Course	Cadastral Code	Distance from the project site
Dereaua	XV_1.11	7.7 km
Biruinţa	XV_1.11a	7.86 km
Tătlăgeacul Mare	XV_1.11b	5.27 km
Tătlăgeacul Mic	XV_1.11c	9.22 km
Albeşti	XV_1.12	21.39 km

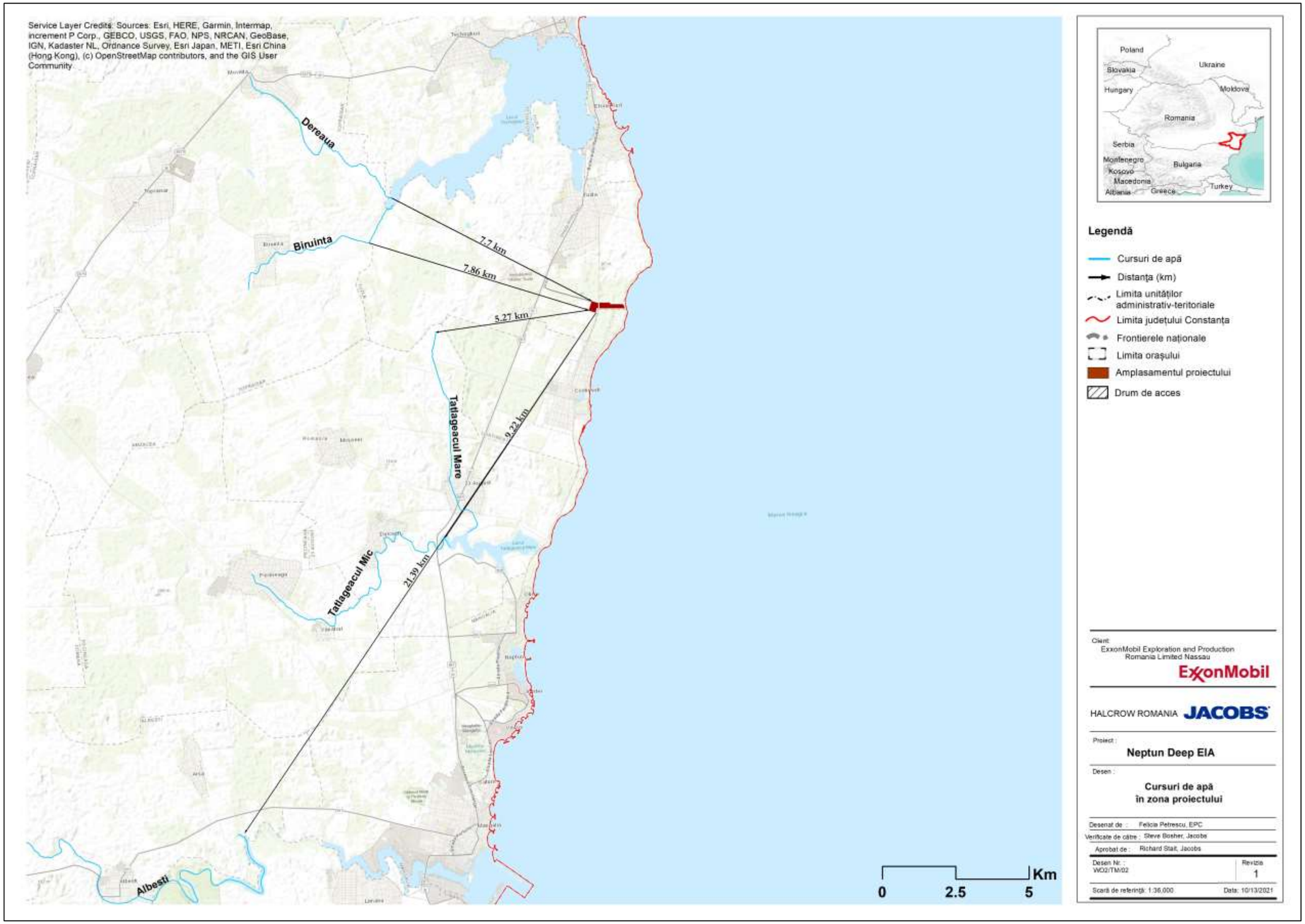


Figure 44 - Location of the nearby water courses in relation with the onshore project site

Water body (surface and /or groundwater): name and code

The onshore project site does not intersect any surface water bodies, but 4 onshore water bodies are located within 20 km from the project site. In Figure 45 is shown the location of the water bodies in relation with the onshore project site, together with the distances between the project site and the water bodies. The figure also includes the coastal water bodies, described in the following section. In Table 45 below are presented the name, code, and type of the nearby water bodies.

Table 45 – Characteristics of nearby onshore surface water bodies

Hydrographic Basin	Water Body	Water Body code	Type of the Water Body
Dobrogea - Litoral	Lacul Techirghiol Sărat	ROLW15.1_B2	HMWB-LW
	Lacul Techirghiol Dulce	ROLW15.1_B1	LW
	Lacul Tătlăgeac	ROLW15.1_B9	LW
	Mangalia	ROCT01_B2	HMWB-CW

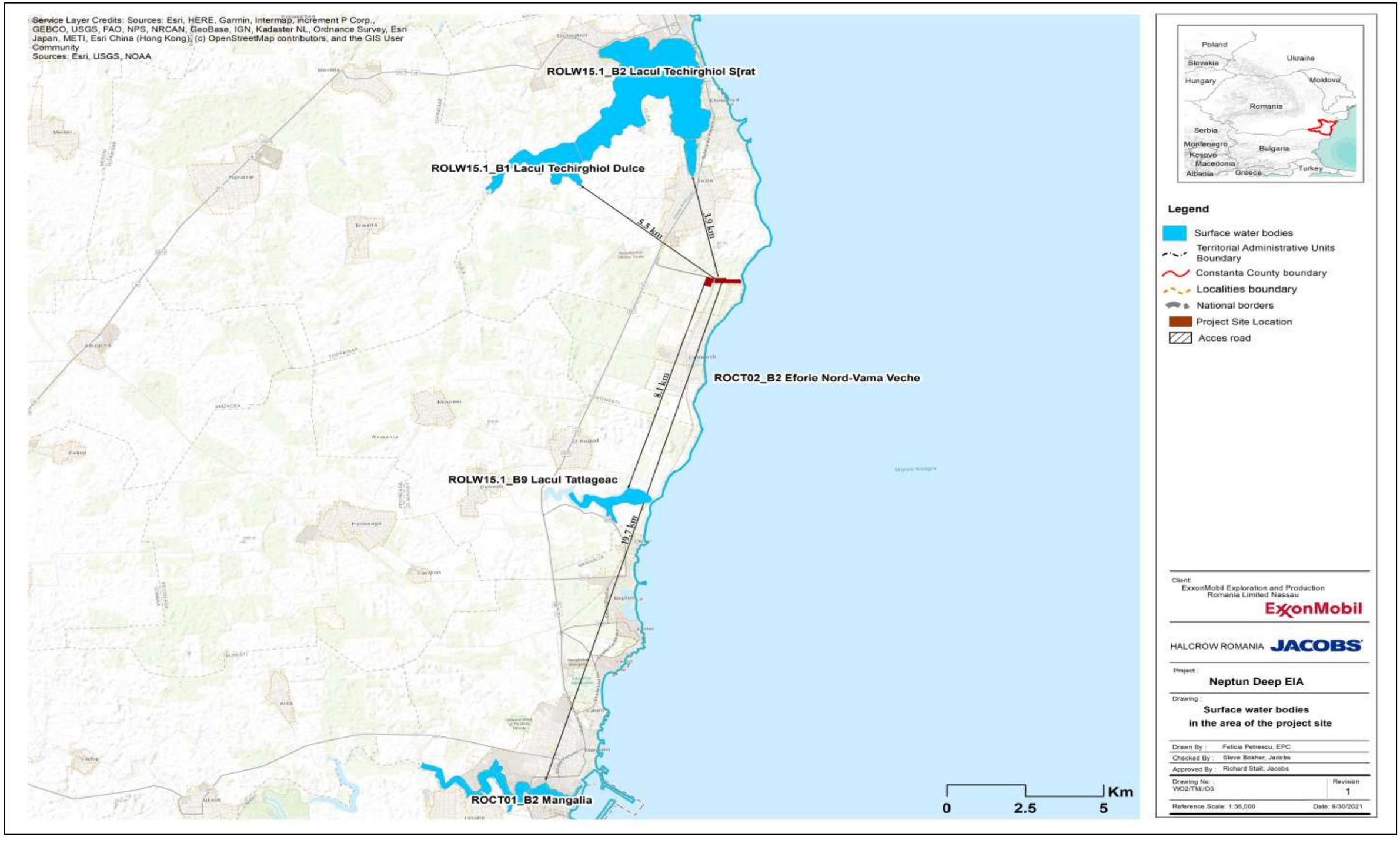


Figure 45 – Location of the nearby water bodies in relation with the project site

The onshore project site location intersects 3 groundwater bodies: RODL04 Cobadin - Mangalia, RODL06 Platforma Valahă and RODL10 Dobrogea de Sud (Figure 46). Out of these, RODL10 is phreatic aquifer, while RODL04 and RODL06 are deep groundwater bodies.

The **groundwater body RODL10 Dobrogea de Sud** is a phreatic aquifer of porous-permeable or fissure type formed in the Holocene-Pleistocene period. The thickness of the cover layers varies between 0-0.5 m. The largest proportion of the surface of the water body is covered by agricultural areas. As sources of pollution, which may have a negative impact on the quality status of the groundwater aquifer, diffuse pollution caused by agricultural activities has been identified. The only determined impact is the one coming from the industry (processing and metallurgy) from the localities of Limanu, Medgidia, Cernavodă, Cobadin, Ovidiu and Techirghiol.

The **groundwater body RODL04 Cobadin – Mangalia** is a fissure-karstic groundwater body, developed in hard rocks, predominantly calcareous. The thickness of the cover layers varies between 0 - 20 m. It is observed that the majority of the surface of this body is occupied by arable land. As sources of pollution, which may have a negative impact on the quality status of the groundwater aquifer, diffuse pollution caused by agricultural activities has been identified. This body is cross-border.

The **groundwater body RODL06 Platforma Valahă** is an under-pressure groundwater body, being confined to Jurassic - Barremian deposits and has a significant economic importance. The thickness of the layers is variable, being very close to the surface. As sources of pollution, which may have a negative impact on the quality status of the groundwater aquifer, diffuse pollution caused by agricultural activities has been identified. This body is cross-border.

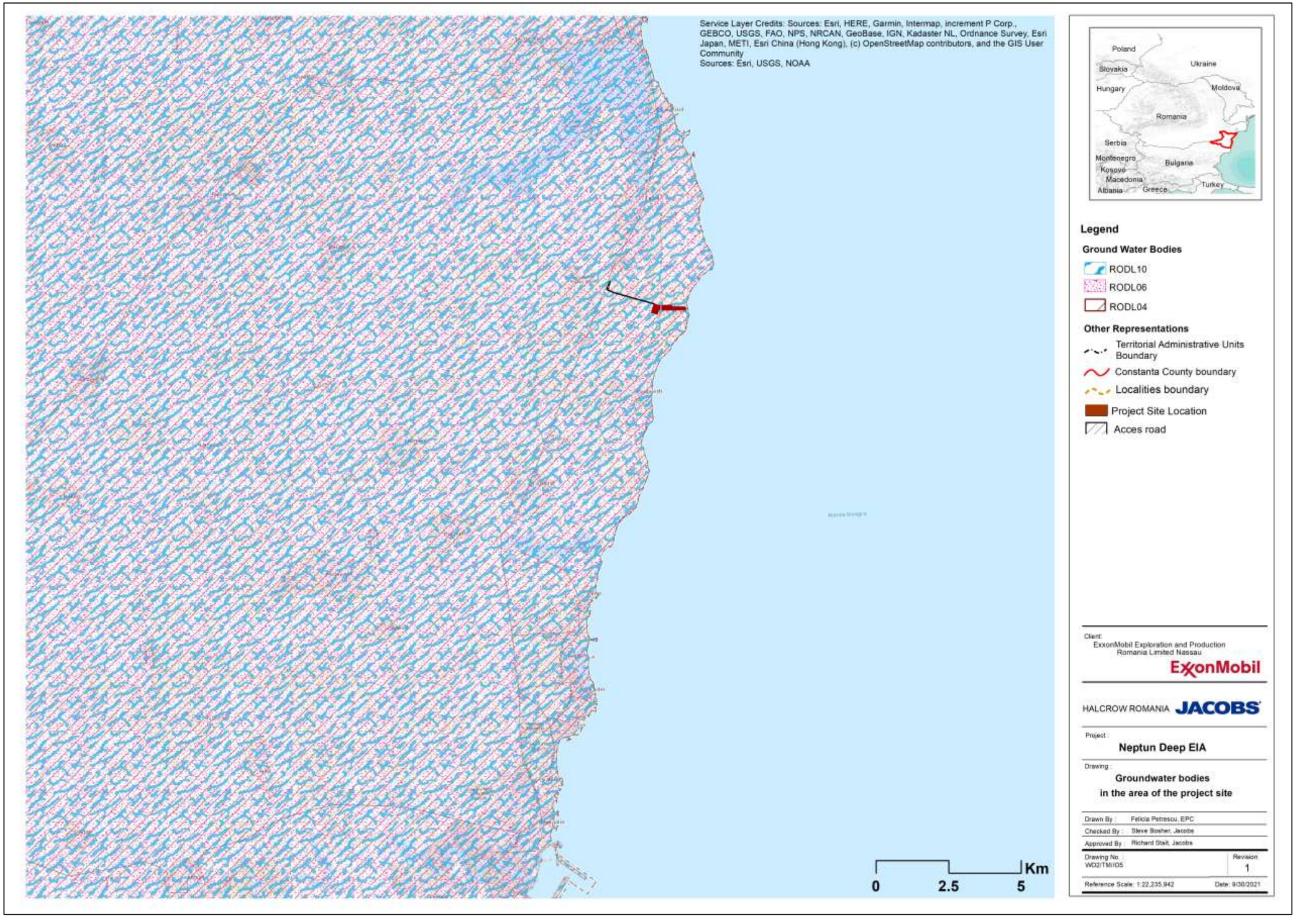


Figure 46 – Location of the onshore project site in relation to the groundwater bodies

13.2.2 Coastal and Offshore

The coastal component of Neptun Deep Project, mainly the exit point of the gas pipeline, is located within the coastal water body Eforie Nord -Vama Veche (Table 46 and Figure 47).

Table 46 – Characteristics of the coastal surface water body

Hydrographic basin	Name of the coastal water body	Water body code	Type of the Water Body
Coastal waters	Eforie Nord - Vama Veche	ROCT02_B2	CW – coastal waters

The water body Eforie Nord – Vama Veche (ROCT02_B2), which may be influenced by the Project, has a surface of 126.22 km^2.

In the coastal area there is also a shellfish designated area, represented in Figure 48.

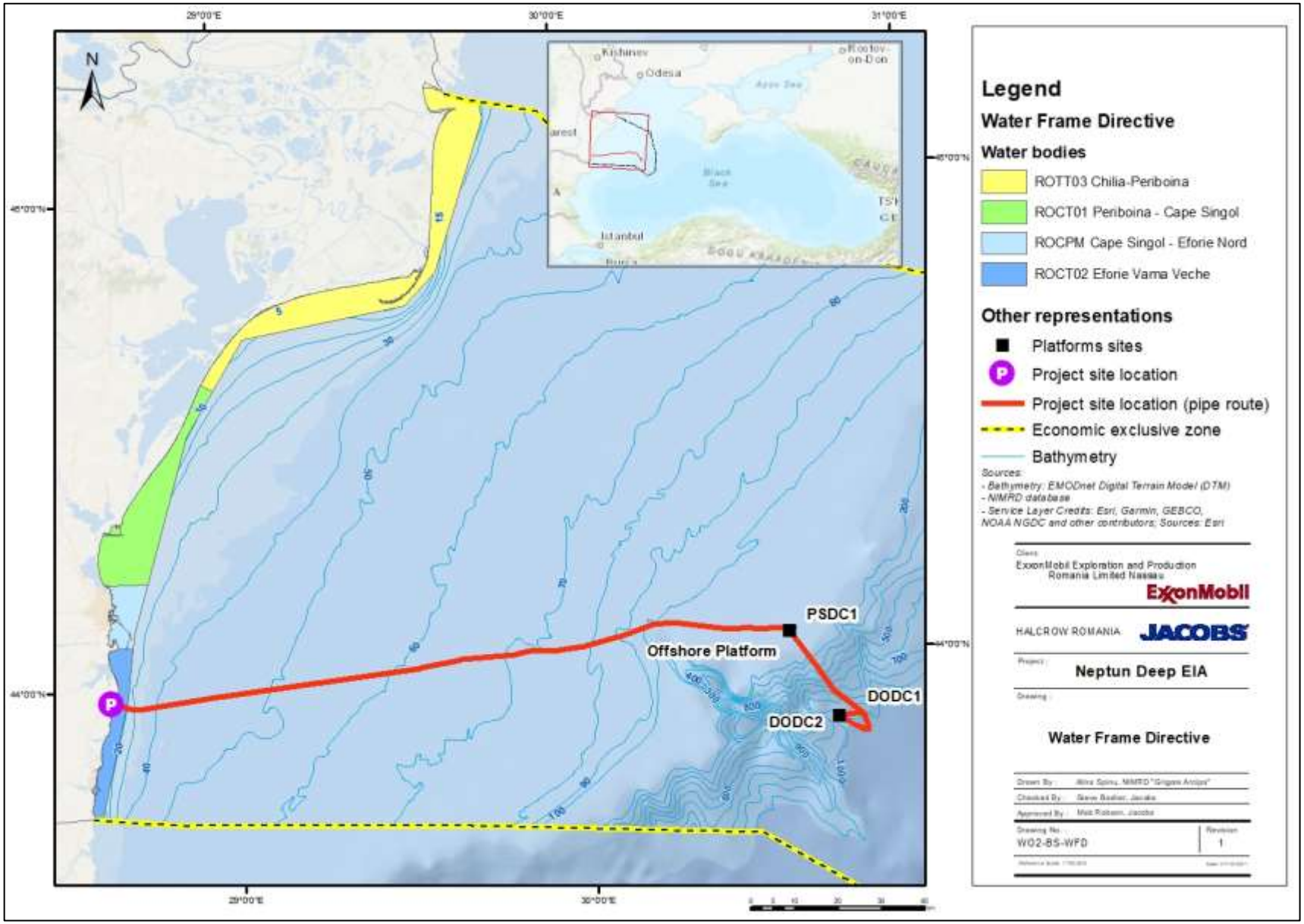


Figure 47 - Location of the project site in relation to the coastal water bodies

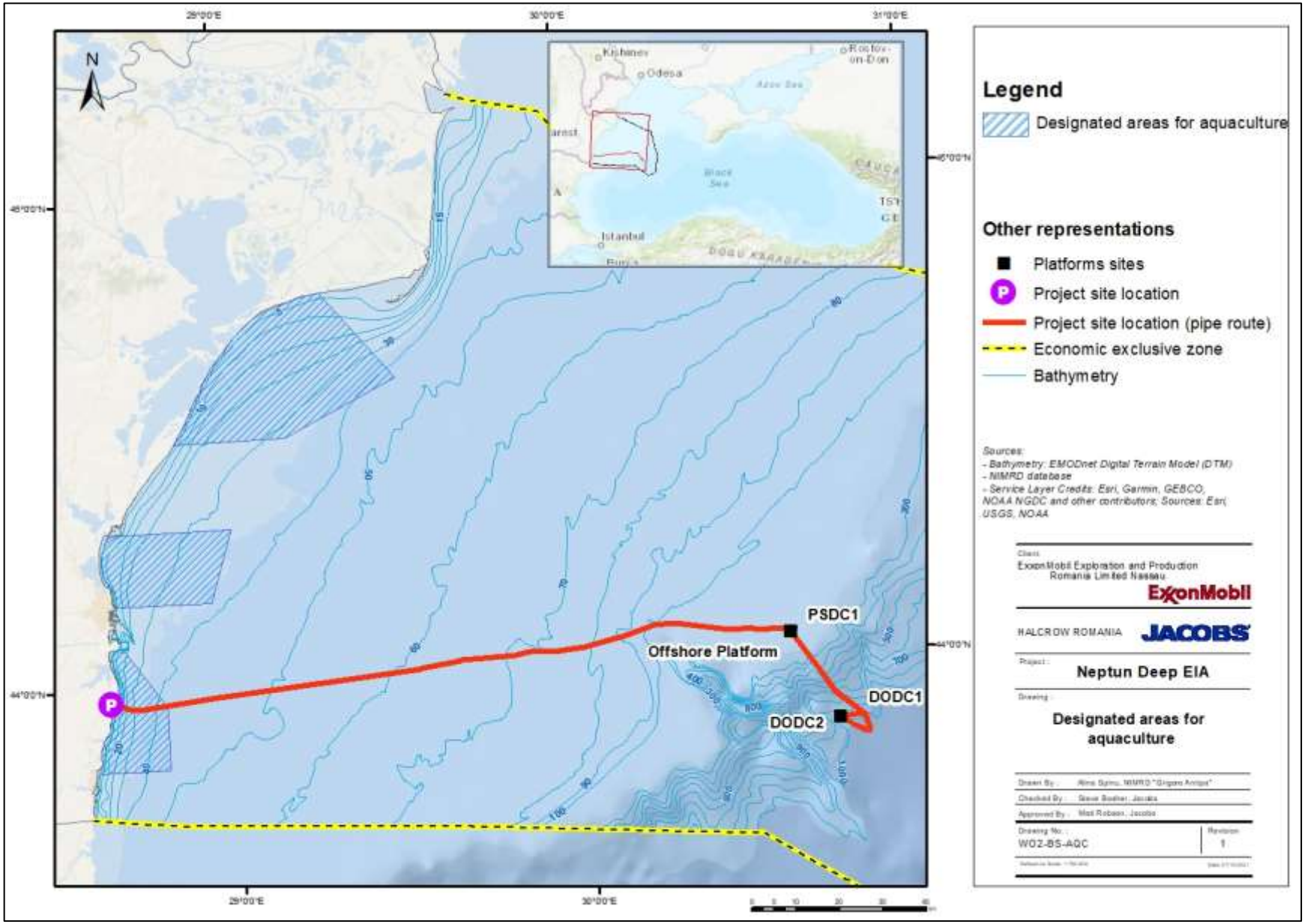


Figure 48 - Location of the shellfish designated area in relation with the project site

13.3 Ecological status/ecological potential and chemical status of the surface water body

13.3.1 Onshore Water Bodies

In Table 47 below are presented the ecological status/ecological potential and chemical status of the onshore surface water bodies, according to the *Updated management plan of the Danube river, Danube Delta, Dobrogea hydrographic area and coastal waters from 2016-2021*.

Table 47 - Status of the nearby surface water bodies

Hydrographic Basin	Water Body	Water Body code	Type of the Water Body	Ecological Status / Potential	Chemical Status
Dobrogea - Litoral	Lacul Techirghiol Sărat	ROLW15.1_B2	HMWB-LW	Not evaluated	Good
	Lacul Techirghiol Dulce	ROLW15.1_B1	LW	Good	Good
	Lacul Tatlageac	ROLW15.1_B9	LW	Good	Good
	Mangalia	ROCT01_B2	HMWB-CW	Moderate	Good

13.3.2 Coastal Water Bodies

13.3.2.1 The state of the water body according to Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters

According to the Updated Management Plan of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters, the ROCT02_B2 water body was classified as a natural water body with moderate ecological status and good chemical status (Table 48, Figures 49 and 50).

Table 48 – State of the coastal water body

Name of the water body	Water body category	Water body typology	Water body code	Ecological Status	Chemical Status
Eforie Nord - Vama Veche	CW	ROCT02	ROCT02_B2	Moderate	Good

Coastal water monitoring is done in shore monitoring sections / stations, as well as offshore sections at depth of 5 m, 10 m, 20 m, and sections at 12 nautical miles (22 km).

According to the Management plan, to assess the condition of water bodies was mainly used the monitoring data from 2013; also, for certain situations the data for the period 2009-2013 was used, as well as recent monitoring data. In the case of biological elements that are monitored less frequently, the latest monitoring data was used.

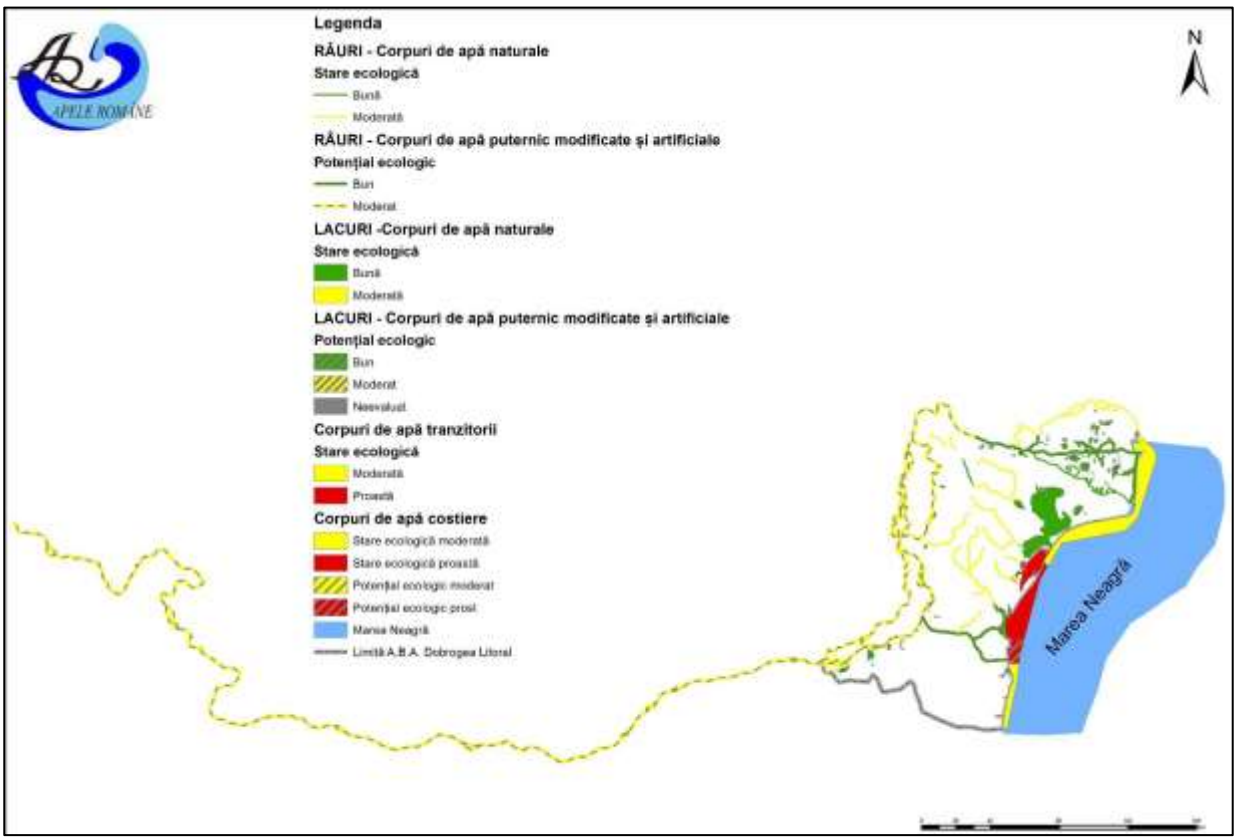


Figure 49 - Ecological status and ecological potential of surface water bodies at the level of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal waters

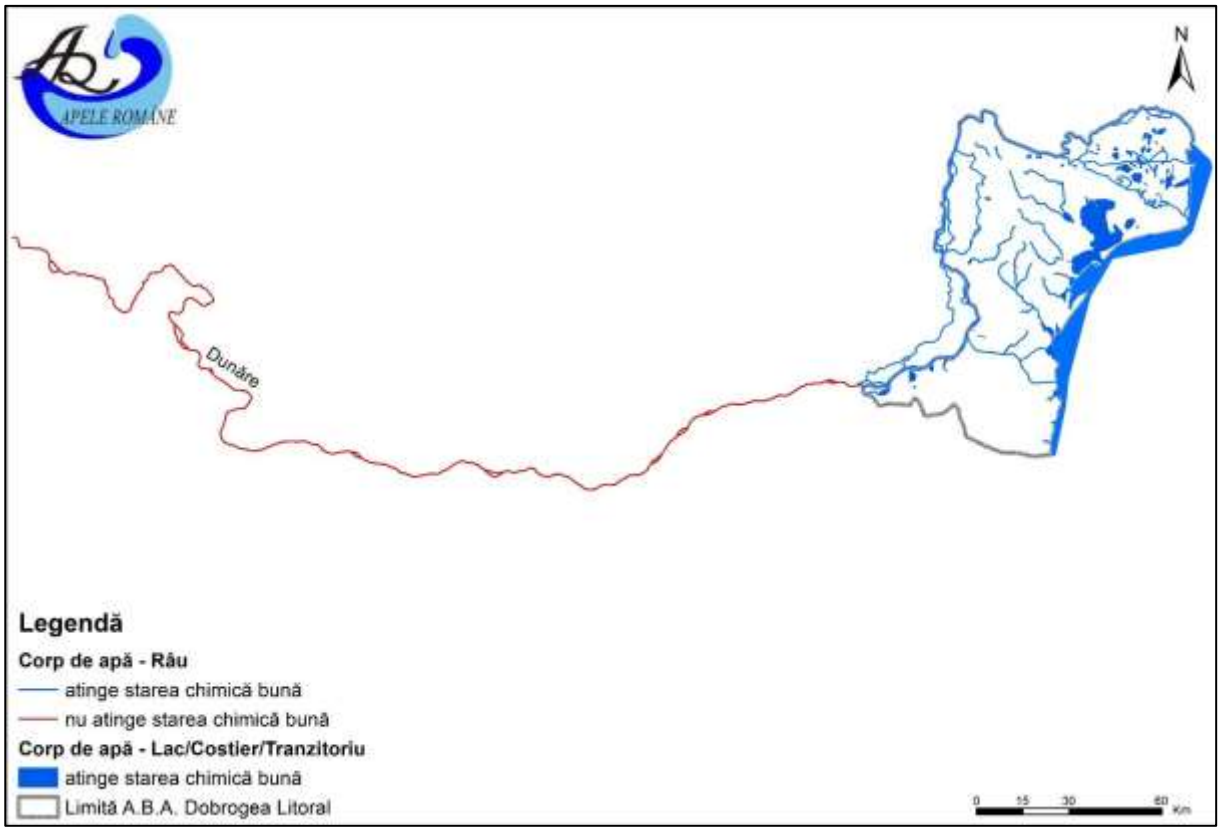


Figure 50 - Map regarding the situation of the chemical state of surface water bodies at the level of the Danube River, Danube Delta, Dobrogea Hydrographic Area and Coastal Waters

13.3.2.2 The state of the water body according to other documents

Other information was also gathered and presented, in addition to data selected from the Updated Management Plan, which would describe the state of the Eforie Nord-Vama Veche water body, which may be influenced by the Project. The source of information is represented by the *"Study on updating / developing the methodology for assessing the ecological status / ecological potential for transient and coastal water bodies*", prepared by NIMRD "Grigore Antipa" prepared in 2017, *Chapter IV. "Application of methodologies for assessing ecological status / ecological potential and interpretation of results"*, Beneficiary: Ministry of Waters and Forests.

For the evaluation of water bodies data was obtained from stations located on a monitoring network (Figure 51) located on the transects Eforie, Costinești, Mangalia and Vama Veche, at water depth of 5 m and 20 m, during 2015 - 2016. If these data were insufficient or missing, was used data obtained from national and international research projects, for which expeditions were carried out in the study area.

The global assessment and classification of the ecological status was done by integrating biological and support elements, based on the integration methodology for global assessment and classification of ecological status / ecological potential of transitional and coastal water bodies, which correlates and integrates biological elements, hydro morphological elements and physico-chemical elements defined by specific parameters, in accordance with the provisions of the WFD.

By integrating the biological elements and the supporting ones, for the period 2015 - 2016, a POOR ecological status was obtained for the water body Eforie Nord - Vama Veche (Table 49).

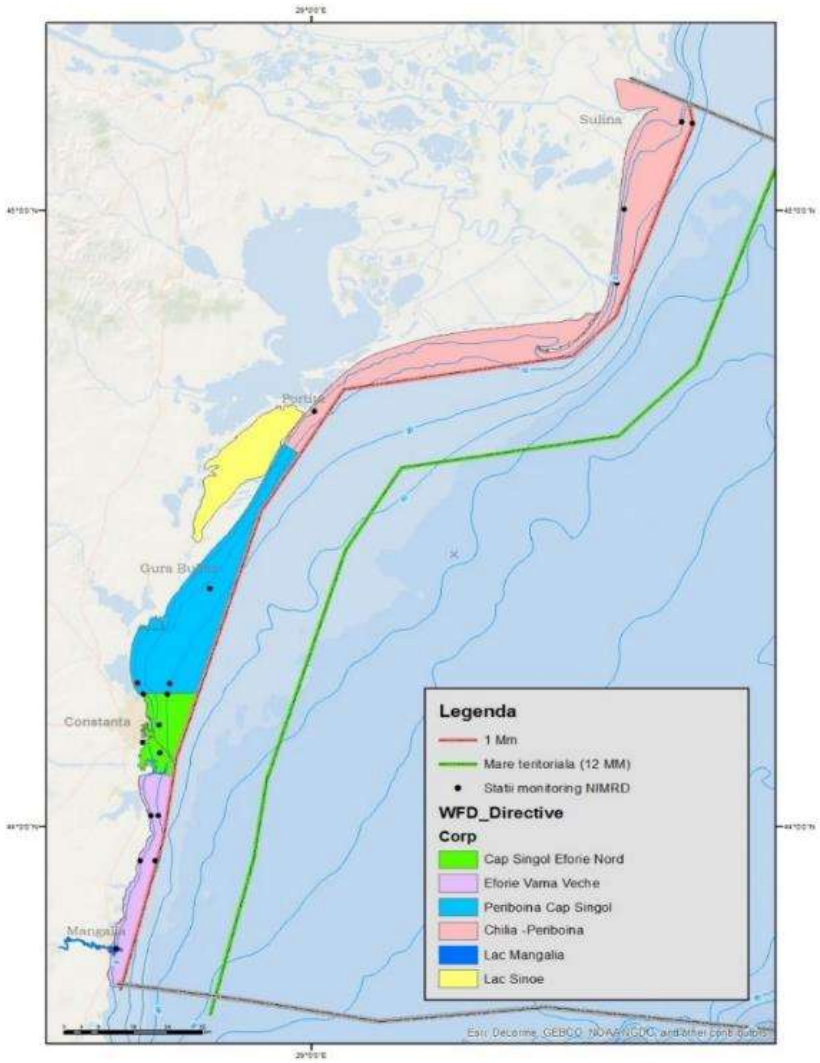


Figure 51 - Transitional and coastal water bodies, natural and modified from the Romanian Black Sea coast

Table 49 - Assessment and global classification of the ecological status of natural water bodies by integrating biological and supporting elements, for the period 2015 - 2016

Water body	Biological elements					Support elements								Ecological state of the water body
						Hydromorphological elements				General physico-chemical elements and specific pollutants				
	Phytoplankton	Macroalgae	Macrozoobenthos	Fish	State	Hydrological parameters	Sedimentological parameters	Morphological parameters	State	General physico-chemical elements	Heavy metals	Organic pollutants	State	
Eforie Nord - Vama Veche	Poor	Moderate	Good	-	Poor	Very good	Very good	Very good	Very good	Moderate	Bad	Bad	Bad	Poor

13.4 Quantitative and chemical status of the groundwater body

In Table 50 are presented the qualitative (chemical) and quantitative status of the groundwater bodies from the project area, according to the *Updated management plan of the Danube river, Danube Delta, Dobrogea hydrographic area and coastal waters from 2016-2021*.

Table 50 - Characteristics of groundwater bodies in the project area

Hydrographic Basin	Groundwater Body				
	Code	Name	Type	Qualitative (chemical) status	Quantitative status
Dobrogea - Litoral	RODL04	Cobadin - Mangalia	depth	Good	Good
	RODL06	Platforma Valahă	depth	Good	Good
	RODL10	Dobrogea de Sud	phreatic	Good	Good

13.5 Environmental objectives of the identified water bodies

13.5.1 Onshore Water Bodies

According to the "*Updated management plan of the Danube river, Danube Delta, Dobrogea hydrographic area and coastal waters from 2016-2021*", in Tables 51 and 52 below are presented the environmental objectives for the surface water bodies, both onshore and coastal, and respectively for the groundwater bodies.

Table 51 - Environmental objectives of the nearby surface water bodies

Hydrographic Basin	Water Body	Water Body code	Environmental objective		Ecological status / ecological potential	Chemical status	Achieving the environmental goal - ecological status / ecological potential	Achieving the environmental goal - chemical status	Achieving the environmental goal - ecological status / ecological potential	Achieving the environmental goal - chemical status	The deadline for achieving the environmental objective	
			Ecological status	Chemical status	PM II		2015		2021		Ecological status / ecological potential	Chemical status
Dobrogea - Litoral	Lacul Techirghiol Sărat	ROLW15.1_B2	environmental objective that will be defined at a later stage	good chemical status	N	2 **	NO	YES	YES	YES	2021	2013
	Lacul Techirghiol Dulce	ROLW15.1_B1	good ecological status	good chemical status	2 *	2	YES	YES	YES	YES	2015	2013
	Eforie Nord – Vama Veche	ROCT02_B2	good ecological status	good chemical status	3	2	NO	YES	YES	YES	2021	2013
	Lacul Tatlageac	ROLW15.1_B9	good ecological status	good chemical status	2	2	YES	YES	YES	YES	2015	2013
	Mangalia	ROCT01_B2	good ecological status	good chemical status	3	2	NO	YES	YES	YES	2027	2013

Note:

* 2 - good ecological status / good ecological potential;
3 - moderate ecological status / moderate ecological potential;
N - not applicable

** 2 - bad chemical condition.

Table 52 - Environmental objectives of the intersected groundwater bodies

Hydrographic Basin	Name of groundwater body	Groundwater body code	Environmental objective		Current quantitative status	Current chemical status	The deadline for achieving the environmental objective	
			Ecological status	Chemical status	(Good/Bad)	(Good/Bad)	Quantitative status	Chemical status
Dobrogea - Litoral	Cobadin-Mangalia	RODL04	Good	Good	Good	Good	2015	2015
	Platforma Valahă	RODL06	Good	Good	Good	Good	2015	2015
	Dobrogea de Sud	RODL10	Good	Good	Good	Bad	2015	2027

13.5.2 Coastal and Offshore Water Bodies

For the project area, the environmental objectives, the exceptions applied and the related deadlines for achieving the environmental objectives of the "*Updated management plan of the Danube river, Danube Delta, Dobrogea hydrographic area and coastal waters from 2016-2021*" are presented in Table 53 and Table **54**54.

Table 53 - Environmental status and objectives for the waterbody ROCT02_B2

River basin	Watercourse	Watercourse category	Water body typology	Environmental objective		Ecological status	Chemical condition
				Ecological status	Chemical condition	MP II	
Coastal waters	Eforie Nord - Vama Veche	CW	ROCT02	Good ecological status	Good chemical condition	Moderate	Good

Table 54 - Exceptions for the waterbody ROCT02_B2

Water body/Code	Achieving the goal of ecological status	Achieving the chemical status goal	Achieving the goal of ecological status	Achieving the chemical status goal	Deadline for achieving the environmental objective		TYPE EXCEPTION FROM THE ENVIRONMENTAL OBJECTIVE - ecological status
	2015		2021		Ecological status	Chemical condition	
Eforie Nord – Vama Veche ROCT02_B2	NO	YES	YES	YES	2021	2013	Article 4 (4) - Disproportionate costs

Appendix A. Regulatory documents issued by authorities

Appendix A. Regulatory documents issued by authorities

1 - Tuzla Local Council - Decision no 100 from 16th of November 2020

Consiliul Local Tuzla

Judetul Constanta
Comuna Tuzla
Sos. Constantei nr. 80A
Tel. 0241 747 564
Fax. 0241 747 904
e-mail *primariatuzla2007@yahoo.com*

HOTARAREA NR. 100

Privind aprobare P.U.Z. „Infiintare statie masurare gaze naturale si centru de control, realizare drum si traseu conducte subterane transport gaze naturale" cu amenajari aferente, spatii de circulatie si acces, pe de o parte si alte spatii conexe in comuna Tuzla, judetul Constanta

Consiliul Local Tuzla, intrunit in sedinta ordinara din data de 16.11.2020;
Avand in vedere:

- Cererea nr. 6908/24.08.2020 din partea ExxonMobil Exploration and Production Romania Limited;
- Referatul de aprobare al primarului, avizul comisiilor de specialitate, referatul de specialitate al compartimentului urbanism;

Tinand seama de:

- prevederile art. 46 alin. 1^7 din Legea nr. 350/2001 privind amenajarea teritoriului si urbanismului, actualizata, Normele de aplicarea a Legii nr. 350/2001 privind amenajarea teritoriului si urbanismului si ale art. 2 alin. (2) din Legea 50/1991 privind autorizarea executarii lucrarilor de constructii – Republicata;
- HG 525/1996 pentru aprobarea Regulamentului General de Urbanism;
- HCL 17/22.02.2013 privind aprobarea Regulamentului Local de implicare a publicului in elaborarea sau revizuirea planurilor de Urbanism si amenajare a teritoriului;
- Legea 10/1995 privind calitatea in constructii;
- HCL 66/27.06.2018 privind aprobarea avizului prealabil de oportunitate aferent proiectului;
- HCJ Constanta 152/22.05.2013 privind stabilirea suprafetelor minime de spatii verzi si a numarului minim de arbusti, arbori, plante decorative si flori aferente constructiilor realizate pe teritoriul administrativ al judetul Constanta;
- HCL 47/11.04.2018 privind aprobarea Studiului de Oportunitate pentru „Infiintare statie masurare gaze naturale si centru de control, realizare drum si traseu conducte subterane transport gaze naturale"
- Certificatul de Urbanism nr. 4/19.01.2018 privind elaborare Plan Urbanistic Zonal emis de Consiliul Judetean Constanta ;
- Legea 351/2004 a gazelor ;

În temeiul art. 129 alin.(2), lit.b) alin.(4), lit.d) și art. 196 alin.(1), lit.a) din Ordonanța de Urgență a Guvernului nr.57/2019 privind Codul administrativ,

HOTARASTE:

ART.1 Se aproba Planul Urbanistic Zonal pe amplasamnetul in suprafata de 248.944 mp, conform anexei la prezenta hotarare.

ART.2 Primarul comunei Tuzla va asigura executarea prevederilor prezentei hotarari.

ART.3 Secretarul comunei va comunica prezenta hotarare Institutiei Prefectului – Judetul Constanta si primarului comunei Tuzla.
ART.4 Hotararea s-a adoptat cu un numar de 13 voturi „ pentru'' , __-__voturi „ impotriva '', ___1__voturi „ abtineri '', la sedinta fiind prezenti un numar de ___ consilieri din cei 14 in functie.

PREȘEDINTE DE ȘEDINȚĂ,
✍ .....
CRISTIAN-STEFAN VITALIA

Jud. CONSTANȚA · COMUNA TUZLA
CONSILIUL LOCAL
ROMÂNIA

AVIZAT PENTRU LEGALITATE,
SECRETAR GENERAL COMUNA TUZLA,
✍ .....
DANIELA-ALINA BORCAN

Appendix A. Regulatory documents issued by authorities

2 - Constanta County Council - Endorsement no 67 from 27th of November 2019

CONSILIUL JUDEŢEAN CONSTANŢA

Nr. 31925/27.11.2019

AVIZAT,
Vicepreşedinte,
Dumitru Daniel Learciu

CĂTRE,
PRIMĂRIA COMUNEI TUZLA

Ca urmare a cererii adresate de **EXXONMOBIL EXPLORATION AND PRODUCTION ROMÂNIA LIMITED NASSAU (BAHAMAS) şi OMV PETROM S.A., reprezentată de Alin Ştirbu**
cu domiciliul/sediul în judeţul - municipiul/oraşul/comuna **Bucureşti**
satul - sectorul **1** cod poştal -;
strada **Calea Floreasca** nr. **169A Corp B** bl. - sc. - et. - ap. -
telefon/fax - e-mail -
înregistrată la nr. **31925** din **14.11.2019**
în conformitate cu prevederile Legii nr. 350/2001 privind amenajarea teritoriului şi urbanismul, cu modificările şi completările ulterioare, se emite următorul:

AVIZ
nr. 67 din 27.11.2019

pentru PLAN URBANISTIC ZONAL- ÎNFIINŢARE STAŢIE MĂSURARE GAZE NATURALE ŞI CENTRU DE CONTROL, REALIZARE DRUM ŞI TRASEU CONDUCTE SUBTERANE TRANSPORT GAZE NATURALE, EXTRAVILAN COMUNA TUZLA, JUD. CONSTANŢA, generat de imobilul- **Teren în suprafata de 248.944,00 mp**
AMPLASAMENT: terenuri identificate cu nr. cadastrale 109216, 104087, 104089, 104094, 101418, 104096, 101462, 104086, 101414, 104110, 104098, 104287, 109217, 100178, 100818, 102101, 102099, 108896, 107123, 105769, 107386, 101055, 108897, 106654, 107418, 102100, 107373, 102098, extravilan com. Tuzla, jud. Constanţa
INIŢIATOR/INVESTITOR: EXXONMOBIL EXPLORATION AND PRODUCTION ROMÂNIA LIMITED NASSAU (BAHAMAS) şi OMV PETROM S.A.
PROIECTANT: RAMBOLL SOUTH EAST EUROPE S.R.L.– m. urb. Alexandru G. Dobra, specialist cu drept de semnătură RUR – D3, DZ0, E

Amplasare, delimitare, suprafaţă zonă studiată în P.U.Z.: **terenuri situate în extravilanul comunei Tuzla, zona imobilelor care au generat P.U.Z. este delimitată astfel:** nord – drumuri de exploatare (De 292/1, De 229/2), A259/89 (proprietar Diaconescu Tiberiu), A259/94 (proprietar BETA ACCENT S.R.L.), sud – A 259/105, A259/106 (proprietar Actual CubicS.R.L.), est – De 269 (drum de exploatare situate de-a lungul falezei), vest- DN 39 (E 87);

Terenul din zona studiată este situat astfel: - cca. 1,4 km spre sud-est faţă de intravilanul comunei Tuzla,- cca.0,04 km spre est faţă de DN 89 (E 87), - cca. 0,13 km spre vest faţă de intravilanul comunei Costineşti, - cca.61 m spre vest faţă de Marea Neagră.

Amplasamentul este situat la distanţa de aprox. 1 km faţă de limita sitului ROSPA 0076 Marea Neagră şi la distanţa de aprox. 961 m faţă de limita sitului ROSCI0273 Zona marina de la Capul Tuzla.

-suprafaţă teren ce a generat PUZ: 248 944 mp;
-suprafaţă zonă studiată în PUZ: 248 944,00 mp.

Prevederi P.U.G./P.U.Z. - R.L.U. **aprobate anterior:** conform documentaţie de urbanism PUG aprobat prin HCL Tuzla nr. 141/2008, zona studiată se află la limita administrativă dintre comunele Tuzla şi Costineşti. În PUG, aprobat, comuna Tuzla aprobat, zona situată între faleza şi calea ferată Constanţa- Mangalia este propusă pentru o potenţială extindere a intravilanului cu funcţiunea de locuire şi turism.
- **UTR** – amplasamentul studiat face parte din extravilanului UAT Tuzla
-**funcţiuni predominante:** funcţiunea existentă – activităţi agricole (arabil, livezi), căi circulaţie;
- **regimul de înălţime:** nereglementat;
- **POT max** = nereglementat;
- **CUT max** = nereglementat;
- **retragerea minimă faţă de aliniament** = nereglementat;
- **retrageri minime faţă de limitele laterale** = nereglementat; se aplică conform Cod Civil
- **retrageri minime faţă de limitele posterioare** = nereglementat; se aplică conform Cod Civil
- **zone de interdicţie temporară -.**

Prevederi P.U.Z. - R.L.U. propuse:
- **UTR** – se propune stabilirea reglementărilor urbanistice pentru terenurile cu funcţiunile de echipamente tehnico – edilitare, căi de comunicaţie rutieră şi amenajări aferente, spaţii plantate.
– **Zonificare funcţională:**

1. **Zona *TE* STAŢIA DE REGLARE – MĂSURARE - - echipamente tehnico-edilitare,Terenul se propune pentru introducerea în intravilan ca trup izolat.**

Suprafaţa = 85.000 mp, parcela A289/1a LOT 1, nr. cad. 109216.
- **funcţiuni dominante:** - reţele conducte, staţii reglare măsurare, centru comandă, lansator PIG, parcări.
Se admit cu condiţionări următoarele utilizări: locuinţe de serviciu cu regim de înălţime max. parter şi suprafaţa construită max. 300 mp.
Suprafaţa edificabil = 51 397 mp
- **regimul de înălţime:** P +1E+M, H max.= 12,00 m;
- **POT max** = 60%;
- **CUT max** = 1,00;
- Suprafaţa spaţii verzi pe parcelă= min. 35%
- **regim de construire**: izolat, regimul de construire va fi dictat de fluxul tehnologic specific activităţilor;
- **retragerea minimă faţă de aliniament** = 10,00 m de la De ;
- **retrageri minime faţă de limitele laterale şi posterioare**= 30,00 m de la limita parcelei la Nord, 10,00 m de la limita de Sud, 10,00 m de la limita de Vest, 43/100 de la limita de Est (zona de protecţie a CF)
- **circulaţii şi accese:** accesele principale se vor face din Dc 4 existent, prin traversarea liniei de cale ferată printr-un drum tehnologic temporar, pentru organizarea de şantier şi prin intermediul drumului propus, cu acces din DN 39. Se vor amenaja locuri de parcare în limita parcelei;
- **echipare tehnico-edilitară:** Retelele de distributie apa potabila, retelele de colectare – canalizare menajera, reteaua de distributie energie electrica se vor realiza conform studiilor de specialitate şi a avizelor de specialitate.

2. **Subzona *Spp* – SPAŢII VERZI DE PROTECŢIE**

- **funcţiuni dominante:** - spaţii verzi şi plantate, cu rol de protecţie, căi de acces către zona de echipamente tehnico-edilitare, construcţii sau amenajări pentru extinderea, modernizare, traversarea, întreţinerea retelelor edilitare, cabine poartă, drumuri pentru acces incinte.
Se admit cu condiţionări următoarele utilizări: echipamente tehnico-edilitare (posturi de transformare, staţii de epurare, puţuri forate, etc.) se pot amplasa în interiorul fâşiei de protecţie a infrastructurii edilitare, cabine poartă, drumuri pentru asigurarea accesului către incinte.
Este interzisă înfiinţarea de parcări pe subzona Spp, sunt interzise lucrări de terasament să afecteze amenajările din domeniul public sau parcelele invecinate.
- **regimul de înălţime:** nu se prevăd construcţii, cu excepţia cabină poartă parter cu H max= 4,00 m;
- **POT max** = - %;
- **CUT max** = -;
- **regim de construire**: este interzisă amplasarea clădirilor în zonele de protecţie a reţelelor edilitare, se pot amplasa reţele conducte, staţii reglare măsurare, centru comandă, lansator PIG, parcări;

- **retragerea minimă față de aliniament:** se pot planta arbori la distanța de minim 2 m față de limitele de proprietate;
- **retrageri minime față de limitele laterale și posterioare**= -
- **circulații și accese:** este interzisă construirea de străzi noi in interiorul zonelor verzi de protecție, cu excepția acceselor către zona de echipamente tehnico- edilitare, este interzisă înființarea de parcări sau staționarea autovehiculelor pe subzona Spp

3. **Zona *Ccr*- ZONĂ PENTRU CĂI DE COMUNICAȚIE RUTIERĂ**

- **funcțiuni dominante:** - construcții, instalații și amenajări aferente traficului rutier, unități de intreținere și depozitare aferente traficului rutier, zonă care face legătura intre DN39 și parcela pentru echipamente tehnico- edilitare (TE). Sunt interzise activități sau procese tehnologice de natură să producă poluare fonică sau chimiă, cu efect asupra funcțiunilor învecinate parcelei, sunt interzise lucrări de terasament să afecteze amenajările din domeniul public sau parcelele invecinate.
- **circulații și accese:** se vor asigura accesele obligatorii, cu respectarea cerințelor tehnice specifice funcțiunii; necesarul de parcaje va fi dimensionat conform cerințelor tehnice specifice funcțiunii.

Se propune înființarea unui drum de acces nou din DN 39, drum asfaltat cu o ampriză de 11 m, care va fi construit de investitor.

Reglementări urbanistice: În zona de echipamente tehnico -edilitare (parcela A 289/1a Lot 1, nr. cad. 109216, S= 85 000 mp) se va institui o perdea verde perimetrală (lățime 10 m) ca subzonă funcțională Spp. Se vor institui zonele de siguranță și de protecție în zona conductelor de gaze naturale conform legislației în vigoare: **20 ml** în zona de protecție – interdicție de construire, **200 ml** în zona de siguranță – obligativitatea obținerii avizului operatorului conductelor pentru orice autorizație de construire.

În urma ședinței Comisiei tehnice de amenajare a teritoriului și de urbanism din data de 20.11.2019 se avizează favorabil/cu condiții~~/nefavorabil~~ Planul urbanistic zonal și Regulamentul local de urbanism aferent acestuia: PLAN URBANISTIC ZONAL - ÎNFIINȚARE STAȚIE MĂSURARE GAZE NATURALE ȘI CENTRU DE CONTROL, REALIZARE DRUM ȘI TRASEU CONDUCTE SUBTERANE TRANSPORT GAZE NATURALE, EXTRAVILAN COMUNA TUZLA, JUD. CONSTANȚA, generat de imobilul- Teren în suprafata de 248.944,00 mp

AMPLASAMENT: terenuri identificate cu nr. cadastrale 109216, 104087, 104089, 104094, 101418, 104096, 101462, 104086, 101414, 104110, 104098, 104287, 109217, 100178, 100818, 102101, 102099, 108896, 107123, 105769, 107386, 101055, 108897, 106654, 107418, 102100, 107373, 102098, extravilan com. Tuzla, jud. Constanța, cu următoarele condiții:

Documentația se va completa cu avizul Comitetului Național al Zonei Costiere, iar condițiile/observațiile se vor prelua în documentația de urbanism (parte scrisă și parte desenată). Se va solicita avizul de amplasament S.N.T.G.N.TRANSGAZ S.A. Mediaș.

Se vor respecta condițiile/specificațiile menționate în avizele și acordurile obținute, iar în documentația de urbanism se vor introduce toate observațiile din avize/acorduri:

- se vor prelua în RLU aferent PUZ toate recomandările din Raportul de Mediu și se vor respecta obligațiile cf. prevederilor HG nr. 1076/2004 specificate în Aviz de mediu nr. 6/21.10.2019, emis de Agenția pentru protecția Mediului Constanța,
- se vor reprezenta pe planuri culoarele/zonele de protecție și siguranță ale conductelor de refulare ape uzate existente (Dn500mm OL și Dn250 mm OL) și se vor menționa în partea scrisă condițiile menționate în Avizul de amplasament nr. 404/6635/28.05.2018, eliberat de RAJA S.A. Constanța,
- se va întocmi planșa privind echiparea tehnico -edilitară a întregii zone studiate și reglementate în PUZ, cu reprezentarea rețelelor existente și a celor propuse,
- pe planșa de echipare tehnico - edilitară se vor reprezenta cablurile Tc existente, cf. Aviz condiționat nr. 674/03.06.2018, eliberat de S.C. TELEKOM ROMÂNIA COMMUNICATIONS S.A.,
- la următoarele etape ale realizării construcțiilor se vor avea în vedere condițiile specificate în Avizul nr.845/U/13.05.2019, emis de Direcția Județeană pentru Cultură Constanța, condițiile din Avizul Statului Major al Apărării nr. DT4266/22.06.2018, condițiile menționate în Avizul Ministerului Afacerilor Interne nr.

418352/01.11.2018, condiţiile Administraţiei Naţionale Apele Române, specificate în Avizul de gospodărire a apelor nr. 89/27.11.2018, revenirea pentru obţinerea avizului Autorităţii Aeronautică Civilă Română la faza A.C.,

- se vor respecta observaţiile menţionate în adresa Ministerului Dezvoltării Regionale şi Administraţiei Publice, nr. 52654/10.05.2018,

- se vor menţiona în documentaţie şi se vor respecta condiţiile şi precizările din avizul Sucursalei Regionale CF Constanţa nr. 7/2/2501/08.08.2019,

- se vor reprezenta, în partea scrisă şi partea desenată a PUZ-ului, propunerile avizate de Compania Naţională a Infrastructurii Rutiere S.A., respectiv varianta accesului prin intermediul unui sens giratoriu (conform documentaţiei vizată de administratorul drumului) menţionată în Documentul de avizare nr. 190702-3/02.07.2019 şi se vor respecta la următoarele faze de proiectare condiţiile menţionate,

- în cazul în care se vor propune lucrări pe terenuri care nu sunt proprietatea investitorului se va obţine acordul deţinatorilor terenurilor,

- după aprobarea Planului Urbanistic Zonal, prevederile acestuia se vor prelua în Planul Urbanistic General.

În conformitate cu prevederile Legii nr. 350/2001 (*actualizată*) privind amenajarea teritoriului si urbanismul: art. 47^1 (2) - *după aprobarea prin hotărârea consiliului local a PUG şi PUZ, primăriile sunt obligate să transmită hotărârea însoţită de documentaţia de aprobare a PUG şi PUZ către oficiul de cadastru şi publicitate imobiliară, în vederea actualizării din oficiu a destinaţiei imobilelor înregistrate în sistemul integrat de cadastru şi carte funciară; după aprobare, un exemplar al documentaţiei de urbanism, însoţit de hotărârea Consiliului Local, se înaintează Consiliului Judeţean Constanţa, în format electronic, pentru a fi transmis Ministerului Dezvoltării Regionale şi Administraţiei Publice în vederea preluării informaţiilor în Observatorul Teritorial Naţional,.*

Prezentul aviz este valabil numai împreună cu planşa de reglementări anexată şi vizată spre neschimbare. Elaboratorul şi beneficiarul P.U.Z. răspund pentru exactitatea datelor şi veridicitatea înscrisurilor cuprinse în P.U.Z. care face obiectul prezentului aviz, în conformitate cu art. 63 alin. (2) lit. g) din Legea nr. 350/2001 privind amenajarea teritoriului şi urbanismul, cu modificările şi completările ulterioare.
Prezentul aviz este un aviz tehnic şi poate fi folosit numai în scopul aprobării P.U.Z.
Proiectul pentru autorizaţia de construire (DTAC) se poate întocmi numai după aprobarea P.U.Z. şi cu obligativitatea respectării întocmai a prevederilor acestuia.
Prezentul aviz este valabil de la data emiterii sale pe toată durata de valabilitate a certificatului de urbanism nr. 4 din 19.01.2018, emis de Consiliul Judeţean Constanţa.

ARHITECT-ŞEF,

arh. Tănase Carmen Ioana

Appendix A. Regulatory documents issued by authorities

3 - NAMR address nr. 4382/08.04.2021 confirming the quality of holder of the oil agreement

AGENŢIA NAŢIONALĂ PENTRU RESURSE MINERALE

CABINET PREŞEDINTE

Nr. 4382
0 8 APR. 2021

Către: **ExxonMobil Exploration and Production Romania Limited**
fax: 031.860.7280
În atenția: Domnului Alin ȘTIRBU, Manager
Referitor la: Confirmare titular acord de concesiune pentru explorare, dezvoltare și exploatare petrolieră în perimetrul XIX Neptun, zona estică/mare adâncă

Urmarea adresei dv. nr.210407-1/07.04.2021, înregistrată la Agenția Națională pentru Resurse Minerale sub nr.4289/07.04.2021, prin prezenta, confirmăm faptul că actualul titular al Acordului de concesiune pentru explorare, dezvoltare și exploatare petrolieră în perimetrul XIX Neptun, aprobat prin H.G. nr.1233/2000, astfel cum acesta a fost modificat prin Actul adițional nr.1, aprobat prin H.G. nr.1928/2004, Actul adițional nr.2, aprobat prin H.G. nr.800/2011, Actul adițional nr.3, aprobat prin H.G. nr.551/2013, Actul adițional nr.4, aprobat prin H.G. nr.1003/2018, Actul adițional nr.5, aprobat prin H.G. nr.37/2019 în ceea ce privește zona estică/mare adâncă (zona A), este constituit din următoarele companii:

- ExxonMobill Exploration and Production Romania Limited, cotă participare 50%,
- OMV Petrom S.A., cotă participare 50%,

potrivit Ordinului Presedintelui A.N.R.M. nr.238/2008 privind transferul a 50% din drepturile dobândite și obligațiile asumate prin Acordul de concesiune pentru explorare, dezvoltare și exploatare petrolieră în perimetrul XIX Neptun, zona estică, de la Petrom S.A.

Operatorul desemnat de Titularul acordului de concesiune, ExxonMobill Exploration and Production Romania Limited împreună cu Petrom S.A., este compania ExxoMobil Exploration and Production Romania Limited, care are responsabilitatea de a executa operațiunile petroliere conform prevederilor contractuale din Acordul de concesiune pentru explorare, dezvoltare și exploatare petrolieră în perimetrul XIX Neptun, în conformitate cu Notificarea nr.2927/A.P./ 27.10.2011.

Prezentul document a fost eliberat pentru obținerea diverselor documente necesare autorizației de construire - Certificat de urbanism și alte avize subsecvente.

PREȘEDINTE,
Daniel Grigoroiu-Norocel

GUVERNUL ROMÂNIEI AGENȚIA NAȚIONALĂ PENTRU RESURSE MINERALE PREȘEDINTE

Bulevardul Dacia nr.59,010407, sector 1, București, România
Tel: +40213132204, Fax: +40213170780, namr@namr.ro
www.namr.ro

Appendix A. Regulatory documents issued by authorities

4 - ANANP decision no. 490 of 06.10.2021 regarding the approval of the Methodological Norms regarding the implementation of the conservation objectives from the Annex to Order no. 1433/2016 on the approval of the Management Plan and the Regulation of the Natura 2000 site ROSCI0273 Zona marina de la Capul Tuzla

GUVERNUL ROMÂNIEI
MINISTERUL MEDIULUI, APELOR ŞI PĂDURILOR
AGENŢIA NAŢIONALĂ PENTRU ARII NATURALE PROTEJATE

DECIZIE
Nr. 490 din 06.10.2021

privind aprobarea Normelor metodologice privind implementarea obiectivelor de conservare din Anexa la Ordinul nr. 1433/2016 privind aprobarea Planului de management şi a Regulamentului sitului Natura 2000 ROSCI0273 Zona marină de la Capul Tuzla

Având în vedere:

- Hotărârea Guvernului nr. 997/2016 privind organizarea şi funcţionarea Agenţiei Naţionale pentru Arii Naturale Protejate şi privind modificarea şi completarea anexei nr. 12 la Hotărârea Guvernului nr. 1705/2006 pentru aprobarea inventarului centralizat al bunurilor din domeniul public al statului;
- Legea nr. 95/2016 privind înfiinţarea Agenţiei Naţionale pentru Arii Naturale Protejate şi pentru modificarea Ordonanţei de urgenţă a Guvernului nr. 57/2007 privind regimul ariilor naturale protejate, conservarea habitatelor naturale, a florei şi faunei sălbatice, cu modificările şi completările ulterioare;
- Hotărârea nr. 867/2018 pentru modificarea şi completarea Hotărârii Guvernului nr. 997/2016 privind organizarea şi funcţionarea Agenţiei Naţionale pentru Arii Naturale Protejate şi privind modificarea şi completarea anexei nr. 12 la Hotărârea Guvernului nr. 1.705/2006 pentru aprobarea inventarului centralizat al bunurilor din domeniul public al statului;
- Referatul Serviciului Monitorizare Arii Naturale Protejate, Relatia cu Comunităţile Locale, Proceduri Certificare de Marcă, Parcuri, nr. 349/05.10.2021 privind aprobarea Normelor metodologice privind implementarea obiectivelor de conservare pentru situl ROSCI0273 Zona marină de la Capul Tuzladin Anexa la Ordinul nr. 1433/2016 privind aprobarea Planului de management şi a Regulamentului sitului Natura 2000 ROSCI0273 Zona marină de la Capul Tuzla.

În conformitate cu prevederile:

- Ordonanţei de urgenţă a Guvernului nr. 57/2007 privind regimul ariilor naturale protejate, conservarea habitatelor naturale, a florei şi faunei sălbatice, aprobată cu modificări şi completări prin Legea nr. 49/2011, cu modificările şi completările ulterioare;

În temeiul:

- Articolelor 16 - 21 din Ordonanţa de urgenţă a Guvernului nr. 57/2007 privind regimul ariilor naturale protejate, conservarea habitatelor naturale, a florei şi faunei sălbatice, aprobată cu modificări şi completări prin Legea nr. 49/2011, cu modificările şi completările ulterioare;
- Legii nr. 220/2019 privind modificarea şi completarea unor acte normative din domeniul protecţiei mediului;
- Art. 3 alin.(3) din Hotărârea Guvernului nr. 997/2016 privind organizarea şi funcţionarea Agenţiei Naţionale pentru Arii Naturale Protejate şi privind modificarea şi completarea anexei nr. 12 la Hotărârea Guvernului nr. 1705/2006 pentru aprobarea inventarului centralizat al bunurilor din domeniul public al statului,

În conformitate cu:

- Proiectul "Asistență pentru AM POIM în procesul de pregătire a proiectelor pentru asigurarea respectării prevederilor directivei 92/43/CEE privind conservarea habitatelor naturale și a speciilor de floră și faună sălbatice și a directivei 79/409/CEE privind conservarea păsărilor sălbatice", cod proiect 140564, beneficiar Ministerul Fondurilor Europene – Autoritatea de Management pentru Programul Operațional Infrastructură Mare, prin care a fost elaborată și asumată anexa privind aprobarea Normelor metodologice privind implementarea obiectivelor de conservare din Anexa la Ordinul nr. 1433/2016 privind aprobarea Planului de management și a Regulamentului sitului Natura 2000 ROSCI0273 Zona marină de la Capul Tuzla,

președintele Agenției Naționale pentru Arii Naturale Protejate emite prezenta:

DECIZIE

Art.1. Începând cu data prezentei decizii, se aprobă Normele metodologice privind implementarea obiectivelor de conservare pentru aria ROSCI0273 Zona marină de la Capul Tuzla din Anexa la Ordinul nr. 1433/2016 privind aprobarea Planului de management și a Regulamentului sitului Natura 2000 ROSCI0273 Zona marină de la Capul Tuzla, prevăzute în anexa1 care face parte integrantă din prezenta decizie.

Art.2. Aplicarea Normelor metodologice este responsabilitatea administratorilor ariilor naturale protejate care fac obiectul Ordinul nr. 1433/2016 privind aprobarea Planului de management și a Regulamentului sitului Natura 2000 ROSCI0273 Zona marină de la Capul Tuzla.

Art. 3. Prezenta decizie va fi comunicată personalului ANANP și administratorilor prevăzuți în art. 2 prin grija Serviciul Monitorizare Arii Naturale Protejate, Relația cu Comunitățile locale, Proceduri de Marcă, Parcuri.

Art. 4. Prezenta decizie are caracter obligatoriu și face obiectul evaluării anuale a activității.

Președinte,

Adi CROITORU

Anexa

Obiective de conservare specifice sitului

ROSCI0273 Zona marină de la Capul Tuzla

Zona marină de la Capul Tuzla, a fost declarată sit de importanță comunitară, având codul ROSCI0273, prin Ordinul ministrului mediului și pădurilor nr. 1964/2007 privind instituirea regimului de arie naturală protejată a siturilor de importanță comunitară, ca parte integrantă a rețelei ecologice europene Natura 2000 în România, cu modificările și completările ulterioare. Situl este amplasat în zona marină a Mării Negre, are o suprafață de 1.738 ha, și este situat la o distanță de 20 km sud de municipiul Constanța și 20 km nord de Mangalia. În situl Natura 2000 ROSCI0273 Zona marină de la Capul Tuzla, fundul stâncos recifal are cea mai mare extindere spre larg și cel mai variat și accidentat relief din sectorul românesc al Mării Negre. De aceea, aici se întâlnește cea mai diversă gamă de microhabitate de acest tip și în consecință, o faună și floră acvatică foarte diversă. Habitate și specii de interes comunitar prezente: 1110 Bancuri de nisip submerse de mică adâncime, 1140 Suprafețe de nisip și mâl descoperite la maree joasă, 1170 Recifi, 8330 Peșteri scufundate complet sau parțial, 4125 *Alosa immaculata*, 4127 *Alosa tanaica*, 1351 *Phocoena phocoena*, 1349 *Tursiops truncatus*.

Bibliografie:

Agenția Europeană de Mediu (EEA) 2021. Formularul standard al sitului ROSCI0273 Zona marină de la Capul Tuzla. URL: https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=ROSCI0273.

Mountford O., Gafta D., Anastasiu P., Bărbos M., Nicolin A., Niculescu M., Oprea A. 2008. NATURA 2000 in Romania. Habitat Fact Sheets. Implementation of Natura 2000 Network in Romania-EUPhare EuropeAid/12/12160/D/SV/RO.

Planul de management al sitului Natura 2000 ROSCI0273 Zona marină de la Capul Tuzla, din 11.07.2016. Publicat în Monitorul Oficial, Partea I nr. 712bis din 14 septembrie 2016.

Zaharia, T., Anton, E., Radu, G. 2013. Ghid sintetic de monitorizare pentru speciile marine și habitatele costiere și marine de interes comunitar din România. Ed. Boldaș.

1110 - Bancuri de nisip submerse de mică adâncime

Suprafața acestui tip de habitat în situl ROSCI0273 este de **450 ha** conform Formularului standard al sitului (planul de management nu menționează suprafața). Are o stare de conservare **favorabilă**. Obiectivul de conservare specific sitului pentru acest habitat este **menținerea stării de conservare favorabile,** definit prin următorii parametri și valori țintă:

Parametru	**Unitate de măsură**	**Valoarea țintă**	**Informații suplimentare**
Suprafață habitat Suprafață subtip 1110-3	Ha	Cel puțin 450	Habitatul este reprezentat de cinci subtipuri, conform descrierii planului de management, dar nu au fost cartate suprafețele specifice pentru fiecare. Subtipurile sunt următoarele: 1110-3 Nisipuri fine de mică adâncime;

Suprafață subtip 1110-4 Suprafață subtip 1110-5 Suprafață subtip 1110-6 Suprafață subtip 1110-9			1110-4 Nisipuri bine calibrate; 1110-5 Nisipuri grosiere și pietrișuri mărunte bătute de valuri; 1110-6 Galeți infralitorali; 1110-9 Nisipuri mâloase și mâluri nisipoase bioturbate de Upogebia.
Specii de nevertebrate caracteristice	Abundența specii / mp	Cel puțin 30	Conform Zaharia și colab. (2013), structura pe specii contribuie la definirea structurii biocenozelor marine. Speciile caracteristice sunt specii de moluște: Lentidium mediterraneum, Donax trunculus, Chamelea gallina, Mya arenaria, Anadara inaequivalvis, Cyclope neritea, Nassarius nitidus, Cerastoderma glaucum, Tellina tenuis, Loripes lacteus, Lucinella divaricata, Solen marginatus, respectiv crustacei: Polybius vernalis, Diogenes pugilator, Crangon crangon, Upogebia pusilla, Carcinus aestuarii, Xantho poressa. Valoarea actuală a parametrului va fi documentată în termen de 3 ani.
Specii indicatoare de perturbări	Prezență / absență	Absență	Speciile de alge verzi indică perturbări în structura habitatului sau schimbarea calității biotopului. Valoarea parametrului Trebuie documentat în termen de 3 ani.
Adâncimea apei	m	Cel puțin 0,5	Habitatul trebuie să fie permanent acoperit cu apă.
Starea ecologică a apei pe baza indicatorilor fizico-chimici	Calificativ stare ecologică	Cel puțin stare ecologică bună	Conform raportului național pe calitatea apelor, în zona costieră a Mării Negre, încărcarea organică determinată prin CCO-Mn si CBO5 și nutrientii au înregistrat valori ridicate în secțiunile cu impact antropic ridicat. Încărcarea organică: Valori mai mari s-au înregistrat numai în secțiunea Constanta Sud Dana 69 la țărm (4,75 – 76,68 mg O_2 / dm^3 CCO- Mn și 2,98 – 19,8 mg O_2 / dm^3 CBO5); Nutrienți Azot mineral total - Constanta Sud - Dana 69 la țărm (valoarea medie înregistrată a fost de 2,437 mg / dm^3); - Constanta Sud - Dana 78 la țărm (valoarea medie înregistrată a fost de 2,05 mg / dm^3); Fosfor total - Constanța Nord Pescărie la țărm (valoarea medie înregistrată a fost de 0,20 mg /dm^3); Dintre metalele grele analizate, mercurul a fost prezent în aproape toate secțiunile de monitoring și a înregistrat valori ridicate. Trebuie analizate și încorporate datele din sistemul de monitorizare a stării ecologice a corpurilor de apă la nivel de sit în termen de 1 an.

Starea ecologică a apei pe baza indicatorilor ecologici	Calificativ stare ecologică	Cel puţin stare ecologică bună	Analiza cantitativă a fitoplanctonului a evidenţiat cea mai ridicată valoare a biomasei fitoplanctonice 305,67 mg/dm3 la izobata de 5 m in secţiunea Fertilchim Năvodari. - Analiza cantitativă a macronevertebratelor a evidenţiat valori asemănătoare ale densităţii taxonilor în toate secţiunile monitorizate cuprinse între 709 – 996 ex/m^2. Analiza valorilor indicelui Shannon - Wiener a evidenţiat valori scăzute în următoarele secţiuni: - Fertilchim Năvodari la ţărm 1,81 si izobata 5 m 1,76; - Constanta Nord ţărm 1,62; - Avanport Mangalia ţărm 1,89. În celelalte secţiuni monitorizate indicele Shannon – Wiener a înregistrat valori cuprinse între 2,29 – 2,68. Trebuie analizate şi încorporate datele din sistemul de monitorizare a stării ecologice a corpurilor de apă la nivel de sit în termen de 1 an.

1140 - Suprafețe de nisip și mâl descoperite la maree joasă

Conform Planului de management, până de curând habitatul **1140** avea în sit o mare valoare conservativă datorită existenței litoralului stâncos natural, care nu este prezent în România decât în câteva puncte: Agigea, Tuzla, Costinești, Vama Veche. Din păcate acesta a fost complet distrus în zona Tuzla în anii 2010 și 2011 prin lucrări hidrotehnice de protecție costieră. Pe de altă parte, Planul de management susține că starea de conservare este favorabilă. Formularul standard actualizat în 2020 prevede aici existența unei suprafețe de **2 ha** a habitatului. Prezența habitatului trebuie verificat în termen de 1 an, iar pe baza rezultatelor, va fi formulat obiectiv de conservare pentru acest tip de habitat.

1170 - Recifi

Suprafața habitatului în situl ROSCI0273 este de **1285 ha** conform Formularului standard al sitului (planul de management nu menționează suprafața integrală, numai a subtipului **1170-9**). Starea de conservare este **favorabilă**, conform informațiilor din Planul de management. Obiectivul de conservare specific sitului pentru acest tip de habitat este **menținerea stării de conservare,** definit prin următorii parametri și valori țintă:

Parametru	**Unitate de măsură**	**Valoare țintă**	**Informații suplimentare**
Suprafață habitat	ha	Cel puțin 1285	Habitatul este reprezentat de șapte subtipuri: 1170-2 Recifi biogeni de *Mytilus galloprovincialis*; 1170-4 Aglomerări de stânci și bolovani - conform planului de management prezente în sit doar sub formă artificială (diguri); 1170- 5 Stâncă supralitorală - situată deasupra nivelului mării și este umezită de stropii valurilor sau udată în timpul furtunilor, 1170-6 Stâncă mediolitorală superioară - situată în partea superioară a zonei de spargere a valurilor și nu este acoperită permanent de apă, 1170-7 Stâncă mediolitorală inferioară - situată în partea inferioară a zonei de spargere a valurilor,

			1170-8 Stâncă infralitorală cu alge fotofile - centurile de *Cystoseira*, au o distribuție fragmentară, una din puținele fragmente rămase este la Mangalia, conform planului de management; 1170-9 Stâncă circalitorală cu *Mytilus galloprovincialis* - acoperă fundul stâncos, sunt prezente și în habitatul anterior, dar devin dominante începând de la limita inferioară a acestuia, continuând ca un covor compact până la limita inferioară a distribuției substratului stâncos, 30-35 metri adâncime.
Suprafața subtipurilor de habitat Suprafața subtip 1110-9	Ha ha	Trebuie definită în termen de 3 ani Cel puțin 586,23	Nu sunt disponibile informații cu privire la suprafața subtipurilor, numai pentru subtipul 111-9. Pentru aceasta din urmă, planul recomandă valori limită pentru stare de conservare favorabilă, precum: Acoperirea cu *Mytilus* în interiorul habitatului peste 80%, Dimensiunea mediană a exemplarelor de *Mytilus galloprovincialis*, lungimea cochiliei peste 50 mm, Biomasa vie a *Mytilus galloprovincialis* peste 7000 g/mp, Frecvența decapoduluii *Eriphia verrucosa* în patrate de 1 mp peste 30%.
Integritatea spațială a habitatului / conectivitate	număr fragmente	Cel mult 2	Nu sunt disponibile date despre fragmentarea habitatului în sit, dar în general starea de conservare favorabilă este asigurată de continuitatea habitatelor. Trebuie documentat în termen de 3 ani.
Prezența speciilor indicatoare de perturbări	prezență/ absență	0	Astfel de specii pot fi (conform Mountford și colab. 2008): *Ulva* sp., *Enteromopha* sp., *Cladophora* sp. Valoarea parametrului Trebuie documentat în termen de 3 ani.
Starea ecologică a apei pe baza indicatorilor fizico-chimici	Calificativ stare ecologică	Cel puțin stare ecologică bună	Conform raportului național pe calitatea apelor, în zona costieră a Mării Negre, încărcarea organică determinată prin CCO-Mn si CBO5 și nutrientii au înregistrat valori ridicate în secțiunile cu impact antropic ridicat. Încărcarea organică: Valori mai mari s-au înregistrat numai în secțiunea Constanta Sud Dana 69 la țărm (4,75 – 76,68 mg O_2 / dm^3 CCO- Mn și 2,98 – 19,8 mg O_2 / dm^3 CBO5); Nutrienți Azot mineral total - Constanta Sud - Dana 69 la țărm (valoarea medie înregistrată a fost de 2,437 mg / dm^3); - Constanta Sud - Dana 78 la țărm (valoarea medie înregistrată a fost de 2,05 mg / dm^3); Fosfor total - Constanța Nord Pescărie la țărm (valoarea medie înregistrată a fost de 0,20 mg /dm^3); Dintre metalele grele analizate, mercurul a fost prezent în aproape toate secțiunile de monitoring și a înregistrat valori ridicate. Trebuie analizate și încorporate datele din sistemul de monitorizare a stării ecologice a corpurilor de apă la nivel de sit în termen de 1 an.

Starea ecologică a apei pe baza indicatorilor ecologici	Calificativ stare ecologică	Cel puţin stare ecologică bună	Analiza cantitativă a fitoplanctonului a evidenţiat cea mai ridicată valoare a biomasei fitoplanctonice 305,67 mg/dm3 la izobata de 5 m in secţiunea Fertilchim Năvodari. - Analiza cantitativă a macronevertebratelor a evidenţiat valori asemănătoare ale densităţii taxonilor în toate secţiunile monitorizate cuprinse între 709 – 996 ex/m^2. Analiza valorilor indicelui Shannon - Wiener a evidenţiat valori scăzute în următoarele secţiuni: - Fertilchim Năvodari la ţărm 1,81 si izobata 5 m 1,76; - Constanta Nord ţărm 1,62; - Avanport Mangalia ţărm 1,89. În celelalte secţiuni monitorizate indicele Shannon – Wiener a înregistrat valori cuprinse între 2,29 – 2,68. Trebuie analizate şi încorporate datele din sistemul de monitorizare a stării ecologice a corpurilor de apă la nivel de sit în termen de 1 an.

8330 - Peşteri scufundate complet sau parţial

Habitatul constă din peşteri situate sub nivelul mării sau deschise spre mare, cel puţin în perioadele de maree înaltă, incluzând peşterile marine parţial submerse. Fundul şi pereţii laterali ai acestor peşteri adăpostesc comunităţi de nevertebrate marine şi de alge, comunităţi de alge roşii sciafile. Dintre speciile de alge roşii se remarcă *Hildebrandtia prototypus* şi *Phyllophora nervosa*. Fauna este dominată de spongieri, cnidari, briozoare, ascidii, crustacee myside şi decapode şi peşti cavernicoli. Planul de management al ROSCI0273 nu conţine informaţii cu privire la suprafaţa acestui tip de habitat, dar formularul standard actualizat menţionează suprafaţa de **0.7 ha**, şi un număr de 7 **peşteri**. Starea de conservare este **necunoscută** în Planul de management şi **bună** în Formularul standard actualizat. Astfel, obiectivul de conservare specific sitului pentru acest tip de habitat este **îmbunătăţirea sau menţinerea stării de conservare**, în funcţie de rezultatele investigaţiilor care vizează clarificarea stării de conservare, în termen **de 2 ani**, definit prin următorii parametri şi valori ţintă:

Parametru	**Unitate de măsură**	**Valoare ţintă**	**Informaţii suplimentare**
Suprafaţă habitat	ha	Cel puţin 0.7	Conform formularului standard actualizat, habitatul are o suprafaţă de 0.7 ha în ROSCI0273. Suprafaţa poate să scadă în mod natural prin eroziune / colmatare / surpare, sau în mod artificial prin modificarea fundului / malului mării sau ale falezelor, prin activităţi antropice. Pentru menţinerea stării de conservare a habitatului în sit, modificările artificiale prin activităţi antropice trebuie prevenite.
Număr peşteri	nr.	Cel puţin 7	Conform Formularului standard actualizat, habitatul include 7 peşteri în ROSCI0273. Numărul peşterilor poate să scadă în mod natural prin eroziune / colmatare / surpare, sau în mod artificial prin modificarea fundului / malului mării sau ale falezelor, prin activităţi antropice. Pentru menţinerea stării de conservare a habitatului în sit, modificările artificiale prin activităţi antropice trebuie prevenite.

Dimensiunile interne ale peșterilor	m	Trebuie definită în termen de 2 ani	Parametrul trebuie definit prin cartarea peșterilor submerse cunoscute din sit.
Număr specii în biocenozele caracteristice sitului	Număr specii	Trebuie definită în termen de 2 ani	Parametrul se poate stabili prin observații directe, atât pentru peșteri individuale, cât și la nivelul sitului.
Modelul spațial al biocenozelor caracteristice	Tipuri de biocenoze și distribuția lor în interiorul peșterilor individuale	Trebuie definită în termen de 2 ani	Distribuția spațială a biocenozelor în interiorul unei peșteri este de obicei un răspuns la condițiile fizice dominante și la structura / morfologia peșterii.
Densitatea populației de *Halichondria panicea* în habitat	Număr colonie / m2	Cel puțin 1	Valoarea țintă indicată în planul de management ROSCI0273 Zona marină de la Capul Tuzla este de cel puțin 1 colonie / m2.
Frecvența *Hemimysis serrata* în grote	%	Cel puțin 80	Valoarea țintă indicată în planul de management ROSCI0273 Zona marină de la Capul Tuzla este de cel puțin 80%.
Starea ecologică a apei pe baza indicatorilor fizico-chimici	Calificativ stare ecologică	Cel puțin stare ecologică bună	Conform raportului național pe calitatea apelor, în zona costieră a Mării Negre, încărcarea organică determinată prin CCO-Mn si CBO5 și nutrientii au înregistrat valori ridicate în secțiunile cu impact antropic ridicat. Încărcarea organică: Valori mai mari s-au înregistrat numai în secțiunea Constanta Sud Dana 69 la țărm (4,75 – 76,68 mg O_2 / dm^3 CCO- Mn și 2,98 – 19,8 mg O_2 / dm^3 CBO5); Nutrienți Azot mineral total - Constanta Sud - Dana 69 la țărm (valoarea medie înregistrată a fost de 2,437 mg / dm^3); - Constanta Sud - Dana 78 la țărm (valoarea medie înregistrată a fost de 2,05 mg / dm^3); Fosfor total - Constanța Nord Pescărie la țărm (valoarea medie înregistrată a fost de 0,20 mg /dm^3); Dintre metalele grele analizate, mercurul a fost prezent în aproape toate secțiunile de monitoring și a înregistrat valori ridicate. Trebuie analizate și încorporate datele din sistemul de monitorizare a stării ecologice a corpurilor de apă la nivel de sit în termen de 1 an.
Starea ecologică a apei pe baza indicatorilor ecologici	Calificativ stare ecologică	Cel puțin stare ecologică bună	Analiza cantitativă a fitoplanctonului a evidențiat cea mai ridicată valoare a biomasei fitoplanctonice 305,67 mg/dm3 la izobata de 5 m in secțiunea Fertilchim Năvodari. - Analiza cantitativă a macronevertebratelor a evidențiat valori asemănătoare ale densității taxonilor în toate secțiunile monitorizate cuprinse între 709 – 996 ex/m^2. Analiza valorilor indicelui Shannon - Wiener a evidențiat valori scăzute în următoarele

			secţiuni: - Fertilchim Năvodari la ţărm 1,81 si izobata 5 m 1,76; - Constanta Nord ţărm 1,62; - Avanport Mangalia ţărm 1,89. În celelalte secţiuni monitorizate indicele Shannon – Wiener a înregistrat valori cuprinse între 2,29 – 2,68. Trebuie analizate şi încorporate datele din sistemul de monitorizare a stării ecologice a corpurilor de apă la nivel de sit în termen de 1 an.

4125 - *Alosa immaculata* (Scrumbie de Dunăre)

Conform Planului de management starea de conservare a speciei a fost evaluată ca **fiind favorabilă**. Obiectivul de conservare la nivel de sit pentru această specie este **menţinerea stării de conservare**, definit prin următorii parametri şi valori ţintă:

Parametru	**Unitate de măsură**	**Valoare ţintă**	**Informaţii suplimentare**
Mărime populaţie	Număr indivizi	Trebuie definită în termen de 3 ani	Conform Planului de management datele au fost colectate în perioada de primăvară, când exemplarele în vârstă de 4-6 ani predominau capturile, ceea ce indică folosirea sitului ca zonă de tranzit pentru efectuarea migraţiei.
Compoziţia pe clase de vârstă a populaţiei	Prezenţa juvenililor în captură la pescuitul ştiinţific cu năvodul de plajă (indivizi / toană)	Cel puţin 3	Prezenţa juvenililor în captură la pescuitul ştiinţific cu năvodul de plajă: ≥ 3 indivizi / toană.
Suprafaţa habitatului adecvat speciei	ha	Trebuie definită în termen de 3 ani	Conform Planului de management suprafaţa habitatului este suficient de mare, şi stabilă sau în creştere, şi calitatea habitatului este adecvată pentru supravieţuirea pe termen lung a speciei.
Specii de peşti invazive / alohtone	Prezenţă / absenţă Abundenţă	Absenţă 0	Conform Planului de management nu au fost identificate specii invazive/alohtone de peşti.
Starea ecologică a corpului de apă pe baza indicatorilor fizico-chimici	Calificativ stare ecologică	Cel puţin stare ecologică bună	Conform raportului naţional pe calitatea apelor, în zona costieră a Mării Negre, încărcarea organică determinată prin CCO-Mn si CBO5 şi nutrientii au înregistrat valori ridicate în secţiunile cu impact antropic ridicat. Încărcarea organică: Valori mai mari s-au înregistrat numai în secţiunea Constanta Sud Dana 69 la ţărm (4,75 – 76,68 mg O_2 / dm^3 CCO- Mn

			și 2,98 – 19,8 mg O_2 / dm^3 CBO5); Nutrienți Azot mineral total - Constanta Sud - Dana 69 la țărm (valoarea medie înregistrată a fost de 2,437 mg / dm^3); - Constanta Sud - Dana 78 la țărm (valoarea medie înregistrată a fost de 2,05 mg / dm^3); Fosfor total - Constanța Nord Pescărie la țărm (valoarea medie înregistrată a fost de 0,20 mg /dm^3); Dintre metalele grele analizate, mercurul a fost prezent în aproape toate secțiunile de monitoring și a înregistrat valori ridicate. Trebuie analizate și încorporate datele din sistemul de monitorizare a stării ecologice a corpurilor de apă la nivel de sit în termen de 1 an.
Starea ecologică a corpului de apă pe baza indicatorilor ecologici	Calificativ stare ecologică	Cel puțin stare ecologică bună	Analiza cantitativă a fitoplanctonului a evidențiat cea mai ridicată valoare a biomasei fitoplanctonice 305,67 mg/dm3 la izobata de 5 m in secțiunea Fertilchim Năvodari. - Analiza cantitativă a macronevertebratelor a evidențiat valori asemănătoare ale densității taxonilor în toate secțiunile monitorizate cuprinse între 709 – 996 ex/m^2. Analiza valorilor indicelui Shannon - Wiener a evidențiat valori scăzute în următoarele secțiuni: - Fertilchim Năvodari la țărm 1,81 si izobata 5 m 1,76; - Constanta Nord țărm 1,62; - Avanport Mangalia țărm 1,89. În celelalte secțiuni monitorizate indicele Shannon – Wiener a înregistrat valori cuprinse între 2,29 – 2,68. Trebuie analizate și încorporate datele din sistemul de monitorizare a stării ecologice a corpurilor de apă la nivel de sit în termen de 1 an.

4127 - *Alosa tanaica* (Rizeafcă)

Conform Planului de management, starea de conservare a speciei a fost evaluată **ca fiind favorabilă**. Obiectivul de conservare la nivel de sit pentru această specie este **menținerea stării de conservare**, definit prin următorii parametri și valori țintă:

Parametru	**Unitate de măsură**	**Valoare țintă**	**Informații suplimentare**
Mărime populație	Număr indivizi	Trebuie definită în termen de 3 ani	Conform Planului de management specia este prezentă în tot lungul coastei Mării Negre pentru cea mai mare parte a anului.
Densitate populație	Număr indiviz i /100 m^2	Trebuie definită în termen de 3 ani	Nu sunt disponibile informații legate de acest parametru. Valoarea țintă pentru acest parametru trebuie definită pe baza unor studii din teren în termen de trei ani.
Compoziția pe clase de vârstă a populației	Prezența juvenililor în captură la pescuitul științific cu năvodul de	Cel puțin 3	Prezența juvenililor în captură la pescuitul științific cu năvodul de plajă: ≥ 3 indivizi / toană.

	plajă (indivizi / toană)		
Suprafața habitatului	ha	Trebuie definită în termen de 3 ani	Conform Planului de management suprafața habitatului este suficient de mare, și stabilă sau în creștere, și calitatea habitatului este adecvată pentru supraviețuirea pe termen lung a speciei.
Specii de pești invazive / alohtone	Prezență / absență Abundență	Absență 0	Conform Planului de management nu au fost identificate specii invazive/alohtone de pești.
Starea ecologică a corpului de apă pe baza indicatorilor fizico-chimici	Calificativ stare ecologică	Cel puțin stare ecologică bună	Conform raportului național pe calitatea apelor, în zona costieră a Mării Negre, încărcarea organică determinată prin CCO-Mn si CBO5 și nutrientii au înregistrat valori ridicate în secțiunile cu impact antropic ridicat. Încărcarea organică: Valori mai mari s-au înregistrat numai în secțiunea Constanta Sud Dana 69 la țărm (4,75 – 76,68 mg O_2 / dm^3 CCO- Mn și 2,98 – 19,8 mg O_2 / dm^3 CBO5); Nutrienți Azot mineral total - Constanta Sud - Dana 69 la țărm (valoarea medie înregistrată a fost de 2,437 mg / dm^3); - Constanta Sud - Dana 78 la țărm (valoarea medie înregistrată a fost de 2,05 mg / dm^3); Fosfor total - Constanța Nord Pescărie la țărm (valoarea medie înregistrată a fost de 0,20 mg /dm^3); Dintre metalele grele analizate, mercurul a fost prezent în aproape toate secțiunile de monitoring și a înregistrat valori ridicate. Trebuie analizate și încorporate datele din sistemul de monitorizare a stării ecologice a corpurilor de apă la nivel de sit în termen de 1 an.
Starea ecologică a corpului de apă pe baza indicatorilor ecologici	Calificativ stare ecologică	Cel puțin stare ecologică bună	Analiza cantitativă a fitoplanctonului a evidențiat cea mai ridicată valoare a biomasei fitoplanctonice 305,67 mg/dm3 la izobata de 5 m in secțiunea Fertilchim Năvodari. - Analiza cantitativă a macronevertebratelor a evidențiat valori asemănătoare ale densității taxonilor în toate secțiunile monitorizate cuprinse între 709 – 996 ex/m^2. Analiza valorilor indicelui Shannon - Wiener a evidențiat valori scăzute în următoarele secțiuni: - Fertilchim Năvodari la țărm 1,81 si izobata 5 m 1,76; - Constanta Nord țărm 1,62; - Avanport Mangalia țărm 1,89. În celelalte secțiuni monitorizate indicele Shannon – Wiener a înregistrat valori cuprinse între 2,29 – 2,68. Trebuie analizate și încorporate datele din sistemul de monitorizare a stării ecologice a corpurilor de apă la nivel de sit în termen de 1 an.

1349 - *Tursiops truncatus* (Afalin)

Afalinul este prezent în zona marină românească în sezonul cald, pe toată suprafața platoului continental. **Pătrunde și în Dunăre**. Prezent în toate siturile, se deplasează în grupuri familiale de 4-**6 indivizi**. Este cel mai sociabil față de om și cel mai des observat. În ROSCI0273 specia utilizează zona ca loc de pasaj și hrănire, fiind observate **5-20 de exemplare** pe parcursul sezoanelor primăvară, vară, toamnă în perioada 2007-2010. Specia utilizează atât zona de mal, cât și zona de larg, efectiv întreaga suprafață a sitului. Poate si observată și în incintele porturilor, uneori în dreptul porților de ecluzare din mare în canalele care fac legătura cu Dunărea. În urmărirea hranei nu ezită să pătrundă și în zonele poluate din incinta și raza porturilor sau a platformelor petroliere. Suprafața habitatului din sit este suficient de mare, dar calitatea habitatului este afectată de impactul generat de activități antropice. În Planul de management starea de conservare s speciei a fost evaluată ca fiind **nefavorabilă - neadecvată**. Obiectivul de conservare specific sitului pentru această specie este **îmbunătățirea stării de conservare**, definit prin următorii parametri și valori țintă:

Parametru	**Unitate de măsură**	**Valoare țintă**	**Informații suplimentare**
Mărimea populației	Număr indivizi	Cel puțin 20	În ROSCI0273 specia utilizează zona ca loc de pasaj și hrănire, fiind observate 5-20 de exemplare pe parcursul sezoanelor primăvară, vară, toamnă în perioada 2007-2010. Mărimea populației se poate estima prin numărare, foto-identificare, capturi accidentale și eșuări.
Tendința mărimii populației	Tendința unităților de reproducere	Stabilă sau în creștere	Pentru documentarea acestui parametru trebuie introdus un program de monitorizare a speciei în sit.
Structura populației	Structura pe clase de vârstă	Prezența tuturor generațiilor	Pe baza aprecierii vizuale în mod arbitrar, cu clasele de vârstă: nou născut (N), pui (P), tânăr (T), adult (A). Exemplu: 12A2T1P1N - 12 adulți, 2 tineri, 1 pui, 1 nou născut. De stabilit în termen de 2 ani.
Suprafața habitatului	Ha	Cel puțin 4.900	Specia utilizează atât zona de mal, cât și zona de larg, efectiv întreaga suprafață a sitului. Poate si observată și în incintele porturilor, uneori în dreptul porților de ecluzare din mare în canalele care fac legătura cu Dunărea. În urmărirea hranei nu ezită să pătrundă și în zonele poluate din incinta și raza porturilor sau a platformelor petroliere.
Tipar de distribuție	Tipar spațial și temporal, intensitatea utilizării habitatelor	Fără scădere semnificativă a tiparului spațial, temporal sau a intensității utilizării habitatelor altele decât cele rezultate din variații naturale	Trebuie introdus un program de monitorizare în termen de 2 ani.

Mărimea și diversitatea speciilor pradă	Număr specii de pești Abundență specii de pești	Trebuie definită în termen de 2 ani	Trebuie introdus un program de monitorizare a populației de pradă, în termen de 2 ani.
Starea ecologică a apei pe baza indicatorilor fizico-chimici	Calificativ stare ecologică	Cel puțin stare ecologică bună	Trebuie analizate și în corporate datele din sistemul de monitorizare a stării ecologice a corpurilor de apă din România, în termen de 1 an.
Starea ecologică a apei pe baza indicatorilor ecologici	Calificativ stare ecologică	Cel puțim stare ecologică bună	Trebuie analizate și în corporate datele din sistemul de monitorizare a stării ecologice a corpurilor de apă din România, în termen de 1 an.

1351 - *Phocoena phocoena* (Marsuin)

Marsuinul este o specie neritică, care pătrunde și în Dunăre și în lagune. În România populațiile sunt concentrate în apropierea coastei, unde hrana este mai abundentă și accesibilă. Uneori este capturat accidental în plase de calcan. La apropierea iernii migrează înspre zonele de iernare din Georgia și Turcia. În ROSCI0273 specia utilizează zona ca loc de pasaj și hrănire, fiind observate **5-20** de **exemplare** pe parcursul sezoanelor primăvară, vară, toamnă în perioada 2007-2010. Specia utilizează atât zona de mal, cât și zona de larg, efectiv întreaga suprafață a sitului. Poate si observată și **în incintele porturilor,** uneori în dreptul porților de ecluzare din mare în canalele care fac legătura cu Dunărea. În urmărirea hranei nu ezită să pătrundă și în zonele poluate din incinta și raza porturilor sau a platformelor petroliere. Suprafața habitatului din sit este suficient de mare, dar calitatea habitatului este afectată de impactul generat de activități antropice. În Planul de management starea de conservare a speciei a fost evaluată ca fiind **nefavorabil - grav**. Obiectivul de conservare la nivel de sit pentru această specie este **îmbunătățirea stării de conservare**, definită prin următorii parametri și valori țintă:

Parametru	**Unitate de măsură**	**Valoarea țintă**	**Informații suplimentare**
Mărime populație	Număr indivizi	Cel puțin 20	În ROSCI0273 specia utilizează zona ca loc de pasaj și hrănire, fiind observate 5-20 de exemplare pe parcursul sezoanelor primăvară, vară, toamnă în perioada 2007-2010. Mărimea populației se poate estima prin numărare, foto-identificare, capturi accidentale și eșuări.
Tendința mărimii populației	Tendința unităților de reproducere	Stabilă sau în creștere	Pentru documentarea acestui parametru trebuie introdus un program de monitorizare a speciei în sit.
Structura populației	Structura pe vârste	Prezența tuturor generațiilor	Pe baza aprecierii vizuale în mod arbitrar, cu clasele de vârstă: nou născut (N), pui (P), tânăr (T), adult (A). Exemplu: 12A2T1P1N - 12 adulți, 2 tânăr, 1 pui, 1 nou născut.

Suprafața habitatului	Ha	Cel puțin 4.900	Specia utilizează atât zona de mal, cât și zona de larg, efectiv întreaga suprafață a sitului. Poate si observată și în incintele porturilor, uneori în dreptul porților de ecluzare din mare în canalele care fac legătura cu Dunărea. În urmărirea hranei nu ezită să pătrundă și în zonele poluate din incinta și raza porturilor sau a platformelor petroliere.
Tipar de distribuție	Tipar spațial și temporal, intensitatea utilizării habitatelor	Fără scădere semnificativă a tiparului spațial, temporal sau a intensității utilizării habitatelor altele decât cele rezultate din variații naturale	Trebuie introdus un program de monitorizare în termen de 2 ani.
Mărimea și diversitatea speciilor pradă	Număr specii de pești Abundență specii de pești	Trebuie definită în termen de 2 ani	Trebuie introdus un program de monitorizare a populației de pradă, în termen de 2 ani.
Starea ecologică a apei pe baza indicatorilor fizico-chimici	Calificativ stare ecologică	Cel puțin stare ecologică bună	Trebuie analizate și în corporate datele din sistemul de monitorizare a stării ecologice a corpurilor de apă din România, în termen de 1 an.
Starea ecologică a apei pe baza indicatorilor ecologici	Calificativ stare ecologică	Cel puțin stare ecologică bună	Trebuie analizate și în corporate datele din sistemul de monitorizare a stării ecologice a corpurilor de apă din România, în termen de 1 an.

Appendix A. Regulatory documents issued by authorities

5 - ANANP decision no. 535 of 05.11.2021 regarding the approval of the Methodological Norms regarding the implementation of the conservation objectives from the Annex to Order no. 1197/2016 on the approval of the Management Plan and the Regulation of the Natura 2000 site ROSPA0076 Marea Neagra

GUVERNUL ROMÂNIEI
MINISTERUL MEDIULUI, APELOR ŞI PĂDURILOR
AGENŢIA NAŢIONALĂ PENTRU ARII NATURALE PROTEJATE

DECIZIE
Nr. 535 din 05.11.2020

privind aprobarea Normelor metodologice privind implementarea obiectivelor de conservare din Anexa la Ordinul Ministrului Mediului şi Pădurilor nr. 1197/2016 privind aprobarea Planului de management şi a Regulamentului sitului Natura 2000 ROSPA0076 Marea Neagră

Având în vedere:

- Hotărârea Guvernului nr. 997/2016 privind organizarea şi funcţionarea Agenţiei Naţionale pentru Arii Naturale Protejate şi privind modificarea şi completarea anexei nr. 12 la Hotărârea Guvernului nr. 1705/2006 pentru aprobarea inventarului centralizat al bunurilor din domeniul public al statului;
- Legea nr. 95/2016 privind înfiinţarea Agenţiei Naţionale pentru Arii Naturale Protejate şi pentru modificarea Ordonanţei de urgenţă a Guvernului nr. 57/2007 privind regimul ariilor naturale protejate, conservarea habitatelor naturale, a florei şi faunei sălbatice, cu modificările şi completările ulterioare;
- Hotărârea nr. 867/2018 pentru modificarea şi completarea Hotărârii Guvernului nr. 997/2016 privind organizarea şi funcţionarea Agenţiei Naţionale pentru Arii Naturale Protejate şi privind modificarea şi completarea anexei nr. 12 la Hotărârea Guvernului nr. 1.705/2006 pentru aprobarea inventarului centralizat al bunurilor din domeniul public al statului;
- Referatul Serviciului Monitorizare Arii Naturale Protejate, Relatia cu Comunităţile Locale, Proceduri Certificare de Marcă, Parcuri, nr. 204/05.11.2020 privind aprobarea Normelor metodologice privind implementarea obiectivelor de conservare din Anexa la Ordinul Ministrului Mediului şi Pădurilor nr. 1197/2016 privind aprobarea Planului de management şi a Regulamentului sitului Natura 2000 **ROSPA0076 Marea Neagră**;
- Ordinul Ministrului Mediului şi Pădurilor nr. 1197/2016 privind aprobarea Planului de management şi a Regulamentului sitului Natura 2000 ROSPA0076 Marea Neagră;

În conformitate cu prevederile:

- Ordonanţei de urgenţă a Guvernului nr. 57/2007 privind regimul ariilor naturale protejate, conservarea habitatelor naturale, a florei şi faunei sălbatice, aprobată cu modificări şi completări prin Legea nr. 49/2011, cu modificările şi completările ulterioare;

În temeiul:

- Articolelor 16 - 21 din Ordonanţa de urgenţă a Guvernului nr. 57/2007 privind regimul ariilor naturale protejate, conservarea habitatelor naturale, a florei şi faunei sălbatice, aprobată cu modificări şi completări prin Legea nr. 49/2011, cu modificările şi completările ulterioare;
- Legii nr. 220/2019 privind modificarea şi completarea unor acte normative din domeniul protecţiei mediului;

- Art. 3 alin.(3) din Hotărârea Guvernului nr. 997/2016 privind organizarea şi funcţionarea Agenţiei Naţionale pentru Arii Naturale Protejate şi privind modificarea şi completarea anexei nr. 12 la Hotărârea Guvernului nr. 1705/2006 pentru aprobarea inventarului centralizat al bunurilor din domeniul public al statului,

președintele Agenției Naționale pentru Arii Naturale Protejate emite prezenta:

DECIZIE

Art.1. Începând cu data prezentei decizii, se aprobă Normele metodologice privind implementarea obiectivelor de conservare pentru aria naturală protejată ROSPA0076 Marea Neagră din Anexa la Ordinul Ministrului Mediului şi Pădurilor nr. 1197/2016 privind aprobarea Planului de management şi a Regulamentului sitului Natura 2000 ROSPA0076 Marea Neagră .

Art.2. Aplicarea Normelor metodologice este responsabilitatea administratorilor ariilor naturale protejate care fac obiectul Ordinului Ministrului Mediului şi Pădurilor nr. 1197/2016 privind aprobarea Planului de management şi a Regulamentului sitului Natura 2000 ROSPA0076 Marea Neagră.

Art. 3. Prezenta decizie va fi comunicată personalului ANANP şi administratorilor prevăzuți în art. 2 prin grija Serviciul Monitorizare Arii Naturale Protejate, Relaţia cu Comunităţile locale, Proceduri de Marcă, Parcuri.

Art. 4. Prezenta decizie are caracter obligatoriu şi face obiectul evaluării anuale a activității.

Președinte,

Adi CROITORU

Obiective de conservare specifice pentru situl ROSPA0076 Marea Neagră

Situl Natura 2000 ROSPA0076 Marea Neagră se poziționează de-a lungul țărmului Mării Negre cu unele întreruperi în zonele cu desfășurare de activități economice, industriale și de transport și se învecinează cu teritoriul administrativ a două județe, și anume: Constanța și Tulcea.
Întinderea Sitului Natura 2000 ROSPA0076 Marea Neagră este spre est de linia de demarcare a țărmului în largul Mării Negre până la izobata de 22 de metri. Valoarea de suprapunere a sitului Natura 2000 ROSPA0076 Marea Neagră cu UAT-urile din zonă este 0. Tipul de utilizare a terenului din cadrul sitului Natura 2000, ROSPA0076 Marea Neagră, este unul singur, respectiv CLC 523 Zone marine, insule maritime.
ROSPA0076 Marea Neagră se suprapune cu rețeaua de SCI-uri marine: ROSCI0269 Vama Veche - 2 Mai, ROSCI0094 Izvoarele sulfuroase submarine de la Mangalia, ROSCI0197 Plaja submersă Eforie Nord - Eforie Sud, ROSCI0273 Zona marină de la Capul Tuzla, ROSCI0237 Structurile submarine metanogene de la Sfântu Gheorghe, ROSCI0066 Rezervația Biosferei Delta Dunării - zona marină, ROSCI0281 Cap Aurora și ROSC10293 Costinești - 23 August.
În aria de protecție specială avifaunistică ROSPA0076 Marea Neagră **sunt 18 specii din Anexa I a Directivei Păsări** care sunt strict protejate: A464 Puffinus yelkouan, A020 Pelecanus crispus, A177 Larus minutus, A191 Sterna sandvicensis, A396 Branta ruficollis, A197 Chlidonias niger, A189 Gelochelidon nilotica, A170 Phalaropus lobatus, A195 Sterna albifrons, A196 Chlidonias hybridus, A038 Cygnus Cygnus, A002 Gavia arctica, A001 Gavia stellate, A180 Larus genei, A176 Larus melanocephalus, A068 Mergus albellus, A190 Sterna caspia, A193 Sterna hirundo și **alte specii cu migrație regulată nemenționate în Anexa I a Directivei Păsări**, după cum urmează: A008 Podiceps nigricollis, A017 Phalacrocorax carbo, A061 Aythya fuligula, A125 Fulica atra, A050 Anas Penelope, A053 Anas platyrhynchos, A051 Anas strepera, A183 Larus fuscus, A179 Larus ridibundus, A070 Mergus merganser, A069 Mergus serrator, A005 Podiceps cristatus, A059 Aythya farina, A067 Bucephala clangula, A459 Larus cachinnans, A182 Larus canus, A006 Podiceps grisegena, A004 Tachybaptus ruficollis, A156 Limosa limosa.
În perioada de migrație situl găzduiește mai mult de 20.000 de exemplare de păsări de baltă, fiind un posibil canditat ca sit RAMSAR.
Aceste specii care au găsit habitate potrivite pentru hrănire, repaos, adăpost, reproducere și creșterea puilor, au stat la baza declarării sitului Sitului Natura 2000 ROSPA0076 Marea Neagră.
La elaborarea acestor obiective de conservare a diversității biologice, a habitatelor naturale, a florei și faunei sălbatice, de siguranță a populației și investițiilor din situl de importanță comunitară ROSPA0076 Marea Neagră, s-au avut în vedere valorile suprafețelor și datele oferite de Planul de management aprobat prin Ordin MMAP nr. 1643/2016, care însă pot fi actualizate pe măsură ce se vor efectua și alte cercetări.

- **Specii de păsări enumerate în anexa I la Directiva Consiliului 2009/147/EC**

A396 Branta ruficollis (gâsca cu gât roșu)

Prezența acestei specii în ROSPA0076 Marea Neagră este de **200 - 300 indivizi în pasaj** conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este **menținerea stării de conservare** și este definit de următorii parametri și valori țintă:

Parametru	**Unitatea de măsură**	**Valoare țintă**	**Informații suplimentare**
Mărimea populației de pasaj	Număr indivizi	Cel puțin 250	Populație aflată în pasaj care utilizează Situl Natura 2000 ROSPA0076 Marea Neagră pentru odihnă și/sau hrănire, conform datelor din planul de management al ROSPA0076 Marea Neagră.

Suprafața luciului de apă	ha	31100	Conform datelor din planul de management al ROSPA0076 Marea Neagră.
Suprafața habitatului de hrănire	ha	Specifică sitului	Conform datelor din planul de management al ROSPA0076 Marea Neagră. Conform ecologiei speciei acesta este format și din terenurilor agricole limitrofe luciului de apă.

A196 Chlidonias hybridus (chirighița cu obraz alb)

Prezența acestei specii în ROSPA0076 Marea Neagră este de **4000 - 5000 indivizi în pasaj** conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este **menținerea stării de conservare** și este definit de următorii parametri și valori țintă:

Parametru	**Unitatea de măsură**	**Valoare țintă**	**Informații suplimentare**
Mărimea populației de pasaj	indivizi	Cel puțin 4500	Populație nerezidentă de pasaj (care utilizează aria naturală protejată pentru odihnă și hrănire). Conform datelor din planul de management al ROSPA0076 Marea Neagră .
Suprafața habitatului de hrănire și odihnă	Ha	40500	Conform datelor din planul de management al ROSPA0076 Marea Neagră
Calitatea apei pe baza indicatorilor fizico-chimici (regimul de oxigen, nutrienți, salinitate, metale, micro-poluanți organici și inorganici)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)
Calitatea apei pe baza indicatorilor ecologici (macronevertebrate, fitobentos, fitoplancton)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)

A197 Chlidonias niger (chirighița neagră)

Prezența acestei specii în ROSPA0076 Marea Neagră este de **120-140 indivizi în pasaj** conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este ***menținerea stării de conservare*** și este definit de următorii parametri și valori țintă:

Parametru	**Unitatea de măsură**	**Valoare țintă**	**Informații suplimentare**
Mărimea populației de pasaj	Număr perechi	Cel puțin 130	Populație nerezidentă de pasaj (care utilizează aria naturală protejată pentru odihnă și hrănire). Conform datelor din planul de management al ROSPA0076 Marea Neagră .
Suprafața habitatului de hrănire și odihnă	Ha	95000	Conform datelor din planul de management al ROSPA0076 Marea Neagră

Calitatea apei pe baza indicatorilor fizico-chimici (regimul de oxigen, nutrienţi, salinitate, metale, micro-poluanţi organici şi inorganici)	Clasa de calitate a apei	Cel puţin clasa de calitate 2 pentru toţi indicatorii	Conform parametrilor folosiţi în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)
Calitatea apei pe baza indicatorilor ecologici (macronevertebrate, fitobentos, fitoplancton)	Clasa de calitate a apei	Cel puţin clasa de calitate 2 pentru toţi indicatorii	Conform parametrilor folosiţi în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)

A038 Cygnus cygnus (lebădă de iarnă)

Prezenţa acestei specii în ROSPA0076 Marea Neagră este de **1000-1500 indivizi la iernat** conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este **menţinerea stării de conservare** şi este definit de următorii parametri şi valori ţintă:

Parametru	**Unitatea de măsură**	**Valoare ţintă**	**Informaţii suplimentare**
Mărimea populaţiei la iernat	Număr indivizi	Cel puţin 1250	Populaţie nerezidentă care utilizează aria naturală protejată pentru iernat. Conform datelor din planul de management al ROSPA0076 Marea Neagră .Specia găseşte condiţii bune de hrană şi odihnă pe lacurile şi terenurile agricole din sit pe timpul iernii.
Suprafaţa luciului de apă	ha	62200	Specia găseşte condiţii bune de hrană şi odihnă pe lacurile şi terenurile agricole din sit pe timpul iernii. Conform datelor din planul de management al ROSPA0076 Marea Neagră
Suprafaţa habitatului de hrănire şi odihnă	ha	3251	Specia găseşte condiţii bune de hrană şi odihnă în zona marină, estuare şi lagune, dar şi pe terenurile agricole din vecinătatea sitului. Conform ecologiei speciei, aceasta se hrăneşte cu plante acvatice (inclusiv submerse) şi palustre, iarbă şi plante agricole (inclusiv seminţe), în special iarna.

A002 Gavia arctica (cufundar polar)

Prezenţa acestei specii în ROSPA0076 Marea Neagră este de **230-300 indivizi la iernat** conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este **menţinerea stării de conservare** şi este definit de următorii parametri şi valori ţintă:

Parametru	**Unitatea de măsură**	**Valoare ţintă**	**Informaţii suplimentare**
Mărimea populaţiei la iernat	Număr indivizi	Cel puţin 265	Populaţie nerezidentă care utilizează aria naturală protejată pentru iernat. Conform

			datelor din planul de management al ROSPA0076 Marea Neagră
Suprafaţa habitatului de hrănire şi odihnă	ha	105100	Suprafaţa adecvata a habitatului a fost estimata pe baza cerintelor speciei, utilizand metodologia GIS, conform datelor din planul de management al ROSPA0076 Marea Neagră.
Calitatea apei pe baza indicatorilor fizico-chimici (regimul de oxigen, nutrienţi, salinitate, metale, micro-poluanţi organici şi inorganici)	Clasa de calitate a apei	Cel puţin clasa de calitate 2 pentru toţi indicatorii	Conform parametrilor folosiţi în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)
Calitatea apei pe baza indicatorilor ecologici (macronevertebrate, fitobentos, fitoplancton)	Clasa de calitate a apei	Cel puţin clasa de calitate 2 pentru toţi indicatorii	Conform parametrilor folosiţi în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)

A001 Gavia stellata (cufundar mic)

Prezenţa acestei specii în ROSPA0076 Marea Neagră este de **100-200 indivizi la iernat** conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este **menţinerea stării de conservare** şi este definit de următorii parametri şi valori ţintă:

Parametru	**Unitatea de măsură**	**Valoare ţintă**	**Informaţii suplimentare**
Mărimea populaţiei la iernat	Număr indivizi	Cel puţin 150	Populaţie nerezidentă care utilizează aria naturală protejată pentru iernat. Conform datelor din planul de management al ROSPA0076 Marea Neagră
Suprafaţa habitatului de hrănire şi odihnă	ha	113600	Suprafaţa adecvata a habitatului a fost estimata pe baza cerintelor speciei, utilizand metodologia GIS conform datelor din planul de management al ROSPA0076 Marea Neagră.
Calitatea apei pe baza indicatorilor fizico-chimici (regimul de oxigen, nutrienţi, salinitate, metale, micro-poluanţi organici şi inorganici)	Clasa de calitate a apei	Cel puţin clasa de calitate 2 pentru toţi indicatorii	Conform parametrilor folosiţi în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)
Calitatea apei pe baza indicatorilor ecologici (macronevertebrate, fitobentos, fitoplancton)	Clasa de calitate a apei	Cel puţin clasa de calitate 2 pentru toţi indicatorii	Conform parametrilor folosiţi în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)

A189 Gelochelidon nilotica (pescăriță râzătoare)

Prezența acestei specii în ROSPA0076 Marea Neagră este de **320-350 indivizi în pasaj**, conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este **menținerea stării de conservare** și este definit de următorii parametri și valori țintă:

Parametru	**Unitatea de măsură**	**Valoare țintă**	**Informații suplimentare**
Mărimea populației de pasaj	Număr indivizi	Cel puțin 335	Populație aflată în pasaj care utilizează Situl Natura 2000 ROSPA0076 Marea Neagră pentru odihnă și/sau hrănire, conform datelor din planul de management al ROSPA0076 Marea Neagră
Suprafața habitatului de hrănire și odihnă	ha	55800	Date estimate pe baza extrapolării și/sau modelării datelor obținute prin măsurători parțiale, conform datelor din planul de management al ROSPA0076 Marea Neagră.
Calitatea apei pe baza indicatorilor fizico-chimici (regimul de oxigen, nutrienți, salinitate, metale, micro-poluanți organici și inorganici)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)
Calitatea apei pe baza indicatorilor ecologici (macronevertebrate, fitobentos, fitoplancton)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)

A180 Larus genei (pescăruș rozalb)

Prezența acestei specii în ROSPA0076 Marea Neagră este de **1000-1500 indivizi în pasaj**, conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este **menținerea stării de conservare** și este definit de următorii parametri și valori țintă:

Parametru	**Unitatea de măsură**	**Valoare țintă**	**Informații suplimentare**
Mărimea populației de pasaj	Număr indivizi	Cel puțin 1250	Populație aflată în pasaj care utilizează Situl Natura 2000 ROSPA0076 Marea Neagră pentru odihnă și/sau hrănire, conform datelor din planul de management al ROSPA0076 Marea Neagră
Suprafața habitatului de hrănire și odihnă	ha	43100	Date estimate pe baza extrapolării și/sau modelării datelor obținute prin măsurători parțiale, conform datelor din planul de management al ROSPA0076 Marea Neagră.

Calitatea apei pe baza indicatorilor fizico-chimici (regimul de oxigen, nutrienți, salinitate, metale, micro-poluanți organici și inorganici)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)
Calitatea apei pe baza indicatorilor ecologici (macronevertebrate, fitobentos, fitoplancton)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)

A176 Larus melanocephalus (pescăruș cu cap negru)

Prezența acestei specii în ROSPA0076 Marea Neagră este de **12000-15000 indivizi în pasaj**, conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este **menținerea stării de conservare** și este definit de următorii parametri și valori țintă:

Parametru	**Unitatea de măsură**	**Valoare țintă**	**Informații suplimentare**
Mărimea populației de pasaj	Număr indivizi	Cel puțin 13500	Populație aflată în pasaj care utilizează Situl Natura 2000 ROSPA0076 Marea Neagră pentru odihnă și/sau hrănire, conform datelor din planul de management al ROSPA0076 Marea Neagră
Suprafața habitatului de hrănire și odihnă	ha	107300	Date estimate pe baza extrapolării și/sau modelării datelor obținute prin măsurători parțiale, conform datelor din planul de management al ROSPA0076 Marea Neagră.
Calitatea apei pe baza indicatorilor fizico-chimici (regimul de oxigen, nutrienți, salinitate, metale, micro-poluanți organici și inorganici)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)
Calitatea apei pe baza indicatorilor ecologici (macronevertebrate, fitobentos, fitoplancton)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)

A177 Larus minutus (pescăruș mic)

Prezența acestei specii în ROSPA0076 Marea Neagră este de **10000-12000 indivizi în pasaj**, conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este **menținerea stării de conservare** și este definit de următorii parametri și valori țintă:

Parametru	**Unitatea de măsură**	**Valoare țintă**	**Informații suplimentare**
Mărimea populației de pasaj	Număr indivizi	Cel puțin 11000	Populație aflată în pasaj care utilizează Situl Natura 2000 ROSPA0076 Marea Neagră

			pentru odihnă şi/sau hrănire, conform datelor din planul de management al ROSPA0076 Marea Neagră
Suprafaţa habitatului de hrănire şi odihnă	ha	102900	Date estimate pe baza extrapolării şi/sau modelării datelor obţinute prin măsurători parţiale, conform datelor din planul de management al ROSPA0076 Marea Neagră.
Calitatea apei pe baza indicatorilor fizico-chimici (regimul de oxigen, nutrienţi, salinitate, metale, micro-poluanţi organici şi inorganici)	Clasa de calitate a apei	Cel puţin clasa de calitate 2 pentru toţi indicatorii	Conform parametrilor folosiţi în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)
Calitatea apei pe baza indicatorilor ecologici (macronevertebrate, fitobentos, fitoplancton)	Clasa de calitate a apei	Cel puţin clasa de calitate 2 pentru toţi indicatorii	Conform parametrilor folosiţi în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)

A068 Mergus albellus (ferăstraş mic)

Prezenţa acestei specii în ROSPA0076 Marea Neagră este de **1000-1500 indivizi la iernat**, conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este **menţinerea stării de conservare** şi este definit de următorii parametri şi valori ţintă:

Parametru	**Unitatea de măsură**	**Valoare ţintă**	**Informaţii suplimentare**
Mărimea populaţiei la iernat	Număr indivizi	Cel puţin 1250	Populaţie aflată în pasaj care utilizează Situl Natura 2000 ROSPA0076 Marea Neagră pentru odihnă şi/sau hrănire, conform datelor din planul de management al ROSPA0076 Marea Neagră
Suprafaţa habitatului de hrănire şi odihnă	ha	58900	Suprafaţa adecvata a habitatului a fost estimata pe baza cerintelor speciei, utilizand metodologia GIS, conform datelor din planul de management al ROSPA0076 Marea Neagră.
Calitatea apei pe baza indicatorilor fizico-chimici (regimul de oxigen, nutrienţi, salinitate, metale, micro-poluanţi organici şi inorganici)	Clasa de calitate a apei	Cel puţin clasa de calitate 2 pentru toţi indicatorii	Conform parametrilor folosiţi în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)
Calitatea apei pe baza indicatorilor ecologici (macronevertebrate, fitobentos, fitoplancton)	Clasa de calitate a apei	Cel puţin clasa de calitate 2 pentru toţi indicatorii	Conform parametrilor folosiţi în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)

A020 Pelecanus crispus (pelican creț)

Prezența acestei specii în ROSPA0076 Marea Neagră este de **70-120 indivizi în pasaj**, conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este **menținerea stării de conservare** și este definit de următorii parametri și valori țintă:

Parametru	**Unitatea de măsură**	**Valoare țintă**	**Informații suplimentare**
Mărimea populației de pasaj	Număr indivizi	Cel puțin 95	Populație aflată în pasaj care utilizează Situl Natura 2000 ROSPA0076 Marea Neagră pentru odihnă și/sau hrănire, conform datelor din planul de management al ROSPA0076 Marea Neagră
Suprafața habitatului de hrănire și odihnă	ha	80400	Suprafața adecvata a habitatului a fost estimata pe baza cerintelor speciei, utilizand metodologia GIS, conform datelor din planul de management al ROSPA0076 Marea Neagră.
Calitatea apei pe baza indicatorilor fizico-chimici (regimul de oxigen, nutrienți, salinitate, metale, micro-poluanți organici și inorganici)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)
Calitatea apei pe baza indicatorilor ecologici (macronevertebrate, fitobentos, fitoplancton)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)

A170 Phalaropus lobatus (notatiță)

Prezența acestei specii în ROSPA0076 Marea Neagră este de **700-1200 indivizi în pasaj** conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este ***menținerea stării de conservare*** și este definit de următorii parametri și valori țintă:

Parametru	**Unitatea de măsură**	**Valoare țintă**	**Informații suplimentare**
Mărimea populației de pasaj	Număr indivizi	Cel puțin 950	Populație aflată în pasaj care utilizează Situl Natura 2000 ROSPA0076 Marea Neagră pentru odihnă și/sau hrănire, conform datelor din planul de management al ROSPA0076 Marea Neagră.
Suprafața habitatului de hrănire și odihnă	ha	25000	Suprafața adecvata a habitatului a fost estimata pe baza cerintelor speciei, utilizand metodologia GIS. Conform datelor din planul de management al ROSPA0076 Marea Neagră.

Calitatea apei pe baza indicatorilor fizico-chimici (regimul de oxigen, nutrienți, salinitate, metale, micro-poluanți organici și inorganici)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)
Calitatea apei pe baza indicatorilor ecologici (macronevertebrate, fitobentos, fitoplancton)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)

A464 Puffinus yelkouan (ielcovan estic)

Prezența acestei specii în ROSPA0076 Marea Neagră este de **10000-17000 indivizi în pasaj** conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este **menținerea stării de conservare** și este definit de următorii parametri și valori țintă:

Parametru	**Unitatea de măsură**	**Valoare țintă**	**Informații suplimentare**
Mărimea populației de pasaj	Număr indivizi	Cel puțin 13500	Populație aflată în pasaj care utilizează Situl Natura 2000 ROSPA0076 Marea Neagră pentru odihnă și/sau hrănire, conform datelor din planul de management al ROSPA0076 Marea Neagră.
Suprafața habitatului de hrănire și odihnă	ha	1500	Estuare și lagune, conform datelor din planul de management al ROSPA0076 Marea Neagră.
Calitatea apei pe baza indicatorilor fizico-chimici (regimul de oxigen, nutrienți, salinitate, metale, micro-poluanți organici și inorganici)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)
Calitatea apei pe baza indicatorilor ecologici (macronevertebrate, fitobentos, fitoplancton)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)

A195 Sterna albifrons (chiră mică)

Prezența acestei specii în ROSPA0076 Marea Neagră este de **300-500 indivizi în pasaj**, conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este **menținerea stării de conservare** și este definit de următorii parametri și valori țintă:

Parametru	**Unitatea de măsură**	**Valoare țintă**	**Informații suplimentare**
Mărimea populației de pasaj	Număr indivizi	Cel puțin 400	Populație aflată în pasaj care utilizează Situl Natura 2000 ROSPA0076 Marea Neagră pentru odihnă și/sau hrănire,

			conform datelor din planul de management al ROSPA0076 Marea Neagră
Suprafața habitatului de hrănire și odihnă	ha	26300	Suprafața adecvata a habitatului a fost estimata pe baza cerintelor speciei, utilizand metodologia GIS, conform datelor din planul de management al ROSPA0076 Marea Neagră.
Calitatea apei pe baza indicatorilor fizico-chimici (regimul de oxigen, nutrienți, salinitate, metale, micro-poluanți organici și inorganici)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)
Calitatea apei pe baza indicatorilor ecologici (macronevertebrate, fitobentos, fitoplancton)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)

A190 Sterna caspia (pescărița mare)

Prezența acestei specii în ROSPA0076 Marea Neagră este de **500-1000 indivizi în pasaj**, conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este **menținerea stării de conservare** și este definit de următorii parametri și valori țintă:

Parametru	**Unitatea de măsură**	**Valoare țintă**	**Informații suplimentare**
Mărimea populației de pasaj	Număr indivizi	Cel puțin 750	Populație aflată în pasaj care utilizează Situl Natura 2000 ROSPA0076 Marea Neagră pentru odihnă și/sau hrănire, conform datelor din planul de management al ROSPA0076 Marea Neagră
Suprafața habitatului de hrănire și odihnă	ha	92400	Suprafața adecvata a habitatului a fost estimata pe baza cerintelor speciei, utilizand metodologia GIS, conform datelor din planul de management al ROSPA0076 Marea Neagră.
Calitatea apei pe baza indicatorilor fizico-chimici (regimul de oxigen, nutrienți, salinitate, metale, micro-poluanți organici și inorganici)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)
Calitatea apei pe baza indicatorilor ecologici (macronevertebrate, fitobentos, fitoplancton)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)

A193 Sterna hirundo (chiră de baltă)

Prezența acestei specii în ROSPA0076 Marea Neagră este de **8000-10000 indivizi în pasaj**, conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este **menținerea stării de conservare** și este definit de următorii parametri și valori țintă:

Parametru	**Unitatea de măsură**	**Valoare țintă**	**Informații suplimentare**
Mărimea populației de pasaj	Număr indivizi	Cel puțin 9000	Populație aflată în pasaj care utilizează Situl Natura 2000 ROSPA0076 Marea Neagră pentru odihnă și/sau hrănire, conform datelor din planul de management al ROSPA0076 Marea Neagră
Suprafața habitatului de hrănire și odihnă	ha	131900	Suprafața adecvata a habitatului a fost estimata pe baza cerintelor speciei, utilizand metodologia GIS, conform datelor din planul de management al ROSPA0076 Marea Neagră.
Calitatea apei pe baza indicatorilor fizico-chimici (regimul de oxigen, nutrienți, salinitate, metale, micro-poluanți organici și inorganici)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)
Calitatea apei pe baza indicatorilor ecologici (macronevertebrate, fitobentos, fitoplancton)	Clasa de calitate a apei	Cel puțin clasa de calitate 2 pentru toți indicatorii	Conform parametrilor folosiți în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)

A191 Sterna sandvicensis (chira de mare)

Prezența acestei specii în ROSPA0076 Marea Neagră este de **5200-6000 indivizi în pasaj**, conform datelor din planul de management. Starea de conservare a speciei este **favorabilă**. Obiectivul de conservare specific sitului pentru această specie este **menținerea stării de conservare** și este definit de următorii parametri și valori țintă:

Parametru	**Unitatea de măsură**	**Valoare țintă**	**Informații suplimentare**
Mărimea populației de pasaj	Număr indivizi	Cel puțin 5600	Populație aflată în pasaj care utilizează Situl Natura 2000 ROSPA0076 Marea Neagră pentru odihnă și/sau hrănire, conform datelor din planul de management al ROSPA0076 Marea Neagră
Suprafața habitatului de hrănire și odihnă	ha	92800	Suprafața adecvata a habitatului a fost estimata pe baza cerintelor speciei, utilizand metodologia GIS, conform datelor din planul de management al ROSPA0076 Marea Neagră.

Calitatea apei pe baza indicatorilor fizico-chimici (regimul de oxigen, nutrienţi, salinitate, metale, micro-poluanţi organici şi inorganici)	Clasa de calitate a apei	Cel puţin clasa de calitate 2 pentru toţi indicatorii	Conform parametrilor folosiţi în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)
Calitatea apei pe baza indicatorilor ecologici (macronevertebrate, fitobentos, fitoplancton)	Clasa de calitate a apei	Cel puţin clasa de calitate 2 pentru toţi indicatorii	Conform parametrilor folosiţi în Sistemul de Monitoring Integrat al Apelor din România (SMIAR)

- **Specii de păsări cu migraţie regulată nemenţionate în anexa I la Directiva Consiliului 2009/147/EC**

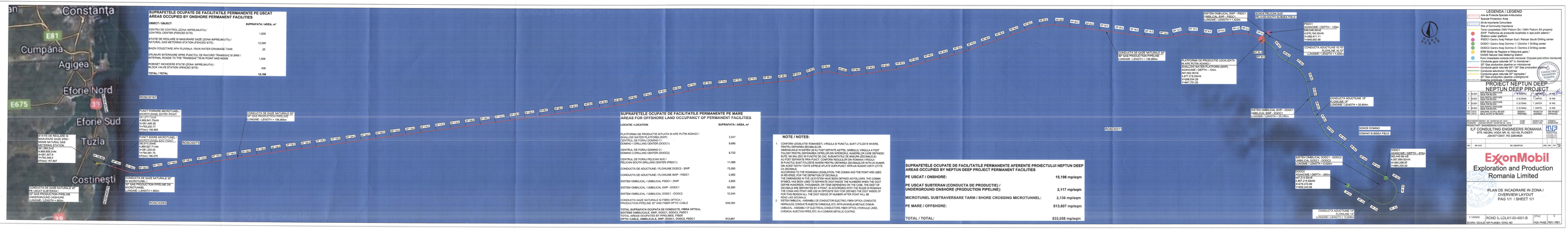
Aceste specii sunt asociate cu habitate acvatice şi litorale. Nu sunt disponibile date despre mărimea populaţiei şi starea lor de conservare. Obiectivul de conservare specific sitului pentru aceste specii este **menţinerea sau îmbunătăţirea stării de conservare,** conform rezultatelor investigaţiilor care vizează clarificarea stării de conservare în termen de 3 ani şi este definit prin următorii parametri şi valori ţintă:

Parametru	**Unitatea de măsură**	**Valoare ţintă**	**Informaţii suplimentare**
Mărimea populaţiei de pasaj **A050 Anas penelope** **A053 Anas platyrhynchos** (A705) **A051 Anas strepera** (A703) **A059 Aythya ferina** **A061 Aythya fuligula** **A067 Bucephala clangula** **A125 Fulica atra** (A723) **A156 Limosa limosa** (A614-B) **A070 Mergus merganser** (A654-A) **A069 Mergus serrator** **A017 Phalacrocorax carbo** (A391) **A005 Podiceps cristatus** (A691) **A006 Podiceps grisegena** **A008 Podiceps nigricollis** (A692) **A004 Tachybaptus ruficollis** (A690)	Număr indivizi	Trebuie definit în termen de 3 ani	Nu sunt disponibile date despre mărimea populaţiei speciilor. Trebuie evaluată în termen de 3 ani şi, în funcţie de starea de conservare a acestora, definită valoarea ţintă.
Suprafaţa habitatelor de hrănire şi odihnă.	Ha	58900	Sunt disponibile informaţii descriptive conform cărora există suprafeţe relativ mari de zone umede puţin adânci şi litorale. Acestea trebuie cartate detaliat în termen de 3 ani. Conform datelor din planul de management al ROSPA0076 Marea Neagră.

Appendix B. General Site Location Plans

Appendix B. General Site Location Plans

1 - Overview layout plan – Neptun Deep Project


Constanta
E81
Cumpăna
Agigea
Eforie Nord
E675
Eforie Sud
Tuzla
Costinești
30
SUPRAFETELE OCUPATE DE FACILITATILE PERMANENTE PE USCAT
AREAS OCCUPIED BY ONSHORE PERMANENT FACILITIES
OBIECT / OBJECT
SUPRAFAȚA / AREA, m²
CENTRU DE CONTROL (ZONA IMPREJMUITA) / CONTROL CENTER (FENCED SITE)
1,639
STATIE DE REGLARE SI MASURARE GAZE (ZONA IMPREJMUITA) / NATURAL GAS METERING STATION (FENCED SITE)
12,099
BAZIN COLECTARE APA PLUVIALA / RAIN WATER DRAINAGE TANK
20
DRUMURI INTERIOARE SPRE PUNCTUL DE RACORD TRANSGAZ SI SRM / INTERNAL ROADS TO THE TRANSGAZ TIE-IN POINT AND NGMS
1,056
ROBINET INCHIDERE STATIE (ZONA IMPREJMUITA) / BLOCK VALVE STATION (FENCED SITE)
409
TOTAL / TOTAL
15,188
STATIE DE REGLARE SI MASURARE GAZE SRM / NGMS NATURAL GAS METERING STATION
37.388 m2
4,869,938.2mN
Y=792,565.0
Y=792,565.0
XP(Am) 157.847
CONDUCTA DE GAZE NATURALE 30" PE USCAT SUBTERAN / 30" GAS PRODUCTION PIPELINE ONSHORE UNDERGROUND
LUNGIME / LENGTH = 950m
ROSCO0293
ROSCO0279
JUNCT. PORNIRE MICROTUNEL / MICROTUNNEL ENTRY POINT
ROSCO0292
JUNCT. IEIRE MICROTUNEL / MICROTUNNEL EXIT POINT
CONDUCTA DE GAZE NATURALE 30" PE USCAT SUBTERAN / 30" GAS PRODUCTION PIPELINE ONSHORE UNDERGROUND
LUNGIME / LENGTH = 156.965m
ROSCO0291
SUPRAFETELE OCUPATE DE FACILITATILE PERMANENTE PE MARE
AREAS FOR OFFSHORE LAND OCCUPANCY OF PERMANENT FACILITIES
LOCATIE / LOCATION
SUPRAFAȚA / AREA, m²
PLATFORMA DE PRODUCTIE SITUATA IN APE PUTIN ADANCI / PRODUCTION PLATFORM (SHALLOW WATER)
3,547
CENTRUL DE FORAJ DOMINO 1 / DOMINO 1 DRILLING CENTER (DODC1)
8,686
CENTRUL DE FORAJ DOMINO 2 / DOMINO 2 DRILLING CENTER (DODC2)
8,722
CENTRUL DE FORAJ PELICAN SUD / PELICAN SOUTH DRILLING CENTER (PSDC1)
11,088
CONDUCTA DE ADUCTIUNE / FLOWLINE DODC2 - SWP
73,280
CONDUCTA DE ADUCTIUNE / FLOWLINE SWP - PSDC1
2,952
SISTEM OMBILICAL / UMBILICAL PSDC1 - SWP
2,952
SISTEM OMBILICAL / UMBILICAL SWP - DODC1
52,280
SISTEM OMBILICAL / UMBILICAL DODC1 - DODC2
12,040
CONDUCTA GAZE NATURALE SI FIBRA OPTICA / PRODUCTION PIPELINE 30" AND FIBER OPTIC CABLE
638,080
TOTAL SUPRAFATA OCUPATA DE CONDUCTE, FIBRA OPTICA, SISTEME OMBILICALE, SWP, DODC1, DODC2, PSDC1
TOTAL AREAS OCCUPIED BY PIPELINES, FIBER OPTIC CABLE, UMBILICALS, SWP, DODC1, DODC2, PSDC1
913,607
NOTE / NOTES:
1. CONFORM LEGISLATIEI ROMANIEI, VIRGULA SI PUNCTUL SUNT UTILIZATE INVERS, FATA DE CELE ENGLEZESTI.
ÎNDEPĂRTAREA IN SISTEM UK AL FIECĂRUI SPAȚIU DUPĂ VIRGULĂ A FOST FOLOSIT PENTRU SEPARAREA CIFRELOR ÎN INTREGIMEA NUMERELOR CARE DEFINESC SUTE, MII SAU ZECI DE MII PUNCTE DE CAZ, SUBUNITATILE DE MASURA (DECIMALELE) AU FOST SEPARATE PRIN PUNCT. CONFORM REGULILOR DIN ROMANIA VIRGULA SE FOLOSESTE PENTRU SEPARAREA CIFRELOR DIN PARTEA DECIMALA A UNUI NUMĂR, ÎN CAZUL NOSTRU DUPĂ CIFRELE AFLATE DUPĂ PUNCT INTR-UN NUMĂR (CIFRE ZECIMALE).
ACCORDING TO THE ROMANIAN LEGISLATION, THE COMMA AND THE POINT ARE USED IN REVERSE, FOR THE DEFINITION OF DECIMALS.
THE DIMENSIONS IN THE US SYSTEM HAVE BEEN DEFINED AS FOLLOWS, THE COMMA SYMBOL HAS BEEN USED TO SEPARATE THE DIGIT INSIDE THE NUMBERS WHEN THE DIGIT DEFINE HUNDREDS, THOUSANDS, OR TENS DEPENDING ON THE CASE, THE DIGIT OF THE UNITS OF MEASURE (DECIMALS) WERE SEPARATED BY THE POINT INSIDE A NUMBER. THE COMA AND POINT ARE USE IN OPPOSITE WAY FOR DEFINED THE DIGIT INSIDE OF FOR THIS REASON ALL THE DIGIT INSIDE OF NUMBER AFTER POINT WILL BE CONSIDERED DECIMALS.
2. SISTEM OMBILICAL - ANSAMBLU DE CONDUCTORI ELECTRICI FIBRA OPTICA CONDUCTS HIDRAULICE, CONDUCTE INJECTIE CHIMICALE, ETC. INTR-UN INVELIS METALIC COMUN.
UMBILICAL - ASSEMBLY OF ELECTRICAL CONDUCTORS, FIBER OPTICS, HYDRAULIC LINES, CHEMICAL INJECTION PIPES, ETC. IN A COMMON METALLIC COATING.
SUPRAFETELE OCUPATE DE FACILITATILE PERMANENTE AFERENTE PROIECTULUI NEPTUN DEEP
AREAS OCCUPIED BY NEPTUN DEEP PROJECT PERMANENT FACILITIES
PE USCAT / ONSHORE:
15,198 mp/sqm
PE USCAT SUBTERAN (CONDUCTA DE PRODUCTIE) / UNDERGROUND ONSHORE (PRODUCTION PIPELINE):
2,117 mp/sqm
MICROTUNEL SUBTRAVERSARE TARM / SHORE CROSSING MICROTUNNEL:
2,136 mp/sqm
PE MARE / OFFSHORE:
813,607 mp/sqm
TOTAL / TOTAL:
833,058 mp/sqm
PLATFORMA DE PRODUCTIE LOCALIZATA IN APE PUTIN ADANC / SHALLOW WATER PLATFORM (SWP)
ADANCIME / DEPTH ~ 120m
445.062.96mE
4,877,318.02mN
X=598,534.28
Y=947,791.25
SISTEM OMBILICAL SWP - PSDC1 / UMBILICAL SWP - PSDC1
LUNGIME / LENGTH = 2,952m
SISTEM OMBILICAL SWP - DODC1 / UMBILICAL SWP - DODC1
LUNGIME / LENGTH = 52,280m
SISTEM OMBILICAL DODC1 - DODC2 / UMBILICAL DODC1 - DODC2
LUNGIME / LENGTH = 12,040m
PSDC1
ADANCIME / DEPTH ~ 125m
442.046.00mE
4,876,194.00mN
X=598,477.11
Y=946,682.94
CONDUCTA DODC2 - PSDC1 / FLOWLINE DODC2 - PSDC1
LUNGIME / LENGTH = 2,952m
CONDUCTA GAZE NATURALE 30" / 30" GAS PRODUCTION PIPELINE
LUNGIME / LENGTH = 156.965m
DODC2
ADANCIME / DEPTH ~ 125m
442.046.00mE
4,876,194.00mN
Y=946,682.94
CONDUCTA ADUCTIUNE 8,6" / FLOWLINE 8"
LUNGIME / LENGTH = 25.90km
DODC1
ADANCIME / DEPTH ~ 125m
442.046.00mE
4,876,194.00mN
Y=946,682.94
CONDUCTA ADUCTIUNE 8,6" / FLOWLINE 8"
LUNGIME / LENGTH = 25.90km
ZONE DOMINO
DOMINO SUBSEA FIELD
SISTEM OMBILICAL SWP - DODC1 / UMBILICAL SWP - DODC1
LUNGIME / LENGTH = 25.190km
SISTEM OMBILICAL DODC1 - DODC2 / UMBILICAL DODC1 - DODC2
LUNGIME / LENGTH = 12.040km
DODC2
ADANCIME / DEPTH ~ 203m
442.445.99 mE
4,857,994.92mN
X=598,229.02
Y=964,339.22
CONDUCTA ADUCTIUNE 16" / FLOWLINE 16"
LUNGIME / LENGTH = 12.040km
LEGENDA / LEGEND
Arie de Protectie Speciala Avifaunistica
Special Protection Area
Sit de importanta Comunitara
Site of Community Importance
Teren proprietate OMV Petrom SA / OMV Petrom SA property
SWP: Platforma de productie localizata in ape putin adanci / Shallow water platform
PSDC1 Centru foraj Pelican Sud / Pelican South Drilling center
DODC1 Centru foraj Domino 1 / Domino 1 Drilling center
DODC2 Centru foraj Domino 2 / Domino 2 Drilling center
SRM: Statie de reglare si masurare gaze / NGMS Natural Gas Metering Station
Punct intrare/iesire conducta in/din microtunel / Entry/exit point in/from microtunnel
Conducta gaze naturale 30" pe uscat / 30" Gas production pipeline onshore
30" Gas production pipeline on microtunnel
Conducta gaze naturale 30" / 30" Gas production pipeline
Conducta adductiune / Flowlines
Conducta gaze naturale 30" ingropata / 30" Gas production pipeline underground
Sistema ombilicale / Umbilicals
PROJECT NEPTUN DEEP
NEPTUN DEEP PROJECT
0 24.001 DOA 19.05.2025 A. STOICA M. NEAGU
1 24.001 DOA 19.05.2025 A. STOICA M. NEAGU
2 24.001 DOA 19.05.2025 A. STOICA M. NEAGU
3 24.001 DOA 19.05.2025 A. STOICA M. NEAGU
4 24.001 DOA 19.05.2025 A. STOICA M. NEAGU
5 24.001 DOA 19.05.2025 A. STOICA M. NEAGU
REV. DATA DESCRIERE / DESCRIPTION NAME / NUME SEMNĂTURA / SIGNATURE
DOCUMENT PREPARED BY / DOCUMENT ÎNTOCMIT DE
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR. 15, 700164, PLOIEȘTI
J29/3071/2007, RO 22804620
REV. REVIZIE DESCRIPTION / DESCRIERE DATA / DATE
ExxonMobil
Exploration and Production Romania Limited
PLAN DE INCADRARE IN ZONA / OVERVIEW LAYOUT
PAG 1/1 / SHEET 1/1
1:100000
ROND_IL-DLAY-00-4001-B
SCARA / SCALE
NR PLANSA / DWG. NO.
STYLE
REV / REV.

Appendix B. General Site Location Plans

2 - Onshore facilities site location plan (copy endorsed by the issuer of the urbanism certificate)



LEGENDA: / LEGEND:

- Limita teren afectat de lucrarile de construire S totala = 232876mp
  Boundary of land affected by the construction works S total = 232876sqm
- Limita administrativa
  Administrative limit
- Arie de Protectie Speciala Avifaunistica (Marea Neagra: RO SPA 0076)
  Special Protection Area (Black Sea: RO SPA 0076)
- Sit de Importanta Comunitara (Zona Marina de la Capul Tuzla: ro SCI 0273)
  Site of Community Importance (Zona Marina de la Capul Tuzla: ro SCI 0273)
- UAT — Unitate administrativ teritoriala / Territorial administrative unit
- CF — Cale ferata / Railyway

NORD

* DENUMIRE COMPLETA PROIECT / COMPLETE PROJECT NAME
NEPTUN DEEP - INSTALARE CONDUCTA SI CABLU DE COMUNICATII, SUBTRAVERSARE PLAJA, FALEZA, DRUMURI SI CALE FERATA; REALIZARE TRECERE TEMPORARA LA NIVEL CU CALEA FERATA; CONSTRUIRE SRM, CENTRU DE CONTROL, IMPREJMUIRE, ILUMINAT, PARCARI, SPATII VERZI, PLATFORME SI DRUMURI INTERIOARE; ORGANIZARE DE SANTIER, ASIGURAREA SI RACORDAREA LA UTILITATI.
NEPTUN DEEP - PIPELINE AND COMMUNICATION CABLE INSTALLATION, UNDERCROSSING OF BEACH, SEA FRONT, ROADS AND RAILWAY; TEMPORARY ROAD RAILWAY CROSSING; CONSTRUCTION OF NGMS, CONTROL CENTER, FENCING, LIGHTING, PARKING, GREEN SPACE, PLATFORMS, INTERNAL ROADS; SITE WORKS, ORGANIZATION AND UTILITIES CONNECTIONS.

PROIECT NEPTUN DEEP*
NEPTUN DEEP PROJECT

REV REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
G	25.03.2021	EMIS PENTRU VERIFICARE ISSUE FOR IDC REVIEW	E. OLTEANU	T. CAPOTA	M. NAE
F	28.01.2021	EMIS PENTRU VERIFICARE ISSUE FOR IDC REVIEW	E. OLTEANU	T. CAPOTA	M. NAE
E	23.07.2020	EMIS PENTRU VERIFICARE ISSUE FOR IDC REVIEW	E. OLTEANU	T. CAPOTA	M. NAE
D	15.07.2020	EMIS PENTRU VERIFICARE ISSUE FOR IDC REVIEW	E. OLTEANU	T. CAPOTA	M. NAE
C	01.07.2020	EMIS PENTRU VERIFICARE ISSUE FOR IDC REVIEW	E. OLTEANU	T. CAPOTA	M. NAE
B	23.06.2020	EMIS PENTRU VERIFICARE ISSUE FOR IDC REVIEW	E. OLTEANU	T. CAPOTA	M. NAE
A	26.05.2020	EMIS PENTRU VERIFICARE ISSUE FOR IDC REVIEW	E. OLTEANU	T. CAPOTA	M. NAE

VERIFICATOR/EXPERT CHECKER/EXPERT	REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16, 100149, PLOIESTI
J29/3071/20007, RO 22804820

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP

ExxonMobil
Exploration and Production Romania Limited

FACILITATI PE USCAT / ONSHORE FACILITIES
PLAN DE INCADRARE IN ZONA / SITE LOCATION PLAN
PAG 1/1 / SHEET 1/1

1:10000	ROND IL-LDLAY-25-4003-B	DTAC	G
SCARA / SCALE	NR PLANSA / DWG. NO	FAZA / PHASE	REV / REV

Appendix C. Onshore and Offshore Site Layout Plans

Appendix C. Onshore and Offshore Site Layout Plans

1 - Onshore facilities plot plan

INVENTAR DE COORDONATE PUNCTE PE CONTUR SUPRAFATA MASURATA PENTRU AMPLASARE SRM SI CAMERA DE CONTROL CENTRALIZAT NR. CAD.109216 - **S1** /
INVENTORY COORDINATES MEASURED POINTS SRM AND CONTROL CENTER LAYOUT CAD.NO. 109216 - **S1**

Nr. Pct.	Coordonate pct.de contur Stereo 70 X [m]	Coordonate pct.de contur Stereo 70 Y [m]	Coordonate pct.de contur WGS 84 X [m]	Coordonate pct.de contur WGS 84 Y [m]	Lungimi laturi D(i,i+1)
56	281679,306	792252,519	390.980,8mE	4.870.091,7mN	236,30
57	281610,294	792478,519	391.234,2mE	4.870.001,9mN	170,29
5	281440,016	792476,365	391.221,6mE	4.869.832,2mN	51,57
6	281452,291	792426,275	391.172,4mE	4.869.847,5mN	174,36
7	281282,954	792384,742	391.120,6mE	4.869.681,2mN	247,05
8	281358,352	792149,476	390.862,4mE	4.869.781,6mN	313,91
9	281657,239	792245,434	391.005,1mE	4.870.063,6mN	23,18
S(S1)=85000mp P=1216,66m					

INVENTAR DE COORDONATE DC4 /
INVENTORY COORDINATES DC4

Nr. Pct.	Coordonate pct.de contur Stereo 70 X [m]	Coordonate pct.de contur Stereo 70 Y [m]	Coordonate pct.de contur WGS 84 X [m]	Coordonate pct.de contur WGS 84 Y [m]	Lungimi laturi D(i,i+1)
57	281610,294	792478,519	391.234,2mE	4.870.001,9mN	6,61
101	281613,601	792484,248	391241,3mE	4.870.011,1mN	118,54
102	281495,124	792480,427	391.229,6mE	4.869.887,4mN	53,35
103	281441,837	792477,829	391.223,7mE	4.869.834,3mN	1,94
104	281439,918	792477,520	391223,3mE	4.869.832,4mN	1,16
5	281440,016	792476,365	391.221,6mE	4.869.832,2mN	170,29
S(dc4)=657mp P=351,90m					

INVENTAR DE COORDONATE
SUPRAFATA DETINUTA CFR S.A NR. CAD.109182 /
INVENTORY COORDINATES OWNER CFR S.A.
SURFACES CAD. NO.109182

Nr. Pct.	Coordonate pct.de contur Stereo 70 X [m]	Coordonate pct.de contur Stereo 70 Y [m]	Coordonate pct.de contur WGS 84 X [m]	Coordonate pct.de contur WGS 84 Y [m]	Lungimi laturi D(i,i+1)
101	281613,601	792484,248	391.234,2mE	4.870.001,9mN	25,38
105	281626,287	792506,229	391.263,4mE	4.870.016,7mN	46,44
106	281579,848	792506,373	391.260,7mE	4.869.970,3mN	53,92
107	281525,929	792506,524	391.257,6mE	4.869.916,5mN	11,71
108	281514,218	792506,406	391.256,7mE	4.869.904,8mN	19,25
109	281494,970	792506,314	391.255,4mE	4.869.885,6mN	37,04
110	281458,000	792504,000	391.250,9mE	4.869.848,9mN	20,31
111	281437,929	792500,925	391.246,6mE	4.869.829,0mN	23,49
104	281439,918	792477,520	391.223,3mE	4.869.832,4mN	1,94
103	281441,837	792477,829	391.223,7mE	4.869.834,3mN	53,35
102	281495,124	792480,427	391.229,6mE	4.869.887,4mN	118,54
S(cfr)=4408mp P=411,37m					

Nr. No	FACILITATE / ITEM
1	ADAPOST CROMATOGRAF GAZE / GAS CHROMATOGRAPH SHELTER
2	CAMERA ECHIPAMENT LOCAL / LOCAL EQUIPMENT ROOM
3	GENERATOR DE REZERVA / STANDBY GENERATOR
4	PUNCT RACORD TRANSGAZ / TRANSGAZ TIE-IN POINT
5	FILTRU SEPARATOR / FILTER SEPARATOR
6	GARA PRIMIRE GODEVIL / PIPELINE PIG RECEIVER
7	PLATFORMA TEHNOLOGICA / TECHNOLOGICAL PLATFORM
8	COS DISPERSIE GAZE / VENT STACK
9	DRUM INTERIOR SI PARCARE / INTERNAL ROAD AND PARKING
10	SKID MASURARE / METERING SKID
11	ROBINET DE CONTROL DEBIT / FLOW CONTROL VALVE
12	POARTA IESIRE PERSONAL IN CAZ DE URGENTA / PERSONNEL EMERGENCY EXIT GATE
13	GARD PROTECTIE / SECURITY FENCE
14	DRUM ACCES DIN DN 39 (AUTORIZAT SEPARAT) / DN39 ACCESS ROAD (SEPARATELY AUTHORIZED)
15	POARTA ACCES AUTOVEHICULE / DRIVE-IN GATE
16	CAMERA DE CONTROL CENTRALIZAT / CENTRAL CONTROL ROOM
17	FOSA SEPTICA VIDANJABILA / SEPTIC TANK
18	BAZIN APA CURATA / FRESH WATER TANK
19	ANTENA SATELIT VSAT / VSAT SATELLITE DISH
20	MANECA DE VANT / WIND SOCK
21	TABLOU DISTRIBUTIE / DISTRIBUTION PANEL
22	SKID INCALZITOARE (2 SKID-URI CU CATE 2BUC.) HEATERS SKID (2 SKIDS WITH 2 HEATERS EACH)
23	POST TRANSFORMARE ENEL (AUTORIZAT SEPARAT) ENEL TRANSFORMER (SEPARATELY AUTHORIZED)
24	ROBINET INCHIDERE STATIE / BLOCK VALVE STATION
25	BAZIN COLECTARE APA PLUVIALA / RAIN WATER DRAINAGE TANK

NOTE / NOTES:

1. TOATE SUPRAFETELE LIBERE IMPREJMUITE CU GARD DE PROTECTIE SI DRUMURILE INTERIOARE VOR FI ACOPERITE CU PIATRA SPARTA. SUPRAFETELE LIBERE DIN INTERIORUL IMPREJMUIRII CAMEREI DE CONTROL CENTRALIZAT SI CONEXIUNEA LA DRUMUL DE ACCES VOR FI PAVATE. ALL OPEN SURFACES INSIDE FENCED AREAS AND INTERNAL ROADS WILL BE COVERED WITH CRUSHED GRAVEL. OPEN SURFACE INSIDE CENTRAL CONTROL ROOM FENCED AREA AND ACCESS ROAD CONNECTION WILL BE PAVED.
2. COSUL DE DISPERSIE GAZE VA FI AMPLASAT LA O DISTANTA DE MINIM 25M FATA DE GARD SAU ALTE ECHIPAMENTE. THE BLOWDOWN STACK SHALL BE AT A MINIMUM DISTANCE OF 25M FROM EQUIPMENT AND THE FENCE LINE.
3. PROTECTIA CONDUCTEI DE GAZE NATURALE PRIN TUNEL REZULTA DIN PROIECTUL DE TUNEL. CONCRETE CASING RESULTS FROM TUNNELING PROCESS.
4. PLANSA ESTE ELABORATA IN SISTEMUL DE COORDONATE STEREO 70. COORDINATES SYSTEM USED ON THE DRAWING IS STEREO 70.
5. CONFORM LEGISLATIEI ROAMANESTI, VIRGULA SI PUNCTUL SUNT UTILIZATE INVERS, PENTRU DEFINIREA ZECIMALELOR. DIMENSIUNILE IN SISTEM US AU FOST DEFINITE ASTFEL: SIMBOLUL VIRGULA A FOST FOLOSIT PENTRU SEPARAREA CIFRELOR DIN INTERIORUL NUMERELOR CARE DEFINESC SUTE, MII SAU ZECI IN FUNCTIE DE CAZ. SUBUNITATILE DE MASURA (ZECIMALELE) AU FOST SEPARATE PRIN PUNCT. CONFORM REGULILOR DIN ROMANIA VIRGULA SI PUNCTUL SUNT FOLOSITE INVERS PENTRU DEFINIREA ZECIMALELOR INTR-UN NUMAR. DIN ACEST MOTIV TOATE CIFRELE AFLATE DUPA PUNCT INTR-UN NUMAR VOR FI CITITE CA ZECIMALE. ACCORDING TO THE ROMANIAN LEGISLATION, THE COMMA AND THE POINT ARE USED IN REVERSE, FOR THE DEFINITION OF DECIMALS. THE DIMENSIONS IN THE US SYSTEM HAVE BEEN DEFINED AS FOLLOWS. THE COMMA SYMBOL HAS BEEN USED TO SEPARATE DIGIT INSIDE THE NUMBERS WHEN THE DIGIT DEFINE HUNDREDS, THOUSANDS, OR TENS DEPENDING ON THE CASE. THE DIGIT OF DECIMALS ARE SEPARATED BY A POINT. IN ACCORDING WITH THE RULES IN ROMANIA THE COMA AND POINT ARE USE IN OPPOSITE WAY FOR DEFINED THE DIGIT INSIDE OF NUMBER. FOR THIS REASON ALL THE DIGIT INSIDE OF NUMBER AFTER POINT WILL BE READ LIKE DECIMALS.
6. PLANSA ESTE INTOCMITA IN SISTEMUL DE COORDONATE STEREO 70. COORDONATELE WGS 84 AU FOST OBTINUTE PRIN CONVERSIE, FOLOSIND METODE ELECTRONICE DE CALCUL SI PARAMETRI SPECIFICI. CONVERSIA PRESUPUNE TRANSFORMARI (TRANSLATARI, ROTIRI SI / SAU SCALARI) ALE COORDONATELOR STEREO 70. DEFINITORII SUNT DOCUMENTELE REALIZATE IN SISTEMUL STEREO 70. ACESTEA VOR FI UTILIZATE IN SCOPUL PUNERII IN OPERA A PROIECTULUI. DOCUMENTELE EMISE IN SISTEMUL WGS 84 REPREZINTA RASPUNSUL LA UNELE CERINTE ALE AUTORITATILOR SI LEGISLATIEI ROMANESTI. THE PLAN IS PREPARED IN STEREO 70 COORDINATE SYSTEM. THE WGS 84 COORDINATES WERE OBTAINED BY CONVERSION, USING ELECTRONIC CALCULATION METHODS ANS SPECIFIC PARAMETERS. THE CONVERSION INVOLVES TRANSFORMATIONS (TRANSLATION, ROTATIONS AND / OR SCALING) OF THE STEREO 70 COORDINATES. THE DEFINING ARE THE DOCUMENTS MADE IN THE STEREO 70 SYSTEM. THESE WILL BE USED FOR THE PURPOSE OF IMPLEMENTING THE PROJECT. THE DOCUMENTS ISSUED IN THE WGS 84 SYSTEM REPRESENT THE ANSWER TO THE SOME REQUIREMENTS OF THE ROMANIAN AUTHORITIES AND LEGISLATION.

PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

LEGENDA / LEGEND:

AG: SUPRATERAN / ABOVE GROUND
UG: SUBTERANE / UNDER GROUND
LIMITA PROPRIETATE / PROPERTY LIMIT
LIMITA NUMERE CADASTRALE / TOPOGRAPHICAL NO.
LIMITA UAT / UAT LIMITS
GARD DE PROTECTIE / SECURITY FENCE
OBIECTIVE NOI / NEW OBJECTIVES
DRUMURI INTERIOARE / INTERNAL ROADS
DRUMURI EXISTENTE / EXISTING ROADS
DRUM ACCES DIN DN 39 (AUTORIZAT SEPARAT) / DN39 ACCES ROAD (SEPARATELY AUTHORIZED)
DRUM ACCES POST TRANSFORMARE (AUTORIZAT SEPARAT) TRANSFORMER ACCESS ROAD (SEPARATELY AUTHORIZED)
LINIE CF / RAILYWAY
CONDUCTA SUBTERANA DE GAZE NATURALE / UNDER GROUND GAS PRODUCTION PIPELINE
CONDUCTA SUPRATERANA DE GAZE NATURALE / ABOVE GROUND GAS PRODUCTION PIPELINE
CONDUCTA TRANSGAZ SUBTERANA / UNDERGROUND TRANSGAZ PIPELINE (AUTORIZATA SEPARAT) / (SEPARATELY AUTHORIZED)
PROTECTIE CONDUCTA / PIPELINE PROTECTION
PROTECTIE CONDUCTA DE GAZE NATURALE IN TUNEL / CONCRETE CASING
DRUMURI PROPUSE PRIN PUG TUZLA / PROPOSED ROAD ON TUZLA PUG
FACILITATI TRANSGAZ / TRANSGAZ FACILITIES / (AUTORIZAT SEPARAT) / (SEPARATELY AUTHORIZED)
RACORD E-NEL (AUTORIZAT SEPARAT) E-NEL CONNECTION (SEPARATELY AUTHORIZED)
RAMPA PENTRU PERSOANELE CU DIZABILITATI RAMP FOR PERSONS WITH DISABILITIES
391.972,23mE 4.869.841,75mN COORDONATE WGS84 / WGS COORDINATES
X=281489,4 Y=792200,7 COORDONATE STEREO 70 / STEREO 70 COORDINATES

* DENUMIRE COMPLETA PROIECT / COMPLETE PROJECT NAME

NEPTUN DEEP - INSTALARE CONDUCTA SI CABLU DE COMUNICATII, SUBTRAVERSARE PLAJA, FALEZA, DRUMURI SI CALE FERATA; REALIZARE TRECERE TEMPORARA LA NIVEL CU CALEA FERATA; CONSTRUIRE SRM, CENTRU DE CONTROL, IMPREJMUIRE, ILUMINAT, PARCARI, SPATII VERZI, PLATFORME SI DRUMURI INTERIOARE; ORGANIZARE DE SANTIER, ASIGURAREA SI RACORDAREA LA UTILITATI.
NEPTUN DEEP - PIPELINE AND COMMUNICATION CABLE INSTALLATION, UNDERCROSSING OF BEACH, SEA FRONT, ROADS AND RAILWAY; TEMPORARY ROAD RAILWAY CROSSING; CONSTRUCTION OF NGMS, CONTROL CENTER, FENCING, LIGHTING, PARKING, GREEN SPACE, PLATFORMS, INTERNAL ROADS; SITE WORKS, ORGANIZATION AND UTILITIES CONNECTIONS.

PROIECT NEPTUN DEEP* NEPTUN DEEP PROJECT

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
3-H	25.03.21	RE-EMIS PENTRU VERIFICARE RE-ISSUE FOR REVIEW	E. OLTEANU	T. CAPOTA	M. NAE
3-G	11.03.21	RE-EMIS PENTRU VERIFICARE RE-ISSUE FOR REVIEW	E. OLTEANU	T. CAPOTA	M. NAE
3-F	28.01.21	RE-EMIS PENTRU VERIFICARE RE-ISSUE FOR REVIEW	E. OLTEANU	T. CAPOTA	M. NAE
3-E	23.07.20	RE-EMIS PENTRU VERIFICARE RE-ISSUE FOR REVIEW	E. OLTEANU	T. CAPOTA	M. NAE
3-D	08.04.20	RE-EMIS PENTRU VERIFICARE RE-ISSUE FOR REVIEW	E. OLTEANU	T. CAPOTA	M. NAE
3-C	31.03.20	RE-EMIS PENTRU VERIFICARE RE-ISSUE FOR REVIEW	E. OLTEANU	T. CAPOTA	M. NAE
3-B	02.03.20	RE-EMIS PENTRU VERIFICARE RE-ISSUE FOR REVIEW	E. OLTEANU	T. CAPOTA	M. NAE
3-A	19.02.20	EMIS PENTRU VERIFICARE ISSUE FOR REVIEW	E. OLTEANU	T. CAPOTA	M. NAE
VERIFICATOR CHECKER			I. BUTNARIU		ANRE
VERIFICATOR/DESEMNAT CHECKER/APPT	REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE		NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR

ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16, 100149, PLOIESTI
J29/3071/2007, RO 22804820

REV	REV DATE	REV.DESCRIPTION	ORIG	REV	APP	PROJ APP
3	15-APR-20	ISSUED FOR DESIGN		AMG		MA
2	22-SEP-19	ISSUED FOR DESIGN	MA	AWM	MDP	MDP
1	24-IAN-18	ISSUED FOR DESIGN	JDC	EG	AM	RJY
0	26-OCT-17	ISSUED FOR DESIGN	JDC	EG	AM	RJY
A	17-OCT-17	INTERDISCIPLINARY CHECK	JDC	EG	AM	RJY

ExxonMobil Exploration and Production Romania Limited

FACILITATI PE USCAT / ONSHORE FACILITIES
PLAN DE SITUATIE / PLOT PLAN
PAG 1/2 / SHEET 1/2

SCARA / SCALE	NR PLANSA / DWG. NO	FAZA / PHASE	REV / REV
1:1000	ROND-EW-LDLAY-25-4001-B	DTAC	3-H

A1 841x594

CONSILIUL JUDETEAN CONSTANTA ANEXA LA CERTIFICATUL DE URBANISM Nr. 85 din 09.04.2021 Arhitect sef,

SUPRAFATA AFECTATA DE LUCRARI DE CONSTRUIRE
AREA AFECTED BY CONSTUCTION WORKS

SUPRAFATA OMV PETROM SA	223184mp
DC4 (PRIMARIA TUZLA / TUZLA CITY HALL)	657mp
DE277 (PRIMARIA TUZLA / TUZLA CITY HALL)	898mp
DE 259/4 (PRIMARIA TUZLA / TUZLA CITY HALL)	571mp
CALE FERATA / RAILWAY (CNCF CFR S.A.)	4408mp
DE 269 (PRIMARIA TUZLA / TUZLA CITY HALL)	494mp
FALEZA / CLIFF (PRIMARIA TUZLA / TUZLA CITY HALL)	1484mp
PLAJA / BEACH (ANAR / ABA DOBROGEA LITORAL)	1180mp
TOTAL	**232876mp**

PLAN CHEIE / KEY PLAN
SC. 1:10000

S1 OMV PETROM SA Nr. cad. 109216 A289/1a, lot 212
S2
S3
S4

SCARA: METRI
SCALE: METERS

INVENTAR DE COORDONATE PUNCTE PE CONTUR SUPRAFATA MASURATA PENTRU AMPLASARE SRM SI CAMERA DE CONTROL CENTRALIZAT NR. CAD.109216 - **S1**
INVENTORY COORDINATES OF MEASURED POINTS SRM AND CONTROL CENTER LAYOUT CAD NO. 109216 - **S1**

Nr. Pct.	Coordonate pct.de contur Stereo 70 X [m]	Y [m]	Coordonate pct.de contur WGS 84 X [m]	Y [m]	Lungimi laturi D(i,i+1)
56	281679,106	792252,519	190.988,0mE	4.870.091,7mN	236,30
57	281610,294	792478,519	191.234,2mE	4.870.001,9mN	170,29
5	281440,016	792476,365	191.229,6mE	4.869.837,4mN	53,35
103	281452,291	792426,275	191.223,7mE	4.869.849,1mN	174,56
7	281282,954	792384,742	191.128,6mE	4.869.681,2mN	247,05
8	281358,152	792149,476	190.882,0mE	4.869.761,6mN	312,91
9	281657,219	792234,614	191.065,7mE	4.870.063,6mN	23,18
S(ST)=85090mp P=1216,66m					

INVENTAR DE COORDONATE DC4 / INVENTORY COORDINATES DC4

Nr. Pct.	Coordonate pct.de contur Stereo 70 X [m]	Y [m]	Coordonate pct.de contur WGS 84 X [m]	Y [m]	Lungimi laturi D(i,i+1)
57	281610,294	792478,519	191.234,2mE	4.870.001,9mN	6,61
1	281628,591	792510,222	191.267,6mE	4.870.018,7mN	118,34
22	281579,860	792510,573	191.264,7mE	4.869.970,1mN	0,38
23	281579,857	792510,753	191.265,1mE	4.869.970,1mN	53,94
20	281525,914	792510,524	191.381,6mE	4.869.916,2mN	11,75
19	281514,188	792510,496	191.360,7mE	4.869.904,5mN	0,10
18	281514,187	792510,503	191.360,8mE	4.869.904,5mN	19,21
17	281494,979	792510,316	191.359,4mE	4.869.885,4mN	9,21
16	281485,769	792510,497	191.359,0mE	4.869.876,2mN	9,21
15	281476,562	792510,497	191.358,6mE	4.869.867,0mN	9,21
14	281467,351	792510,387	191.357,8mE	4.869.857,8mN	26,50
13	281442,856	792510,497	191.356,0mE	4.869.833,4mN	5,73
12	281437,123	792510,497	191.356,3mE	4.869.827,6mN	9,52
111	281437,929	792500,925	191.346,6mE	4.869.828,5mN	20,31
110	281458,000	792504,000	191.350,9mE	4.869.848,9mN	37,04
109	281494,970	792506,314	191.355,6mE	4.869.885,6mN	19,25
108	281514,218	792506,496	191.356,7mE	4.869.904,8mN	11,71
107	281525,929	792506,524	191.357,6mE	4.869.916,5mN	53,92
106	281579,848	792506,373	191.360,7mE	4.869.970,3mN	46,44
S(dc277)=898mp P=394,74m					

INVENTAR DE COORDONATE DE 277 / INVENTORY COORDINATES DE 277

Nr. Pct.	Coordonate pct.de contur Stereo 70 X [m]	Y [m]	Coordonate pct.de contur WGS 84 X [m]	Y [m]	Lungimi laturi D(i,i+1)
105	281626,287	792506,229	191.263,4mE	4.870.016,7mN	4,61
1	281628,591	792510,222	191.267,6mE	4.870.018,7mN	48,73
22	281579,860	792510,573	191.264,7mE	4.869.970,1mN	0,38
23	281579,857	792510,753	191.265,1mE	4.869.970,1mN	53,94
20	281525,914	792510,524	191.381,6mE	4.869.916,2mN	11,75
19	281514,188	792510,496	191.360,7mE	4.869.904,5mN	0,10
18	281514,187	792510,503	191.360,8mE	4.869.904,5mN	19,21
17	281494,979	792510,316	191.359,4mE	4.869.885,4mN	9,21
16	281485,769	792510,497	191.359,0mE	4.869.876,2mN	9,21
15	281476,562	792510,497	191.358,6mE	4.869.867,0mN	9,21
14	281467,351	792510,387	191.357,8mE	4.869.857,8mN	26,50
13	281442,856	792510,497	191.356,0mE	4.869.833,4mN	5,73
12	281437,123	792510,497	191.356,3mE	4.869.827,6mN	9,52
111	281437,929	792500,925	191.346,6mE	4.869.828,5mN	20,31
110	281458,000	792504,000	191.350,9mE	4.869.848,9mN	37,04
109	281494,970	792506,314	191.355,6mE	4.869.885,6mN	19,25
108	281514,218	792506,496	191.356,7mE	4.869.904,8mN	11,71
107	281525,929	792506,524	191.357,6mE	4.869.916,5mN	53,92
106	281579,848	792506,373	191.360,7mE	4.869.970,3mN	46,44
S(dc277)=898mp P=394,74m					

INVENTAR DE COORDONATE NR. - **S3** NR. CAD.109659
INVENTORY COORDINATES - **S3** CAD. NO. 109659

Nr. Pct.	Coordonate pct.de contur Stereo 70 X [m]	Y [m]	Coordonate pct.de contur WGS 84 X [m]	Y [m]	Lungimi laturi D(i,i+1)
1	281628,591	792510,222	191.267,6mE	4.870.018,7mN	371,40
2	281625,471	792881,617	191.638,1mE	4.869.992,6mN	48,73
3	281576,744	792881,117	191.634,6mE	4.869.944,2mN	53,94
4	281522,805	792880,573	191.630,7mE	4.869.890,4mN	11,75
5	281511,079	792880,453	191.629,8mE	4.869.878,7mN	19,21
6	281491,872	792880,258	191.628,5mE	4.869.859,5mN	9,20
7	281482,668	792880,163	191.627,8mE	4.869.850,3mN	9,21
8	281473,460	792880,071	191.627,2mE	4.869.841,1mN	9,21
9	281464,250	792879,970	191.626,5mE	4.869.831,9mN	24,50
10	281439,753	792879,730	191.624,8mE	4.869.807,5mN	5,73
11	281434,020	792879,672	191.624,3mE	4.869.801,8mN	26,50
12	281407,524	792879,407	191.622,5mE	4.869.775,3mN	9,52
13	281397,973	792879,310	191.621,8mE	4.869.765,8mN	20,31
14	281377,679	792879,110	191.620,4mE	4.869.745,5mN	37,04
15	281340,709	792878,849	191.617,8mE	4.869.708,5mN	19,25
16	281321,464	792878,715	191.616,5mE	4.869.689,2mN	11,71
17	281309,759	792878,634	191.615,7mE	4.869.677,5mN	53,92
18	281255,842	792878,263	191.612,0mE	4.869.623,6mN	46,44
S(S3)=78880mp P=1126,08m					

INVENTAR DE COORDONATE - **S4** NR. CAD.108819, 109729
INVENTORY COORDINATES - **S4** CAD. NO. 108819, 109729

Nr. Pct.	Coordonate pct.de contur Stereo 70 X [m]	Y [m]	Coordonate pct.de contur WGS 84 X [m]	Y [m]	Lungimi laturi D(i,i+1)
2	281528,099	793350,925	192.100,0mE	4.869.858,7mN	5,62
3	281534,688	793352,429	192.101,2mE	4.869.855,2mN	6,61
4	281540,520	793354,199	192.102,5mE	4.869.846,7mN	5,21
5	281580,297	793355,593	192.103,6mE	4.869.841,6mN	8,02
6	281585,567	793357,742	192.105,3mE	4.869.833,8mN	8,02
7	281588,799	793359,024	192.106,8mE	4.869.826,9mN	7,02
8	281484,413	793360,843	192.107,7mE	4.869.822,5mN	4,55
9	281479,408	793362,234	192.108,8mE	4.869.817,4mN	5,19
10	281474,068	793364,829	192.110,8mE	4.869.807,9mN	9,64
11	281466,780	793367,409	192.113,8mE	4.869.803,2mN	9,64
12	281460,742	793367,419	192.113,2mE	4.869.796,7mN	3,59
13	281457,284	793368,381	192.113,6mE	4.869.793,2mN	22,22
14	281435,875	793374,329	192.118,2mE	4.869.773,2mN	22,22
15	281435,875	793374,329	192.118,8mE	4.869.770,6mN	2,83
16	281430,165	793375,916	192.119,4mE	4.869.767,4mN	492,26
17	281430,300	792883,678	191.628,4mE	4.869.801,8mN	5,70
18	281435,998	792883,736	191.628,8mE	4.869.807,5mN	5,70
19	281441,687	792883,794	191.630,5mE	4.869.832,3mN	24,84
20	281474,107	792884,082	191.631,2mE	4.869.841,5mN	9,32
21	281483,425	792884,175	191.631,9mE	4.869.850,8mN	9,37
22	281492,793	792884,279	191.632,5mE	4.869.860,2mN	9,37
23	281499,545	792884,339	191.633,0mE	4.869.866,9mN	12,72
24	281512,267	792884,468	191.633,9mE	4.869.879,6mN	11,75
25	281519,680	793345,551	192.095,8mE	4.869.878,3mN	20,15
S(S4)=67304mp P=1233,91m					

INVENTAR DE COORDONATE NR. CAD. 109729
INVENTORY COORDINATES CAD. NO. 109729

Nr. Pct.	Coordonate pct.de contur Stereo 70 X [m]	Y [m]	Coordonate pct.de contur WGS 84 X [m]	Y [m]	Lungimi laturi D(i,i+1)
1	281524,018	792884,586	191.634,8mE	4.869.891,3mN	466,36
2	281520,699	793350,925	192.100,0mE	4.869.858,7mN	22,75
3	281498,019	793350,903	192.099,8mE	4.869.836,0mN	23,19
4	281475,909	793350,983	192.099,6mE	4.869.813,9mN	2,42
5	281473,569	793350,952	192.099,4mE	4.869.811,5mN	36,96
6	281436,671	793349,486	192.098,2mE	4.869.774,6mN	13,29
7	281423,397	793349,163	192.098,0mE	4.869.761,3mN	22,36
8	281401,051	793349,018	192.098,0mE	4.869.738,9mN	23,49

INVENTAR DE COORDONATE NR. CAD. 109115
INVENTORY COORDINATES CAD. NO. 109115

Nr. Pct.	Coordonate pct.de contur Stereo 70 X [m]	Y [m]	Coordonate pct.de contur WGS 84 X [m]	Y [m]	Lungimi laturi D(i,i+1)
10	281478,068	793364,829	192.110,8mE	4.869.807,9mN	9,64
11	281466,780	793367,409	192.113,8mE	4.869.803,2mN	9,64
12	281460,742	793367,419	192.113,2mE	4.869.796,7mN	3,59
13	281457,284	793368,381	192.113,6mE	4.869.793,2mN	22,22
14	281435,875	793374,329	192.118,2mE	4.869.773,2mN	22,22
15	281435,875	793374,329	192.118,8mE	4.869.770,6mN	2,83
16	281430,165	793375,916	192.119,4mE	4.869.767,4mN	3,10
17	281430,300	792883,678	191.628,4mE	4.869.801,8mN	492,26
18	281435,998	792883,736	191.628,8mE	4.869.807,5mN	5,70
19	281441,687	792883,794	191.630,5mE	4.869.832,3mN	24,84
20	281474,107	792884,082	191.631,2mE	4.869.841,5mN	9,32
21	281483,425	792884,175	191.631,9mE	4.869.850,8mN	9,37
22	281492,793	792884,279	191.632,5mE	4.869.860,2mN	9,37
23	281499,545	792884,339	191.633,0mE	4.869.866,9mN	12,72
24	281512,267	792884,468	191.633,9mE	4.869.879,6mN	11,75
S=43004mp P=1141,68m					

INVENTAR DE COORDONATE DE 269 NR. CAD. 109115
INVENTORY COORDINATES CAD. NO. 109115

Nr. Pct.	Coordonate pct.de contur Stereo 70 X [m]	Y [m]	Coordonate pct.de contur WGS 84 X [m]	Y [m]	Lungimi laturi D(i,i+1)
10	281478,068	793364,829	192.110,8mE	4.869.807,9mN	9,64
11	281466,780	793367,409	192.113,8mE	4.869.803,2mN	9,64
12	281460,742	793367,419	192.113,2mE	4.869.796,7mN	3,59
13	281457,284	793368,381	192.113,6mE	4.869.793,2mN	22,22
14	281435,875	793374,329	192.118,2mE	4.869.773,2mN	22,22
15	281435,875	793374,329	192.118,8mE	4.869.770,6mN	2,83
16	281430,165	793375,916	192.119,4mE	4.869.767,4mN	3,10
17	281430,300	792883,678	191.628,4mE	4.869.801,8mN	492,26
18	281435,998	792883,736	191.628,8mE	4.869.807,5mN	5,70
19	281441,687	792883,794	191.630,5mE	4.869.832,3mN	24,84
20	281474,107	792884,082	191.631,2mE	4.869.841,5mN	9,32
21	281483,425	792884,175	191.631,9mE	4.869.850,8mN	9,37
22	281492,793	792884,279	191.632,5mE	4.869.860,2mN	9,37
23	281499,545	792884,339	191.633,0mE	4.869.866,9mN	6,75
24	281512,267	792884,468	191.633,9mE	4.869.879,6mN	12,72
25	281519,680	793345,551	192.095,8mE	4.869.878,3mN	11,75
S(269)=49mp P=121,20m					

INVENTAR DE COORDONATE NR. CAD. 107127
INVENTORY COORDINATES CAD. NO. 107127

Nr. Pct.	Coordonate pct.de contur Stereo 70 X [m]	Y [m]	Coordonate pct.de contur WGS 84 X [m]	Y [m]	Lungimi laturi D(i,i+1)
1	281471,811	793374,655	192.120,7mE	4.869.888,9mN	22,75
4	281449,936	793380,922	192.120,7mE	4.869.888,9mN	23,19
3	281427,909	793388,186	192.131,5mE	4.869.764,4mN	2,42
2	281425,542	793388,950	192.132,1mE	4.869.762,0mN	36,96
1	281414,647	793424,276	192.166,7mE	4.869.748,9mN	13,29
8	281427,293	793420,187	192.163,4mE	4.869.761,8mN	4,38
7	281431,557	793419,145	192.162,6mE	4.869.766,1mN	31,05
6	281461,068	793499,486	192.154,8mE	4.869.796,2mN	36,44
S(107127)=1484mp P=170,91m					

INVENTAR DE COORDONATE NR. CAD. 106571
INVENTORY COORDINATES CAD. NO. 106571

Nr. Pct.	Coordonate pct.de contur Stereo 70 X [m]	Y [m]	Coordonate pct.de contur WGS 84 X [m]	Y [m]	Lungimi laturi D(i,i+1)
6	281461,068	793499,486	192.154,8mE	4.869.796,2mN	36,44
1	281431,557	793419,145	192.162,6mE	4.869.766,1mN	31,05
2	281427,293	793420,187	192.163,4mE	4.869.761,8mN	4,38
9	281414,647	793424,276	192.166,7mE	4.869.748,9mN	13,29
10	281406,901	793449,453	192.191,4mE	4.869.739,6mN	26,34
11	281428,844	793445,663	192.188,9mE	4.869.761,8mN	22,36
12	281451,651	793440,018	192.184,7mE	4.869.784,9mN	23,49
S(106571)=1180mp P=152,78m					

NOTE / NOTES:

1. TOATE SUPRAFETELE LIBERE IMPREJMUITE CU GARD DE PROTECTIE SI DRUMURILE INTERIOARE VOR FI ACOPERITE CU PIATRA SPARTA.
SUPRAFETELE LIBERE DIN INTERIORUL IMPREJMUITURII CAMEREI DE CONTROL CENTRALIZAT SI CONEXIUNEA LA DRUMUL DE ACCES VOR FI PAVATE. ALL OPEN SURFACES INSIDE FENCED AREAS AND INTERNAL ROADS WILL BE COVERED WITH CRUSHED GRAVEL. OPEN SURFACE INSIDE CENTRAL CONTROL ROOM FENCED AREA AND ACCESS ROAD CONNECTION WILL BE PAVED.
2. CODUL DE DISPERSIE GAZE VA FI ASIPLASAT LA O DISTANTA DE MINIM 25M FATA DE GARD SAU ALTE ECHIPAMENTE.
THE BLOWDOWN STACK SHALL BE AT A MINIMUM DISTANCE OF 25M FROM EQUIPMENT AND THE FENCE LINE.
3. PROTECTIA CONDUCTIEI DE GAZE NATURALE PRIN TUNEL REZULTA DIN PROIECTUL DE TUNEL.
CONCRETE CASING RESULTS FROM TUNNELING PROCESS.
4. PLANUL ESTE ELABORAT IN SISTEMUL DE COORDONATE STEREO 70.
COORDINATES SYSTEM USED ON THE DRAWING IS STEREO 70.
5. CONFORM LEGISLATIEI ROMANESTI, VIRGULA SI PUNCTUL SUNT UTILIZATE INVERS, PENTRU DEFINIREA ZECIMALELOR.
DIMENSIUNILE IN SISTEM US AU FOST DEFINITE ASTFEL: SIMBOLUL VIRGULA A FOST FOLOSIT PENTRU SEPARAREA CIFRELOR DIN INTEGRUL NUMERELOR CARE DEFINESC SUTE, MII SAU ZECI IN FUNCTIE DE CAZ. SUBUNITATILE DE MASURA (ZECIMALELE) AU FOST SEPARATE PRIN PUNCT, CONFORM REGULILOR DIN ROMANIA VIRGULA SI PUNCTUL SUNT FOLOSITE INVERS PENTRU DEFINIREA ZECIMALELOR INTR-UN NUMAR. DIN ACEST MOTIV TOATE CIFRELE AFLATE DUPA PUNCT INTR-UN NUMAR VOR FI CITITE CA ZECIMALE.
ACCORDING TO THE ROMANIAN LEGISLATION, THE COMMA AND THE POINT ARE USED IN REVERSE, FOR THE DEFINITION OF DECIMALS.
THE DIMENSIONS IN THE US SYSTEM HAVE BEEN DEFINED AS FOLLOWS. THE COMMA SYMBOL HAS BEEN USED TO SEPARATE DIGIT INSIDE THE NUMBERS WHEN THE DIGIT DEFINE HUNDREDS, THOUSANDS, OR TENS DEPENDING ON THE CASE. THE DIGIT OF DECIMALS ARE SEPARATED BY A POINT. IN ACCORDING WITH THE RULES IN ROMANIA THE COMA AND POINT ARE USE IN OPPOSITE WAY FOR DEFINED THE DIGIT INSIDE OF NUMBER. FOR THIS REASON, ALL DIGIT OF NUMBERS AFTER POINT WILL BE READ LIKE DECIMALS.
6. PLANSA ESTE INTOCMITA IN SISTEMUL DE COORDONATE STEREO 70. COORDONATELE WGS 84 AU FOST OBTINUTE PRIN CONVERSIE, FOLOSIND METODE ELECTRONICE DE CALCUL SI PARAMETRI SPECIFICI. CONVERSIA PRESUPUNE TRANSFORMAREA PRIN (TRANSLATARI, ROTIRI SI / SAU SCALARI) ALE COORDONATELOR STEREO 70.
DEFINITIVI SUNT DOCUMENTELE REALIZATE IN SISTEMUL STEREO 70. ACESTEA VOR FI UTILIZATE IN SCOPUL PUNERII IN OPERA A PROIECTULUI. DOCUMENTELE EMISE IN SISTEMUL WGS 84 REPREZINTA RASPUNSUL LA UNELE CERINTE ALE AUTORITATILOR SI LEGISLATIEI ROMANESTI.
THE PLAN IS PREPARED IN STEREO 70 COORDINATE SYSTEM. THE WGS 84 COORDINATES WERE OBTAINED BY CONVERSION, USING ELECTRONIC CALCULATION METHODS AND SPECIFIC PARAMETERS. THE CONVERSION INVOLVES TRANSFORMATIONS (TRANSLATION, ROTATIONS AND / OR SCALING) OF THE STEREO 70 COORDINATES.
THE DEFINING ARE THE DOCUMENTS MADE IN THE STEREO 70 SYSTEM. THESE WILL BE USED FOR THE PURPOSE OF IMPLEMENTING THE PROJECT. THE DOCUMENTS ISSUED IN THE WGS 84 SYSTEM REPRESENT THE ANSWER TO THE SOME REQUIREMENTS OF THE ROMANIAN AUTHORITIES AND LEGISLATION.

SUPRAFATA AFECTATA DE LUCRARI DE CONSTRUIRE
AREA AFECTED BY CONSTUCTION WORKS

SUPRAFATA OMV PETROM SA	223184mp
DC4 (PRIMARIA TUZLA / TUZLA CITY HALL)	657mp
DE277 (PRIMARIA TUZLA / TUZLA CITY HALL)	898mp
DE 259/4 (PRIMARIA TUZLA / TUZLA CITY HALL)	571mp
CALE FERATA / RAILWAY (CNCF CFR S.A.)	4408mp
DE 269 (PRIMARIA TUZLA / TUZLA CITY HALL)	494mp
FALEZA / CLIFF (PRIMARIA TUZLA / TUZLA CITY HALL)	1484mp
PLAJA / BEACH (ANAR / ABA DOBROGEA LITORAL)	1180mp
TOTAL	**232676mp**

PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNE UMPLEMENTARE SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

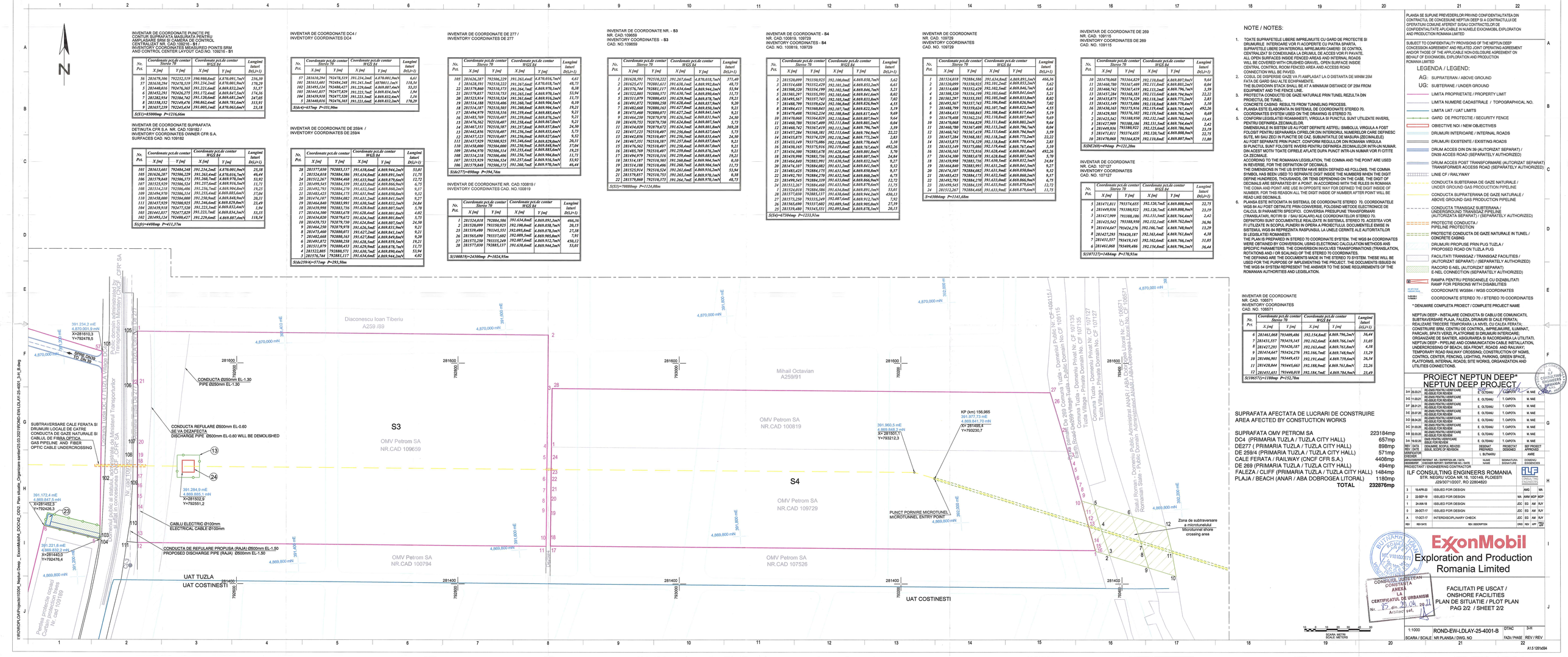
SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND THE OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

LEGENDA / LEGEND:

AG: SUPRATERAN / ABOVE GROUND
UG: SUBTERANE / UNDER GROUND
LIMITA PROPRIETATE / PROPERTY LIMIT
LIMITA NUMERE CADASTRALE / TOPOGRAPHICAL NO.
LIMITA CAT / UAT LIMITS
GARD DE PROTECTIE / SECURITY FENCE
OBIECTIVE NOI / NEW OBJECTIVES
DRUMURI INTERIOARE / INTERNAL ROADS
DRUMURI EXISTENTE / EXISTING ROADS
DRUM ACCES DN DN 39 (AUTORIZAT SEPARATI) / DN39 ACCES ROAD (SEPARATELY AUTHORIZED)
DRUM ACCES POST TRANSFORMARE (AUTORIZAT SEPARAT) / TRANSFORMER ACCESS ROAD (SEPARATELY AUTHORIZED)
LINIE CF / RAILYWAY
CONDUCTA SUBTERANA DE GAZE NATURALE / UNDER GROUND GAS PRODUCTION PIPELINE
CONDUCTA SUPRATERANA DE GAZE NATURALE / ABOVE GROUND GAS PRODUCTION PIPELINE
CONDUCTA TRANSGAZ SUBTERANA / UNDERGROUND CONDUCTA TRANSGAZ PIPELINE (AUTORIZATA SEPARAT) / (SEPARATELY AUTHORIZED)
PROTECTIE CONDUCTA / PIPELINE PROTECTION
PROTECTIE CONDUCTA DE GAZE NATURALE IN TUNEL / CONDUCTA DE GAZE NATURALE IN TUNEL
DRUMURI PROPUSE PRIN PUG TUZLA / PROPOSED ROAD ON TUZLA PUG
FACILITATI TRANSGAZ / TRANSGAZ FACILITIES / (AUTORIZAT SEPARAT) / (SEPARATELY AUTHORIZED)
RACORD E-NEL (AUTORIZAT SEPARAT) E-NEL CONNECTION (SEPARATELY AUTHORIZED)
RAMPA PENTRU PERSOANELE CU DIZABILITATI / RAMP FOR PERSONS WITH DISABILITIES
COORDONATE WGS84 / WGS COORDINATES
COORDONATE STEREO 70 / STEREO 70 COORDINATES

* DENUMIRE COMPLETA PROIECT / COMPLETE PROJECT NAME

NEPTUN DEEP - INSTALARE CONDUCTA SI CABLU DE COMUNICATII, SUBTRAVERSARE PLAJA, FALEZA, DRUMURI SI CALE FERATA; REALIZARE TRECERE TEMPORARA LA NIVEL CU CALEA FERATA; CONSTRUIRE SRM, CENTRE DE CONTROL, IMPREJMUIRE, ILUMINAT, PARCARI, SPATII VERZI, PLATFORME SI DRUMURI INTERIOARE; ORGANIZARE DE SANTIER. ASIGURAREA SI RACORDAREA LA UTILITATI.
NEPTUN DEEP - PIPELINE AND COMMUNICATION CABLE INSTALLATION, UNDERCROSSING OF BEACH, SEA FRONT, ROADS AND RAILWAY; TEMPORARY ROAD RAILWAY CROSSING; CONSTRUCTION OF SMRS, CONTROL CENTER, FENCING, LIGHTING, PARKING, GREEN SPACE, PLATFORMS, INTERNAL ROADS; SITE WORKS, ORGANIZATION AND UTILITIES CONNECTIONS.


Diaconescu Ioan Tiberiu
A259 /89
Mihail Octavian
A259/91
OMV Petrom SA
NR.CAD 100819
OMV Petrom SA
NR.CAD 109659
OMV Petrom SA
NR.CAD 109729
OMV Petrom SA
NR.CAD 100794
OMV Petrom SA
NR.CAD 107526
S3
S4
UAT TUZLA
UAT COSTINESTI
UAT COSTINESTI
SPRE DN 39
CONDUCTA Ø250mm EL-1.30
PIPE Ø250mm EL-1.30
SUBTRAVERSARE CALE FERATA SI DRUMURI LOCALE DE CATRE CONDUCTA DE GAZE NATURALE SI CABLUL DE FIBRA OPTICA.
GAS PIPELINE AND FIBER OPTIC CABLE UNDERCROSSING
CONDUCTA REFULARE Ø600mm EL-0.60
DE VA DEZAFECTA
DISCHARGE PIPE Ø600mm EL-0.60 WILL BE DEMOLISHED
CABLU ELECTRIC Ø100mm
ELECTRICAL CABLE Ø100mm
CONDUCTA DE REFULARE PROPUSA (RAJA) Ø500mm EL-1.50
PROPOSED DISCHARGE PIPE (RAJA) Ø500mm EL-1.50
PUNCT PORNIRE MICROTUNEL
MICROTUNNEL ENTRY POINT
Zona de subtraversare a microtunelului
Microtunnel shore crossing area
KP (km) 156,965
391.877,73 mE
4.869.841,70 mN
X= 281400,4
Y=793230,7
391.960,5 mE
4.869.848,9 mN
X= 281600,1
Y=793212,3
391.234,2 mE
4.870.001,9 mN
X=281610,3
Y=792478,5
391.172,4 mE
4.869.847,5 mN
X=281452,3
Y=792426,3
391.221,6 mE
4.869.832,2 mN
X=281440,0
Y=792476,4
391.284,9 mE
4.869.895,1 mN
X=281502,9
Y=792551,2
Pentru protectia copacilor Curtain protection trees Nr. cad 109189
Pentru protectia copacilor Curtain protection trees Nr. cad 109189
Proprietate publica si administrata OMV PETROM SA Property public and administrated OMV PETROM SA
Proprietate publica si administrata de Ministerul Transporturilor Property public and administrated by Ministry of Transport

Appendix C. Onshore and Offshore Site Layout Plans

2 - Onshore facilities site organization and temporary works layout plan

INVENTAR DE COORDONATE PUNCTE PE CONTUR SUPRAFATA MASURATA PENTRU AMPLASARE SRM SI CAMERA DE CONTROL CENTRALIZAT NR. CAD.109216 - **S1** / INVENTORY COORDINATES MEASURED POINTS SRM AND CONTROL CENTER LAYOUT CAD.NO. 109216 - **S1**

Nr. Pct.	Coordonate pct.de contur Stereo 70 X [m]	Coordonate pct.de contur Stereo 70 Y [m]	Coordonate pct.de contur WGS 84 X [m]	Coordonate pct.de contur WGS 84 Y [m]	Lungimi laturi D(i,i+1)
56	281679,306	792252,519	390.980,8mE	4.870.091,7mN	236,30
57	281610,294	792478,519	391.234,2mE	4.870.001,9mN	170,29
5	281440,016	792476,365	391.221,6mE	4.869.832,2mN	51,57
6	281452,291	792426,275	391.172,4mE	4.869.847,5mN	174,36
7	281282,954	792384,742	391.120,6mE	4.869.681,2mN	247,05
8	281358,352	792149,476	390.862,4mE	4.869.781,6mN	313,91
9	281657,239	792245,434	391.005,1mE	4.870.063,6mN	23,18
S(S1)=85000mp P=1216,66m					

INVENTAR DE COORDONATE DC4 / INVENTORY COORDINATES DC4

Nr. Pct.	Coordonate pct.de contur Stereo 70 X [m]	Coordonate pct.de contur Stereo 70 Y [m]	Coordonate pct.de contur WGS 84 X [m]	Coordonate pct.de contur WGS 84 Y [m]	Lungimi laturi D(i,i+1)
57	281610,294	792478,519	391.234,2mE	4.870.001,9mN	6,61
101	281613,601	792484,248	391241,3mE	4.870.011,1mN	118,54
102	281495,124	792480,427	391.229,6mE	4.869.887,4mN	53,35
103	281441,837	792477,829	391.223,7mE	4.869.834,3mN	1,94
104	281439,918	792477,520	391223,3mE	4.869.832,4mN	1,16
5	281440,016	792476,365	391.221,6mE	4.869.832,2mN	170,29
S(dc4)=657mp P=351,90m					

INVENTAR DE COORDONATE
SUPRAFATA DETINUTA CFR S.A NR. CAD.109182 /
INVENTORY COORDINATES OWNER CFR S.A.
SURFACES CAD. NO.109182

Nr. Pct.	Coordonate pct.de contur WGS 84 X [m]	Coordonate pct.de contur WGS 84 Y [m]	Coordonate pct.de contur WGS 84 X [m]	Coordonate pct.de contur WGS 84 Y [m]	Lungimi laturi D(i,i+1)
101	281613,601	792484,248	391.234,2mE	4.870.001,9mN	25,38
105	281626,287	792506,229	391.263,4mE	4.870.016,7mN	46,44
106	281579,848	792506,373	391.260,7mE	4.869.970,3mN	53,92
107	281525,929	792506,524	391.257,6mE	4.869.916,5mN	11,71
108	281514,218	792506,406	391.256,7mE	4.869.904,8mN	19,25
109	281494,970	792506,314	391.255,4mE	4.869.885,6mN	37,04
110	281458,000	792504,000	391.250,9mE	4.869.848,9mN	20,31
111	281437,929	792500,925	391.246,6mE	4.869.829,0mN	23,49
104	281439,918	792477,520	391.223,3mE	4.869.832,4mN	1,94
103	281441,837	792477,829	391.223,7mE	4.869.834,3mN	53,35
102	281495,124	792480,427	391.229,6mE	4.869.887,4mN	118,54
S(cfr)=4408mp P=411,37m					

DETALIERE CONTAINERE ORGANIZARE DE SANTIER / DETAILED SITE ORGANIZATION CONTAINERS

SIMBOL SYMBOL	DENUMIRE DESCRIPTION	DIMENSIUNI CONTAINER (latime x lungime), mm, (NR. BUC.) DIMENSIONS (width x length), mm, (NUMBER OF CONTAINERS)
A	CONTAINER DEPOZITARE INDOOR WAREHOUSE	19480x12110 (8 buc de care / 8 pieces of: 2435x12110)
B	CONTAINER BIROURI CONTRACTOR OFFICE	9740x12110 (4 buc de care / 4 pieces of: 2435x12110)
C	CONTAINER BIROURI CLIENT CLIENT OFFICE	4870x12110 (2 buc de care / 2 pieces of: 2435x12110)
D	SALA DE MESE MESS HALL	9740x12110 (4 buc de care / 4 pieces of: 2435x12110)
E	CONTAINER PRIM AJUTOR INFIRMARY	2435x12110 (1 buc de / 1 piece of: 2435x12110)
F	GRUPURI SANITARE TOILET AND SHOWER FACILITIES	4870x6055 (2 buc de / 2 pieces of: 2435x6055)
G	CABINA DE PAZA GUARD HOUSE	2435x2989 (1 buc de / 1 piece of: 2435x2989)

DETALIERE SUPRAFETE ORGANIZARE DE SANTIER / DETAILED SITE ORGANIZATION AREAS

NUMAR ITEM NO.	DENUMIRE ITEM NAME	SUPRAFATA TOTALA OCUPATA TEMPORAR TOTAL SURFACE OCCUPIED TEMPORARILY
1	STATIE MASURARE / NGMS	S = 9770mp/sqm
2	CORIDOR CONDUCTA / PIPELINE CORRIDOR	S = 16523mp/sqm
3	TRAVERSARE TEMPORARA CALE FERATA SI RACORDARE DRUMURI LOCALE / TEMPORARY RAILWAY CROSSING AND LOCAL ROADS CONNECTION	S = 1030mp/sqm
4	SUBTRAVERSARE CALE FERATA SI DRUMURI LOCALE DE CATRE CONDUCTA DE GAZE NATURALE / NATURAL GAS PIPELINE UNDERCROSSING OF RAILWAY AND LOCAL ROADS	S = 539mp/sqm
5	DRUM SANTIER / SITE ROAD	S = 9499mp/sqm
6	ASAMBLARE CONDUCTE / STRINGING YARD	S = 18339mp/sqm
7	DEPOZITARE TEVI / PIPE STORAGE	S = 450mp/sqm
8	LANSARE CONDUCTA / LAUNCH SHAFT	S = 5850mp/sqm
9	ZONA DEPOZITARE SOL EXCAVAT EXCAVATED SOIL AREA	S = 1100mp/sqm
10	ZONA DEPOZITARE SOL VEGETAL VEGETAL SOIL AREA	S = 6120mp/sqm

NOTE / NOTES:

1. TOATE SUPRAFETELE IMPREJMUITE CU GARD DE PROTECTIE, ZONA ASAMBLARE CONDUCTA, ZONA DEPOZITARE TEVI SI DRUMURILE DE ORGANIZARE DE SANTIER VOR FI ACOPERITE CU PIATRA SPARTA.
   ALL THE SURFACES INSIDE FENCED AREAS, STRINGING YARD, PIPE STORAGE AREA AND SITE WORKS ORGANIZATION ROADS WILL BE COVERED WITH CRUSHED GRAVEL.
2. TRECEREA TEMPORARA LA NIVEL CU CALEA FERATA SE VA REALIZA CONFORM PROIECTULUI DE SPECIALITATE.
   THE TEMPORARY ROAD RAILWAY CROSSING WILL BE BUILT ACCORDING WITH SPECIALITY PROJECT.
3. CONFORM LEGISLATIEI ROAMANESTI, VIRGULA SI PUNCTUL SUNT UTILIZATE INVERS, PENTRU DEFINIREA ZECIMALELOR.
   DIMENSIUNILE IN SISTEM US AU FOST DEFINITE ASTFEL: SIMBOLUL VIRGULA A FOST FOLOSIT PENTRU SEPARAREA CIFRELOR DIN INTERIORUL NUMERELOR CARE DEFINESC SUTE, MII SAU ZECI IN FUNCTIE DE CAZ. SUBUNITATILE DE MASURA (ZECIMALELE) AU FOST SEPARATE PRIN PUNCT. CONFORM REGULILOR DIN ROMANIA VIRGULA SI PUNCTUL SUNT FOLOSITE INVERS PENTRU DEFINIREA ZECIMALELOR INTR-UN NUMAR. DIN ACEST MOTIV TOATE CIFRELE AFLATE DUPA PUNCT INTR-UN NUMAR VOR FI CITITE CA ZECIMALE.
   ACCORDING TO THE ROMANIAN LEGISLATION, THE COMMA AND THE POINT ARE USED IN REVERSE, FOR THE DEFINITION OF DECIMALS.
   THE DIMENSIONS IN THE US SYSTEM HAVE BEEN DEFINED AS FOLLOWS. THE COMMA SYMBOL HAS BEEN USED TO SEPARATE DIGIT INSIDE THE NUMBERS WHEN THE DIGIT DEFINE HUNDREDS, THOUSANDS, OR TENS DEPENDING ON THE CASE. THE DIGIT OF DECIMALS ARE SEPARATED BY A POINT. IN ACCORDING WITH THE RULES IN ROMANIA THE COMA AND POINT ARE USE IN OPPOSITE WAY FOR DEFINED THE DIGIT INSIDE OF NUMBER. FOR THIS REASON ALL THE DIGIT INSIDE OF NUMBER AFTER POINT WILL BE READ LIKE DECIMALS.
4. PLANSA ESTE INTOCMITA IN SISTEMUL DE COORDONATE STEREO 70. COORDONATELE WGS 84 AU FOST OBTINUTE PRIN CONVERSIE, FOLOSIND METODE ELECTRONICE DE CALCUL SI PARAMETRI SPECIFICI. CONVERSIA PRESUPUNE TRANSFORMARI (TRANSLATARI, ROTIRI SI / SAU SCALARI) ALE COORDONATELOR STEREO 70.
   DEFINITORII SUNT DOCUMENTELE REALIZATE IN SISTEMUL STEREO 70. ACESTEA VOR FI UTILIZATE IN SCOPUL PUNERII IN OPERA A PROIECTULUI. DOCUMENTELE EMISE IN SISTEMUL WGS 84 REPREZINTA RASPUNSUL LA UNELE CERINTE ALE AUTORITATILOR SI LEGISLATIEI ROMANESTI.
   THE PLAN IS PREPARED IN STEREO 70 COORDINATE SYSTEM. THE WGS 84 COORDINATES WERE OBTAINED BY CONVERSION, USING ELECTRONIC CALCULATION METHODS ANS SPECIFIC PARAMETERS. THE CONVERSION INVOLVES TRANSFORMATIONS (TRANSLATION, ROTATIONS AND / OR SCALING) OF THE STEREO 70 COORDINATES.
   THE DEFINING ARE THE DOCUMENTS MADE IN THE STEREO 70 SYSTEM. THESE WILL BE USED FOR THE PURPOSE OF IMPLEMENTING THE PROJECT. THE DOCUMENTS ISSUED IN THE WGS 84 SYSTEM REPRESENT THE ANSWER TO THE SOME REQUIREMENTS OF THE ROMANIAN AUTHORITIES AND LEGISLATION.

PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

LEGENDA / LEGEND:

- LIMITA PROPRIETATE / PROPERTY LIMIT
- LIMITA NUMERE CADASTRALE / TOPOGRAPHICAL NO.
- LIMITA UAT / UAT LIMITS
- GARD DE PROTECTIE / SECURITY FENCE
- GARD DE PROTECTIE ORGANIZARE SANTIER / SECURITY FENCE SITE ORGANIZATION
- CONTAINERE ORGANIZARE DE SANTIER / SITE ORGANIZATION CONTAINERS
- AMENAJARE TEMPORARA DEPOZITARE MATERIALE / TEMPORARY PRECOMMISSIONING PAD
- SUPRAFATA PARCARE TEMPORARA / TEMPORARY PARKING AREA
- ORGANIZARE DE SANTIER STATIE MASURAE / NGMS SITE ORGANIZATION
- CORIDOR CONDUCTA / PIPELINE CORIDOR
- TRAVERSARE TEMPORARA CALE FERATA SI RACORDARE DRUMURI LOCALE / TEMPORARY RAILWAY CROSSING AND LOCAL ROADS CONNECTION
- SUBTRAVERSARE CALE FERATA SI DRUMURI LOCALE DE CATRE CONDUCTA DE GAZE NATURALE / NATURAL GAS PIPELINE UNDERCROSSING OF RAILWAY AND LOCAL ROADS
- DRUMURI ORGANIZARE DE SANTIER / SITE ORGANIZATION ROAD
- ASAMBLARE CONDUCTE / STRINGING YARD
- DEPOZITARE TEVI / PIPE STORAGE
- LANSARE CONDUCTA / LAUNCH SHAFT
- OBIECTIVE NOI / NEW OBJECTIVES
- DRUMURI EXISTENTE / EXISTING ROADS
- DRUM ACCESS DIN DN 39 / DN 39 ACCESS ROAD
- LINIE CF / RAILYWAY
- TRECERE TEMPORARA LA NIVEL CU CALEA FERATA / TEMPORARY RAIL ROAD CROSSING
- CONDUCTA SUBTERANA DE GAZE NATURALE / UNDER GROUND GAS PRODUCTION PIPELINE
- PROTECTIE CONDUCTA / PIPELINE PROTECTION
- PROTECTIE CONDUCTA DE GAZE NATURALE IN TUNEL / CONCRETE CASING
- DRUMURI PROPUSE PRIN PUG TUZLA / PROPOSED ROAD ON TUZLA PUG
- GENERATOR ELECTRIC / DIESEL GENERATOR
- TABLOU ELECTRIC / ELECTRICAL PANEL
- REZERVOR COMBUSTIBIL 7,5 m³ / FUEL TANK 7,5m³
- FOSA SEPTICA 20m³/ SEPTIC TANK 20m³
- REZERVOR APA 12m³/ WATER TANK 12m³
- COORDONATE WGS84 / WGS COORDINATES
- COORDONATE STEREO 70 / STEREO 70 COORDINATES

* DENUMIRE COMPLETA PROIECT / COMPLETE PROJECT NAME
NEPTUN DEEP - INSTALARE CONDUCTA SI CABLU DE COMUNICATII, SUBTRAVERSARE PLAJA, FALEZA, DRUMURI SI CALE FERATA; REALIZARE TRECERE TEMPORARA LA NIVEL CU CALEA FERATA; CONSTRUIRE SRM, CENTRU DE CONTROL, IMPREJMUIRE, ILUMINAT, PARCARI, SPATII VERZI, PLATFORME SI DRUMURI INTERIOARE; ORGANIZARE DE SANTIER, ASIGURAREA SI RACORDAREA LA UTILITATI.
NEPTUN DEEP - PIPELINE AND COMMUNICATION CABLE INSTALLATION, UNDERCROSSING OF BEACH, SEA FRONT, ROADS AND RAILWAY; TEMPORARY ROAD RAILWAY CROSSING; CONSTRUCTION OF NGMS, CONTROL CENTER, FENCING, LIGHTING, PARKING, GREEN SPACE, PLATFORMS, INTERNAL ROADS; SITE WORKS, ORGANIZATION AND UTILITIES CONNECTIONS.

PROIECT NEPTUN DEEP
NEPTUN DEEP PROJECT

REV	DATA DATE	EMIS PENTRU VERIFICARE / ISSUE FOR REVIEW	E. OLTEANU	T. CAPOTA	M. NAE
H	28.09.21				
G	25.03.21				
F	12.03.21				
E	28.01.21				
D	23.07.20				
C	15.07.20				
B	01.07.20				
A	19.05.20				
REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
VERIFICATOR CHECKER			I. DUNA		A1, A2
DESENATORI DRAWERS	REFERAT DE VERIFICARE / CHECKER REPORT	NR. / EXPERTIZA NR. / DATA / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16, 100149, PLOIESTI
J29/3071/2007, RO 22804820

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP

ExxonMobil
Exploration and Production Romania Limited

FACILITATI PE USCAT / ONSHORE FACILITIES
PLAN ORGANIZARE DE SANTIER
SI LUCRARI TEMPORARE /
SITE ORGANIZATION AND TEMPORARY WORKS LAYOUT
PAG 1/2 / SHEET 1/2

1:1000 SCARA / SCALE	ROND-IL-LDLAY-25-4002-B NR PLANSA / DWG. NO	DTAC FAZA / PHASE	H REV / REV

A1 841x594

S1
OMV PETROM SA
Nr. cad. 109216
A289/1a, lot 212

SUPRAFATA AFECTATA DE LUCRARI DE CONSTRUIRE
AREA AFECTED BY CONSTUCTION WORKS

SUPRAFATA OMV PETROM SA	223184mp
DC4 (PRIMARIA TUZLA / TUZLA CITY HALL)	657mp
DE277 (PRIMARIA TUZLA / TUZLA CITY HALL)	898mp
DE 259/4 (PRIMARIA TUZLA / TUZLA CITY HALL)	571mp
CALE FERATA / RAILWAY (CNCF CFR S.A.)	4408mp
DE 269 (PRIMARIA TUZLA / TUZLA CITY HALL)	494mp
FALEZA / CLIFF (PRIMARIA TUZLA / TUZLA CITY HALL)	1484mp
PLAJA / BEACH (ANAR / ABA DOBROGEA LITORAL)	1180mp
TOTAL	**232876mp**

PLAN CHEIE / KEY PLAN
SC. 1:10000

INVENTAR DE COORDONATE PUNCTE PE CONTUR SUPRAFATA MASURATA PENTRU AMPLASARE SRM SI CAMERA DE CONTROL CENTRALIZAT 109216 - SURVEYED POINTS SRM AND CONTROL CENTER LAYOUT CAD NO. 109216 - SI

Nr. Pct.	Coordonate pct.de contur Stereo 70		Coordonate pct.de contur WGS 84		Lungimi laturi
	X [m]	Y [m]	X [m]	Y [m]	D(Li+1)
56	281679,106	792252,519	390.980,8mE	4.870.091,7mN	236,30
57	281618,294	792478,329	391.236,2mE	4.870.081,9mN	78,20
5	281440,016	792476,365	391.231,6mE	4.869.832,2mN	51,57
6	281452,291	792426,275	391.177,9mE	4.869.849,3mN	174,39
7	281382,954	792384,742	391.120,6mE	4.869.681,2mN	247,05
8	281358,553	792149,476	390.882,6mE	4.869.731,6mN	311,91
9	281657,239	792245,434	391.005,1mE	4.870.136,6mN	25,18

S(S1)=85000mp P=1216,66m

INVENTAR DE COORDONATE SUPRAFATA DETINUTA CFR S.A. NR. CAD.109182 / INVENTORY COORDINATES OWNER CFR S.A. SURFACES CAD. NO.109182

Nr. Pct.	Coordonate pct.de contur Stereo 70		Coordonate pct.de contur WGS 84		Lungimi laturi
	X [m]	Y [m]	X [m]	Y [m]	D(Li+1)
101	281613,601	792484,248	391.234,2mE	4.870.081,9mN	25,38
103	281626,287	792506,229	391.265,4mE	4.870.076,1mN	46,44
106	281579,848	792506,373	391.260,7mE	4.869.978,3mN	55,92
107	281525,929	792506,524	391.257,6mE	4.869.916,5mN	11,71
108	281514,218	792506,406	391.256,7mE	4.869.904,6mN	19,25
109	281494,979	792506,314	391.256,6mE	4.869.885,6mN	27,84
110	281458,000	792504,000	391.250,9mE	4.869.848,9mN	20,31
111	281437,929	792500,925	391.246,6mE	4.869.829,0mN	25,49
112	281419,918	792477,520	391.223,3mE	4.869.832,0mN	21,98
103	281441,837	792477,829	391.223,7mE	4.869.834,3mN	53,35
102	281495,124	792480,427	391.229,6mE	4.869.887,4mN	118,54

S(cfp)=4400mp P=411,37m

INVENTAR DE COORDONATE DE 259/4 / INVENTORY COORDINATES DE 259/4

Nr. Pct.	Coordonate pct.de contur Stereo 70		Coordonate pct.de contur WGS 84		Lungimi laturi
	X [m]	Y [m]	X [m]	Y [m]	D(Li+1)
28	281577,098	792885,137	391.638,6mE	4.868.944,2mN	53,01
23	281618,294	792884,586	391.634,8mE	4.869.009,1mN	11,75
24	281512,267	792884,645	391.633,9mE	4.869.179,6mN	13,72
25	281499,545	792884,339	391.633,8mE	4.869.166,9mN	6,75
26	281492,793	792884,270	391.633,5mE	4.869.160,0mN	9,37
27	281483,425	792884,175	391.633,9mE	4.869.150,8mN	9,32
28	281474,107	792884,082	391.633,9mE	4.869.141,5mN	9,21
19	281464,840	792883,991	391.630,5mE	4.869.132,3mN	24,84
18	281439,998	792883,756	391.628,8mE	4.869.107,5mN	5,70
17	281434,309	792883,678	391.628,4mE	4.869.101,8mN	4,02
11	281434,020	792879,672	391.624,3mE	4.869.101,8mN	5,73
10	281439,753	792879,578	391.624,8mE	4.869.107,5mN	24,55
9	281464,250	792879,978	391.626,5mE	4.869.133,9mN	9,21
8	281473,460	792880,071	391.627,2mE	4.869.143,1mN	9,21
7	281482,668	792880,163	391.627,8mE	4.869.149,8mN	9,20
6	281492,153	792880,258	391.628,5mE	4.869.159,3mN	9,21
5	281511,079	792880,453	391.629,9mE	4.869.178,7mN	11,71
4	281522,889	792880,571	391.630,7mE	4.869.190,6mN	53,94
3	281576,744	792881,117	391.634,6mE	4.869.941,2mN	4,02

S(da259)/4=571mp P=293,50m

INVENTAR DE COORDONATE NR. CAD. 109729 / INVENTORY COORDINATES CAD. NO.109729

Nr. Pct.	Coordonate pct.de contur Stereo 70		Coordonate pct.de contur WGS 84		Lungimi laturi
	X [m]	Y [m]	X [m]	Y [m]	D(Li+1)
1	281534,018	792884,586	391.634,8mE	4.869.091,3mN	64,01
2	281530,099	792950,925	392.100,8mE	4.869.058,7mN	20,15
25	281539,480	792945,551	392.095,8mE	4.869.078,3mN	27,58
26	281565,690	792937,602	392.089,5mE	4.869.905,0mN	7,91
27	281573,493	792936,243	392.087,6mE	4.869.912,7mN	450,12
28	281577,030	792885,137	391.638,6mE	4.869.944,2mN	53,01

S(1058171)=24300mp P=1024,95m

INVENTAR DE COORDONATE DE 277 / INVENTORY COORDINATES DE 277

Nr. Pct.	Coordonate pct.de contur Stereo 70		Coordonate pct.de contur WGS 84		Lungimi laturi
	X [m]	Y [m]	X [m]	Y [m]	D(Li+1)
105	281626,287	792506,229	391.265,4mE	4.870.016,7mN	5,62
1	281628,591	792510,222	391.267,6mE	4.870.018,7mN	68,73
2	281625,471	792881,631	391.638,1mE	4.869.992,0mN	48,73
3	281576,744	792881,117	391.634,6mE	4.869.941,2mN	53,94
4	281522,805	792880,571	391.630,7mE	4.869.890,4mN	11,73
5	281511,079	792880,453	391.629,9mE	4.869.878,7mN	19,21
6	281492,153	792880,258	391.628,5mE	4.869.859,3mN	9,20
7	281482,668	792880,163	391.627,8mE	4.869.850,2mN	9,21
8	281473,460	792880,071	391.627,2mE	4.869.840,1mN	9,21
9	281464,250	792879,978	391.626,5mE	4.869.831,9mN	24,50
10	281439,753	792879,738	391.624,8mE	4.869.807,5mN	5,73
11	281434,020	792879,672	391.624,3mE	4.869.801,8mN	369,28
12	281468,742	792567,499	391.133,2mE	4.869.794,9mN	5,73
13	281472,855	792563,181	391.128,2mE	4.869.775,2mN	24,50
14	281485,871	792374,329	391.118,8mE	4.869.778,4mN	2,83
15	281485,871	792374,329	391.118,8mE	4.869.775,6mN	22,22
16	281483,167	792375,916	391.119,4mE	4.869.767,4mN	492,26
17	281434,309	792378,686	391.124,9mE	4.869.767,0mN	9,21
18	281439,998	792883,756	391.628,8mE	4.869.107,5mN	5,70
19	281444,840	792883,991	391.630,5mE	4.869.132,3mN	24,84
20	281474,107	792884,082	391.633,9mE	4.869.141,5mN	9,21
21	281483,425	792884,175	391.633,9mE	4.869.150,8mN	9,32
22	281492,793	792884,270	391.633,5mE	4.869.160,0mN	9,37
23	281499,545	792884,339	391.633,9mE	4.869.166,9mN	12,72
24	281512,267	792884,645	391.633,9mE	4.869.179,6mN	11,75

S=43306mp P=1141,68m

INVENTAR DE COORDONATE - **S4** NR. CAD.109819, 109729 / INVENTORY COORDINATES - **S4** CAD. NO. 100819, 109729

Nr. Pct.	Coordonate pct.de contur Stereo 70		Coordonate pct.de contur WGS 84		Lungimi laturi
	X [m]	Y [m]	X [m]	Y [m]	D(Li+1)
2	281520,099	793506,925	392.100,8mE	4.869.858,7mN	4,61
3	281514,688	793503,429	392.101,2mE	4.869.853,2mN	6,61
4	281508,230	793504,199	392.102,2mE	4.869.846,7mN	5,23
5	281503,297	793505,595	392.103,6mE	4.869.841,6mN	8,02
6	281495,567	793507,743	392.105,3mE	4.869.833,8mN	7,03
7	281488,799	793509,624	392.106,8mE	4.869.826,9mN	4,55
8	281484,413	793510,804	392.107,7mE	4.869.822,5mN	5,19
9	281479,498	793362,234	392.108,8mE	4.869.817,4mN	9,69
10	281470,868	793364,829	392.110,8mE	4.869.807,9mN	9,64
11	281460,780	793367,499	392.113,2mE	4.869.797,8mN	9,21
12	281460,742	793367,419	392.113,2mE	4.869.788,7mN	3,59
13	281457,284	793368,381	392.113,6mE	4.869.785,1mN	22,22
14	281435,875	793374,329	392.118,2mE	4.869.773,2mN	2,83
15	281433,149	793375,086	392.118,8mE	4.869.770,4mN	3,10
16	281430,165	793375,916	392.119,4mE	4.869.767,4mN	492,26
17	281429,581	793376,102	392.119,5mE	4.869.766,7mN	9,69
2	281425,542	793388,950	392.132,1mE	4.869.762,6mN	13,45
3	281427,909	793388,186	392.131,5mE	4.869.764,4mN	2,42
4	281427,541	793388,276	392.131,6mE	4.869.764,7mN	13,29
5	281471,811	793374,655	392.120,7mE	4.869.808,9mN	22,75
6	281470,868	793364,829	392.110,8mE	4.869.807,9mN	11,80

S(de4)=457mp P=531,90m

INVENTAR DE COORDONATE DC4 / INVENTORY COORDINATES DC4

Nr. Pct.	Coordonate pct.de contur WGS 84		Lungimi laturi
	X [m]	Y [m]	D(Li+1)
57	281616,294	792478,519	391.234,2mE	4.870.081,9mN	6,61
58	281613,601	792484,248	391.241,1mE	4870811,1mN	118,54
102	281495,124	792480,427	391.229,6mE	4.869.887,4mN	55,35
103	281441,837	792477,829	391.223,7mE	4.869.834,3mN	1,94
104	281439,943	792477,376	391.223,2mE	4.869.832,4mN	3,19
5	281440,016	792476,365	391.221,6mE	4.869.832,2mN	170,39

S(dc4)=457mp P=531,90m

NOTE / NOTES:

1. TOATE SUPRAFETELE IMPREJMUITE CU GARD DE PROTECTIE. ZONA ASAMBLARE CONDUCTA, ZONA DEPOZITARE TEVI SI DRUMURILE DE ORGANIZARE DE SANTIER VOR FI ACOPERITE CU PIATRA SPARTA. ALL THE SURFACES INSIDE FENCED AREAS, STRINGING YARD, PIPE STORAGE AREA AND SITE WORKING ROADS ON ROADS WILL BE COVERED WITH CRUSHED GRAVEL.
2. TRECEREA TEMPORARA LA NIVEL CU CALEA FERATA SE VA REALIZA CONFORM PROIECTULUI DE SPECIALITATE. THE TEMPORARY ROAD RAILWAY CROSSING WILL BE BUILT ACCORDING WITH SPECIALITY PROJECT.
3. CONFORM LEGISLATIEI ROMANESTI, VIRGULA SI PUNCTUL SUNT UTILIZATE INVERS, PENTRU DEFINIREA ZECIMALELOR. DIMENSIUNILE IN SISTEM UU AU FOST DEFINITE ASTFEL: SIMBOLUL VIRGULA A FOST FOLOSIT PENTRU SEPARAREA CIFRELOR DIN INTERIORUL NUMERELOR CARE DEFINESC SUITE; MII SAU ZECI IN FUNCTIE DE CAZ. SUBUNITATILE DE MASURA (ZECIMALELE) AU FOST SEPARATE PRIN PUNCT. CONFORM REGULILOR DIN ROMANIA VIRGULA SI PUNCTUL SUNT FOLOSITE INVERS PENTRU DEFINIREA ZECIMALELOR INTR-UN NUMAR. UN ACEST MOTIV TOATE CIFRELE ALATE DUPA PUNCT INTR-UN NUMAR VOR FI CITITE CA ZECIMALE.
   ACCORDING TO THE ROMANIAN LEGISLATION, THE COMMA AND THE POINT ARE USED IN REVERSE, FOR THE DEFINITION OF DECIMALS.
   THE DIMENSIONS IN THE UU SYSTEM HAVE BEEN DEFINED AS FOLLOWS. THE COMMA SYMBOL HAS BEEN USED TO SEPARATE DIGIT INSIDE THE NUMBERS WHEN THE DIGIT DEFINE HUNDREDS, THOUSANDS, OR TENS DEPENDING ON THE CASE. THE DIGIT OF DECIMALS ARE SEPARATED BY A POINT. IN ACCORDING WITH THE RULES IN ROMANIA THE COMA AND POINT ARE USE IN OPPOSITE WAY FOR DEFINED THE DIGIT INSIDE OF NUMBER. FOR THIS REASON ALL THE DIGIT INSIDE OF NUMBER AFTER POINT WILL BE READ LIKE DECIMALS.
4. PLANSA ESTE INTOCMITA IN SISTEMUL DE COORDONATE STEREO 70. COORDONATELE WGS 84 AU FOST OBTINUTE PRIN CONVERSIE, FOLOSIND METODE ELECTRONICE DE CALCUL SI PARAMETRII SPECIFICI. CONVERSIA PRESUPUNE TRANSFORMARI (TRANSLATARI, ROTIRI SI / SAU SCALARI) ALE COORDONATELOR STEREO 70. DEFINITORII SUNT DOCUMENTELE REALIZATE IN SISTEMUL STEREO 70, ASTFEL VOR FI UTILIZATE IN SCOPUL PUNERII IN OPERA A PROIECTULUI. DOCUMENTELE EMISE IN SISTEMUL WGS 84 REPREZINTA RASPUNSUL LA UNELE CERINTE ALE AUTORITATILOR SI LEGISLATIEI ROMANESTI.
   THE PLAN IS PREPARED IN STEREO 70 COORDINATE SYSTEM. THE WGS 84 COORDINATES WERE OBTAINED BY CONVERSION, USING ELECTRONIC CALCULATION METHODS AND SPECIFIC PARAMETERS. THE CONVERSION INVOLVES TRANSFORMATIONS (TRANSLATION, ROTATIONS AND / OR SCALING) OF THE STEREO 70 COORDINATES.
   THE DEFINING ARE THE DOCUMENTS MADE IN THE STEREO 70 SYSTEM. THESE WILL BE USED FOR THE PURPOSE OF IMPLEMENTING THE PROJECT. THE DOCUMENTS ISSUED IN THE WGS 84 SYSTEM REPRESENT THE ANSWER TO THE SOME REQUIREMENTS OF THE ROMANIAN AUTHORITIES AND LEGISLATION.

INVENTAR DE COORDONATE NR. CAD. 100819 / INVENTORY COORDINATES CAD. NO.100819

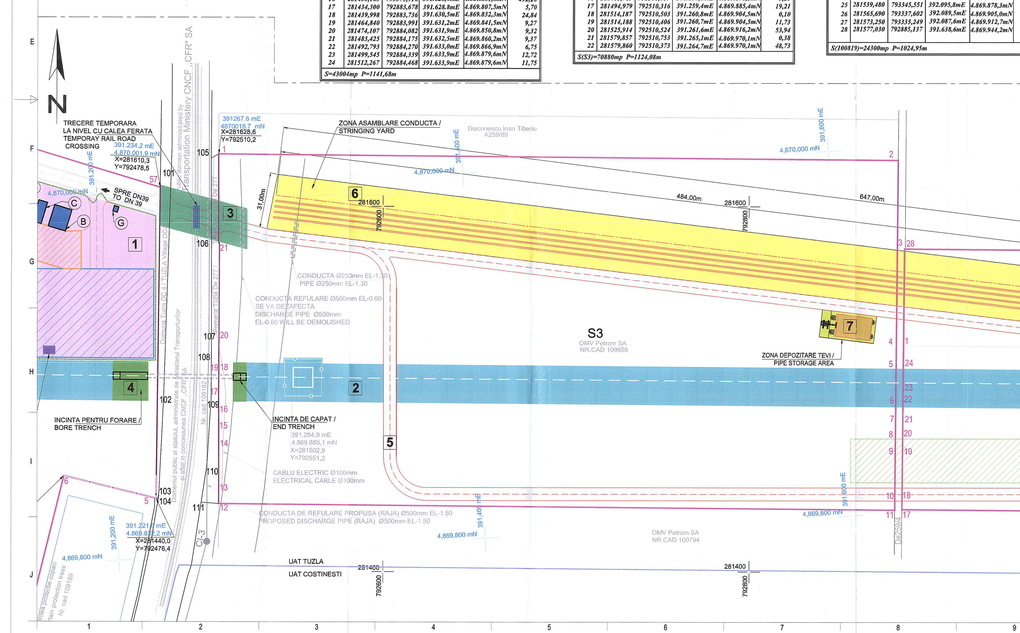
Nr. Pct.	Coordonate pct.de contur Stereo 70		Coordonate pct.de contur WGS 84		Lungimi laturi
	X [m]	Y [m]	X [m]	Y [m]	D(Li+1)
1	281534,018	792884,586	391.634,8mE	4.869.091,3mN	466,36
2	281530,099	793506,925	392.100,8mE	4.869.858,7mN	20,15
25	281539,480	793545,551	392.095,8mE	4.869.878,3mN	27,58
26	281565,690	793537,602	392.089,5mE	4.869.905,0mN	7,91
27	281573,493	793536,243	392.087,6mE	4.869.912,7mN	450,12
28	281577,030	792885,137	391.638,6mE	4.869.944,2mN	53,01

S(1058171)=24300mp P=1024,95m

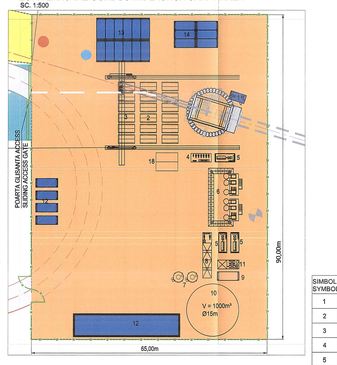
INVENTAR DE COORDONATE NR. - **S3** NR. CAD. 109659 / INVENTORY COORDINATES - **S3** CAD. NO. 109659

Nr. Pct.	Coordonate pct.de contur Stereo 70		Coordonate pct.de contur WGS 84		Lungimi laturi
	X [m]	Y [m]	X [m]	Y [m]	D(Li+1)
1	281638,591	792516,222	391.267,6mE	4.870.018,7mN	373,40
2	281625,471	792881,631	391.638,1mE	4.869.992,0mN	48,73
3	281576,744	792881,117	391.634,6mE	4.869.941,2mN	53,94
4	281522,805	792880,571	391.630,7mE	4.869.890,4mN	11,73
5	281511,079	792880,453	391.629,9mE	4.869.878,7mN	19,21
6	281492,153	792880,258	391.628,5mE	4.869.859,3mN	9,20
7	281482,668	792880,163	391.627,8mE	4.869.850,2mN	9,21
8	281473,460	792880,071	391.627,2mE	4.869.840,1mN	9,21
9	281464,250	792879,978	391.626,5mE	4.869.831,9mN	24,50
10	281439,753	792879,738	391.624,8mE	4.869.807,5mN	5,73
11	281434,020	792879,672	391.624,3mE	4.869.801,8mN	369,28
12	281468,742	792567,499	391.133,2mE	4.869.794,9mN	5,73
13	281472,855	792563,181	391.128,2mE	4.869.775,2mN	24,50
14	281485,871	792374,329	391.118,8mE	4.869.778,4mN	2,83
15	281485,871	792374,329	391.118,8mE	4.869.775,6mN	22,22
16	281483,167	792375,916	391.119,4mE	4.869.767,4mN	492,26
17	281434,309	792378,686	391.124,9mE	4.869.767,0mN	9,21
18	281439,998	792883,756	391.628,8mE	4.869.107,5mN	5,70
19	281444,840	792883,991	391.630,5mE	4.869.132,3mN	24,84
20	281474,107	792884,082	391.633,9mE	4.869.141,5mN	9,21
21	281483,425	792884,175	391.633,9mE	4.869.150,8mN	9,32
22	281492,793	792884,270	391.633,5mE	4.869.160,0mN	9,37
23	281499,545	792884,339	391.633,9mE	4.869.166,9mN	12,72
24	281512,267	792884,645	391.633,9mE	4.869.179,6mN	11,75

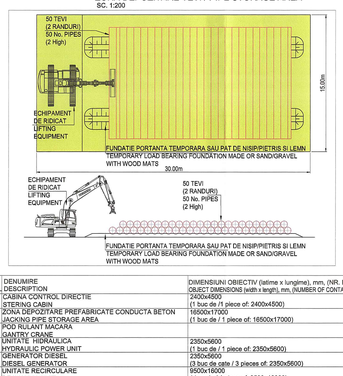
S(S3)=78880mp P=1124,80m



ZONA LANSARE CONDUCTA / LAUNCH SHAFT AREA
SC. 1:500



ZONA DEPOZITARE TEVI / PIPE STORAGE AREA
SC. 1:200



SIMBOL SYMBOL	DENUMIRE DESCRIPTION	DIMENSIUNI OBIECTIV (latime x lungime), mm, (NR. BUC.) OBJECT DIMENSIONS (width x length), mm, (NUMBER OF CONTAINERS)
1	ZONA CONTROL DIRECTIE STERING CABIN	(1 buc de /1 piece of: 2400x4500)
2	ZONA DEPOZITARE PREFABSRICATE CONDUCTA BETON JACKING PIPE STORAGE AREA	16500x17000 (1 buc de / 1 piece of: 16500x17000)
3	POD RULANT MACARA GANTRY CRANE	(1 buc de / 1 piece of: 2350x5600)
4	UNITATE HIDRAULICA HYDRAULIC POWER UNIT	2350x5600 (1 buc de / 1 piece of: 2350x5600)
5	GENERATOR DIESEL DIESEL GENERATOR	2350x5600 (3 buc de cate / 3 pieces of: 2350x5600)
6	UNITATE RECIRCULARE RECYCLING UNIT	9500x16000 (1 buc de / 1 piece of: 9500x16000)
7	SEDIU CONTAINTA BESOM CONTAINER	Ø2850, Himax 21m (2 buc de cate / 2 pieces of: Ø2850, Himax 21m)
8	UNITATE AMESTECARE MIXING UNIT	2400x12000 (1 buc de / 1 piece of: 2400x12000)
9	REZERVOR TAMPON BUFFER TANK	2400x6000 (1 buc de / 1 piece of: 2400x6000)
10	REZERVOR STOCARE STORAGE TANK	Ø15000 (1 buc de / 1 piece of: Ø15000)
11	UNITATE POMPARE PUMP UNIT	2400x6000 (1 buc de / 1 piece of: 2400x6000)
12	ATELIER, CONTAINER DEPOZITARE ECHIPAMENTE WORKSHOP, JACKING EQUIPMENT, STORAGE CONTAINER	8000x2620/2 6055x9740 (12 buc de cate / 12 pieces of: 2435x6055, 4buc de / 4 pieces of: 2435x6055)
13	BIROU, GRUP SANITAR, PUNCT PRIM AJUTOR OFFICE, SANITARY FACILITY, FIRST AID	12110x14610 (12 buc de cate / 12 pieces of: 2435x6055)
14	CONTAINER PERSONAL CREW CONTAINER	12110x7305 (6 buc de cate / 6 pieces of: 2435x6055)
15	ZONA DEPOZITARE SCULE WELDING PIPES AREA	20000x5000 (1 buc de / 1 piece of: 20000x5000)
16	ZONA DEPOZITARE SCULE TOOLS STORAGE AREA	15000x5000 (1 buc de / 1 piece of: 15000x5000)
17	CONTAINERE BIROURI OFFICE CONTAINERS	12110x2435 (2 buc de cate / 2 pieces of: 6055x2435)
18	HABE OTEL STEEL TANKS	6000x5000 (2 buc de cate / 2 pieces of: 6000x2500)

INVENTAR DE COORDONATE DE 269 NR. CAD. 109115 / INVENTORY COORDINATES DE 269 CAD. NO. 109115

Nr. Pct.	Coordonate pct.de contur Stereo 70		Coordonate pct.de contur WGS 84		Lungimi laturi
	X [m]	Y [m]	X [m]	Y [m]	D(Li+1)
10	281470,868	793364,829	392.110,8mE	4.869.807,9mN	9,64
11	281460,780	793367,499	392.113,2mE	4.869.803,2mN	0,84
12	281460,742	793367,419	392.113,2mE	4.869.797,8mN	3,59
13	281457,284	793368,381	392.113,6mE	4.869.794,9mN	22,22
14	281435,875	793374,329	392.118,2mE	4.869.773,2mN	2,83
15	281433,149	793375,086	392.118,8mE	4.869.770,4mN	3,10
16	281430,165	793375,916	392.119,4mE	4.869.767,4mN	492,26
17	281429,581	793376,102	392.119,5mE	4.869.766,7mN	9,69
2	281425,542	793388,950	392.132,1mE	4.869.762,6mN	13,45
3	281427,909	793388,186	392.131,5mE	4.869.764,4mN	2,42
4	281427,541	793388,276	392.131,6mE	4.869.764,7mN	13,29
5	281471,811	793374,655	392.120,7mE	4.869.808,9mN	22,75
6	281470,868	793364,829	392.110,8mE	4.869.807,9mN	11,80

S(DE269)=494mp P=121,20m

INVENTAR DE COORDONATE NR. CAD. 107127 / INVENTORY COORDINATES CAD. NO. 107127

Nr. Pct.	Coordonate pct.de contur Stereo 70		Coordonate pct.de contur WGS 84		Lungimi laturi
	X [m]	Y [m]	X [m]	Y [m]	D(Li+1)
5	281471,811	793374,655	392.120,7mE	4.869.808,9mN	22,75
4	281449,936	793380,922	392.126,7mE	4.869.808,9mN	25,39
3	281427,909	793388,186	392.131,5mE	4.869.764,4mN	2,42
2	281425,542	793388,950	392.132,1mE	4.869.762,6mN	36,96
9	281414,647	793424,276	392.166,7mE	4.869.748,9mN	13,29
8	281427,293	793420,187	392.163,6mE	4.869.761,8mN	4,38
7	281431,557	793419,145	392.162,6mE	4.869.766,1mN	31,05
6	281461,068	793409,486	392.154,8mE	4.869.796,2mN	36,44

S(107127)=1486mp P=770,91m

PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SUPRAFETELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

LEGENDA / LEGEND:
- LIMITA PROPRIETATE / PROPERTY LIMIT
- LIMITA NUMERE CADASTRALE / TOPOGRAPHICAL NO.
- LINIA CAI UAT / UAT LIMIT
- GARD DE PROTECTIE / SECURITY FENCE
- GARD DE PROTECTIE ORGANIZARE SANTIER / PROTECTIVE SITE ORGANIZATION
- CONTAINERE ORGANIZARE DE SANTIER / SITE ORGANIZATION CONTAINERS
- AMENAJARE TEMPORARA DEPOZITARE MATERIALE / TEMPORARY PRECOMMISSIONING PAD
- SUPRAFATA PARCARE TEMPORARA / TEMPORARY PARKING AREA
- ORGANIZARE DE SANTIER / SITE STATIE MASURARE / NGMS SITE ORGANIZATION
- CORIDOR CONDUCTA / PIPELINE CORIDOR
- TRAVERSARE TEMPORARA CALE FERATA SI RACORDARE DRUMURI LOCALE / TEMPORARY RAILWAY CROSSING AND LOCAL ROADS CONNECTION
- SUBTRAVERSARE CALE FERATA SI DRUMURI LOCALE DE CATRE CONDUCTA DE GAZE NATURALE / NATURAL GAS PIPELINE UNDERCROSSING OF RAILWAY AND LOCAL ROADS
- DRUMURI ORGANIZARE DE SANTIER / SITE ORGANIZATION ROAD
- ASAMBLARE CONDUCTE / STRINGING YARD
- DEPOZITARE TEVI / PIPE STORAGE
- LANSARE CONDUCTA / LAUNCH SHAFT
- EXCAVATED SOIL AREA
- ZONA DEPOZITARE SOL VEGETAL / VEGETAL SOIL AREA
- OBIECTIVE NOI / NEW OBJECTIVES
- DRUMURI EXISTENTE / EXISTING ROADS
- DRUM ACCESS DN DN 39 / DN 39 ACCESS ROAD
- LINIE CF / RAILYWAY
- TRECERE TEMPORARA LA NIVEL CU CALEA FERATA / TEMPORARY RAIL ROAD CROSSING
- CONDUCTA SUBTERANA DE GAZE NATURALE / UNDER GROUND GAS PRODUCTION PIPELINE
- PROTECTIE CONDUCTA / PIPELINE PROTECTION
- PROTECTIE CONDUCTA DE GAZE NATURALE IN TUNEL / CONCRETE CASING
- DRUMURI PROPUSE PRIN PUG TUZLA / PROPOSED ROAD ON TUZLA PUG
- GENERATOR ELECTRIC / DIESEL GENERATOR
- TABLOU ELECTRIC / ELECTRICAL PANEL
- REZERVOR COMBUSTIBIL 7,5 m³ / FUEL TANK 7,5m³
- FOSA SEPTICA 20m³/ SEPTIC TANK 20m³
- REZERVOR APA 12m³/ WATER TANK 12m³
- COORDONATE WGS84 / WGS COORDINATES
- COORDONATE STEREO 70 / STEREO 70 COORDINATES

DETALIERE SUPRAFETE ORGANIZARE DE SANTIER / DETAILED SITE ORGANIZATION AREAS

NUMAR ITEM NO.	DENUMIRE ITEM NAME	SUPRAFATA TOTALA OCUPATA TEMPORAR TOTAL SURFACE OCCUPIED TEMPORARILY
1	STATIE MASURARE / NGMS	S = 9770mp/sqm
2	CORIDOR CONDUCTA / PIPELINE CORRIDOR	S = 16523mp/sqm
3	TRAVERSARE TEMPORARA CALE FERATA SI RACORDARE DRUMURI LOCALE / TEMPORARY RAILWAY CROSSING AND LOCAL ROADS CONNECTION	S = 1030mp/sqm
4	SUBTRAVERSARE CALE FERATA SI DRUMURI LOCALE DE CATRE CONDUCTA DE GAZE NATURALE / NATURAL GAS PIPELINE UNDERCROSSING OF RAILWAY AND LOCAL ROADS	S = 539mp/sqm
5	DRUM SANTIER / SITE ROAD	S = 9499mp/sqm
6	ASAMBLARE CONDUCTE / STRINGING YARD	S = 18339mp/sqm
7	DEPOZITARE TEVI / PIPE STORAGE	S = 450mp/sqm
8	LANSARE CONDUCTA / LAUNCH SHAFT	S = 5850mp/sqm
9	ZONA DEPOZITARE SOL EXCAVAT EXCAVATED SOIL AREA	S = 1100mp/sqm
10	ZONA DEPOZITARE SOL VEGETAL VEGETAL SOIL AREA	S = 6120mp/sqm

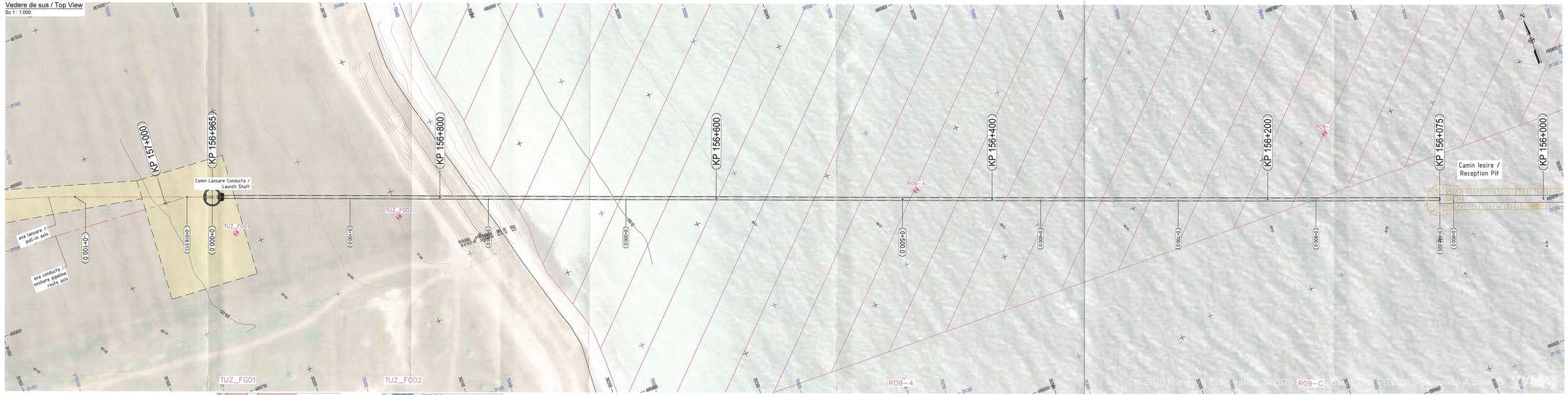
SUPRAFATA AFECTATA DE LUCRARI DE CONSTRUIRE AREA AFECTED BY CONSTUCTION WORKS

SUPRAFATA OMV PETROM SA	223184mp
DC4 (PRIM

Appendix C. Onshore and Offshore Site Layout Plans

3 – Shore crossing – microtunnel top view and longitudinal section profile

Vedere de sus / Top View
Sc 1 : 1.000



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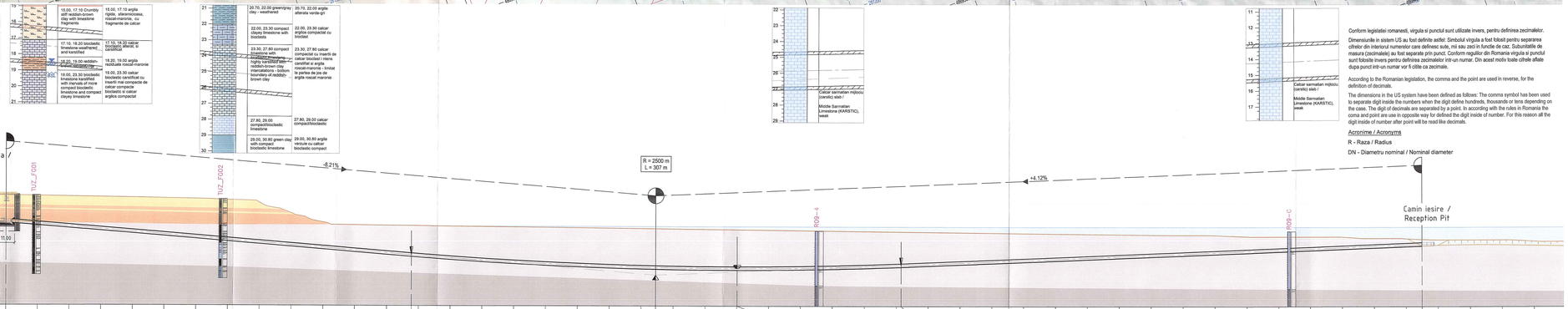
Profil longitudinal / Longitudinal Section
Sc 1 : 1.000



Axe / Axis:
Microtunel / Microtunneling DN 2000

Sectiune / Section:
DN 2000 Optiune microtunel cu intrare la adancime mare / DN 2000 deep option

Statie / Station:
-0+450.000 - 1+100.000
m relativ la nivelul marii -50.00 / m aMSL -50.00

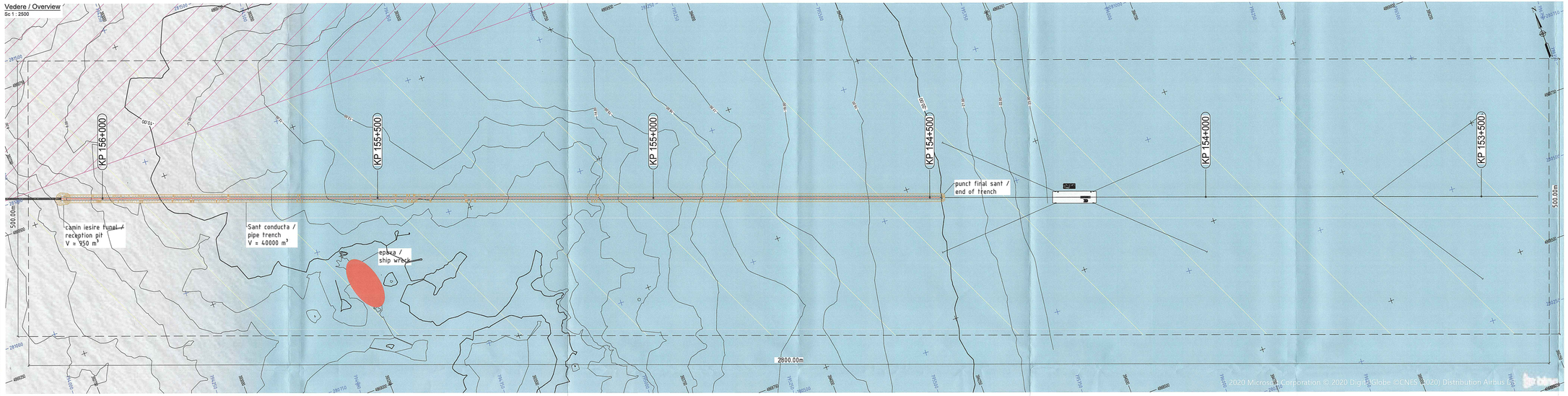
| | | |

Appendix C. Onshore and Offshore Site Layout Plans

4 – Shore crossing - connection of landfall area with offshore area, top view plan

Vedere / Overview

Sc 1 : 2500

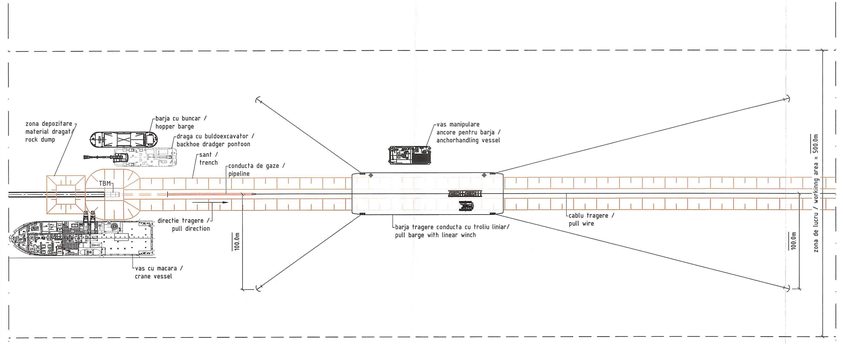


Camin iesire tunel - Punct pornire sant /

fara scara

Reception Pit - Beginning of the Trench

without scale

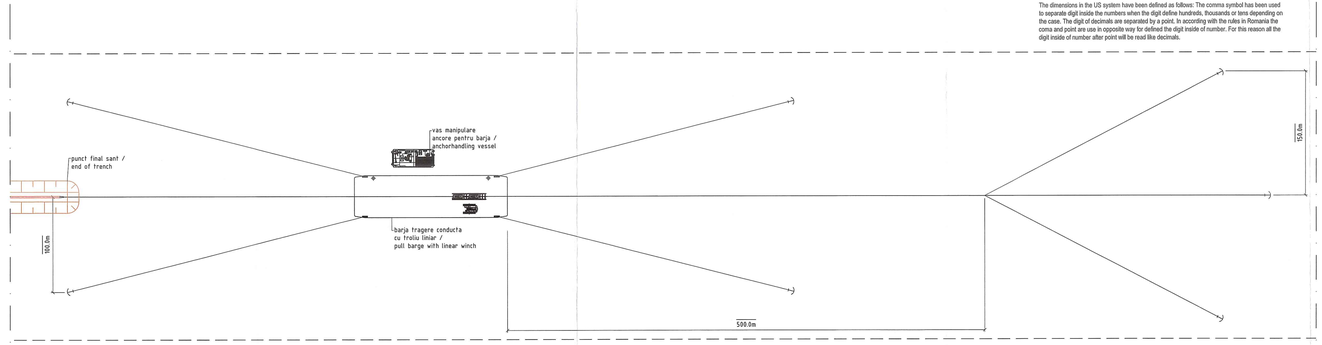


Punct final sant /

fara scara

End of Trench

without scale



Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Conform regulilor din Romania virgula si punctul sunt folosite invers pentru definirea zecimalelor intr-un numar. Din acest motiv toate cifrele aflate dupa punct intr-un numar vor fi citite ca zecimale.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SUSAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED
SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

Legenda / Legend:

KP 157+000 — Pozitie kilometrica / Kilometric point

—15.00— Contur curba de nivel / Depth contour

Zona de lucru in larg / Offshore work area

Arie protejata Natura 2000 / Natura 2000 protected area

Epava / Ship wreck

Nota / Note:

TBM - FOREZA TUNEL
- TUNNEL BORING MACHINE

Note / Notes:

Batimetrie / Bathymetry

- ROND-EW-YDPAL-24-0018

Aliniament conducta / Pipe alignment

- ROND-EW-YDPAL-24-0018

Camin iesire tunel / Reception pit

- ROND-IL-YDDWG-00-0702

Sistem de coordonate / Coordinate system

- Sistemul Geodezic Global WGS 84 TM 30 NE (EPSG 2213);
  grila coordonate = negru /
  WGS 84 TM 30 NE (EPSG 2213); coordinate grid = black
- Coordonate pentru Romania Pulkovo42/58b.Stereo 70 (EPSG 3844);
  grila coordonate = albastru /
  Pulkovo42/58b.Stereo70 (EPSG 3844); coordinate grid = blue
- Inaltime relativa la nivelul marii /
  Height Datum MSL

* DENUMIRE COMPLETA PROIECT / COMPLETE PROJECT NAME

NEPTUN DEEP - INSTALARE CONDUCTA SI CABLU DE COMUNICATII, SUBTRAVERSARE PLAJA, FALEZA, DRUMURI SI CALE FERATA; REALIZARE TRECERE TEMPORARA LA NIVEL CU CALEA FERATA; CONSTRUIRE SRM, CENTRU DE CONTROL, IMPREJMUIRE, ILUMINAT, PARCARI, SPATII VERZI, PLATFORME SI DRUMURI INTERIOARE; ORGANIZARE DE SANTIER, ASIGURAREA SI RACORDAREA LA UTILITATI

NEPTUN DEEP - PIPELINE AND COMMUNICATION CABLE INSTALLATION, UNDERCROSSING OF BEACH, SEA FRONT, ROADS AND RAILWAY; TEMPORARY ROAD RAILWAY CROSSING; CONSTRUCTION OF NGMS, CONTROL CENTER, FENCING, LIGHTING, PARKING, GREEN SPACES, PLATFORMS, INTERNAL ROADS; SITE WORKS, ORGANIZATION AND UTILITIES CONNECTIONS

PROIECT NEPTUN DEEP
NEPTUN DEEP PROJECT

REV	DATA / DATE	EMIS DE / ISSUED BY	VERIFICAT / CHECKED	APROBAT / APPROVED
1-B	06-2020	EMIS PENTRU REVIZIE / ISSUED FOR REVIEW	E. OLTEANU	T. CAPOTA	M. MAE
1-A	06-2020	EMIS PENTRU REVIZIE / ISSUED FOR REVIEW	E. OLTEANU	T. CAPOTA	M. MAE
REV	DATA / DATE	EMIS DE / ISSUED BY	VERIFICAT / CHECKED	APROBAT / APPROVED
VERIFICATOR CHECKED			I. DUMA		A.V. AD
DESCRIEREA REVIZIEI / REVISION DESCRIPTION		REVIZIA NR. / REVISION NR. / DATA / CHECK-IN/RAPORT EXECUTIE NO. / DATE	NUME / NAME	SEMNATURA / SIGNATURE	CONTROL ESSENTIALS

PROIECTANT / ENGINEERING CONTRACTOR

ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16, Ro100149, PLOIESTI
J29/3071/2007, RO22804820

PROIECTANT DE SPECIALITATE / ENGINEERING SUB CONTRACTOR

de la Motte & Partner GmbH
Birkenweg 11; 21465 Reinbek; Germany

REV	DATA REVIZIEI / REVISION	DESCRIEREA REVIZIEI / REV. DESCRIPTION	REPREZENTAT / REPRESENTED ORIG.	REV.	INT.	ANS.
1	29.04.2020	for approval and use				
0	25.03.2020	for approval and use				
A	10.03.2020	for review				

ExxonMobil
Exploration and Production Romania Limited

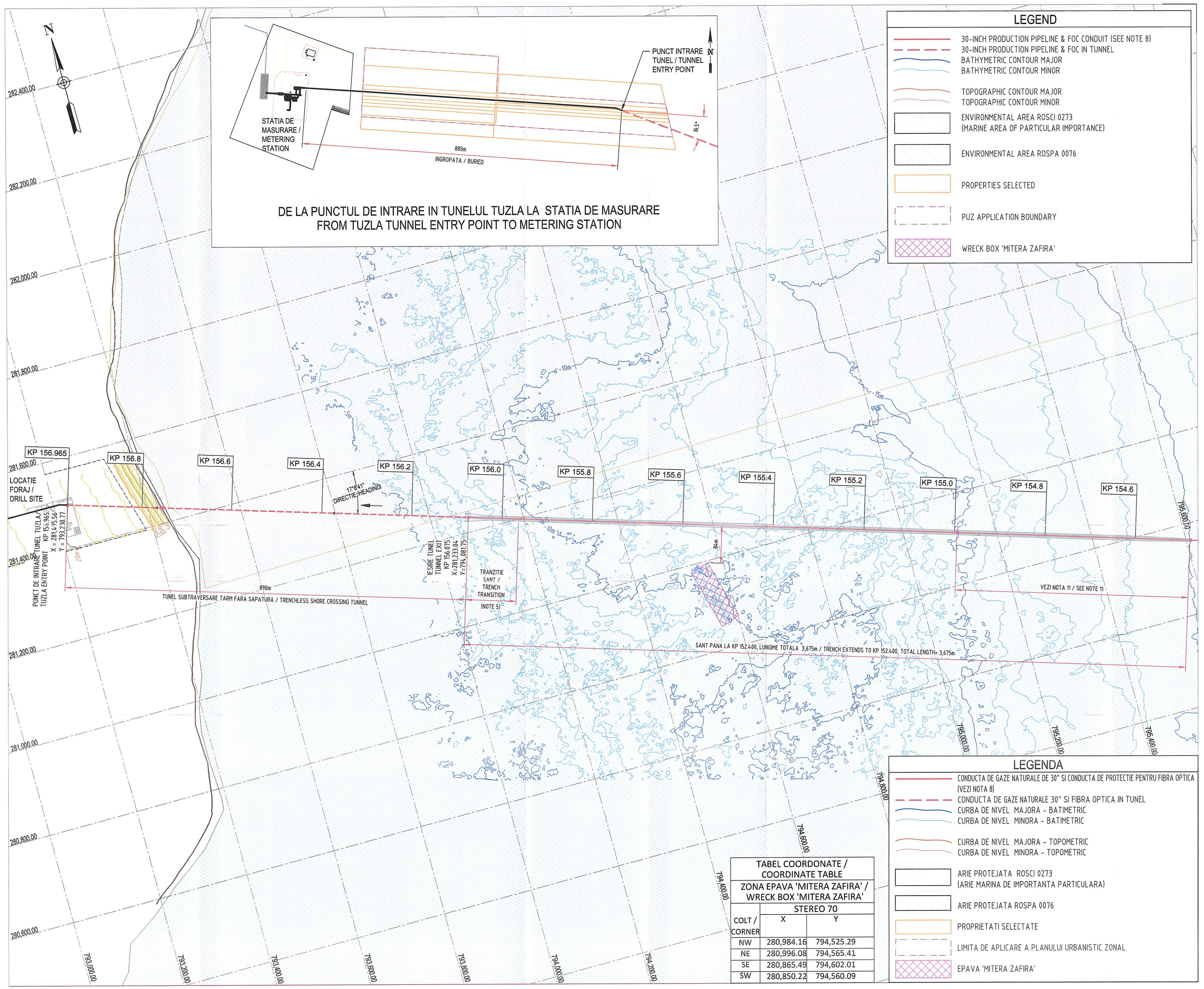
SUBTRAVERSARE / SHORE CROSSING

CONECTARE ZONA COSTIERA CU ZONA DIN LARG /
CONNECTING OF LANDFALL AND OFFSHORE SECTION
VEDERE DE SUS / TOP VIEW

SCARA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV / REV.
1 : 1000	ROND-IL-YDDWG-00-0502-B	DTAC	1-B

Appendix C. Onshore and Offshore Site Layout Plans

5 – Production pipeline alignment sheets



TABEL COORDONATE / COORDINATE TABLE		
ZONA EPAVA 'MITERA ZAFIRA' / WRECK BOX 'MITERA ZAFIRA'		
	STEREO 70	
COLT / CORNER	X	Y
NW	280,984.16	794,525.29
NE	280,996.08	794,565.41
SE	280,865.49	794,602.01
SW	280,850.22	794,560.09

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. Daca nu se precizeaza altfel, toate dimensiunile sunt exprimate in metri.
2. Toate cotele de nivel sunt in metri, relativ la nivelul marii.
3. Datele batimetrice provin din baza de date geotehnice si geofizice GIS actualizata in 2014, document Fugro J31135-R-001(03) actualizat pentru proiectul Neptun Deep.
4. Lungimea traiectoriei subtraversarii tarmului in lungul axului central = 890m.
5. Santul va fi pre-dragat de la punctul de iesire din tunel pana la cota de nivel -20m in conformitate cu specificatiile din ROND-EW-YSPDS-59-0121. Pentru detaliile santului si ale caminului de iesire se vor consulta plansele ROND-EW-YDLAY-22-0007 si ROND-EW-YDDET-25-0001.
6. Conducta de gaze naturale de 30" si conducta de protectie pentru fibra optica vor fi instalate de catre contractorul EPC-2 in conformitate cu specificatiile din ROND-EW-YSPDS-30-0704. Optiunile de montaj sunt:
   - Tragerea conductei de pe o barja acorata acolo unde apa are o adancime de 20m utilizand un troliu montat pe tarm la punctul de intrare in tunel.
   - Tragerea conductei de pe tarm utilizand o barja marina ancorata acolo unde adancimea apei este intre 15-20m. Insirarea conductei va fi executata de pe tarm.
   - Impingerea/tragerea conductei de pe tarm utilizand un sistem combinat alcatuit din propulsor (daca este optiunea "Direct Pipe") si o barja troliu marina care sa produca tensionarea..

   Pentru toate optiunile, capul de tragere va fi abandonat intr-o caseta la o adancime a apei de 20m, pentru recuperarea de catre vaporul de lansare EPC1.
7. Tronsonul de conducta ca fi testat hidraulic conform specificatiei ROND-EW-YSPDS-20-0001 si -0007.
8. Fibra optica va fi montata in conducta ei de protectie in acelasi sant cu conducta intinzandu-se pana la o adancime de 20m.
9. TTZ = Zona sant tranzitie
10. Santul va trece de la nivelul fundului marii pe o distanta de 300m. Incepand cu KP 152.400 si terminand la KP 152.700.
11. Ca o optiune, conexiunea intre EPC-2 si EPC-1 poate fi executata ca conexiune deasupra apei la o adancime a apei 15m-20m (de la nivelul marii).

NOTES

1. All dimensions are in meters, unless noted otherwise.
2. All elevations are in meters, relative to MSL.
3. Bathymetry data from 2014 geotechnical and geophysical GIS database update, update fugro document J31135-R-001(03) for Neptun Deep development.
4. Length of the trenchless shore crossing trajectory along center line= 890m.
5. The trenched section is to be pre-dredged from the tunnel exit point to the 20m depth contour in accordance with specification ROND-EW-YSPDS-59-0121. For details of the trench and the exit pit refer to drawings ROND-EW-YDLAY-22-0007 & ROND-EW-YDDET-25-0001.
6. The 30" production pipeline and conduit for the FOC are to be installed by EPC-2 contractor in accordance with Specification ROND-EW-YSPDS-30-0704. The pipeline installation options are:
   - Pull pipe from an anchored offshore barge using an onshore winch located at the tunnel entry point.
   - Pull pipe from the shoreline using a winch located on an anchored offshore winch barge. Pipe string fabricated on shore.
   - Push/pull pipe from shore using a combined system comprising of the pipe thruster (if Direct pipe) and an offshore winch barge providing tension.

   For the base case the pull head is to be abandoned in a target box at the 20m water depth contour for retrieval by the EPC1 pipelay vessel.
7. The pipe string shall be hydrotested after installation in accordance with Specification ROND-EW-YSPDS-20-0001 & -0007.
8. FOC to be installed into conduit pipe in same trench as the pipeline extending to 20m water depth.
9. TTZ= Trench Transition Zone
10. The trench will transition from seabed level over a distance of 300m. Starting at KP 152.400 and ending at KP 152.700.
11. As an option tie-in between EPC-2 and EPC-1 can be made by above water tie-in between 15m-20m (MSL) water depth.

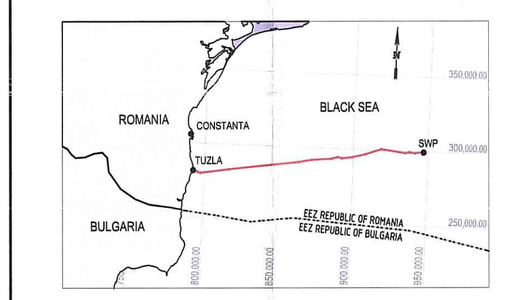
PARAMETRII GEODEZIE SI PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA / KEY PLAN



ACRONIME

KP - POZITIE KILOMETRICA (CONDUCTA)

ACRONYMS

KP - KILOMETRIC POINT

NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

ILF CONSULTING ENGINEERS ROMANIA S.R.L. CERTIFICAT DE AUTORIZARE

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
3-E	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
3-D	10.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
3-C	24.06.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
3-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
3-A	03.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR / CHECKER			I. BUTNARU		ANRE
VERIFICARE/ DESIGN REVIEW	REFERAT NR. / EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE		NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / EXIGENCES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR. 19, VOI VIA, PLOIESTI
JUDETUL PRAHOVA, ROMANIA
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORG	REV	APP	PROJ APP
3	18-JUL-18	RE-ISSUED FOR DESIGN (IFD)	TV	BJ	TR	JH
2	15-DEC-17	RE-ISSUED FOR DESIGN (IFD)	FK	EP	SS	JG
1	12-SEP-17	RE-ISSUED FOR DESIGN (IFD)	FK	EP	SS	JG
0	30-JUN-17	ISSUED FOR DESIGN (IFD)	FK	EP	SS	JG
A	19-MAY-17	ISSUED FOR IDC	RO	EP	SS	

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA GAZE NATURALE
PRODUCTION PIPELINE

SUBTRAVERSARE TARM
SHORE CROSSING

PROFIL APROPIERE
APPROACH ALIGNMENT

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1:4,000	ROND-EW-YDPAL-24-0002-C	DTAC	3-E

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:20,000)

TIE-IN POINT	
X	Y
298,595.20	947,777.93

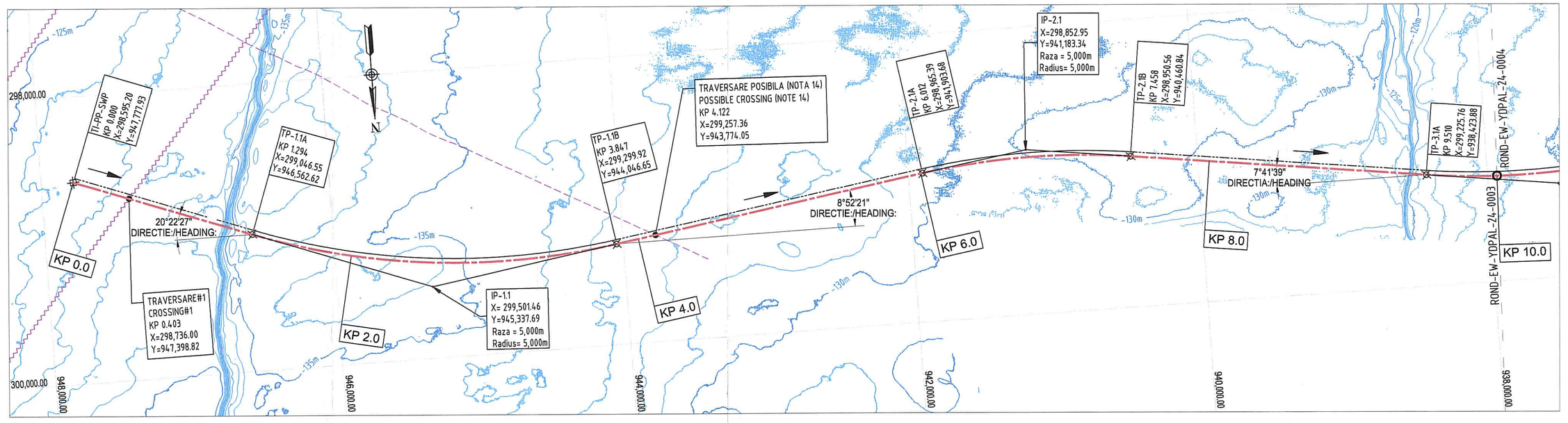
MATCH POINT END	
X	Y
299,287.55	937,935.21

PUNCT DE CONEXIUNE	
X	Y
298,525.20	947,777.93

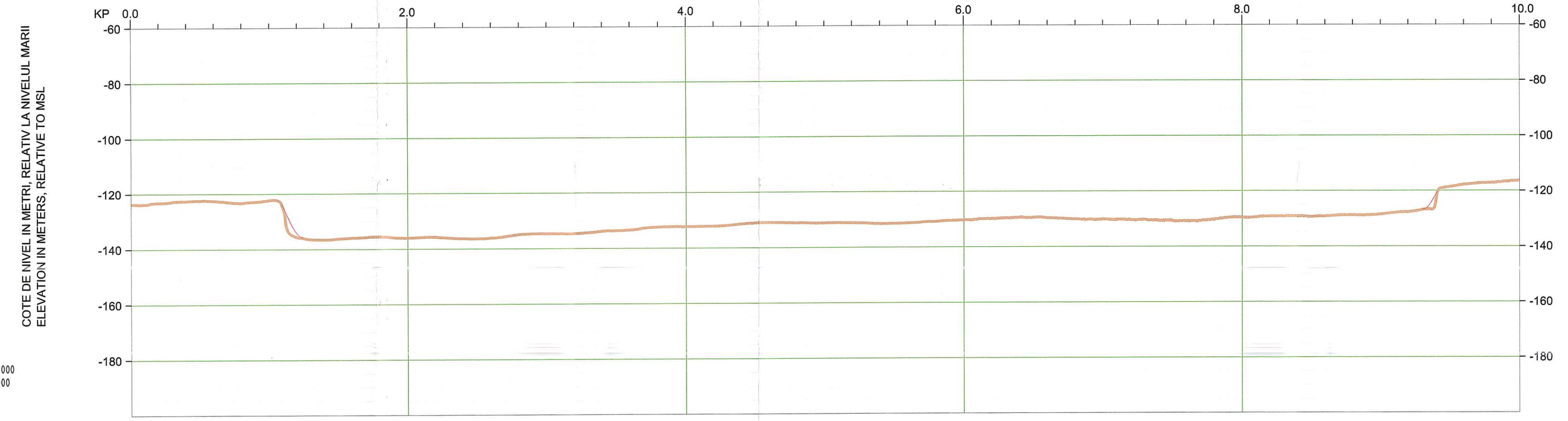
PUNCT LEGATURA DE FINAL	
X	Y
299,287.55	937,935.21

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CURBA DE NIVEL MAJORA / MAJOR CONTOUR
- CURBA DE NIVEL MINORA / MINOR CONTOUR
- CABLU / FIR / CABLE/WIRE
- POTENTIAL CABLU / RUPTURA / POSSIBLE CABLE/SCAR



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters.
The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 20,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	10

DATE TEHNICE / ENGINEERING DATA

| | | |

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:20,000)

TIE-IN POINT	
X	Y
299,267.55	937,935.21

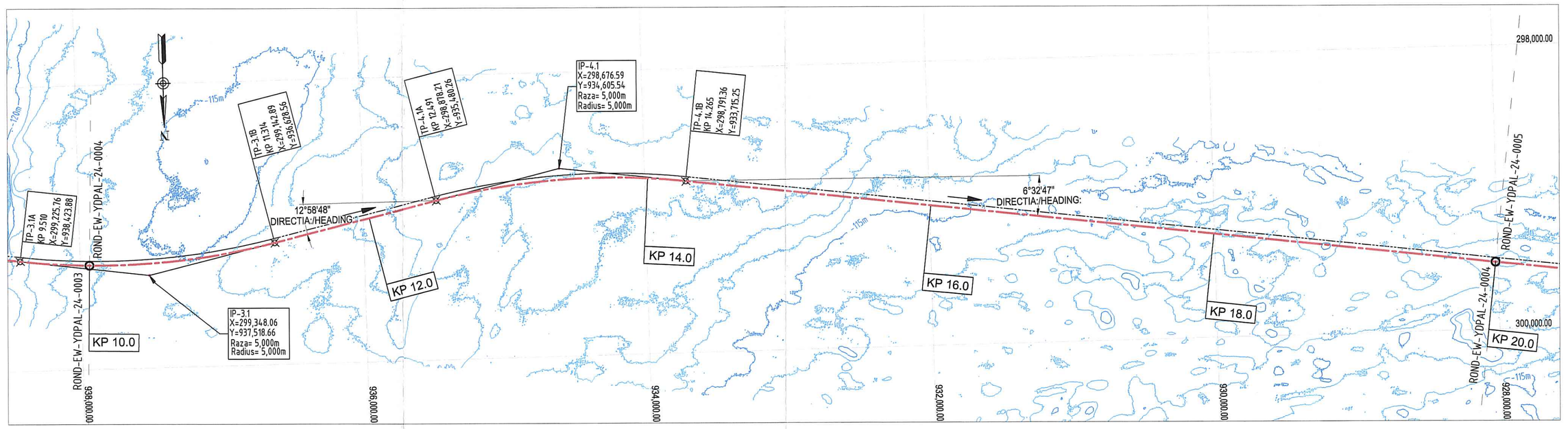
PUNCT DE CONEXIUNE	
X	Y
299,267.55	937,935.21

MATCH POINT END	
X	Y
299,525.86	928,018.19

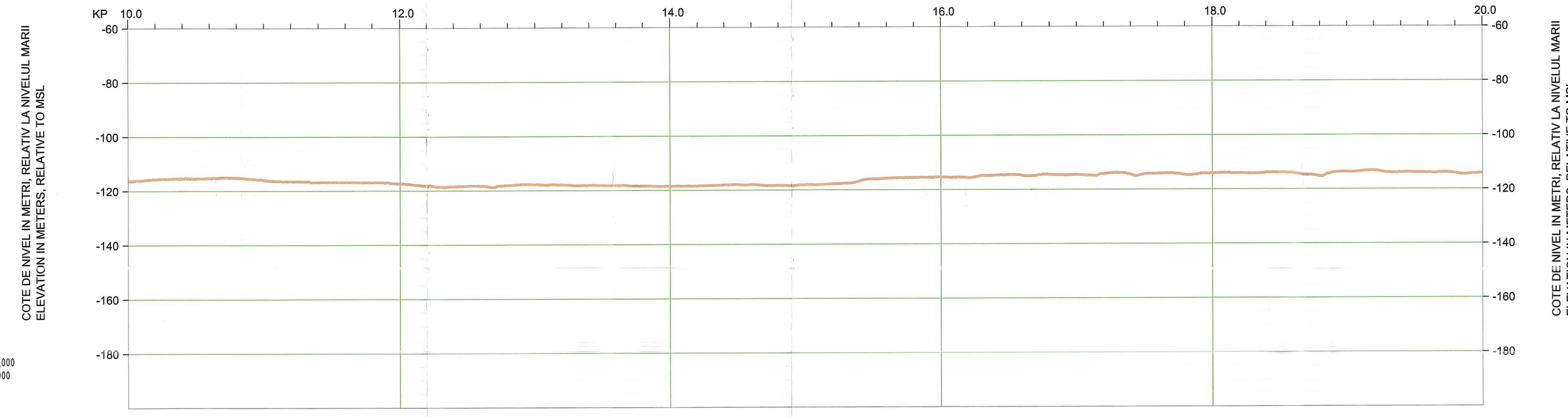
PUNCT LEGATURA DE FINAL	
X	Y
299,525.86	928,018.19

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CURBA DE NIVEL MAJORA / MAJOR CONTOUR
- CURBA DE NIVEL MINORA / MINOR CONTOUR



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



NOTA / NOTE:

Planse este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

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SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 20,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	10

DATE TEHNICE / ENGINEERING DATA

					KP 10.000	KP 11.314	KP 12.491	KP 14.265	KP 16.931	KP 20.000
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA CURBURI (m)			ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)	5,000	12° 58' 48"	10,000	6° 32' 47"	
	TRAVERSARE CONDUCTA / CABLU				CABLE / PIPELINE CROSSING	NU EXISTA / NONE				
	TIP SOL LA SUPRAFATA FUNDULUI MARII				SURFACE SEABED SOIL	ZONA 1 - ARGILA (NOTA 9) / ZONE 1 - CLAY (NOTE 9)			ZONA 2 - NISIP (NOTA 9) / ZONE 2 - SAND (NOTE 9)	
DATE CONDUCTA	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)			PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 FDU / 762 / 17.5				
	GROS.PERETE DISP. ANTIDEFORMARE (mm)/ INTERVAL (m)				BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	22.8 / 500				
	STRAT ANTI-COROZIV/GROS.(mm)/DENSITATE(kg/m³)				ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	FBE / 0.38 - 0.815 / 1,350				
	STRAT INT. PROT./ GROSIME (µm) / DENSITATE (kg/m³)				INTERNAL COAT. / THICK (µm) / DENSITY (kg/m³)	STRAT INTERIOR PROTECTIE (NOTA 10) / 50 / 1,500 / INTERNAL FLOW COAT (NOTE 10) COATING / 50 / 1,500				
	STRAT BETON: GROSIME (mm) / DENSITATE (kg/m³)				CONCRETE COATING: THICK (mm) / DENSITY (kg/m³)	55 / 3,050				
	TIP SUDURA / TIP UMPLUTURA / DENSITATE (kg/m³)				FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	FBE + POLIURETAN 128 - 224 / FBE + POLYURETHANE / 128 - 224				
	TIP ANOD / MASA (Kg) / INTERVAL MONTAJ (segmente)				ANODE BRACELETS TYPE / MASS (kg) / SPACING (joints)	ALUMINIU (4.0x800) / 161 / 1 LA 10 SEGMENTE / AI (4.0x800) / 161 / 1 EVERY 10 JOINTS				
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)			PIPELINE WEIGHT (kN/m)	IN AIR (DRY) (kN/m)	7.392			
		IN APA	GOALA (kN/m) / SG			SUBMERGED	EMPTY (kN/m) / SG	1.447 / 1.24		
			INUNDATA (kN/m) / SG				FLOODED (kN/m) / SG	5.572 / 1.94		
			IN FUNCTIUNE (kN/m) / SG				OPERATION (kN/m) / SG	1.581 / 1.27		
LUCRARI PRE INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)			PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE				
	SUPORTI / SALTELE BETON				SLEEPERS / MATTRESSES	NU EXISTA / NONE				
LUCRARI POST INSTALARE CONDUCTA	ADANCIME SANT (m)			POST-LAY INT. WORKS	TRENCHING DEPTH (m)	NU EXISTA / NONE				
	TIP UMPLUTURA / STRAT ACOPERITOR (m)				BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE				
	STRAT PIETRIS				GRAVEL DUMPING	NU EXISTA / NONE				
LUNGIME TRONSON ADMISA	INSTALARE (m)			ALLOWABLE SPAN LENGTH	INSTALLATION (m)	72.6			75.1	
	HIDRO-TEST (m)				HYDROTEST (m)	37.0			53.0	
	FUNCTIONARE (m)				OPERATION (m)	51.0			57.0	
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)			SPECIFIC REQUIREM.	LAY TOLERANCE (m)	±10				
	ALTELE				OTHER					

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATA IN 2014, DOCUMENT FUGRO J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCES PLATFORMA ACTUALIZATA PRIN DOC. FUGRO 160424.V3 (2017).
4. DATELE DE SOL PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRRPT-00-0015-001 A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002. DATELE DE SOL LA LOCATIA PLATFORMEI ACTUALIZATE CU MASURATORILE FUGRO 2017.
5. DIRECTIILE SUNT INDICATE IN RAPORT CU NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND MODUL DE CONECTARE LA LOCATIA PLATFORMEI SE VA CONSULTA PLANSA ROND-EW-YDPAL-22-0011 - ARANJAMENT CONDUCTA DE ADUCTIUNE SI CONDUCTA DE GAZE NATURALE LA PLATFORMA (SWP).
7. STERS.
8. PENTRU DETALII PRIVIND ANOZII SE VA CONSULTA PLANSA ROND-EW-YDCPD-24-0002 SI DOCUMENTUL ROND-EW-YRSTY-24-0002.
9. CARACTERIZAREA SOLULUI ESTE BAZATA PE NOTA TEHNICA 408009-00349-TN-003 (A SE VEDEA SI NOTA 4).
10. STRAT INTERIOR CONDUCTA CONFORM SPECIFICATIEI STRAT EPOXIDIC INTERN ROND-EW-YSPDS-20-0039.
11. A SE NOTA CA GROSIMEA ANOZILOR SI DISTANTA ADMISA DINTRE EI VOR FI RE-EVALUATE IN DETALILE TEHNICE DE EXECUTIE IN BAZA GROSIMII ACTUALE A STRATULUI DE BETON.

NOTES

1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM APPROACH BATHYMETRY UPDATED BY FUGRO DOC. 160424-V3 (2017).
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002. PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM LOCATION REFER TO DRAWING : ROND-EW-YDPAL-22-0011 - FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
7. DELETED.
8. FOR ANODE DETAILS REFER TO DRAWING ROND-EW-YDCPD-24-0002 & DOCUMENT ROND-EW-YRSTY-24-0002.
9. SOIL CHARACTERIZATION BASED ON TECHNICAL NOTE 408009-00349-TN-003 (SEE ALSO NOTE 4).
10. INTERNAL FLOW COAT AS PER INTERNAL EPOXY COATING SPECIFICATION ROND-EW-YSPDS-20-0039.
11. NOTE THAT ALLOWABLE SPANS AND ANODE THICKNESSES ARE TO BE RE-ASSESSED IN DETAILED DESIGN BASED UPON ACTUAL CONCRETE COATING THICKNESSES.

DOCUMENTE REFERINTA / REFERENCE DOCUMENTS

NUMAR PLANSA	DESCRIERE	DRAWING NUMBER	DESCRIPTION
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOZI CONDUCTA DE GAZE NATURALE	ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS

SCALA / SCALE BAR

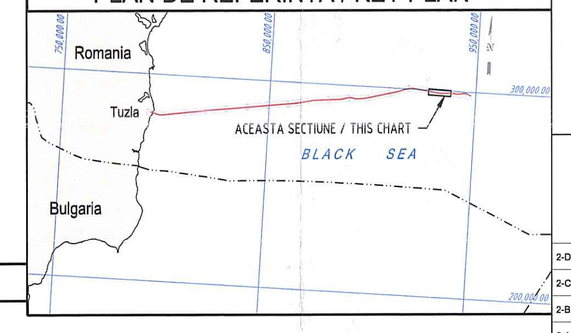
METRI / METERS: 0 — 200 — 1,000 — 2,000

SCALA ORIZONTALA 1:20,000 (IN FORMAT "A1") / HORIZONTAL SCALE 1:20,000 (AT "A1" SIZE)

PARAMETRI GEODEZIE SI PROIECTIE / GEODETIC & PROJECTION PARAMETERS

DATE GEODEZICE	:	STEREO 70	GEODETIC DATUM	: STEREO 70
PROIECTIE	:	Dublu Stereografica	PROJECTION	: Double Stereographic
Meridianul central (MC)	:	25.0	Central meridian (CM)	: 25.0
Latitudine Origine	:	46.0	Latitude of Origin	: 46.0
Falsa origine estica	:	500,000.0	False Easting at origin	: 500,000.0
Falsa origine nordica	:	500,000.0	False Northing at origin	: 500,000.0
Factor de scala la MC	:	0.99975	Scale factor at CM	: 0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)	VERTICAL DATUM	: MSL

PLAN DE REFERINTA / KEY PLAN



ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite asfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
2-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-C	10.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. ERBIGA
2-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	04.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR / CHECKER			I. BUTNARU		AMNE
VERIFICARE DESIGN REVIEW		REFERAT NR. / EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE	NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.19, 100146, PLOIESTI
J29/397/12007, RO 22904620
S.C. JEREMY PROMASTER S.R.L.
STR. CUCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
2	15DEC17	RE-ISSUED FOR IFD	FK	EP	SS	JG
1	26SEP17	RE-ISSUED FOR IFD	FK	EP	SS	JG
0	04AUG17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

CONDUCTA DE GAZE NATURALE 30" 30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT ALIGNMENT SHEET

FISA NR. 002 DIN 016 SHEET 002 DIN 016

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 20,000	ROND-EW-YDPAL-24-0004-C	DTAC	2-D

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:20,000)

TIE-IN POINT	
X	Y
299,525.86	928,018.19

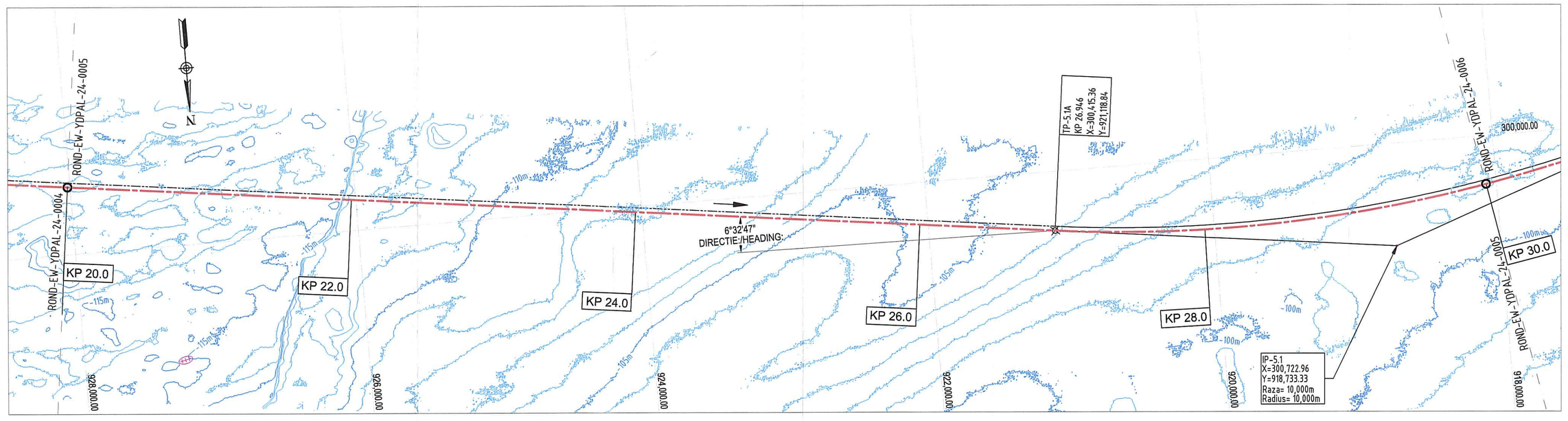
PUNCT DE CONEXIUNE	
X	Y
299,525.86	928,018.19

MATCH POINT END	
X	Y
300,478.28	918,048.58

PUNCT LEGATURA DE FINAL	
X	Y
300,478.28	918,048.58

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- EPAVA / WRECK
- CURBA DE NIVEL MAJORA / MAJOR CONTOUR
- CURBA DE NIVEL MINORA / MINOR CONTOUR

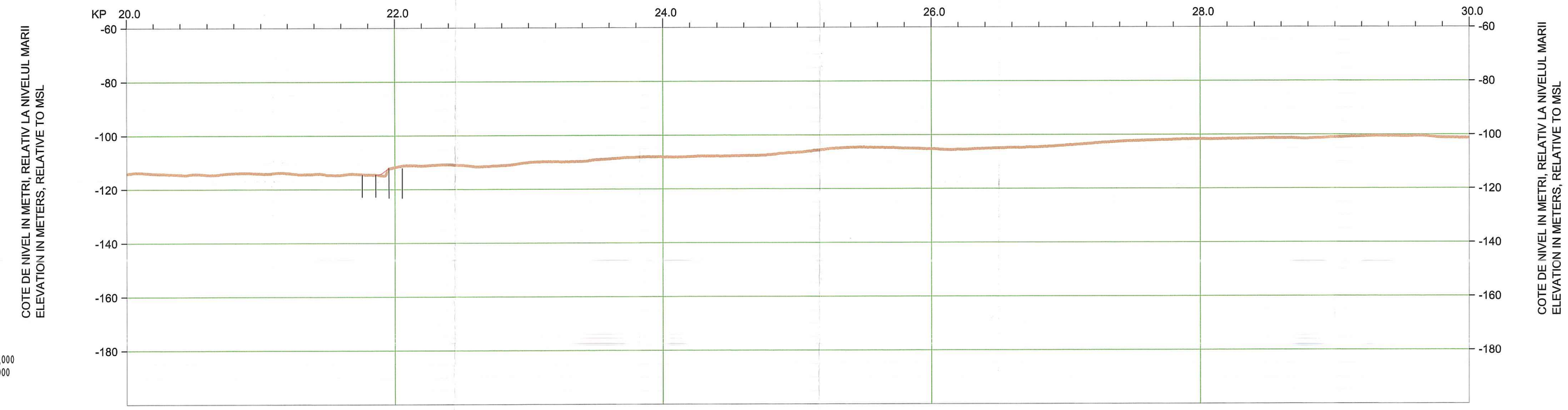


PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE

NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters.
The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.



SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 20,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	10

DATE TEHNICE / ENGINEERING DATA

						KP 20.000	KP 21.755	KP 21.855	KP 21.940	KP 21.955	KP 22.055	KP 22.338	KP 26.946	KP 30.000
ELEMENTE TRASEU	ORIENTARE (°N) / RAZA CURBURI (m)		ROUTE ITEMS	STRAIGHT HEADING (°N) / BEND RADIUS (m)		6° 32' 47"							10,000	
	TRAVERSARE CONDUCTA / CABLU			CABLE / PIPELINE CROSSING		NU EXISTA / NONE								
	TIP SOL LA SUPRAFATA FUNDULUI MARII			SURFACE SEABED SOIL		ZONA 2 – NISIP (NOTA 9) / ZONE 2 – SAND (NOTE 9)								
DATE CONDUCTA	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)		PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)		DNV SAWL 450 FDU / 762 / 17.5								
	GROS.PERETE DISP. ANTIDEFORMARE (mm)/ INTERVAL (m)			BUCKLE ARRESTOR W.T. (mm) / SPACING (m)		22.8 / 500								
	STRAT ANTI-COROZIV/GROS.(mm)/DENSITATE(kg/m³)			ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)		FBE / 0.38 – 0.815 / 1,350								
	STRAT INT. PROT./ GROSIME (µm) / DENSITATE (kg/m³)			INTERNAL COAT. / THICK (µm) / DENSITY (kg/m³)		ACOPERIRE LA INTERIOR (NOTA 10) ACOPERIREA / 50 / 1,500 / INTERNAL FLOW COAT (NOTE 10) COATING / 50 / 1,500								
	STRAT BETON: GROSIME (mm) / DENSITATE (kg/m³)			CONCRETE COATING: THICK (mm) / DENSITY (kg/m³)		55 / 3,050								
	TIP SUDURA / TIP UMPLUTURA / DENSITATE (kg/m³)			FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)		FBE + POLIURETAN 128 – 224 / FBE + POLYURETHANE / 128 – 224								
	TIP ANOD / MASA (Kg) / INTERVAL MONTAJ (segmente)			ANODE BRACELETS TYPE / MASS (kg) / SPACING (joints)		ALUMINIU (4.0x800) / 161 / 1 LA 10 SEGMENTE / AI (4.0x800) / 161 / 1 EVERY 10 JOINTS								
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)		PIPELINE WEIGHT (kN/m)	IN AIR (DRY) (kN/m)	7.392								
		IN APA	GOALA (kN/m) / SG		SUBMERGED EMPTY (kN/m) / SG	1.447 / 1.24								
			INUNDATA (kN/m) / SG		FLOODED (kN/m) / SG	5.572 / 1.94								
			IN FUNCTIUNE (kN/m) / SG		OPERATION (kN/m) / SG	1.581 / 1.27								
LUCRARI PRE INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)		PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)		NU EXISTA / NONE								
	SUPORTI / SALTELE BETON			SLEEPERS / MATTRESSES		NU EXISTA / NONE								
	INALTIME (m) / LATIME (m) PAT PIETRIS			GRAVEL DUMPING HEIGHT (m) / WIDTH (m)		1.8/10								
LUCRARI POST INSTALARE CONDUCTA	ADANCIME SANT (m)		POST-LAY INT. WORKS	TRENCHING DEPTH (m)		NU EXISTA / NONE								
	TIP UMPLUTURA / STRAT ACOPERITOR (m)			BACKFILLING TYPE / COVER TOP (m)		NU EXISTA / NONE								
	INALTIME (m) / LATIME (m) STRAT PIETRIS			GRAVEL DUMPING HEIGHT (m) / WIDTH (m)		NU EXISTA / NONE								
LUNGIME TRONSON ADMISA	INSTALARE (m)		ALLOWABLE SPAN LENGTH	INSTALLATION (m)		75.1							82.9	
	HIDRO-TEST (m)			HYDROTEST (m)		53.0							53.0	
	FUNCTIONARE (m)			OPERATION (m)		57.0							58.0	
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)		SPECIFIC REQUIREM.	LAY TOLERANCE (m)		±10	±2					±10		
	ALTELE			OTHER		FALIE (NOTA 13) / FAULT (NOTE 13)								

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATA IN 2014, DOCUMENT FUGRO J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCES PLATFORMA ACTUALIZATA PRIN DOC. FUGRO 160424.V3 (2017).
4. DATELE DE SOL PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRRPT-00-0015-001 A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002. DATELE DE SOL LA LOCATIA PLATFORMEI ACTUALIZATE CU MASURATORILE FUGRO 2017.
5. DIRECTILE SUNT INDICATE IN RAPORT CU NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND MODUL DE CONECTARE LA LOCATIA PLATFORMEI SE VA CONSULTA PLANSA ROND-EW-YDPAL-22-0011 – ARANJAMENT CONDUCTA DE ADUCTIUNE SI CONDUCTA DE GAZE NATURALE LA PLATFORMA (SWP).
7. STERS.
8. PENTRU DETALII PRIVIND ANOZII CONSULTATI PLANSA ROND-EW-YDCPD-24-0002 SI DOCUMENTUL ROND-EW-YRSTY-24-0002.
9. CARACTERIZAREA SOLULUI ESTE BAZATA PE NOTA TEHNICA 408009-00349-TN-003 (A SE VEDEA SI NOTA 4).
10. STRAT INTERIOR CONDUCTA CONFORM SPECIFICATIEI STRAT EPOXIDIC INTERN ROND-EW-YSPDS-20-0039.
13. LUCRARI DE INTERVENTIE FALIE: DEPOZITARE PIATRA, A SE CONSULTA PLANSA ROND-EW-YDPLX-24-003. FISELE DE ALINIAMENT PREZINTA TRAVERSAREA FALIEI CU DEPOZITARE DE PIATRA CA SOLUTIE DE BAZA.
14. A SE NOTA CA GROSIMEA ANOZILOR SI DISTANTA ADMISA DINTRE EI VOR FI RE-EVALUATE IN DETALILE TEHNICE DE EXECUTIE IN BAZA GROSIMII ACTUALE A STRATULUI DE BETON.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTES

1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM APPROACH BATHYMETRY UPDATED BY FUGRO DOC. 160424.V3 (2017).
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002. PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM LOCATION REFER TO DRAWING : ROND-EW-YDPAL-22-0011 – FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
7. DELETED.
8. FOR ANODE DETAILS REFER TO DRAWING ROND-EW-YDCPD-24-0002 & DOC. ROND-EW-YRSTY-24-0002.
9. SOIL CHARACTERIZATION BASED ON TECHNICAL NOTE 408009-00349-TN-003 (SEE ALSO NOTE 4).
10. INTERNAL FLOW COAT AS PER INTERNAL EPOXY COATING SPECIFICATION ROND-EW-YSPDS-20-0039.
13. INTERVENTION WORK ON THE FAULT: ROCK DUMPING, SEE DRAWING ROND-EW-YDPLX-24-0003. ALIGNMENT SHEETS SHOW THE FAULT CROSSING WITH ROCK DUMPING SOLUTION AS BASE CASE.
14. NOTE THAT ALLOWABLE SPANS AND ANODE THICKNESSES ARE TO BE RE-ASSESSED IN DETAILED DESIGN BASED UPON ACTUAL CONCRETE COATING THICKNESSES.

DOCUMENTE REFERINTA

NUMAR PLANSA	DESCRIERE
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOZI CONDUCTA DE GAZE NATURALE
ROND-EW-YDPLX-24-0003	DETALII TRAVERSARE FALIE PENTRU CONDUCTA DE GAZE NATURALE VARIANTA 1 DIN 2

REFERENCE DOCUMENTS

DRAWING NUMBER	DESCRIPTION
ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS
ROND-EW-YDPLX-24-0003	PRODUCTION PIPELINE FAULT CROSSING CONFIGURATION DETAILS 1 OF 2

SCALA

METRI 0 200 1,000 2,000

SCALA ORIZONTALA 1:20,000 (IN FORMAT "A1")

SCALE BAR

METERS 0 200 1,000 2,000

HORIZONTAL SCALE 1:20,000 (AT "A1" SIZE)

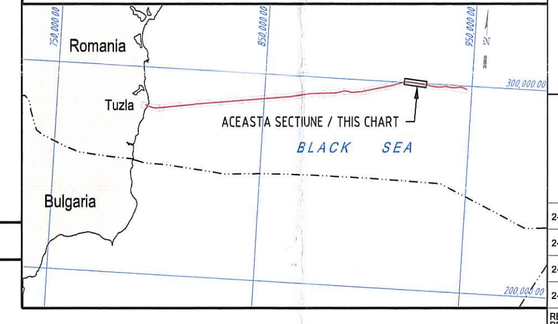
PARAMETRI GEODEZIE SI PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA / KEY PLAN



ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite asfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

PROIECT NEPTUN DEEP /
NEPTUN DEEP PROJECT

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
2-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-C	10.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	04.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR / CHECKER			I. BUTNARIU		ANRE
VERIFICATOR / CHECKER	REFERAT NR. / EXPERTIZA NR. / DATA / REPORT / EXPERTISE NO. / DATE		NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / ENDORSES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.19 , 100149, PLOIESTI
J29/307/12007, RO 2280420
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP.
2	15DEC17	RE-ISSUED FOR IFD		FK	EP	SS JG
1	28SEP17	RE-ISSUED FOR IFD		FK	EP	SS JG
0	04AUG17	ISSUE FOR IFD		RO	EP	SS JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE GAZE NATURALE 30"
30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA NR. 003 DIN 016
SHEET 003 OF 016

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 20,000	ROND-EW-YDPAL-24-0005-C	DTAC	2-D

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:20,000)

TIE-IN POINT	
X	Y
300,478.28	918,048.58

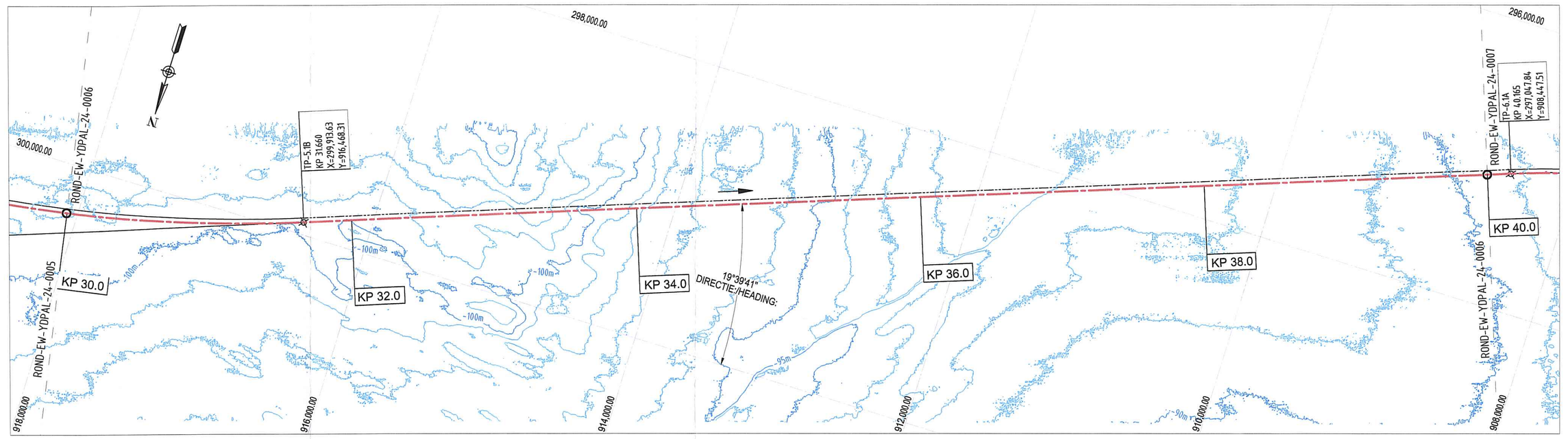
PUNCT DE CONEXIUNE	
X	Y
300,478.28	918,048.58

MATCH POINT END	
X	Y
297,103.86	908,604.29

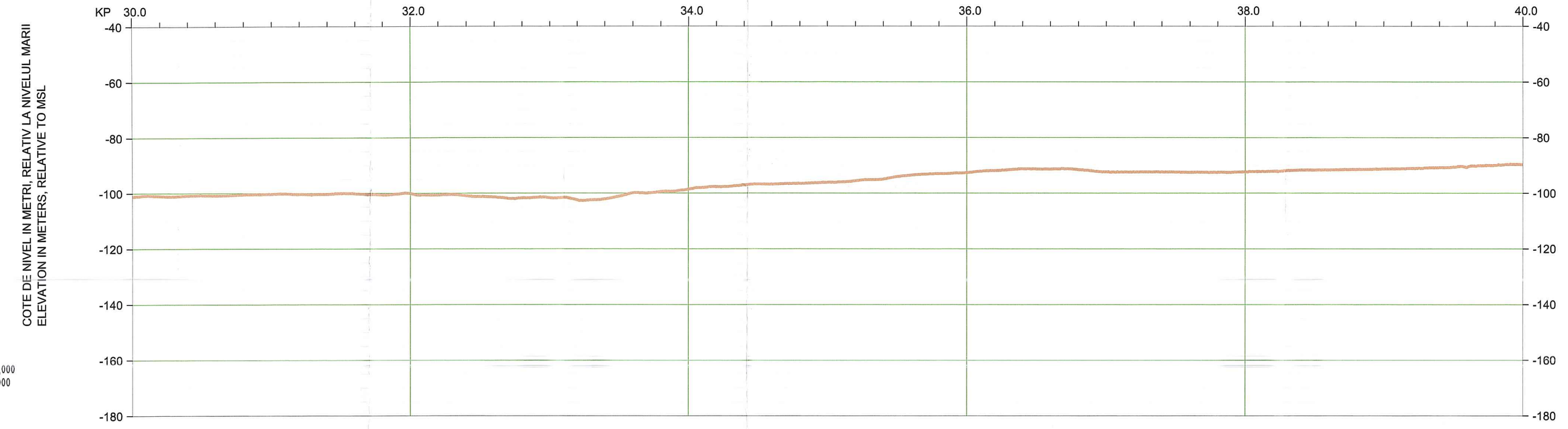
PUNCT LEGATURA DE FINAL	
X	Y
297,103.86	908,604.29

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CONTUR CURBA NIVEL MAJORA / MAJOR CONTOUR
- CONTUR CURBA NIVEL MINORA / MINOR CONTOUR



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters.
The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

SCALA ORIZONTALA / HORIZONTAL SCALE 1 : 20,000
SCALA VERTICALA / VERTICAL SCALE 1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION 10

DATE TEHNICE / ENGINEERING DATA

					KP 30.000	KP 31660	KP 32.368	KP 33.000	KP 37.263	KP 40.000
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA CURBURI (m)		ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)	10,000			19° 39' 41"		
	TRAVERSARE CONDUCTA / CABLU			CABLE / PIPELINE CROSSING	NU EXISTA / NONE					
	TIP SOL LA SUPRAFATA FUNDULUI MARII			SURFACE SEABED SOIL	ZONA 2 - NISIP (NOTA 9) / ZONE 2 - SAND (NOTE 9)			ZONA 3 - ARGILA / ZONE 3 - CLAY (NOTE 9)		
DATE CONDUCTA	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)		PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 FDU / 762 / 17.5					
	GROS.PERETE DISP. ANTIDEFORMARE (mm)/ INTERVAL (m)			BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	22.8 / 500					
	STRAT ANTI-COROZIV/GROS.(mm)/DENSITATE(kg/m³)			ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	FBE / 0.38 - 0.815 / 1,350					
	STRAT INT. PROT./ GROSIME (µm) / DENSITATE (kg/m³)			INTERNAL COAT. / THICK (µm) / DENSITY (kg/m³)	STRAT INTERIOR PROTECTIE (NOTA 10) / 50 / 1,500 / INTERNAL FLOW COAT (NOTE 10) COATING / 50 / 1,500					
	STRAT BETON: GROSIME (mm) / DENSITATE (kg/m³)			CONCRETE COATING: THICK (mm) / DENSITY (kg/m³)	55 / 3,050			80 / 3,050		
	TIP SUDURA / TIP UMPLUTURA / DENSITATE (kg/m³)			FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	FBE + POLIURETAN / FBE + POLYURETHANE / 128 - 224					
	TIP ANOD / MASA (Kg) / INTERVAL MONTAJ (segmente)			ANODE BRACELETS TYPE / MASS (kg) / SPACING (joints)	ALUMINIU (40x800) / 161 / 1 LA 10 SEGMENTE / AI (40x800) / 161 / 1 EVERY 10 JOINTS			ALUMINIU (50x775) / 198 / 1 LA 10 SEGMENTE / AI (50x775) / 198 / 1 EVERY 10 JOINTS		
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)	PIPELINE WEIGHT (kN/m)	IN AIR (DRY) (kN/m)	7.392			9.502		
		IN APA: GOALA (kN/m) / SG		SUBMERGED: EMPTY (kN/m) / SG	1.447 / 1.24			2.856 / 1.43		
		IN APA: INUNDATA (kN/m) / SG		SUBMERGED: FLOODED (kN/m) / SG	5.572 / 1.94			6.981 / 2.05		
		IN APA: IN FUNCTIUNE (kN/m) / SG		SUBMERGED: OPERATION (kN/m) / SG	1.581 / 1.27			2.989 / 1.45		
LUCRARI PRE INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)		PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE					
	SUPORTI / SALTELE BETON			SLEEPERS / MATTRESSES	NU EXISTA / NONE					
LUCRARI POST INSTALARE CONDUCTA	ADANCIME SANT (m)		POST-LAY INT. WORKS	TRENCHING DEPTH (m)	NU EXISTA / NONE					
	TIP UMPLUTURA / STRAT ACOPERITOR (m)			BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE					
	STRAT PIETRIS			GRAVEL DUMPING	NU EXISTA / NONE					
LUNGIME TRONSON ADMISA	INSTALARE (m)		ALLOWABLE SPAN LENGTH	INSTALLATION (m)	82.9			80.4		75.5
	HIDRO-TEST (m)			HYDROTEST (m)	53.0			40.0		40.0
	FUNCTIONARE (m)			OPERATION (m)	58.0			47.0		47.0
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)		SPECIFIC REQUIREM.	LAY TOLERANCE (m)	±10					
	ALTELE			OTHER						

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATA IN 2014, DOCUMENT FUGRO J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCES PLATFORMA ACTUALIZATA PRIN DOC. FUGRO 160424 V3 (2017).
4. DATELE DE SOL PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRRPT-00-0015-001 SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002. DATELE DE SOL LA LOCATIA PLATFORMEI ACTUALIZATE CU MASURATORILE FUGRO 2017.
5. DIRECTILE SUNT INDICATE IN RAPORT CU NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND MODUL DE CONECTARE LA LOCATIA PLATFORMEI SE VA CONSULTA PLANSA ROND-EW-YDPAL-22-0011 - ARANJAMENT CONDUCTA DE ADUCTIUNE SI CONDUCTA DE GAZE NATURALE LA PLATFORMA (SWP).
7. STERS.
8. PENTRU DETALII PRIVIND ANOZII CONSULTATI PLANSA ROND-EW-YDCPD-24-0002 SI DOCUMENTUL ROND-EW-YRSTY-24-0002.
9. CARACTERIZAREA SOLULUI ESTE BAZATA PE NOTA TEHNICA 408009-00349-TN-003 (A SE VEDEA SI NOTA 4).
10. STRAT INTERIOR CONDUCTA CONFORM SPECIFICATIEI STRAT EPOXIDIC INTERN ROND-EW-YSPDS-20-0039.
11. A SE NOTA CA GROSIMEA ANOZILOR SI DISTANTA ADMISA DINTRE EI VOR FI RE-EVALUATE IN DETALIILE DE EXECUTIE IN BAZA GROSIMII ACTUALE A STRATULUI DE BETON.

NOTES

1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM APPROACH BATHYMETRY UPDATED BY FUGRO DOC. 160424, V3 (2017)
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002. PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM LOCATION REFER TO DRAWING : ROND-EW-YDPAL-22-0011 - FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
7. DELETED.
8. FOR ANODE DETAILS REFER TO DRAWING ROND-EW-YDCPD-24-0002 & DOCUMENT ROND-EW-YRSTY-24-0002.
9. SOIL CHARACTERIZATION BASED ON TECHNICAL NOTE 408009-00349-TN-003 (SEE ALSO NOTE 4).
10. INTERNAL FLOW COAT AS PER INTERNAL EPOXY COATING SPECIFICATION ROND-EW-YSPDS-20-0039.
11. NOTE THAT ALLOWABLE SPANS AND ANODE THICKNESSES ARE TO BE RE-ASSESSED IN DETAILED DESIGN BASED UPON ACTUAL CONCRETE COATING THICKNESSES.

DOCUMENTE REFERINTA / REFERENCE DOCUMENTS

NUMAR PLANSA	DESCRIERE	DRAWING NUMBER	DESCRIPTION
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOZI CONDUCTA DE GAZE NATURALE	ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS

SCALA / SCALE BAR

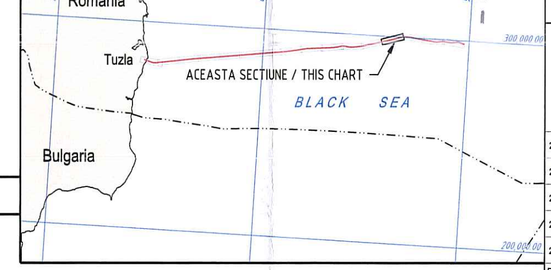
METRI / METERS: 0 — 200 — 1,000 — 2,000

SCALA ORIZONTALA 1:20,000 (IN FORMAT "A1") / HORIZONTAL SCALE 1:20,000 (AT "A1" SIZE)

PARAMETRI GEODEZIE SI PROIECTIE / GEODETIC & PROJECTION PARAMETERS

DATE GEODEZICE	:	STEREO 70	GEODETIC DATUM	: STEREO 70
PROIECTIE	:	Dublu Stereografica	PROJECTION	: Double Stereographic
Meridianul central (MC)	:	25.0	Central meridian (CM)	: 25.0
Latitudine Origine	:	46.0	Latitude of Origin	: 46.0
Falsa origine estica	:	500,000.0	False Easting at origin	: 500,000.0
Falsa origine nordica	:	500,000.0	False Northing at origin	: 500,000.0
Factor de scala la MC	:	0.99975	Scale factor at CM	: 0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)	VERTICAL DATUM	: MSL

PLAN DE REFERINTA / KEY PLAN



ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16, 100149, PLOIESTI
J29/207/2007, RO 20924450
S.C. JEREMY PROMASTER S.R.L.
STR. CIRCUMBELUL NR. 16A, PLOIESTI.

REV.	DATE	DESCRIPTION	ORIG	REV	APP	PROJ APP
2	15DEC17	RE-ISSUED FOR IFD	FK	EP	SS	JG
1	26SEP17	RE-ISSUED FOR IFD	FK	EP	SS	JG
0	04AUG17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE GAZE NATURALE 30" 30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA NR. 004 DIN 016
SHEET 004 OF 016

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
2-E	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-D	10.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-C	24.06.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	04.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR / CHECKER			I. BUTNARIU		ANRE
APROBATOR / APPROVER		REFERAT NR. / EXPERTISE NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE	NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / ENDORSES

1 : 20,000 — SCALA / SCALE
ROND-EW-YDPAL-24-0006-C — NR. PLANSA / DWG. NO.
DTAC 2-E — FAZA / PHASE: REV. / REV.
A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:20,000)

TIE-IN POINT	
X	Y
297,103.86	908,604.29

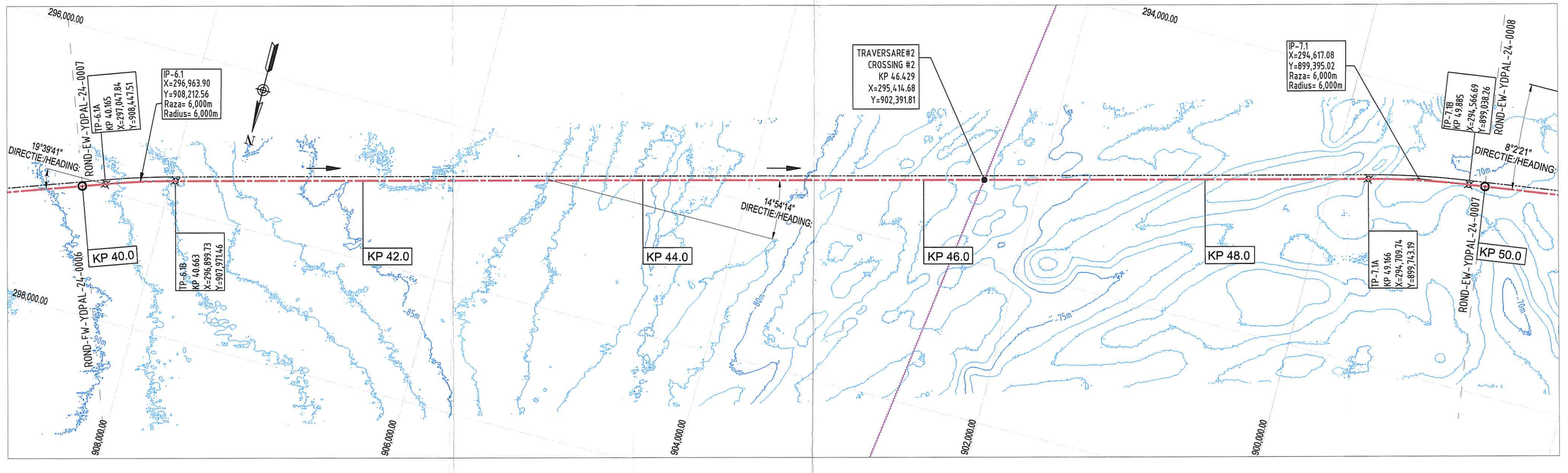
PUNCT DE CONEXIUNE	
X	Y
297,103.86	908,604.29

MATCH POINT END	
X	Y
294,550.56	898,924.05

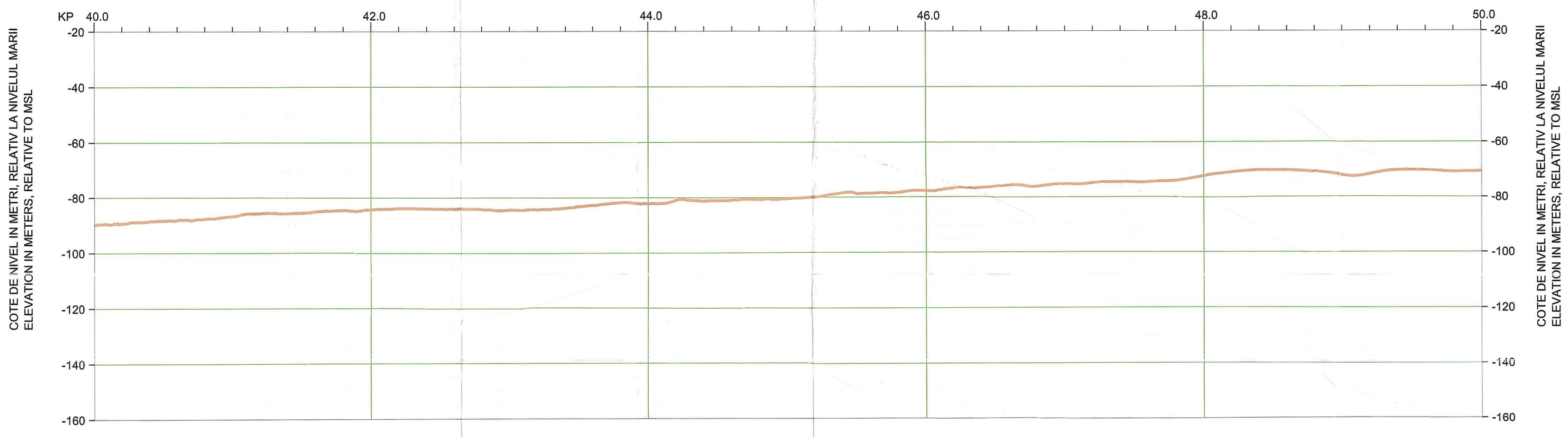
PUNCT LEGATURA DE FINAL	
X	Y
294,550.56	898,924.05

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CONTUR CURBA NIVEL MAJORA / MAJOR CONTOUR
- CONTUR CURBA NIVEL MINORA / MINOR CONTOUR
- CABLU / FIR / CABLE/WIRE



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 20,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	10

DATE TEHNICE / ENGINEERING DATA

				KP 40.000	KP 40.165	KP 40.663	KP 45.152	KP 46.329	KP 46.429	KP 46.529	KP 49.166	KP 49.885	KP 50.000
ELEMENTE TRASEU	ORIENTARE (°N) / RAZA CURBURI (m)	ROUTE ITEMS	STRAIGHT HEADING (°N) / BEND RADIUS (m)		6,000		14° 54' 14"				6,000		8° 2' 21"
	TRAVERSARE CONDUCTA / CABLU		CABLE / PIPELINE CROSSING			19° 39' 41"			TRAVERSARE CABLU #2 (NOTA 11) / CABLE CROSSING #2 (NOTE 11)				
	TIP SOL LA SUPRAFATA FUNDULUI MARII		SURFACE SEABED SOIL	ZONA 3 – ARGILA (NOTA 9) / ZONE 3 – CLAY (NOTE 9)									
DATE CONDUCTA	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)	PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 FDU / 762 / 17.5									
	GROS.PERETE DISP. ANTIDEFORMARE (mm)/ INTERVAL (m)		BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	22.8 / 500			NU EXISTA / NONE						
	STRAT ANTI-COROZIV/GROS.(mm)/DENSITATE(kg/m³)		ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	FBE / 0.38 – 0.815 / 1,350									
	STRAT INT. PROT./ GROSIME (µm) / DENSITATE (kg/m³)		INTERNAL COAT. / THICK (µm) / DENSITY (kg/m³)	STRAT INTERIOR PROTECTIE (NOTA 10) / 50 / 1,500 / INTERNAL FLOW COAT (NOTE 10) COATING / 50 / 1,500									
	STRAT BETON: GROSIME (mm) / DENSITATE (kg/m³)		CONCRETE COATING: THICK (mm) / DENSITY (kg/m³)	80 / 3,050									
	TIP SUDURA / TIP UMPLUTURA / DENSITATE (kg/m³)		FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	FBE + POLIURETAN 128 – 224 / FBE + POLYURETHANE / 128 – 224									
	TIP ANOD / MASA (Kg) / INTERVAL MONTAJ (segmente)		ANODE BRACELETS TYPE / MASS (kg) / SPACING (joints)	ALUMINIU (50x775) / 198 / 1 LA 10 SEGMENTE / Al (50x775) / 198 / 1 EVERY 10 JOINTS									
	GREUTATE CONDUCTA (kN/m) IN AER (USCATA) (kN/m)	PIPELINE WEIGHT (kN/m)	IN AIR (DRY) (kN/m)	9.502									
	GREUTATE CONDUCTA (kN/m) IN APA GOALA (kN/m) / SG	SUBMERGED	EMPTY (kN/m) / SG										
	GREUTATE CONDUCTA (kN/m) IN APA INUNDATA (kN/m) / SG	SUBMERGED	FLOODED (kN/m) / SG	6.981 / 2.05									
	GREUTATE CONDUCTA (kN/m) IN APA IN FUNCTIUNE (kN/m) / SG	SUBMERGED	OPERATION (kN/m) / SG	2.989 / 1.45									
LUCRARI PRE INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)	PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA /NONE									
	SUPORTI / SALTELE BETON		SLEEPERS / MATTRESSES						TRAVERSARE CABLU #2 (NOTA 14) / CABLE CROSSING #2 (NOTE 14)				
LUCRARI POST INSTALARE CONDUCTA	ADANCIME SANT (m)	POST-LAY INT. WORKS	TRENCHING DEPTH (m)	NU EXISTA / NONE									
	TIP UMPLUTURA / STRAT ACOPERITOR (m)		BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE									
	STRAT PIETRIS		GRAVEL DUMPING	NU EXISTA / NONE									
LUNGIME TRONSON ADMISA	INSTALARE (m)	ALLOWABLE SPAN LENGTH	INSTALLATION (m)	75.5									
	HIDRO-TEST (m)		HYDROTEST (m)	40.0									
	FUNCTIONARE (m)		OPERATION (m)	47.0									
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)	SPECIFIC REQUIREM.	LAY TOLERANCE (m)	±10				±2		±10			
	ALTELE		OTHER										

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATA IN 2014, DOCUMENT FUGRO J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP.
4. DATELE DE SOL PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRRPT-00-0015-001 A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002.
5. DIRECTIILE SUNT INDICATE IN RAPORT CU NORDUL STERED 70.
6. PENTRU DETALII PRIVIND MODUL DE CONECTARE LA LOCATIA PLATFORMEI SE VA CONSULTA PLANSA ROND-EW-YDPAL-22-0011 – ARANJAMENT CONDUCTA DE ADUCTIUNE SI CONDUCTA DE GAZE NATURALE LA PLATFORMA (SWP).
7. STERS.
8. PENTRU DETALII PRIVIND ANOZII CONSULTATI PLANSA ROND-EW-YDCPD-24-0002 SI DOCUMENTUL ROND-EW-YRSTY-24-0002.
9. CARACTERIZAREA SOLULUI ESTE BAZATA PE NOTA TEHNICA 408009-00349-TN-003 (A SE VEDEA SI NOTA 4).
10. STRAT INTERIOR CONDUCTA CONFORM SPECIFICATIEI STRAT EPOXIDIC INTERN ROND-EW-YSPDS-20-0039.
11. PUNCT TRAVERSARE CABLU CONFORM BAZEI DE DATE MARINE GLOBALE. CONSTRUCTORUL VA DETERMINA LOCATIA EXACTA.
12. POSIBILA TRAVERSARE A VIITORULUI CABLU HCDC ROMANIA – TURCIA. CONSTRUCTORUL VA VERIFICA DATA CONSTRUCTIEI CU DETINATORUL CABLULUI.
13. TRAVERSARE CABLU CONFORM BAZEI DE DATE GIS FURNIZATA DE FUGRO.
14. TRAVERSARE CABLUL CONFORM PLANSA ROND-EW-YDPLX-24-0002 SOLUTIE TIPICA TRAVERSARE CABLU
15. A SE NOTA CA GROSIMEA ANOZILOR SI DISTANTA ADMISA DINTRE EI VOR FI RE-EVALUATE IN DETALIILE DE EXECUTIE IN BAZA GROSIMII ACTUALE A STRATULUI DE BETON.

NOTES

1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT.
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002.
5. HEADINGS INDICATED ARE RELATIVE TO STERED 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM LOCATION REFER TO DRAWING : ROND-EW-YDPAL-22-0011 – FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
7. DELETED.
8. FOR ANODE DETAILS REFER TO DRAWING ROND-EW-YDCPD-24-0002 & DOCUMENT ROND-EW-YRSTY-24-0002.
9. SOIL CHARACTERIZATION BASED ON TECHNICAL NOTE 408009-00349-TN-003 (SEE ALSO NOTE 4).
10. INTERNAL FLOW COAT AS PER INTERNAL EPOXY COATING SPECIFICATION ROND-EW-YSPDS-20-0039.
11. CABLE CROSSING FROM GLOBAL MARINE DATABASE. CONTRACTOR TO DETERMINE EXACT LOCATION.
12. POTENTIAL CROSSING FOR FUTURE HCDC ROMANIA TURKEY. CONTRACTOR TO CHECK WITH THE CABLE OWNER FOR THE CONSTRUCTION DATE.
13. CABLE CROSSING FROM GIS DATABASE PROVIDED BY FUGRO.
14. CABLE CROSSING AS PER DRAWING ROND-EW-YDPLX-24-0002 TYPICAL CABLE CROSSING G.A.
15. NOTE THAT ALLOWABLE SPANS AND ANODE THICKNESSES ARE TO BE RE-ASSESSED IN DETAILED DESIGN BASED UPON ACTUAL CONCRETE COATING THICKNESSES.

DOCUMENTE REFERINTA

NUMAR PLANSA	DESCRIERE
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOZI CONDUCTA DE GAZE NATURALE
ROND-EW-YDPLX-24-0002	SOLUTIE TIPICA TRAVERSARE CABLU

REFERENCE DOCUMENTS

DRAWING NUMBER	DESCRIPTION
ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS
ROND-EW-YDPLX-24-0002	TYPICAL CABLE CROSSING GENERAL ARRANGEMENT

SCALA

0 200 METRI 1,000 2,000

SCALA ORIZONTALA 1:20,000 (IN FORMAT "A1")

SCALE BAR

0 200 METERS 1,000 2,000

HORIZONTAL SCALE 1:20,000 (AT "A1" SIZE)

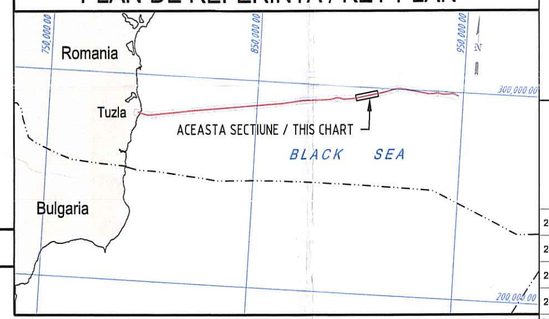
PARAMETRI GEODEZIE SI PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dubla Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA / KEY PLAN



ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA / DATE	EMIS PENTRU / ISSUED FOR	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
3-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
3-C	10.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	04.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR / CHECKED BY		I. BUTNARIU			ANRE
VERIFICATOR INDEPENDENT / INDEPENDENT CHECKER	REFERAT NR. / REFERITOR NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE		NUME / NAME	SEMNATURA / SIGNATURE	DOSARUL EXIGENTELOR

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. INFORMATICII NR.136-138, 013499, BUCUREŞTI
TEL. INFORMATICII NR.136-138, 013499, BUCUREŞTI
S.C. JEREMY PROMASTER S.R.L.
STR. CUTICARILOR, NR. 14A, PLOIEŞTI.

REV.	REV. DATE	REV. DESCRIPTION	ORG	REV	APP	PROJ APP
2	15DEC17	RE-ISSUED FOR IFD	FK	EP	SS	JG
1	26SEP17	RE-ISSUED FOR IFD	FK	EP	SS	JG
0	04AUG17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE GAZE NATURALE 30" 30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA NR. 005 DIN 016
SHEET 005 OF 016

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 20,000	ROND-EW-YDPAL-24-0007-C	DTAC	2-D

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:20,000)

TIE-IN POINT	
X	Y
294,550.56	898,924.05

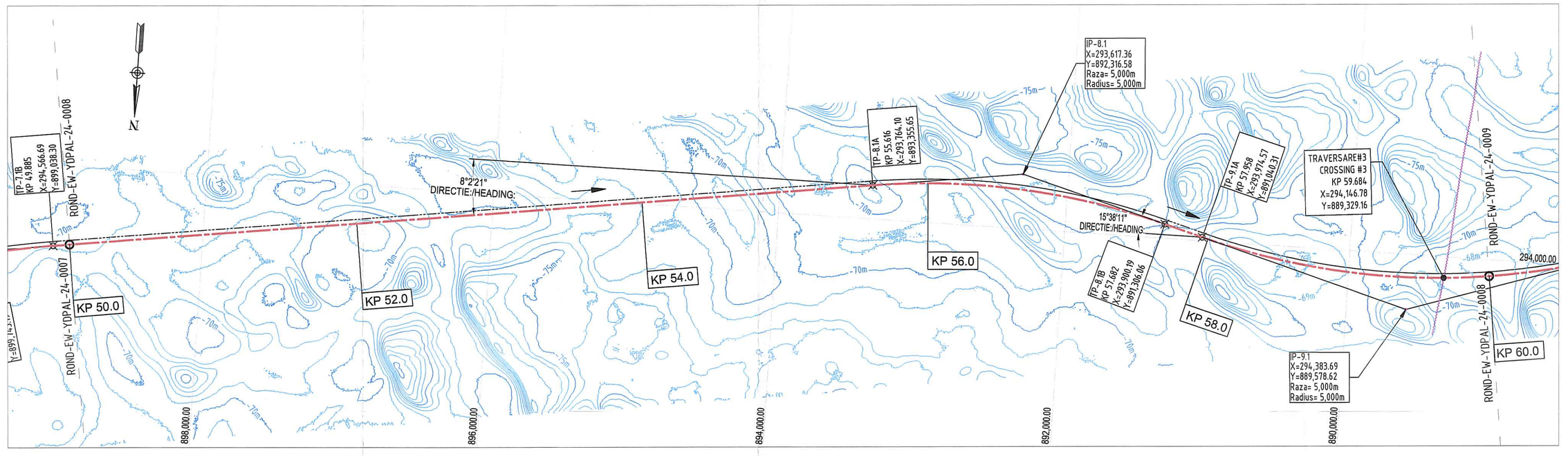
MATCH POINT END	
X	Y
294,113.92	889,014.07

PUNCT DE CONEXIUNE	
X	Y
294,550.56	898,924.05

PUNCT LEGATURA DE FINAL	
X	Y
294,113.92	889,014.07

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CONTUR CURBA NIVEL MAJORA / MAJOR CONTOUR
- CONTUR CURBA NIVEL MINORA / MINOR CONTOUR
- CABLU / FIR / CABLE/WIRE



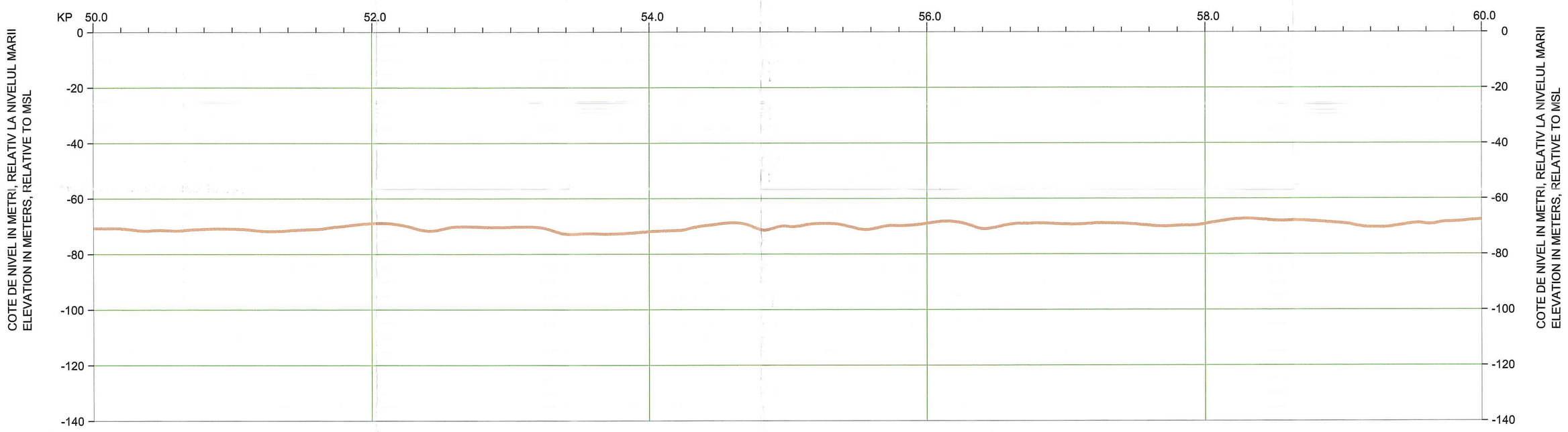
PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE

NOTA / NOTE:

Planse este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 20,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	10



DATE TEHNICE / ENGINEERING DATA

					KP 50.000	KP 50.238	KP 54.544	KP 55.616	KP 57.682	KP 57.758	KP 59.584	KP 59.684	KP 59.784	KP 60.000
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA CURBURI (m)			ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)	8° 2' 21"		5,000	15° 38' 11"	5,000				
	TRAVERSARE CONDUCTA / CABLU				CABLE / PIPELINE CROSSING						TRAVERSARE CABLU #3 (NOTA 13) / CABLE CROSSING #3 (NOTE 13)			
	TIP SOL LA SUPRAFATA FUNDULUI MARII				SURFACE SEABED SOIL	ZONA 3 - ARGILA (NOTA 9) / ZONE 3 - CLAY (NOTE 9)		ZONA 4 - NISIP (NOTA 9) / ZONE 4 - SAND (NOTE 9)						
DATE CONDUCTA	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)			PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 FDU / 762 / 17.5								
	GROS.PERETE DISP. ANTIDEFORMARE (mm)/ INTERVAL (m)				BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	NU EXISTA / NONE								
	STRAT ANTI-COROZIV/GROS.(mm)/DENSITATE(kg/m³)				ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	FBE / 0.38 - 0.815 / 1,350								
	STRAT INT. PROT./ GROSIME (µm) / DENSITATE (kg/m³)				INTERNAL COAT. / THICK (µm) / DENSITY (kg/m³)	STRAT INTERIOR PROTECTIE (NOTA 10) / 50 / 1,500 / INTERNAL FLOW COAT (NOTE 10) COATING / 50 / 1,500								
	STRAT BETON: GROSIME (mm) / DENSITATE (kg/m³)				CONCRETE COATING: THICK (mm) / DENSITY (kg/m³)	80 / 3.050	65 / 3,050		75 / 3,050					
	TIP SUDURA / TIP UMPLUTURA / DENSITATE (kg/m³)				FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	FBE + POLIURETAN 128 - 224 / FBE + POLYURETHANE / 128 - 224								
	TIP ANOD / MASA (Kg) / INTERVAL MONTAJ (segmente)				ANODE BRACELETS TYPE / MASS (kg) / SPACING (joints)	ALUMINIU (50x775) / 198 / 1 LA 10 SEGMENTE / AI (50x775) / 198 / 1 EVERY 10 JOINTS		ALUMINIU (40x800) / 161 / 1 LA 10 SEGMENTE / AI (40x800) / 161 / 1 EVERY 10 JOINTS						
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)			PIPELINE WEIGHT (kN/m)	IN AIR (DRY) (kN/m)	9.502	8.222	9.070					
		IN APA	GOALA (kN/m) / SG			EMPTY (kN/m) / SG	2.856 / 1.43		2.568 / 1.39					
			INUNDATA (kN/m) / SG			SUBMERGED FLOODED (kN/m) / SG	6.981 / 2.05	6.126 / 1.98						
			IN FUNCTIUNE (kN/m) / SG			OPERATION (kN/m) / SG	2.989 / 1.45	2.135 / 1.34	2.701 / 1.42					
LUCRARI PRE INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)			PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE								
	SUPORTI / SALTELE BETON				SLEEFERS / MATTRESSES						TRAVERSARE CABLU #3 (NOTA 14) / CABLE CROSSING #3 (NOTE 14)			
LUCRARI POST INSTALARE CONDUCTA	ADANCIME SANT (m)			POST-LAY INT. WORKS	TRENCHING DEPTH (m)	NU EXISTA / NONE								
	TIP UMPLUTURA / STRAT ACOPERITOR (m)				BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE								
	STRAT PIETRIS				GRAVEL DUMPING	NU EXISTA / NONE								
LUNGIME TRONSON ADMISA	INSTALARE (m)			ALLOWABLE SPAN LENGTH	INSTALLATION (m)	75.5	75.4		70.6					
	HIDRO-TEST (m)				HYDROTEST (m)	40.0	51.0		44.0					
	FUNCTIONARE (m)				OPERATION (m)	47.0	53.0		45.0					
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)			SPECIFIC REQUIREM.	LAY TOLERANCE (m)	±10							±2	±10
	ALTELE				OTHER									

ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor afiate dupa simbolul punct.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIVELA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATA IN 2014, DOCUMENT FUGRO J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP.
4. DATELE DE SOL PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRRPT-00-0015-001 A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002.
5. DIRECTILE SUNT INDICATE IN RAPORT CU NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND MODUL DE CONECTARE LA LOCATIA PLATFORMEI SE VA CONSULTA PLANSA ROND-EW-YDPAL-22-0011 - ARANJAMENT CONDUCTA DE ADUCTIUNE SI CONDUCTA DE GAZE NATURALE LA PLATFORMA (SWP).
7. STERS.
8. PENTRU DETALII PRIVIND ANOZII CONSULTATI PLANSA ROND-EW-YDCPD-24-0002 SI DOCUMENTUL ROND-EW-YRSTY-24-0002.
9. CARACTERIZAREA SOLULUI ESTE BAZATA PE NOTA TEHNICA 408009-00349-TN-003 (A SE VEDEA SI NOTA 4).
10. STRAT INTERIOR CONDUCTA CONFORM SPECIFICATIEI STRAT EPOXIDIC INTERN ROND-EW-YSPOS-20-0039.
11. PUNCT TRAVERSARE CABLU CONFORM BAZEI DE DATE MARINE GLOBALE. CONSTRUCTORUL VA DETERMINA LOCATIA EXACTA.
12. POSIBILA TRAVERSARE A VITORULUI CABLU HCDC ROMANIA - TURCIA. CONSTRUCTORUL VA VERIFICA DATA CONSTRUCTIEI CU DETINATORUL CABLULUI.
13. TRAVERSARE CABLU CONFORM BAZEI DE DATE GIS FURNIZATA DE FUGRO.
14. TRAVERSARE CABLUI, CONFORM PLANSA ROND-EW-YDPLX-24-0002 SOLUTIE TIPICA TRAVERSARE CABLU.
15. A SE NOTA CA GROSIMEA ANOZILOR SI DISTANTA ADMISA DINTRE EI VOR FI RE-EVALUATE IN DETALIILE DE EXECUTIE, IN BAZA GROSIMII ACTUALE A STRATULUI DE BETON.

NOTES

1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP.
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM LOCATION REFER TO DRAWING : ROND-EW-YDPAL-22-0011 - FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
7. DELETED.
8. FOR ANODE DETAILS REFER TO DRAWING ROND-EW-YDCPD-24-0002 & DOCUMENT ROND-EW-YRSTY-24-0002.
9. SOIL CHARACTERIZATION BASED ON TECHNICAL NOTE 408009-00349-TN-003 (SEE ALSO NOTE 4).
10. INTERNAL FLOW COAT AS PER INTERNAL EPOXY COATING SPECIFICATION ROND-EW-YSPOS-20-0039.
11. CABLE CROSSING FROM GLOBAL MARINE DATABASE. CONTRACTOR TO DETERMINE EXACT LOCATION.
12. POTENTIAL CROSSING FOR FUTURE HCDC ROMANIA TURKEY. CONTRACTOR TO CHECK WITH THE CABLE OWNER FOR THE CONSTRUCTION DATE.
13. CABLE CROSSING FROM GIS DATABASE PROVIDED BY FUGRO.
14. CABLE CROSSING AS PER DRAWING ROND-EW-YDPLX-24-0002 TYPICAL CABLE CROSSING G.A.
15. NOTE THAT ALLOWABLE SPANS AND ANODE THICKNESSES ARE TO BE RE-ASSESSED IN DETAILED DESIGN BASED UPON ACTUAL CONCRETE COATING THICKNESSES.

DOCUMENTE REFERINTA / REFERENCE DOCUMENTS

NUMAR PLANSA	DESCRIERE	DRAWING NUMBER	DESCRIPTION
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOZI CONDUCTA DE GAZE NATURALE	ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS
ROND-EW-YDPLX-24-0002	SOLUTIE TIPICA TRAVERSARE CABLU	ROND-EW-YDPLX-24-0002	TYPICAL CABLE CROSSING GENERAL ARRANGEMENT

SCALA / SCALE BAR

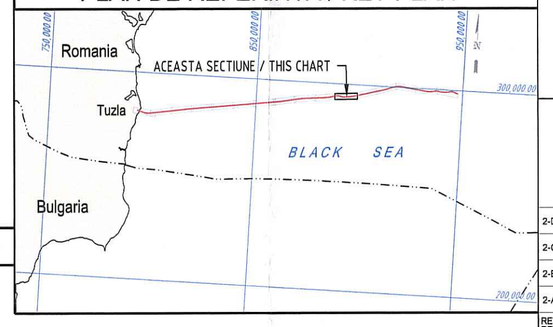
METRI 0 200 1,000 2,000
SCALA ORIZONTALA 1:20,000 (IN FORMAT "A1")

METERS 0 200 1,000 2,000
HORIZONTAL SCALE 1:20,000 (AT "A1" SIZE)

PARAMETRI GEODEZIE SI PROIECTIE / GEODETIC & PROJECTION PARAMETERS

DATE GEODEZICE	STEREO 70	GEODETIC DATUM	STEREO 70
PROIECTIE	Dublu Stereografica	PROJECTION	Double Stereographic
Meridianul central (MC)	25.0	Central meridian (CM)	25.0
Latitudine Origine	46.0	Latitude of Origin	46.0
Falsa origine estica	500,000.0	False Easting at origin	500,000.0
Falsa origine nordica	500,000.0	False Northing at origin	500,000.0
Factor de scala la MC	0.99975	Scale factor at CM	0.99975
DATE VERTICALE	MSL (NIVELUL MARII)	VERTICAL DATUM	MSL

PLAN DE REFERINTA / KEY PLAN



BUTNARIU ANDREI MARIUS
NR. V181000171
ILF CONSULTING ENGINEERS ROMANIA S.R.L.
VERIFICATOR PROIECTE

ILF CONSULTING ENGINEERS ROMANIA S.R.L. BUCUREST - 1 - ROMANIA

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
2-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-C	10.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	04.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR / CHECKER			I. BUTNARIU		ANRE

ÎNTOCMIT/ORIGINATOR / DESENAT/DRAWN	REFERAT NR. / EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE	NUME / NAME	SEMNĂTURA / SIGNATURE	DOMENIU / EVIDENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.19 , 100149, PLOIESTI
J29/2071/2007, RO 22824452
S.C. JEREMY PROMASTER S.R.L.
STR. CONDUREULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROV APP
2	15DEC17	RE-ISSUED FOR IFD	FK	EP	SS	JG
1	26SEP17	RE-ISSUED FOR IFD	FK	EP	SS	JG
0	04AUG17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE GAZE NATURALE 30" 30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA NR. 006 DIN 016
SHEET 006 OF 016

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 20,000	ROND-EW-YDPAL-24-0008-C	DTAC	2-D

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:20,000)

TIE-IN POINT	
X	Y
294,113.92	889,014.07

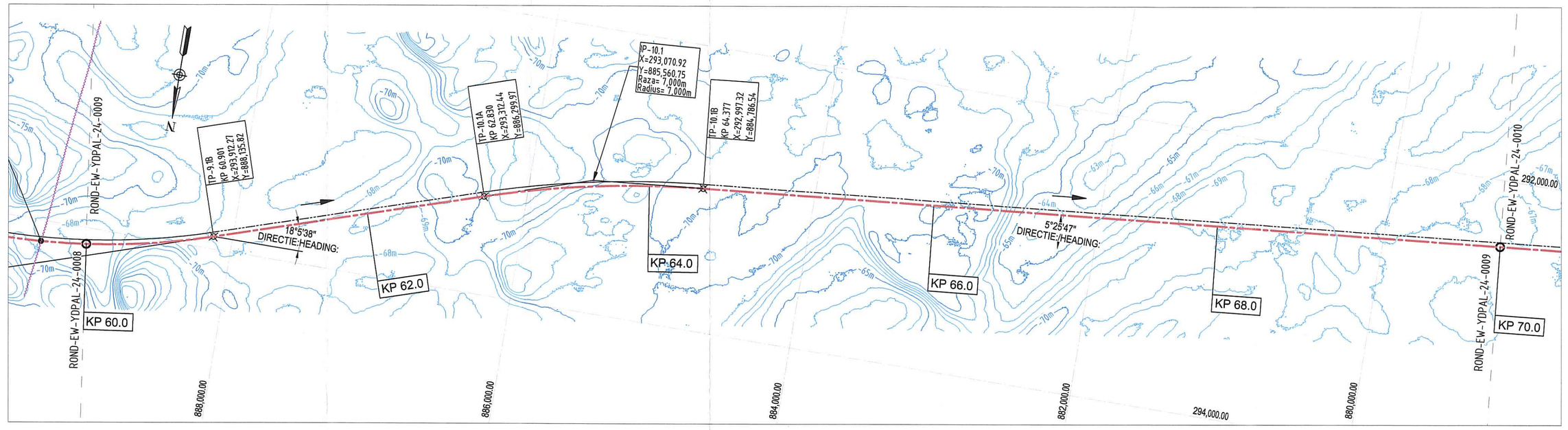
PUNCT DE CONEXIUNE	
X	Y
294,113.92	898,014.07

MATCH POINT END	
X	Y
292,464.53	879,181.35

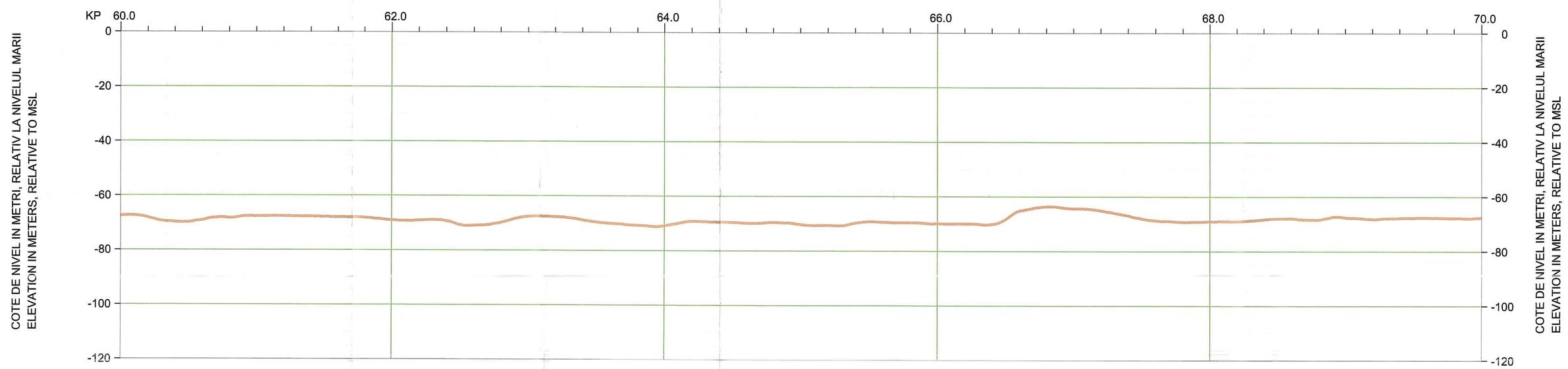
PUNCT LEGATURA DE FINAL	
X	Y
292,464.53	879,181.35

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CONTUR CURBA NIVEL MAJORA / MAJOR CONTOUR
- CONTUR CURBA NIVEL MINORA / MINOR CONTOUR
- CABLU / FIR / CABLE/WIRE



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 20,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	10

DATE TEHNICE / ENGINEERING DATA

							KP 60.000	KP 60.901	KP 62.830	KP 64.377	KP 70.000
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA CURBURI (m)			ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)		5,000	18° 5' 38"	7,000	5° 25' 47"	
	TRAVERSARE CONDUCTA / CABLU				CABLE / PIPELINE CROSSING		NU EXISTA / NONE				
	TIP SOL LA SUPRAFATA FUNDULUI MARII				SURFACE SEABED SOIL		ZONA 4 - NISIP (NOTA 9) / ZONE 4 - SAND (NOTE 9)				
DATE CONDUCTA	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)			PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)		DNV SAWL 450 FDU / 762 / 17.5				
	GROS.PERETE DISP. ANTIDEFORMARE (mm)/ INTERVAL (m)				BUCKLE ARRESTOR W.T. (mm) / SPACING (m)		NU EXISTA / NONE				
	STRAT ANTI-COROZIV/GROS.(mm)/DENSITATE(kg/m³)				ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)		FBE / 0.38 - 0.815 / 1,350				
	STRAT INT. PROT./ GROSIME (µm) / DENSITATE (kg/m³)				INTERNAL COAT. / THICK (µm) / DENSITY (kg/m³)		STRAT INTERIOR PROTECTIE (NOTA 10) / 50 / 1,500 / INTERNAL FLOW COAT (NOTE 10) COATING / 50 / 1,500				
	STRAT BETON: GROSIME (mm) / DENSITATE (kg/m³)				CONCRETE COATING: THICK (mm) / DENSITY (kg/m³)		75 / 3,050				
	TIP SUDURA / TIP UMPLUTURA / DENSITATE (kg/m³)				FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)		FBE + POLIURETAN 128 - 224 / FBE + POLYURETHANE / 128 - 224				
	TIP ANOD / MASA (Kg) / INTERVAL MONTAJ (segmente)				ANODE BRACELETS TYPE / MASS (kg) / SPACING (joints)		ALUMINIU (40x800) / 161 / 1 LA 10 SEGMENTE / Al (40x800) / 161 / 1 EVERY 10 JOINTS				
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)			PIPELINE WEIGHT (kN/m)	IN AIR (DRY) (kN/m)		9.070			
		IN APA	GOALA (kN/m) / SG			SUBMERGED	EMPTY (kN/m) / SG				
			INUNDATA (kN/m) / SG				FLOODED (kN/m) / SG	6.693 / 2.03			
			IN FUNCTIUNE (kN/m) / SG				OPERATION (kN/m) / SG	2.701 / 1.42			
LUCRARI PRE INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)			PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)		NU EXISTA / NONE				
	SUPORTI / SALTELE BETON				SLEEPERS / MATTRESSES		NU EXISTA / NONE				
LUCRARI POST INSTALARE CONDUCTA	ADANCIME SANT (m)			POST-LAY INT. WORKS	TRENCHING DEPTH (m)		NU EXISTA / NONE				
	TIP UMPLUTURA / STRAT ACOPERITOR (m)				BACKFILLING TYPE / COVER TOP (m)		NU EXISTA / NONE				
	STRAT PIETRIS				GRAVEL DUMPING		NU EXISTA / NONE				
LUNGIME TRONSON ADMISA	INSTALARE (m)			ALLOWABLE SPAN LENGTH	INSTALLATION (m)		70.6				
	HIDRO-TEST (m)				HYDROTEST (m)		44.0				
	FUNCTIONARE (m)				OPERATION (m)		45.0				
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)			SPECIFIC REQUIREM.	LAY TOLERANCE (m)		±10				
	ALTELE				OTHER						

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATA IN 2014, DOCUMENT FUGRO J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCES PLATFORMA ACTUALIZATA PRIN DOC. FUGRO 160424.V3 (2017).
4. DATELE DE SOL PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRRPT-00-0015-001 A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002. DATELE DE SOL LA LOCATIA PLATFORMEI ACTUALIZATE CU MASURATORILE FUGRO 2017.
5. DIRECTIILE SUNT INDICATE IN RAPORT CU NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND MODUL DE CONECTARE LA LOCATIA PLATFORMEI SE VA CONSULTA PLANSA ROND-EW-YDPAL-22-0011 - ARANJAMENT CONDUCTA DE ADUCTIUNE SI CONDUCTA DE GAZE NATURALE LA PLATFORMA (SWP).
7. STERS.
8. PENTRU DETALII PRIVIND ANOZII CONSULTATI PLANSA ROND-EW-YDCPD-24-0002 SI DOCUMENTUL ROND-EW-YRSTY-24-0002.
9. CARACTERIZAREA SOLULUI ESTE BAZATA PE NOTA TEHNICA 408009-00349-TN-003 (A SE VEDEA SI NOTA 4).
10. STRAT INTERIOR CONDUCTA CONFORM SPECIFICATIEI STRAT EPOXIDIC INTERN ROND-EW-YSPDS-20-0039.
11. A SE NOTA CA GROSIMEA ANOZILOR SI DISTANTA ADMISA DINTRE EI VOR FI RE-EVALUATE IN DETALIILE DE EXECUTIE, IN BAZA GROSIMII ACTUALE A STRATULUI DE BETON.

NOTES

1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM APPROACH BATHYMETRY UPDATED BY FUGRO DOC. 160424.V3 (2017).
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002. PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. HEADINGS INDICATE ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM LOCATION REFER TO DRAWING : ROND-EW-YDPAL-22-0011 - FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
7. DELETED.
8. FOR ANODE DETAILS REFER TO DRAWING ROND-EW-YDCPD-24-0002 & DOCUMENT ROND-EW-YRSTY-24-0002.
9. SOIL CHARACTERIZATION BASED ON TECHNICAL NOTE 408009-00349-TN-003 (SEE ALSO NOTE 4).
10. INTERNAL FLOW COAT AS PER INTERNAL EPOXY COATING SPECIFICATION ROND-EW-YSPDS-20-0039.
11. NOTE THAT ALLOWABLE SPANS AND ANODE THICKNESSES ARE TO BE RE-ASSESSED IN DETAILED DESIGN BASED UPON ACTUAL CONCRETE COATING THICKNESSES.

DOCUMENTE REFERINTA / REFERENCE DOCUMENTS

NUMAR PLANSA	DESCRIERE	DRAWING NUMBER	DESCRIPTION
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOZI CONDUCTA DE GAZE NATURALE	ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS

SCALA / SCALE BAR

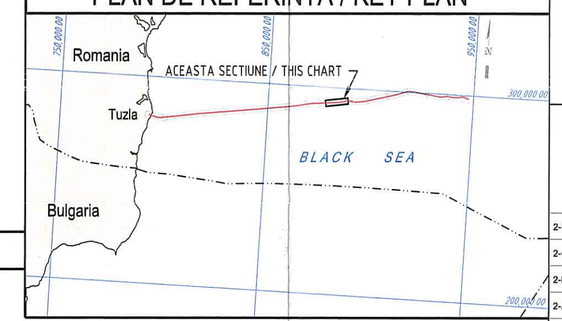
METRI / METERS
0 200 1,000 2,000

SCALA ORIZONTALA 1:20,000 (IN FORMAT "A1") / HORIZONTAL SCALE 1:20,000 (AT "A1" SIZE)

PARAMETRI GEODEZIE SI PROIECTIE / GEODETIC & PROJECTION PARAMETERS

DATE GEODEZICE	:	STEREO 70	GEODETIC DATUM	: STEREO 70
PROIECTIE	:	Dublu Stereografica	PROJECTION	: Double Stereographic
Meridianul central (MC)	:	25.0	Central meridian (CM)	: 25.0
Latitudine Origine	:	46.0	Latitude of Origin	: 46.0
Falsa origine estica	:	500,000.0	False Easting at origin	: 500,000.0
Falsa origine nordica	:	500,000.0	False Northing at origin	: 500,000.0
Factor de scala la MC	:	0.99975	Scale factor at CM	: 0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)	VERTICAL DATUM	: MSL

PLAN DE REFERINTA / KEY PLAN



ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
VERIFICATOR / CHECKER			I. BUTNARIU		ANRE
REPROIECTOR / DIGITIZER	REFERAT NR. / EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO / DATE		NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / ENGINEERS
3-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
3-C	10.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	04.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU-VODA NR.1B , 100149, PLOIESTI
J29/307/12007, RO 32834820
S.C. JEREMY PROMASTER S.R.L.
STR. CUROJMELULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
2	15DEC17	RE-ISSUED FOR IFD		FK	EP	SS JG
1	26SEP17	RE-ISSUED FOR IFD		FK	EP	SS JG
0	04AUG17	ISSUE FOR IFD		RO	EP	SS JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE GAZE NATURALE 30" 30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA NR. 007 DIN 016
SHEET 007 OF 016

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 20,000	ROND-EW-YDPAL-24-0009-C	DTAC	2-D

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:20,000)

TIE-IN POINT	
X	Y
292,464.53	879,181.35

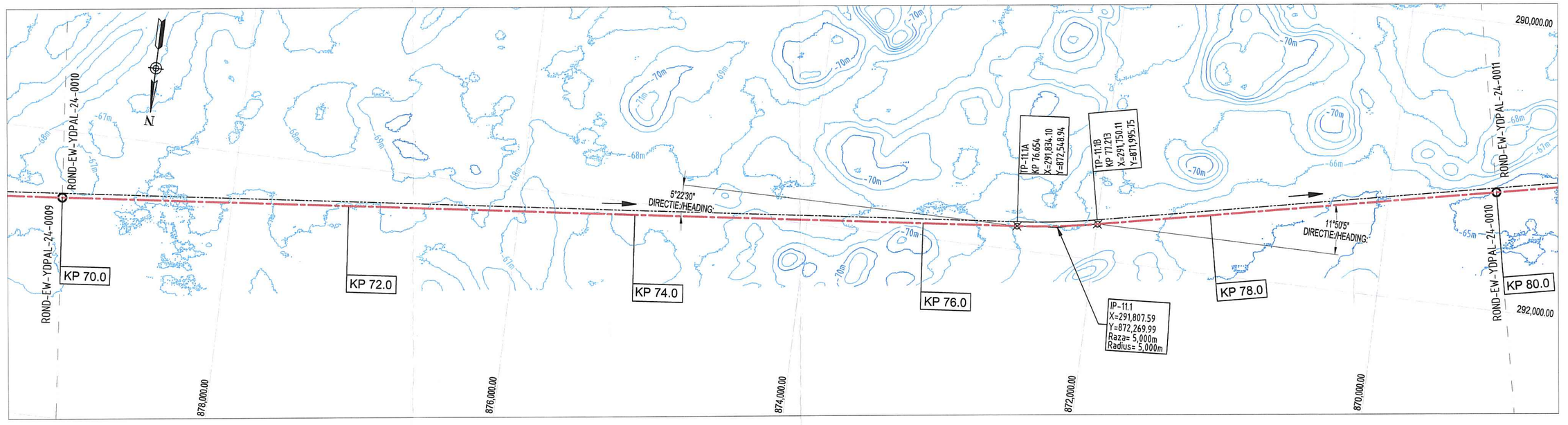
MATCH POINT END	
X	Y
291,177.80	869,264.92

PUNCT DE CONEXIUNE	
X	Y
292,464.53	879,181.35

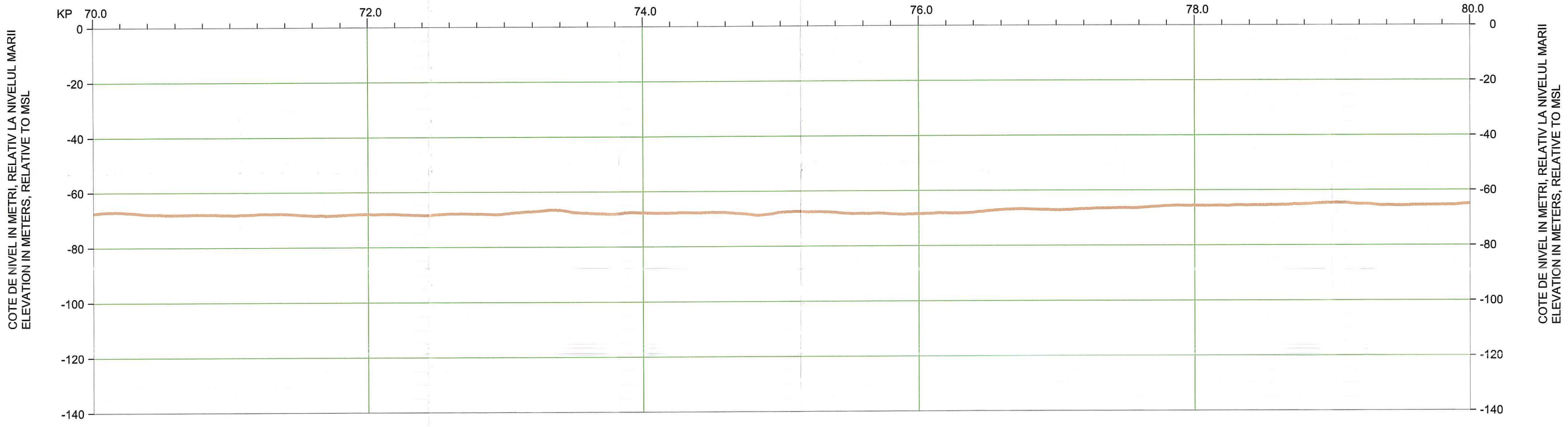
PUNCT LEGATURA DE FINAL	
X	Y
291,177.80	869,264.92

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CONTUR CURBA NIVEL MAJORA / MAJOR CONTOUR
- CONTUR CURBA NIVEL MINORA / MINOR CONTOUR



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 20,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	10

DATE TEHNICE / ENGINEERING DATA

				KP 70.000	KP 76.026	KP 76.654	KP 77.213	KP 80.000
ELEMENTE TRASEU	ORIENTARE (°N) / RAZA CURBURI (m)	ROUTE ITEMS	STRAIGHT HEADING (°N) / BEND RADIUS (m)	5° 22' 30"		5,000	11° 50' 5"	
	TRAVERSARE CONDUCTA / CABLU		CABLE / PIPELINE CROSSING	NU EXISTA / NONE				
	TIP SOL LA SUPRAFATA FUNDULUI MARII		SURFACE SEABED SOIL	ZONA 4 - NISIP (NOTA 9) / ZONE 4 - SAND (NOTE 9)				
DATE CONDUCTA	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)	PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 FDU / 762 / 17.5				
	GROS.PERETE DISP. ANTIDEFORMARE (mm)/ INTERVAL (m)		BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	NU EXISTA / NONE				
	STRAT ANTI-COROZIV/GROS.(mm)/DENSITATE(kg/m³)		ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	FBE / 0.38 - 0.815 / 1,350				
	STRAT INT. PROT. / GROSIME (µm) / DENSITATE (kg/m³)		INTERNAL COAT. / THICK (µm) / DENSITY (kg/m³)	STRAT INTERIOR PROTECTIE (NOTA 10) / 50 / 1,500 / INTERNAL FLOW COAT (NOTE 10) COATING / 50 / 1,500				
	STRAT BETON: GROSIME (mm) / DENSITATE (kg/m³)		CONCRETE COATING: THICK (mm) / DENSITY (kg/m³)	75 / 3,050				
	TIP SUDURA / TIP UMPLUTURA / DENSITATE (kg/m³)		FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	FBE + POLIURETAN 128 - 224 / FBE + POLYURETHANE / 128 - 224				
	TIP ANOD / MASA (Kg) / INTERVAL MONTAJ (segmente)		ANODE BRACELETS TYPE / MASS (kg) / SPACING (joints)	ALUMINIU (40x800) / 161 / 1 LA 10 SEGMENTE / AI (40x800) / 161 / 1 EVERY 10 JOINTS				
	GREUTATE CONDUCTA (kN/m) IN AER (USCATA) (kN/m)		PIPELINE WEIGHT (kN/m) IN AIR (DRY) (kN/m)	9.070				
	GREUTATE CONDUCTA (kN/m) IN APA GOALA (kN/m) / SG		PIPELINE WEIGHT (kN/m) SUBMERGED EMPTY (kN/m) / SG	2.568 / 1.39				
	GREUTATE CONDUCTA (kN/m) IN APA INUNDATA (kN/m) / SG		PIPELINE WEIGHT (kN/m) SUBMERGED FLOODED (kN/m) / SG	6.693 / 2.03				
	GREUTATE CONDUCTA (kN/m) IN APA IN FUNCTIUNE (kN/m) / SG		PIPELINE WEIGHT (kN/m) SUBMERGED OPERATION (kN/m) / SG	2.701 / 1.42				
LUCRARI PRE INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)	PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE				
	SUPORTI / SALTELE BETON		SLEEPERS / MATTRESSES	NU EXISTA / NONE				
LUCRARI POST INSTALARE CONDUCTA	ADANCIME SANT (m)	POST-LAY INT. WORKS	TRENCHING DEPTH (m)	NU EXISTA / NONE				
	TIP UMPLUTURA / STRAT ACOPERITOR (m)		BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE				
	STRAT PIETRIS		GRAVEL DUMPING	NU EXISTA / NONE				
LUNGIME TRONSON ADMISA	INSTALARE (m)	ALLOWABLE SPAN LENGTH	INSTALLATION (m)	70.6			63.7	
	HIDRO-TEST (m)		HYDROTEST (m)	44.0			39.0	
	FUNCTIONARE (m)		OPERATION (m)	45.0			40.0	
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)	SPECIFIC REQUIREM.	LAY TOLERANCE (m)	±10				
	ALTELE		OTHER					

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATA IN 2014, DOCUMENT FUGRO J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP.
4. DATELE DE SOL PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRRPT-00-0015-001 A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002.
5. DIRECTIILE SUNT INDICATE IN RAPORT CU NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND MODUL DE CONECTARE LA LOCATIA PLATFORMEI SE VA CONSULTA PLANSA ROND-EW-YDPAL-22-0011 - ARANJAMENT CONDUCTA DE ADUCTIUNE SI CONDUCTA DE GAZE NATURALE LA PLATFORMA (SWP).
7. STERS.
8. PENTRU DETALII PRIVIND ANOZII CONSULTATI PLANSA ROND-EW-YDCPD-24-0002 SI DOCUMENTUL ROND-EW-YRSTY-24-0002.
9. CARACTERIZAREA SOLULUI ESTE BAZATA PE NOTA TEHNICA 408009-00349-TN-003 (A SE VEDEA SI NOTA 4.).
10. STRAT INTERIOR CONDUCTA CONFORM SPECIFICATIEI STRAT EPOXIDIC INTERN ROND-EW-YSPDS-20-0039.
11. A SE NOTA CA GROSIMEA ANOZILOR SI DISTANTA ADMISA DINTRE EI VOR FI RE-EVALUATE IN DETALILE DE EXECUTIE, IN BAZA GROSIMII ACTUALE A STRATULUI DE BETON.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTES

1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT.
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM LOCATION REFER TO DRAWING : ROND-EW-YDPAL-22-0011 - FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
7. DELETED.
8. FOR ANODE DETAILS REFER TO DRAWING ROND-EW-YDCPD-24-0002 & DOCUMENT ROND-EW-YRSTY-24-0002
9. SOIL CHARACTERIZATION BASED ON TECHNICAL NOTE 408009-00349-TN-003 (SEE ALSO NOTE 4).
10. INTERNAL FLOW COAT AS PER INTERNAL EPOXY COATING SPECIFICATION ROND-EW-YSPDS-20-0039.
11. NOTE THAT ALLOWABLE SPANS AND ANODE THICKNESSES ARE TO BE RE-ASSESSED IN DETAILED DESIGN BASED UPON ACTUAL CONCRETE COATING THICKNESSES.

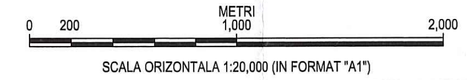
DOCUMENTE REFERINTA

NUMAR PLANSA	DESCRIERE
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOZI CONDUCTA DE GAZE NATURALE

REFERENCE DOCUMENTS

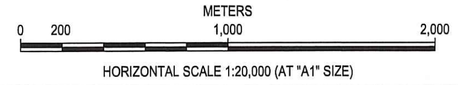
DRAWING NUMBER	DESCRIPTION
ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS

SCALA



SCALA ORIZONTALA 1:20,000 (IN FORMAT "A1")

SCALE BAR



HORIZONTAL SCALE 1:20,000 (AT "A1" SIZE)

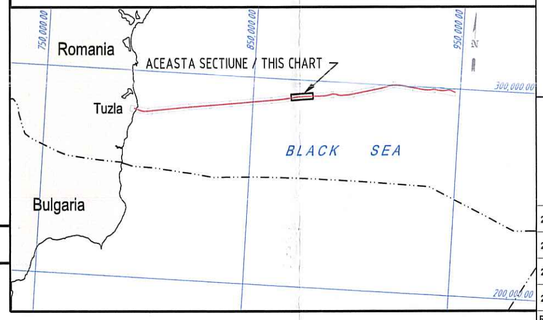
PARAMETRI GEODEZIE SI PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA / KEY PLAN



ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV.	DATE	DESCRIPTION	DRAWN PREPARED	CHECKED DESIGNED	APPROVED
2-D	12.03.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-C	10.02.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-B	29.05.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	04.02.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
REV.	DATE	DESCRIERE SCOPUL REVIZIEI / DESCRIPTION OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	BIP PROJECT APPROVED
VERIFICATOR CHECKED		I. BUTNARIU			ANRE

VERIFICATOR DESIGNERI / DESIGNERS	RAPORT NR. / EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	CONFORM EXIGENCES

PROIECTANT / ENGINEERING CONTRACTOR
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI.

REV.	REV. DATE	REV. DESCRIPTION	ORG	REV	APP	PROJ APP
2	15DEC17	RE-ISSUED FOR IFD	FK	EP	SS	JG
1	26SEP17	RE-ISSUED FOR IFD	FK	EP	SS	JG
0	04AUG17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE GAZE NATURALE 30"
30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA NR. 008 DIN 016
SHEET 008 OF 016

1 : 20,000	ROND-EW-YDPAL-24-0010-C	DTAC	2-D
SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scale / Scale 1:20,000)

TIE-IN POINT	
X	Y
291,177.80	869,264.52

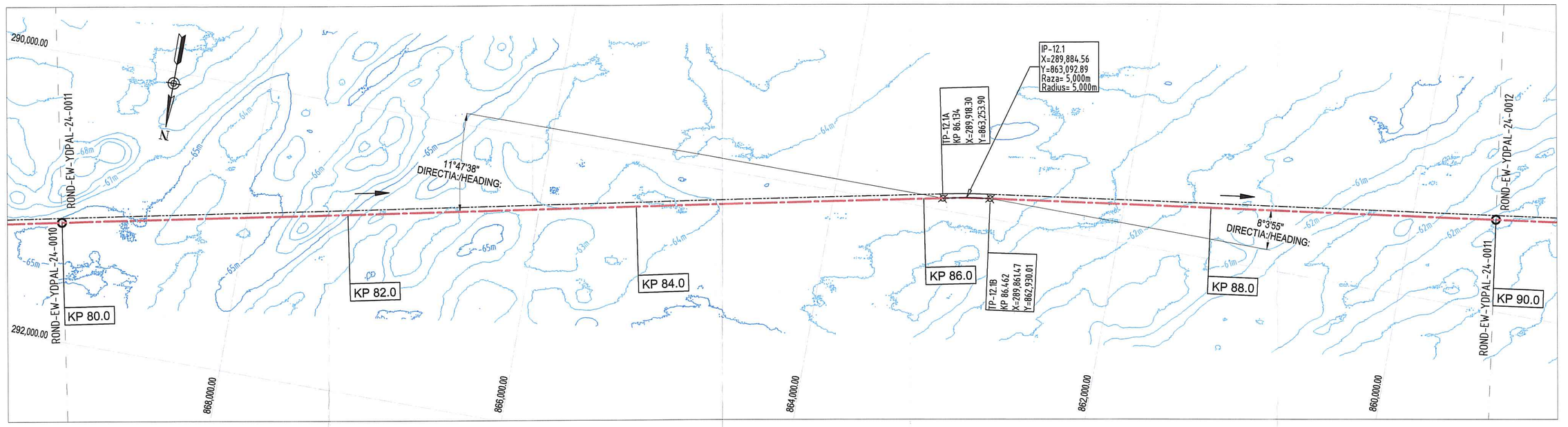
MATCH POINT END	
X	Y
289,384.26	859,422.94

PUNCT DE CONEXIUNE	
X	Y
291,177.80	869,264.52

PUNCT LEGATURA DE FINAL	
X	Y
289,384.26	859,422.94

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CONTUR CURBA NIVEL MAJORA / MAJOR CONTOUR
- CONTUR CURBA NIVEL MINORA / MINOR CONTOUR



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE

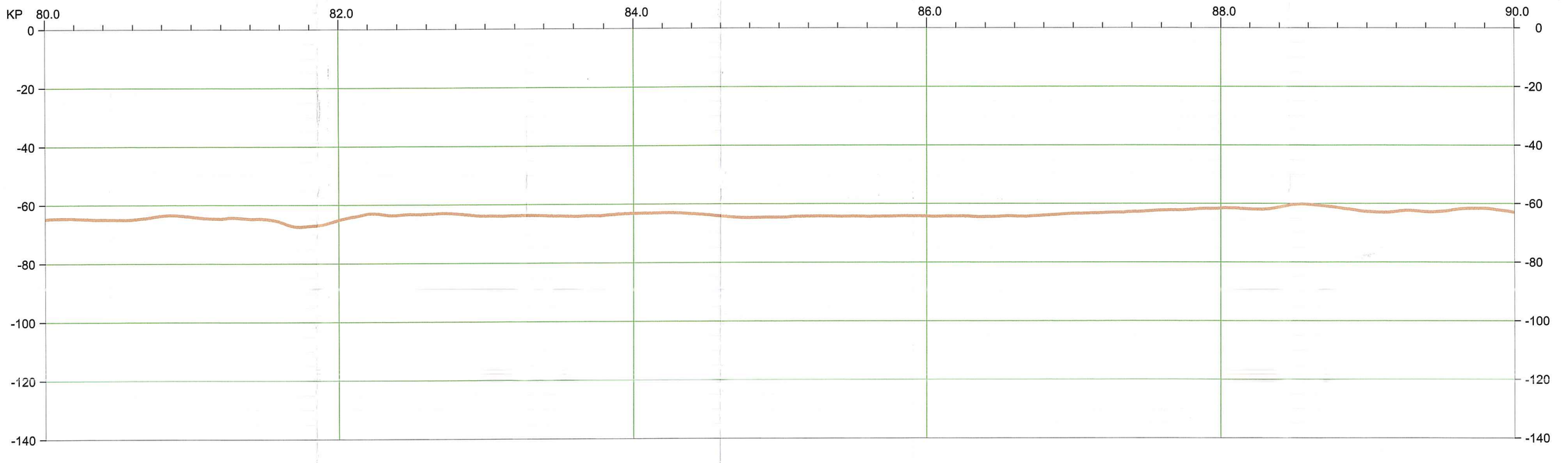
NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters.
The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 20,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	10

COTE DE NIVEL IN METRI, RELATIV LA NIVELUL MARII
ELEVATION IN METERS, RELATIVE TO MSL



COTE DE NIVEL IN METRI, RELATIV LA NIVELUL MARII
ELEVATION IN METERS, RELATIVE TO MSL

DATE TEHNICE / ENGINEERING DATA

					KP 80.000	KP 86.134	KP 86.462	KP 90.000
ELEMENTE TRASEU	ORIENTARE (°N) / RAZA CURBURI (m)		ROUTE ITEMS	STRAIGHT HEADING (°N) / BEND RADIUS (m)	11° 47' 38"	5,000		8° 3' 55"
	TRAVERSARE CONDUCTA / CABLU			CABLE / PIPELINE CROSSING	NU EXISTA / NONE			
	TIP SOL LA SUPRAFATA FUNDULUI MARII			SURFACE SEABED SOIL	ZONA 4 - NISIP (NOTA 9) / ZONE 4 - SAND (NOTE 9)			
DATE CONDUCTA	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)		PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 FDU / 762 / 17.5			
	GROS.PERETE DISP. ANTIDEFORMARE (mm) / INTERVAL (m)			BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	NU EXISTA / NONE			
	STRAT ANTI-COROZIV/GROS.(mm)/DENSITATE(kg/m³)			ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	FBE / 0.38 - 0.815 / 1,350			
	STRAT INT. PROT./ GROSIME (µm) / DENSITATE (kg/m³)			INTERNAL COAT. / THICK (µm) / DENSITY (kg/m³)	STRAT INTERIOR PROTECTIE (NOTA 10) / 50 / 1,500 / INTERNAL FLOW COAT (NOTE 10) COATING / 50 / 1,500			
	STRAT BETON: GROSIME (mm) / DENSITATE (kg/m³)			CONCRETE COATING: THICK (mm) / DENSITY (kg/m³)	75 / 3,050			
	TIP SUDURA / TIP UMPLUTURA / DENSITATE (kg/m³)			FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	FBE + POLIURETAN 128 - 224 / FBE + POLYURETHANE / 128 - 224			
	TIP ANOD / MASA (Kg) / INTERVAL MONTAJ (segmente)			ANODE BRACELETS TYPE / MASS (kg) / SPACING (joints)	ALUMINIU (40x800) / 161 / 1 LA 10 SEGMENTE / AI (40x800) / 161 / 1 EVERY 10 JOINTS			
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)		PIPELINE WEIGHT (kN/m) IN AIR (DRY) (kN/m)	9.070			
		IN APA	GOALA (kN/m) / SG	SUBMERGED	2.568 / 1.39			
			INUNDATA (kN/m) / SG		6.693 / 2.03			
			IN FUNCTIUNE (kN/m) / SG		2.701 / 1.42			
LUCRARI PRE INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)		PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE			
	SUPORTI / SALTELE BETON			SLEEPERS / MATTRESSES	NU EXISTA / NONE			
LUCRARI POST INSTALARE CONDUCTA	ADANCIME SANT (m)		POST-LAY INT. WORKS	TRENCHING DEPTH (m)	NU EXISTA / NONE			
	TIP UMPLUTURA / STRAT ACOPERITOR (m)			BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE			
	STRAT PIETRIS			GRAVEL DUMPING	NU EXISTA / NONE			
LUNGIME TRONSON ADMISA	INSTALARE (m)		ALLOWABLE SPAN LENGTH	INSTALLATION (m)	63.7			
	HIDRO-TEST (m)			HYDROTEST (m)	39.0			
	FUNCTIONARE (m)			OPERATION (m)	40.0			
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)		SPECIFIC REQUIREM.	LAY TOLERANCE (m)	±10			
	ALTELE			OTHER				

ACRONIME
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KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
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SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

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2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATA IN 2014, DOCUMENT FUGRO J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP.
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6. PENTRU DETALII PRIVIND MODUL DE CONECTARE LA LOCATIA PLATFORMEI SE VA CONSULTA PLANSA ROND-EW-YDPAL-22-0011 - ARANJAMENT CONDUCTA DE ADUCTIUNE SI CONDUCTA DE GAZE NATURALE LA PLATFORMA (SWP).
7. STERS.
8. PENTRU DETALII PRIVIND ANOZII CONSULTATI PLANSA ROND-EW-YDCPD-24-0002 SI DOCUMENTUL ROND-EW-YRSTY-24-0002.
9. CARACTERIZAREA SOLULUI ESTE BAZATA PE NOTA TEHNICA 408009-00349-TN-003 (A SE VEDEA SI NOTA 4).
10. STRAT INTERIOR CONDUCTA CONFORM SPECIFICATIEI STRAT EPOXIDIC INTERN ROND-EW-YSPDS-20-0039.
11. A SE NOTA CA GROSIMEA ANOZILOR SI DISTANTA ADMISA DINTRE EI VOR FI RE-EVALUATE IN DETALILE DE EXECUTIE IN BAZA GROSIMII ACTUALE A STRATULUI DE BETON.

NOTES

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2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT.
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM LOCATION REFER TO DRAWING : ROND-EW-YDPAL-22-0011 - FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
7. DELETED.
8. FOR ANODE DETAILS REFER TO DRAWING ROND-EW-YDCPD-24-0002 & DOCUMENT ROND-EW-YRSTY-24-0002.
9. SOIL CHARACTERIZATION BASED ON TECHNICAL NOTE 408009-00349-TN-003 (SEE ALSO NOTE 4).
10. INTERNAL FLOW COAT AS PER INTERNAL EPOXY COATING SPECIFICATION ROND-EW-YSPDS-20-0039.
11. NOTE THAT ALLOWABLE SPANS AND ANODE THICKNESSES ARE TO BE RE-ASSESSED IN DETAILED DESIGN BASED UPON ACTUAL CONCRETE COATING THICKNESSES.

DOCUMENTE REFERINTA / REFERENCE DOCUMENTS

NUMAR PLANSA	DESCRIERE	DRAWING NUMBER	DESCRIPTION
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOZI CONDUCTA DE GAZE NATURALE	ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS

SCALA / SCALE BAR

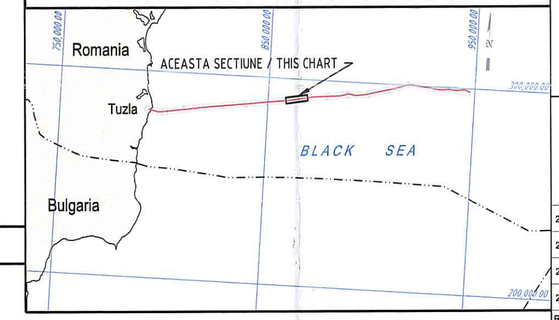
SCALA ORIZONTALA 1:20,000 (IN FORMAT "A1") — METRI: 0, 200, 1,000, 2,000

HORIZONTAL SCALE 1:20,000 (AT "A1" SIZE) — METERS: 0, 200, 1,000, 2,000

PARAMETRI GEODEZIE SI PROIECTIE / GEODETIC & PROJECTION PARAMETERS

DATE GEODEZICE	:	STEREO 70	GEODETIC DATUM	: STEREO 70
PROIECTIE	:	Dublu Stereografica	PROJECTION	: Double Stereographic
Meridianul central (MC)	:	25.0	Central meridian (CM)	: 25.0
Latitudine Origine	:	46.0	Latitude of Origin	: 46.0
Falsa origine estica	:	500,000.0	False Easting at origin	: 500,000.0
Falsa origine nordica	:	500,000.0	False Northing at origin	: 500,000.0
Factor de scala la MC	:	0.99975	Scale factor at CM	: 0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)	VERTICAL DATUM	: MSL

PLAN DE REFERINTA / KEY PLAN



BUCURESTEAN CONSULTING ENGINEERS ROMANIA MEMBER ASSOCIATION

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
2-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-C	10.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	04.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR / CHECKER			I. BUTNARIU		AVIZE
DESIGN/EXPERT / PROIECTANT		REFERAT NR./EXPERTIZA NR. / DATA / CHECKER REPORT/ EXPERTISE NO./ DATE	NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. INGHENU VODA NR.16, 300145, PLOIESTI
J29/3071/2007, RO 22804820

S.C. JEREMY PROMASTER S.R.L.
STR. CUCUBEULUI, NR. 144, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
2	15DEC17	RE-ISSUED FOR IFD	FK	EP	SS	JG
1	26SEP17	RE-ISSUED FOR IFD	FK	EP	SS	JG
0	04AUG17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE GAZE NATURALE 30"
30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA NR. 009 DIN 016
SHEET 009 OF 016

1 : 20,000	ROND-EW-YDPAL-24-0011-C	DTAC	2-D
SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:20,000)

TIE-IN POINT	
X	Y
289,364.26	859,422.94

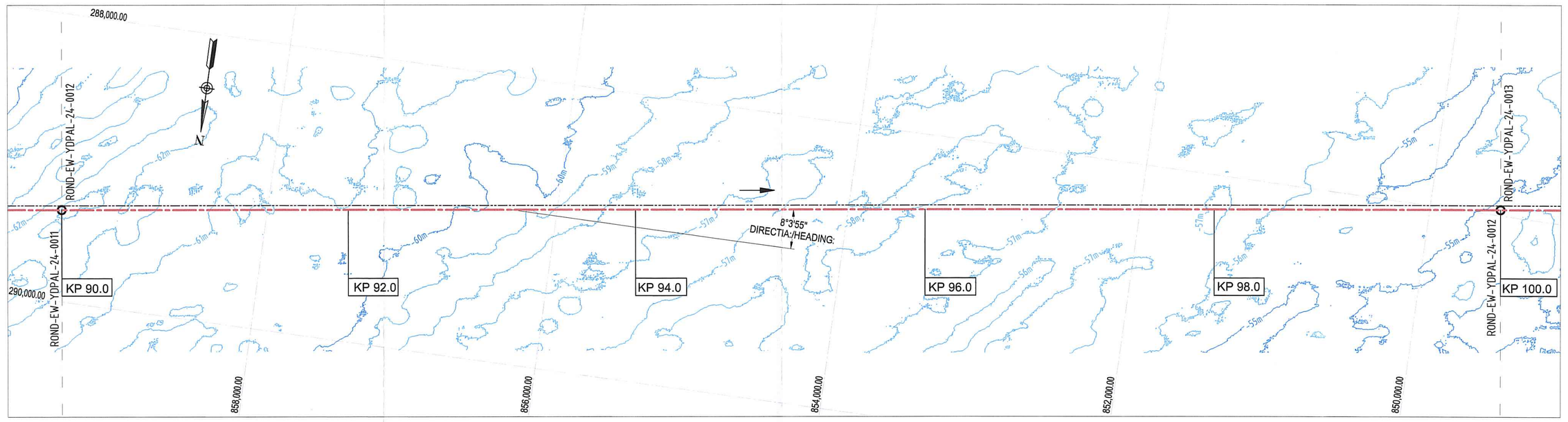
MATCH POINT END	
X	Y
287,959.87	849,510.27

PUNCT DE CONEXIUNE	
X	Y
289,364.26	859,422.94

PUNCT LEGATURA DE FINAL	
X	Y
287,959.87	849,510.27

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CONTUR CURBA NIVEL MAJORA / MAJOR CONTOUR
- CONTUR CURBA NIVEL MINORA / MINOR CONTOUR



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE

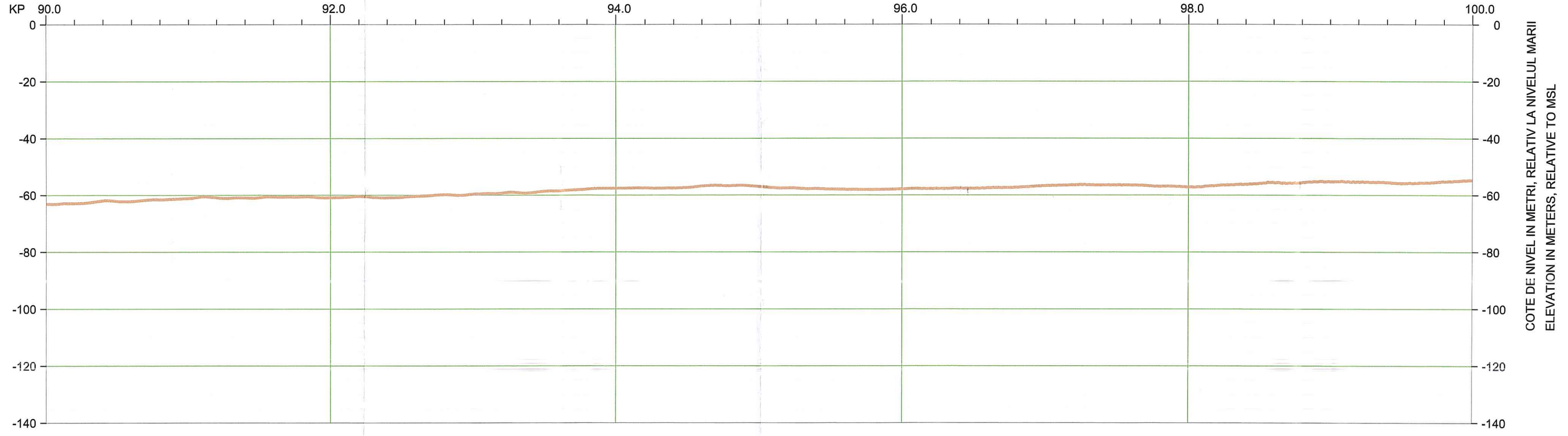
NOTA / NOTE:

Planse este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 20,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	10

COTE DE NIVEL IN METRI, RELATIV LA NIVELUL MARII
ELEVATION IN METERS, RELATIVE TO MSL



COTE DE NIVEL IN METRI, RELATIV LA NIVELUL MARII
ELEVATION IN METERS, RELATIVE TO MSL

DATE TEHNICE / ENGINEERING DATA

				KP 90.000	KP 96.174	KP 100.000
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA CURBURI (m)	ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)	8° 3' 55"		
	TRAVERSARE CONDUCTA / CABLU		CABLE / PIPELINE CROSSING	NU EXISTA / NONE		
	TIP SOL LA SUPRAFATA FUNDULUI MARII		SURFACE SEABED SOIL	ZONA 4 - NISIP (NOTA 9) / ZONE 4 - SAND (NOTE 9)		
DATE CONDUCTA	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)	PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 FDU / 762 / 17.5		
	GROS.PERETE DISP. ANTIDEFORMARE (mm) / INTERVAL (m)		BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	NU EXISTA / NONE		
	STRAT ANTI-COROZIV/GROS.(mm)/DENSITATE(kg/m³)		ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	FBE / 0.38 - 0.815 / 1,350		
	STRAT INT. PROT./ GROSIME (µm) / DENSITATE (kg/m³)		INTERNAL COAT. / THICK (µm) / DENSITY (kg/m³)	STRAT INTERIOR PROTECTIE (NOTA 10) / 50 / 1,500 / INTERNAL FLOW COAT (NOTE 10) COATING / 50 / 1,500		
	STRAT BETON: GROSIME (mm) / DENSITATE (kg/m³)		CONCRETE COATING: THICK (mm) / DENSITY (kg/m³)	75 / 3,050	100 / 3,050	
	TIP SUDURA / TIP UMPLUTURA / DENSITATE (kg/m³)		FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	FBE + POLIURETAN 128 - 224 / FBE + POLYURETHANE / 128 - 224		
	TIP ANOD / MASA (Kg) / INTERVAL MONTAJ (segmente)		ANODE BRACELETS TYPE / MASS (kg) / SPACING (joints)	ALUMINIU (40x800) / 161 / 1 LA 10 SEGMENTE / Al (40x800) / 161 / 1 EVERY 10 JOINTS	ALUMINIU (50x775) / 198 / 1 LA 10 SEGMENTE / Al (50x775) / 198 / 1 EVERY 10 JOINTS	
	GREUTATE CONDUCTA (kN/m) — IN AER (USCATA) (kN/m)		PIPELINE WEIGHT (kN/m) — IN AIR (DRY) (kN/m)	9.070	11.274	
	GREUTATE CONDUCTA (kN/m) — IN APA: GOALA (kN/m) / SG		SUBMERGED — EMPTY (kN/m) / SG	2.568 / 1.39	4.039 / 1.56	
	GREUTATE CONDUCTA (kN/m) — IN APA: INUNDATA (kN/m) / SG		SUBMERGED — FLOODED (kN/m) / SG	6.693 / 2.03	8.165 / 2.13	
	GREUTATE CONDUCTA (kN/m) — IN APA: IN FUNCTIUNE (kN/m) / SG		SUBMERGED — OPERATION (kN/m) / SG	2.701 / 1.42	4.172 / 1.58	
LUCRARI PRE INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)	PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE		
	SUPORTI / SALTELE BETON		SLEEPERS / MATTRESSES	NU EXISTA / NONE		
LUCRARI POST INSTALARE CONDUCTA	ADANCIME SANT (m)	POST-LAY INT. WORKS	TRENCHING DEPTH (m)	NU EXISTA / NONE		
	TIP UMPLUTURA / STRAT ACOPERITOR (m)		BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE		
	STRAT PIETRIS		GRAVEL DUMPING	NU EXISTA / NONE		
LUNGIME TRONSON ADMISA	INSTALARE (m)	ALLOWABLE SPAN LENGTH	INSTALLATION (m)	63.7	62.2	
	HIDRO-TEST (m)		HYDROTEST (m)	39.0	39.0	
	FUNCTIONARE (m)		OPERATION (m)	40.0	40.0	
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)	SPECIFIC REQUIREM.	LAY TOLERANCE (m)	±10		
	ALTELE		OTHER			

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATA IN 2014, DOCUMENT FUGRO J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP.
4. DATELE DE SOL PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRRPT-00-0015-001 A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002.
5. DIRECTILE SUNT INDICATE IN RAPORT CU NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND MODUL DE CONECTARE LA LOCATIA PLATFORMEI SE VA CONSULTA PLANSA ROND-EW-YDPAL-22-0011 - ARANJAMENT CONDUCTA DE ADUCTIUNE SI CONDUCTA DE GAZE NATURALE LA PLATFORMA (SWP).
7. STERS.
8. PENTRU DETALII PRIVIND ANOZII CONSULTATI PLANSA ROND-EW-YDCPD-24-0002 SI DOCUMENTUL ROND-EW-YRSTY-24-0002.
9. CARACTERIZAREA SOLULUI ESTE BAZATA PE NOTA TEHNICA 408009-00349-TN-003 (A SE VEDEA SI NOTA 4).
10. STRAT INTERIOR CONDUCTA CONFORM SPECIFICATIEI STRAT EPOXIDIC INTERN ROND-EW-YSPDS-20-0039.
11. A SE NOTA CA GROSIMEA ANOZILOR SI DISTANTA ADMISA DINTRE EI VOR FI RE-EVALUATE IN DETALILE DE EXECUTIE IN BAZA GROSIMII ACTUALE A STRATULUI DE BETON.

NOTES

1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT.
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM LOCATION REFER TO DRAWING : ROND-EW-YDPAL-22-0011 - FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
7. DELETED.
8. FOR ANODE DETAILS REFER TO DRAWING ROND-EW-YDCPD-24-0002 & DOCUMENT ROND-EW-YRSTY-24-0002.
9. SOIL CHARACTERIZATION BASED ON TECHNICAL NOTE 408009-00349-TN-003 (SEE ALSO NOTE 4).
10. INTERNAL FLOW COAT AS PER INTERNAL EPOXY COATING SPECIFICATION ROND-EW-YSPDS-20-0039.
11. NOTE THAT ALLOWABLE SPANS AND ANODE THICKNESSES ARE TO BE RE-ASSESSED IN DETAILED DESIGN BASED UPON ACTUAL CONCRETE COATING THICKNESSES.

DOCUMENTE REFERINTA / REFERENCE DOCUMENTS

NUMAR PLANSA	DESCRIERE	DRAWING NUMBER	DESCRIPTION
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOZI CONDUCTA DE GAZE NATURALE	ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS

SCALA / SCALE BAR

0 200 METRI 1,000 2,000

SCALA ORIZONTALA 1:20,000 (IN FORMAT "A1")

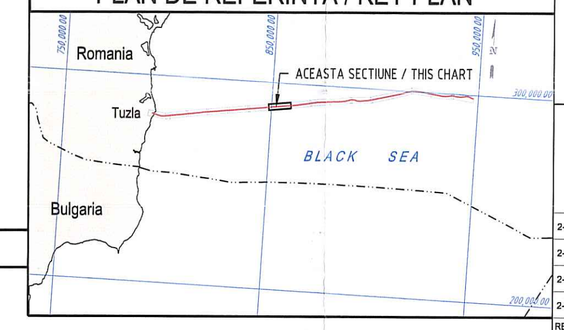
0 200 METERS 1,000 2,000

HORIZONTAL SCALE 1:20,000 (AT "A1" SIZE)

PARAMETRI GEODEZIE SI PROIECTIE / GEODETIC & PROJECTION PARAMETERS

DATE GEODEZICE	:	STEREO 70	GEODETIC DATUM	: STEREO 70
PROIECTIE	:	Dublu Stereografica	PROJECTION	: Double Stereographic
Meridianul central (MC)	:	25.0	Central meridian (CM)	: 25.0
Latitudine Origine	:	46.0	Latitude of Origin	: 46.0
Falsa origine estica	:	500,000.0	False Easting at origin	: 500,000.0
Falsa origine nordica	:	500,000.0	False Northing at origin	: 500,000.0
Factor de scala la MC	:	0.99975	Scale factor at CM	: 0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)	VERTICAL DATUM	: MSL

PLAN DE REFERINTA / KEY PLAN



ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

4 ILF CONSULTING ENGINEERS ROMANIA SRL

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
2-O	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-C	10.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	04.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR/ CHECKER			I. BUTNARU		ANRE

VERIFICATOR/ DESENATOR	REFERAT NR./EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOSARUL/ EXIGENCES
IPM				

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR. 19 , 109145, PLOIESTI
J29/307/2007, RO 22604650

S.C. JEREMY PROMASTER S.R.L.
STR. CUCUIELULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
2	15DEC17	RE-ISSUED FOR IFD	FK	EP	SS	JG
1	26SEP17	RE-ISSUED FOR IFD	FK	EP	SS	JG
0	04AUG17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE GAZE NATURALE 30" 30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA NR. 010 DIN 016
SHEET 010 OF 016

1 : 20,000	ROND-EW-YDPAL-24-0012-C	DTAC	2-D
SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:20,000)

TIE-IN POINT	
X	Y
287,959.87	849,510.27

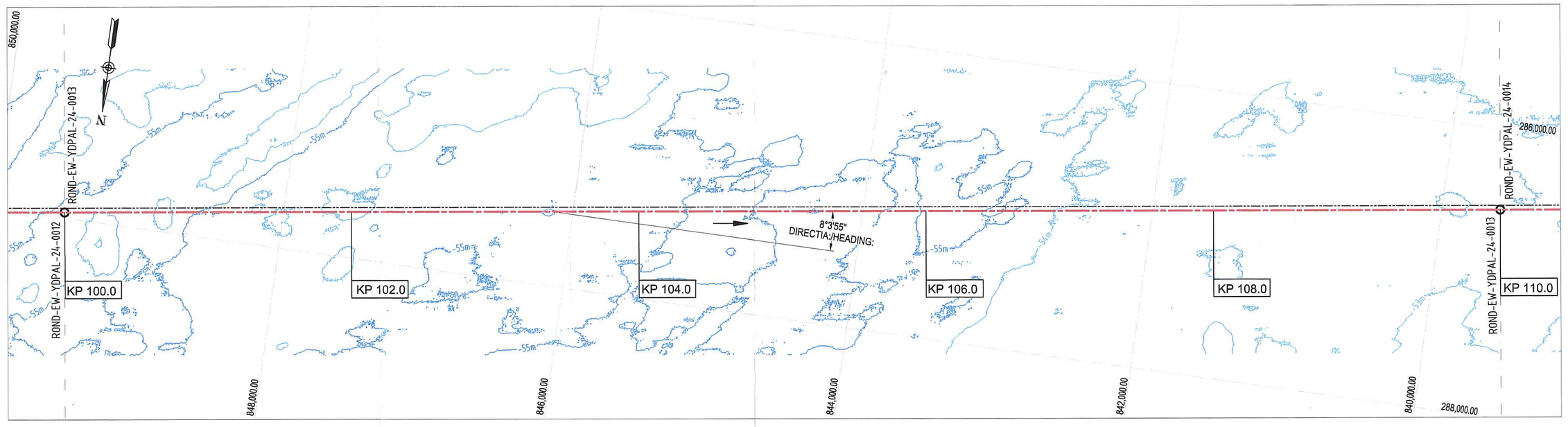
MATCH POINT END	
X	Y
286,555.29	839,598.07

PUNCT DE CONEXIUNE	
X	Y
287,959.87	849,510.27

PUNCT LEGATURA DE FINAL	
X	Y
286,555.29	839,598.07

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CONTUR CURBA NIVEL MAJORA / MAJOR CONTOUR
- CONTUR CURBA NIVEL MINORA / MINOR CONTOUR



SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

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3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATA IN 2014, DOCUMENT FUGRO J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP.
4. DATELE DE SOL PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRRPT-00-0015-001 A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002.
5. DIRECTIILE SUNT INDICATE IN RAPORT CU NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND MODUL DE CONECTARE LA LOCATIA PLATFORMEI SE VA CONSULTA PLANSA ROND-EW-YDPAL-22-0011 - ARANJAMENT CONDUCTA DE ADUCTIUNE SI CONDUCTA DE GAZE NATURALE LA PLATFORMA (SWP).
7. STERS.
8. PENTRU DETALII PRIVIND ANOZII CONSULTATI PLANSA ROND-EW-YDCPD-24-0002 SI DOCUMENTUL ROND-EW-YRSTY-24-0002.
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NOTES

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DOCUMENTE REFERINTA

NUMAR PLANSA	DESCRIERE
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOZI CONDUCTA DE GAZE NATURALE

REFERENCE DOCUMENTS

DRAWING NUMBER	DESCRIPTION
ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS

SCALA

METRI: 0 — 200 — 1,000 — 2,000

SCALA ORIZONTALA 1:20,000 (IN FORMAT "A1")

SCALE BAR

METERS: 0 — 200 — 1,000 — 2,000

HORIZONTAL SCALE 1:20,000 (AT "A1" SIZE)

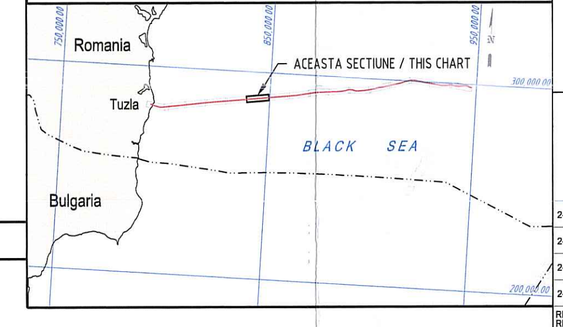
PARAMETRI GEODEZIE SI PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA / KEY PLAN



NOTA / NOTE:

Planșa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
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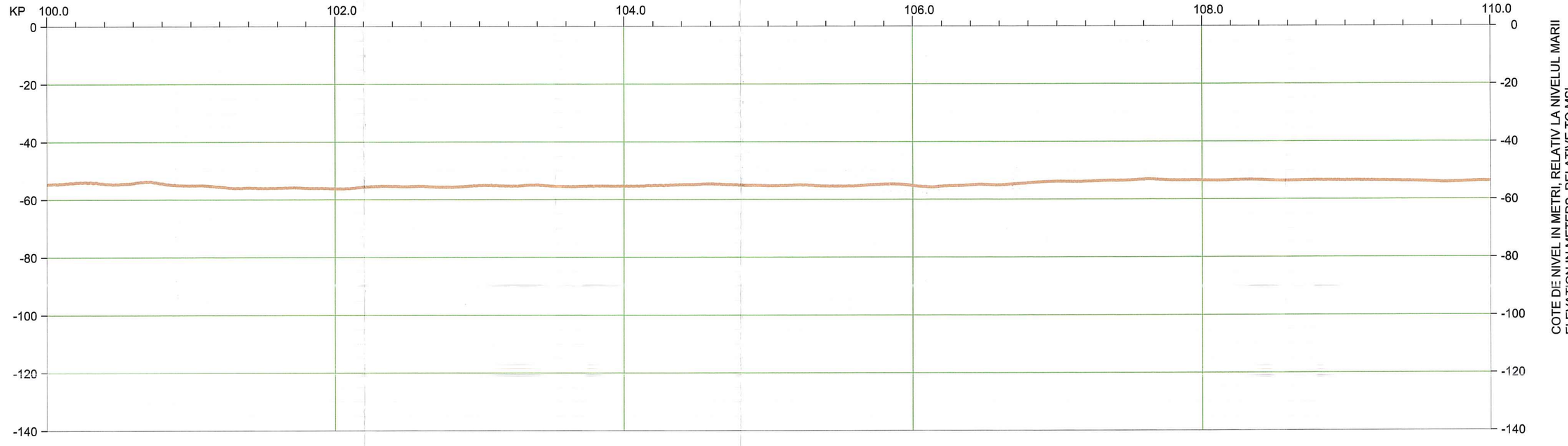
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE

COTE DE NIVEL IN METRI, RELATIV LA NIVELUL MARII
ELEVATION IN METERS, RELATIVE TO MSL



COTE DE NIVEL IN METRI, RELATIV LA NIVELUL MARII
ELEVATION IN METERS, RELATIVE TO MSL

SCALA ORIZONTALA / HORIZONTAL SCALE 1 : 20,000
SCALA VERTICALA / VERTICAL SCALE 1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION 10

DATE TEHNICE / ENGINEERING DATA

					KP 100.000	KP 110.000
ELEMENTE TRASEU	ORIENTARE ('N') / RAZA CURBURI (m)		ROUTE ITEMS	STRAIGHT HEADING ('N') / BEND RADIUS (m)	8° 3' 55"	
	TRAVERSARE CONDUCTA / CABLU			CABLE / PIPELINE CROSSING	NU EXISTA / NONE	
	TIP SOL LA SUPRAFATA FUNDULUI MARII			SURFACE SEABED SOIL	ZONA 4 - NISIP (NOTA 9) / ZONE 4 - SAND (NOTE 9)	
DATE CONDUCTA	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)		PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 FDU / 762 / 17.5	
	GROS.PERETE DISP. ANTIDEFORMARE (mm) / INTERVAL (m)			BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	NU EXISTA / NONE	
	STRAT ANTI-COROZIV/GROS.(mm)/DENSITATE(kg/m³)			ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	FBE / 0.38 - 0.815 / 1,350	
	STRAT INT. PROT./ GROSIME (µm) / DENSITATE (kg/m³)			INTERNAL COAT. / THICK (µm) / DENSITY (kg/m³)	STRAT INTERIOR PROTECTIE (NOTA 10) / 50 / 1,500 / INTERNAL FLOW COAT (NOTE 10) COATING / 50 / 1,500	
	STRAT BETON: GROSIME (mm) / DENSITATE (kg/m³)			CONCRETE COATING: THICK (mm) / DENSITY (kg/m³)	100 / 3,050	
	TIP SUDURA / TIP UMPLUTURA / DENSITATE (kg/m³)			FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	FBE + POLIURETAN 128 - 224 / FBE + POLYURETHANE / 128 - 224	
	TIP ANOD / MASA (Kg) / INTERVAL MONTAJ (segmente)			ANODE BRACELETS TYPE / MASS (kg) / SPACING (joints)	ALUMINIU (50x775) / 198 / 1 LA 10 SEGMENTE / AI (50x775) / 198 / 1 EVERY 10 JOINTS	
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)		PIPELINE WEIGHT (kN/m) IN AIR (DRY) (kN/m)	11.274	
		IN APA: GOALA (kN/m) / SG		SUBMERGED: EMPTY (kN/m) / SG	4.039 / 1.56	
		IN APA: INUNDATA (kN/m) / SG		SUBMERGED: FLOODED (kN/m) / SG	8.165 / 2.13	
		IN APA: IN FUNCTIUNE (kN/m) / SG		SUBMERGED: OPERATION (kN/m) / SG	4.172 / 1.58	
LUCRARI PRE INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)		PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE	
	SUPORTI / SALTELE BETON			SLEEPERS / MATTRESSES	NU EXISTA / NONE	
LUCRARI POST INSTALARE CONDUCTA	ADANCIME SANT (m)		POST-LAY INT. WORKS	TRENCHING DEPTH (m)	NU EXISTA / NONE	
	TIP UMPLUTURA / STRAT ACOPERITOR (m)			BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE	
	STRAT PIETRIS			GRAVEL DUMPING	NU EXISTA / NONE	
LUNGIME TRONSON ADMISA	INSTALARE (m)		ALLOWABLE SPAN LENGTH	INSTALLATION (m)	62.2	
	HIDRO-TEST (m)			HYDROTEST (m)	39.0	
	FUNCTIONARE (m)			OPERATION (m)	40.0	
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)		SPECIFIC REQUIREM.	LAY TOLERANCE (m)	±10	
	ALTELE			OTHER		

ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the comma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

REV.	DATA DATE	DENUMIRE, SCOPUL REVIZIEI/ ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
2-D	12.03.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-C	10.02.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-B	29.05.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	04.02.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR CHECKED			I. BUTNARU		AMRE
REVIZUIT/SEMNAT DESIGNED/VERIF	REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE		NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. SEVERU VODA NR.18, 100145, PLOIESTI
J29/307/1/2007, RO 22010625
S.C. JEREMY PROMASTER S.R.L.
STR. CUNCUIOAIELUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
2	15DEC17	RE-ISSUED FOR IFD	FK	EP	SS	JG
1	26SEP17	RE-ISSUED FOR IFD	FK	EP	SS	JG
0	04AUG17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE GAZE NATURALE 30" 30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT ALIGNMENT SHEET

FISA NR. 011 DIN 016
SHEET 011 OF 016

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 20,000	ROND-EW-YDPAL-24-0013-C	DTAC	2-D

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:20,000)

TIE-IN POINT	
X	Y
286,555.29	839,598.07

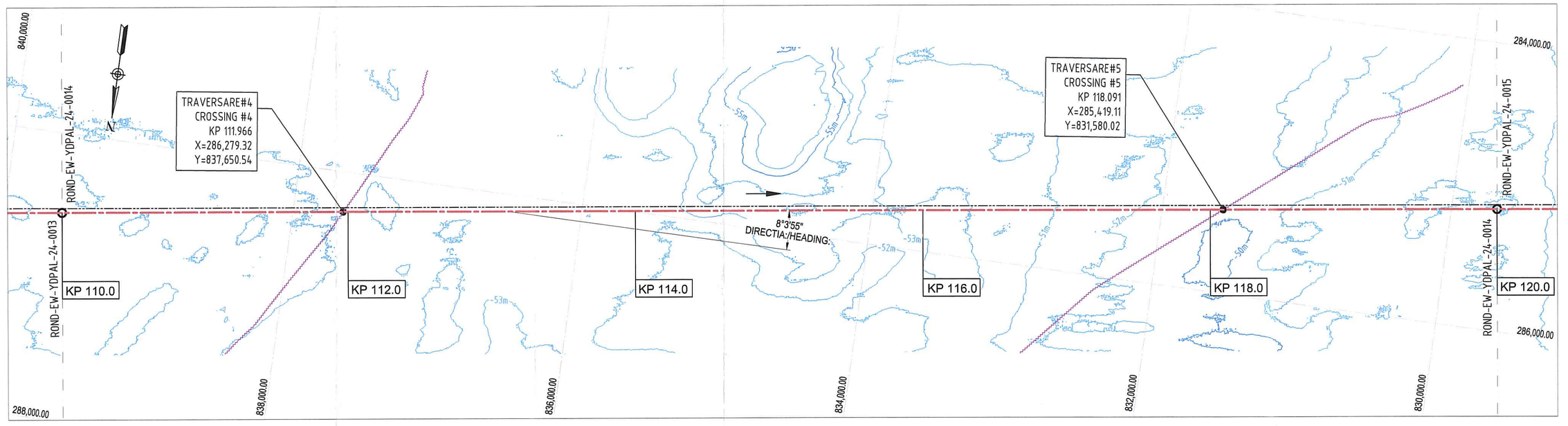
PUNCT DE CONEXIUNE	
X	Y
286,555.29	839,598.07

MATCH POINT END	
X	Y
285,150.79	829,686.43

PUNCT LEGATURA DE FINAL	
X	Y
285,150.79	829,686.43

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CONTUR CURBA NIVEL MAJORA / MAJOR CONTOUR
- CONTUR CURBA NIVEL MINORA / MINOR CONTOUR
- CABLU / FIR / CABLE/WIRE



SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATA IN 2014, DOCUMENT FUGRO J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP.
4. DATELE DE SOL PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRRPT-00-0015-001 A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002.
5. DIRECTILE SUNT INDICATE IN RAPORT CU NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND MODUL DE CONECTARE LA LOCATIA PLATFORMEI SE VA CONSULTA PLANSA ROND-EW-YDPAL-22-0011 - ARANJAMENT CONDUCTA DE ADUCTIUNE SI CONDUCTA DE GAZE NATURALE LA PLATFORMA (SWP).
7. STERS.
8. PENTRU DETALII PRIVIND ANOZII CONSULTATI PLANSA ROND-EW-YDCPD-24-0002 SI DOCUMENTUL ROND-EW-YRSTY-24-0002.
9. CARACTERIZAREA SOLULUI ESTE BAZATA PE NOTA TEHNICA 408009-00349-TN-003 (A SE VEDEA SI NOTA 4).
10. STRAT INTERIOR CONDUCTA CONFORM SPECIFICATIEI STRAT EPOXIDIC INTERN ROND-EW-YSPDS-20-0039.
11. PUNCT TRAVERSARE CABLU CONFORM BAZEI DE DATE MARINE GLOBALE. CONSTRUCTORUL VA DETERMINA LOCATIA EXACTA.
12. POSIBILA TRAVERSARE VIITOR CABLU HCDC ROMANIA - TURCIA. CONSTRUCTORUL VA VERIFICA DATA CONSTRUCTIEI CU DETINATORUL CABLULUI
13. TRAVERSARE CABLU CONFORM BAZEI DE DATE GIS FURNIZATA DE FUGRO.
14. STERS.
15. TRAVERSARE CABLU CONFORM PLANSA ROND-EW-YDPLX-24-0002 SOLUTIE TIPICA TRAVERSARE CABLU.
16. A SE NOTA CA GROSIMEA ANOZILOR SI DISTANTA ADMISA DINTRE EI VOR FI RE-EVALUATE IN DETALILE DE EXECUTIE, IN BAZA GROSIMII ACTUALE A STRATULUI DE BETON.

NOTES

1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT.
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM LOCATION REFER TO DRAWING : ROND-EW-YDPAL-22-0011 - FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
7. DELETED.
8. FOR ANODE DETAILS REFER TO DRAWING ROND-EW-YDCPD-24-0002 & DOCUMENT ROND-EW-YRSTY-24-0002.
9. SOIL CHARACTERIZATION BASED ON TECHNICAL NOTE 408009-00349-TN-003 (SEE ALSO NOTE 4).
10. INTERNAL FLOW COAT AS PER INTERNAL EPOXY COATING SPECIFICATION ROND-EW-YSPDS-20-0039.
11. CABLE CROSSING FROM GLOBAL MARINE DATABASE. CONTRACTOR TO DETERMINE EXACT LOCATION.
12. POTENTIAL CROSSING FOR FUTURE HCDC ROMANIA TURKEY. CONTRACTOR TO CHECK WITH THE CABLE OWNER FOR THE CONSTRUCTION DATE.
13. CABLE CROSSING FROM GIS DATABASE PROVIDED BY FUGRO.
14. DELETED.
15. CABLE CROSSING AS PER DRAWING ROND-EW-YDPLX-24-0002 TYPICAL CABLE CROSSING G.A.
16. NOTE THAT ALLOWABLE SPANS AND ANODE THICKNESSES ARE TO BE RE-ASSESSED IN DETAILED DESIGN BASED UPON ACTUAL CONCRETE COATING THICKNESSES.

DOCUMENTE REFERINTA

NUMAR PLANSA	DESCRIERE
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOD CONDUCTA DE GAZE NATURALE
ROND-EW-YDPLX-24-0002	SOLUTIE TIPICA TRAVERSARE CABLU

REFERENCE DOCUMENTS

DRAWING NUMBER	DESCRIPTION
ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS
ROND-EW-YDPLX-24-0002	TYPICAL CABLE CROSSING GENERAL ARRANGEMENT

SCALA

METRI: 0 — 200 — 1,000 — 2,000

SCALA ORIZONTALA 1:20,000 (IN FORMAT "A1")

SCALE BAR

METERS: 0 — 200 — 1,000 — 2,000

HORIZONTAL SCALE 1:20,000 (AT "A1" SIZE)

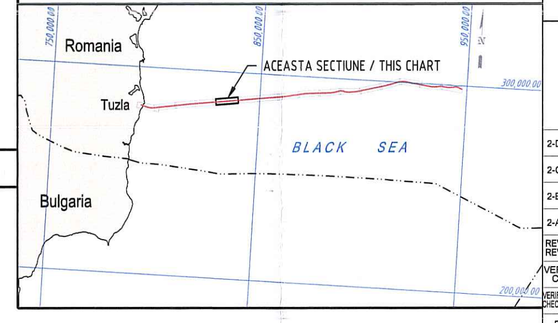
PARAMETRI GEODEZIE SI PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA / KEY PLAN



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE

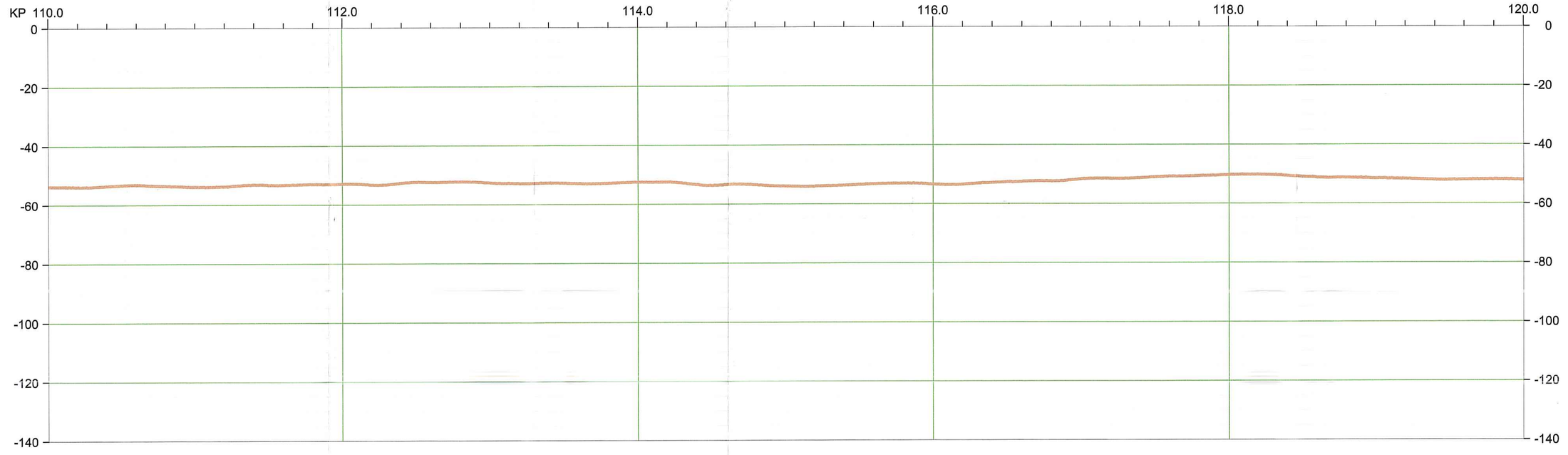
NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 20,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	10

COTE DE NIVEL IN METRI, RELATIV LA NIVELUL MARII
ELEVATION IN METERS, RELATIVE TO MSL



COTE DE NIVEL IN METRI, RELATIV LA NIVELUL MARII
ELEVATION IN METERS, RELATIVE TO MSL

DATE TEHNICE / ENGINEERING DATA

					KP 110.000	KP 111.866	KP 111.966	KP 112.066	KP 112.260	KP 117.991	KP 118.091	KP 118.191	KP 120.000
ELEMENTE TRASEU	ORIENTARE (°N) / RAZA CURBURI (m)			ROUTE ITEMS	STRAIGHT HEADING (°N) / BEND RADIUS (m)	8° 3' 55"							
	TRAVERSARE CONDUCTA / CABLU				CABLE / PIPELINE CROSSING	TRAVERSARE CABLU #4 (NOTA 13) / CABLE CROSSING #4 (NOTE 13) →				NU EXISTA / NONE		TRAVERSARE CABLU #5 (NOTA 13) / CABLE CROSSING #5 (NOTE 13) →	
	TIP SOL LA SUPRAFATA FUNDULUI MARII				SURFACE SEABED SOIL	ZONA 4 - NISIP (NOTA 9) / ZONE 4 - SAND (NOTE 9)							
DATE CONDUCTA	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)			PIPELINE DATA	STEEL GRADE / O.D. (m) / WALL THICKNESS (mm)	DNV SAWL 450 FDU / 762 / 17.5							
	GROS.PERETE DISP. ANTIDEFORMARE (mm) / INTERVAL (m)				BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	NU EXISTA / NONE							
	STRAT ANTI-COROZIV/GROS.(mm)/DENSITATE(kg/m³)				ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	FBE / 0.38 - 0.815 / 1,350							
	STRAT INT. PROT. / GROSIME (µm) / DENSITATE (kg/m³)				INTERNAL COAT. / THICK (µm) / DENSITY (kg/m³)	STRAT INTERIOR PROTECTIE (NOTA 10) / 50 / 1,500 / INTERNAL FLOW COAT (NOTE 10) COATING / 50 / 1,500							
	STRAT BETON: GROSIME (mm) / DENSITATE (kg/m³)				CONCRETE COATING: THICK (mm) / DENSITY (kg/m³)	100 / 3,050							
	TIP SUDURA / TIP UMPLUTURA / DENSITATE (kg/m³)				FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	FBE + POLIURETAN 128 - 224 / FBE + POLYURETHANE / 128 - 224							
	TIP ANOD / MASA (Kg) / INTERVAL MONTAJ (segmente)				ANODE BRACELETS TYPE / MASS (kg) / SPACING (joints)	ALUMINIU (50x775) / 198 / 1 LA 10 SEGMENTE / AI (50x775) / 198 / 1 EVERY 10 JOINTS							
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)			PIPELINE WEIGHT (kN/m)	IN AIR (DRY) (kN/m)		11.274					
		IN APA	GOALA (kN/m) / SG			SUBMERGED	EMPTY (kN/m) / SG	4.039 / 1.56					
			INUNDATA (kN/m) / SG				FLOODED (kN/m) / SG	8.165 / 2.13					
			IN FUNCTIUNE (kN/m) / SG				OPERATION (kN/m) / SG	4.172 / 1.58					
LUCRARI PRE INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)			PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE							
	SUPORTI / SALTELE BETON				SLEEPERS / MATTRESSES	TRAVERSARE CABLU #4(NOTA 15)/CABLE CROSSING #4(NOTE 15) →				NU EXISTA / NONE		TRAVERSARE CABLU #5 (NOTA 15) / CABLE CROSSING #5 (NOTE 15) →	
LUCRARI POST INSTALARE CONDUCTA	ADANCIME SANT (m)			POST-LAY INT. WORKS	TRENCHING DEPTH (m)	NU EXISTA / NONE							
	TIP UMPLUTURA / STRAT ACOPERITOR (m)				BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE							
	STRAT PIETRIS				GRAVEL DUMPING	NU EXISTA / NONE							
LUNGIME TRONSON ADMISA	INSTALARE (m)			ALLOWABLE SPAN LENGTH	INSTALLATION (m)	62.2				50.8			
	HIDRO-TEST (m)				HYDROTEST (m)	39.0				35.0			
	FUNCTIONARE (m)				OPERATION (m)	40.0				35.0			
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)			SPECIFIC REQUIREM.	LAY TOLERANCE (m)	±10	±2			±10		±2	±10
	ALTELE				OTHER								

ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

BUTNARIU IVAN
ROMANIA
MEMBRU CORESPONDENT
NR. VI 161000171
C.S.T.C.
INGINERI CONSILIERI
CONSULTING ENGINEERS

PROIECT NEPTUN DEEP /
NEPTUN DEEP PROJECT

REV	DATE	DESCRIPTION	DES	CHK	APP
2-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-C	10.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	04.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	REF PROIECT / APPROVED
VERIFICATOR / CHECKER			I. BUTNARIU		ANNE
RESPONSABIL DESENATOR		REFERAT NR. / EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE	NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU-VODA NR.15, 300149, PLOIESTI
J29/307/12007, RO 22804820
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

ILF CONSULTING ENGINEERS

REV.	REV. DATE	REV. DESCRIPTION	ORG	REV	APP	PROJ APP
2	15DEC17	RE-ISSUED FOR IFD	FK	EP	SS	JG
1	26SEP17	RE-ISSUED FOR IFD	FK	EP	SS	JG
0	04AUG17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production
Romania Limited

CONDUCTA DE GAZE NATURALE 30"
30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA NR. 012 DIN 016
SHEET 012 OF 016

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 20,000	ROND-EW-YDPAL-24-0014-C	DTAC	2-D

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:20,000)

TIE-IN POINT	
X	Y
285,150.79	829,686.43

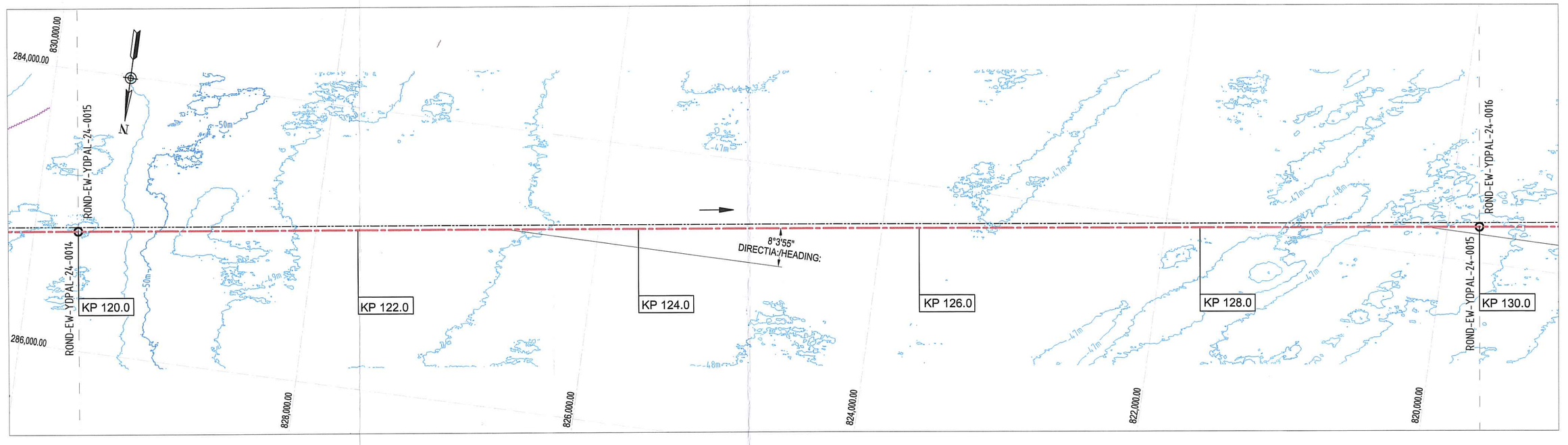
MATCH POINT END	
X	Y
283,746.36	819,775.31

PUNCT DE CONEXIUNE	
X	Y
285,150.79	829,686.43

PUNCT LEGATURA DE FINAL	
X	Y
283,746.36	819,775.31

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CONTUR CURBA NIVEL MAJORA / MAJOR CONTOUR
- CONTUR CURBA NIVEL MINORA / MINOR CONTOUR
- CABLU / FIR / CABLE/WIRE



SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATA IN 2014, DOCUMENT FUGRO J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP.
4. DATELE DE SOL PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRRPT-00-0015-001 A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002.
5. DIRECTILE SUNT INDICATE IN RAPORT CU NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND MODUL DE CONECTARE LA LOCATIA PLATFORMEI SE VA CONSULTA PLANSA ROND-EW-YDPAL-22-0011 - ARANJAMENT CONDUCTA DE ADUCTIUNE SI CONDUCTA DE GAZE NATURALE LA PLATFORMA (SWP).
7. STERS.
8. PENTRU DETALII PRIVIND ANOZII CONSULTATI PLANSA ROND-EW-YDCPD-24-0002 SI DOCUMENTUL ROND-EW-YRSTY-24-0002.
9. CARACTERIZAREA SOLULUI ESTE BAZATA PE NOTA TEHNICA 408009-00349-TN-003 (A SE VEDEA SI NOTA 4).
10. STRAT INTERIOR CONDUCTA CONFORM SPECIFICATIEI STRAT EPOXIDIC INTERN ROND-EW-YSPDS-20-0039.
11. A SE NOTA CA GROSIMEA ANOZILOR SI DISTANTA ADMISA DINTRE EI VOR FI RE-EVALUATE IN DETALILE DE EXECUTIE IN BAZA GROSIMII ACTUALE A STRATULUI DE BETON.

NOTES

1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT.
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM LOCATION REFER TO DRAWING : ROND-EW-YDPAL-22-0011 - FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
7. DELETED.
8. FOR ANODE DETAILS REFER TO DRAWING ROND-EW-YDCPD-24-0002 & DOCUMENT ROND-EW-YRSTY-24-0002.
9. SOIL CHARACTERIZATION BASED ON TECHNICAL NOTE 408009-00349-TN-003 (SEE ALSO NOTE 4).
10. INTERNAL FLOW COAT AS PER INTERNAL EPOXY COATING SPECIFICATION ROND-EW-YSPDS-20-0039.
11. NOTE THAT ALLOWABLE SPANS AND ANODE THICKNESSES ARE TO BE RE-ASSESSED IN DETAILED DESIGN BASED UPON ACTUAL CONCRETE COATING THICKNESSES.

DOCUMENTE REFERINTA / REFERENCE DOCUMENTS

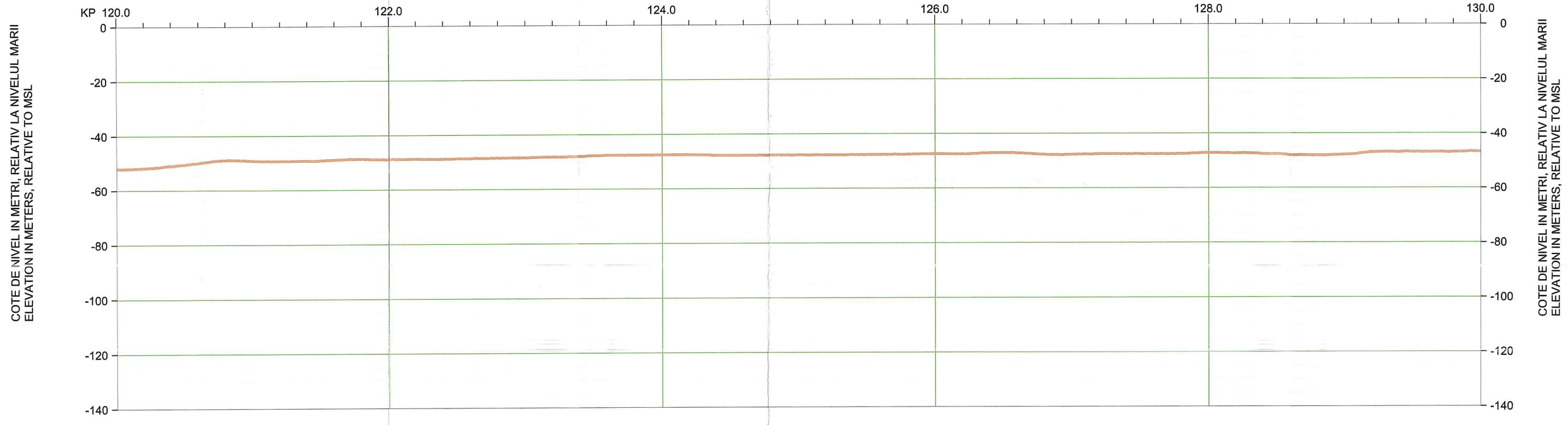
NUMAR PLANSA	DESCRIERE	DRAWING NUMBER	DESCRIPTION
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOD CONDUCTA DE GAZE NATURALE	ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS

SCALA / SCALE BAR

METRI / METERS: 0 — 200 — 1,000 — 2,000

SCALA ORIZONTALA 1:20,000 (IN FORMAT "A1") / HORIZONTAL SCALE 1:20,000 (AT "A1" SIZE)

PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

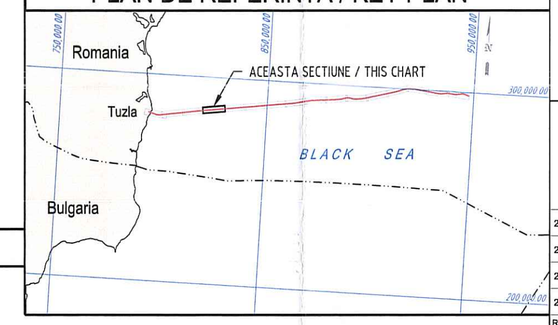
The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 20,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	10

PARAMETRI GEODEZIE SI PROIECTIE / GEODETIC & PROJECTION PARAMETERS

DATE GEODEZICE	:	STEREO 70	GEODETIC DATUM	: STEREO 70
PROIECTIE	:	Dublu Stereografica	PROJECTION	: Double Stereographic
Meridianul central (MC)	:	25.0	Central meridian (CM)	: 25.0
Latitudine Origine	:	46.0	Latitude of Origin	: 46.0
Falsa origine estica	:	500,000.0	False Easting at origin	: 500,000.0
Falsa origine nordica	:	500,000.0	False Northing at origin	: 500,000.0
Factor de scala la MC	:	0.99975	Scale factor at CM	: 0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)	VERTICAL DATUM	: MSL

PLAN DE REFERINTA / KEY PLAN



DATE TEHNICE / ENGINEERING DATA

					KP 120.000	KP 127.098	KP 130.000
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA CURBURI (m)			ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)	8° 3' 55"	
	TRAVERSARE CONDUCTA / CABLU				CABLE / PIPELINE CROSSING	NU EXISTA / NONE	
	TIP SOL LA SUPRAFATA FUNDULUI MARII				SURFACE SEABED SOIL	ZONA 4 - NISIP (NOTA 9) / ZONE 4 - SAND (NOTE 9)	
DATE CONDUCTA	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)			PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 FDU / 762 / 17.5	
	GROS.PERETE DISP. ANTIDEFORMARE (mm) / INTERVAL (m				BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	NU EXISTA / NONE	
	STRAT ANTI-COROZIV/GROS.(mm)/DENSITATE(kg/m³)				ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	FBE / 0.38 - 0.815 / 1.350	
	STRAT INT. PROT./ GROSIME (µm) / DENSITATE (kg/m³)				INTERNAL COAT. / THICK (µm) / DENSITY (kg/m³)	STRAT INTERIOR PROTECTIE (NOTA 10) / 50 /1,500 / INTERNAL FLOW COAT (NOTE 10) COATING / 50 / 1,500	
	STRAT BETON: GROSIME (mm) / DENSITATE (kg/m³)				CONCRETE COATING: THICK (mm) / DENSITY (kg/m³)	100 / 3,050	
	TIP SUDURA / TIP UMPLUTURA / DENSITATE (kg/m³)				FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	FBE + POLIURETAN 128 - 224 / FBE + POLYURETHANE / 128 - 224	
	TIP ANOD / MASA (Kg) / INTERVAL MONTAJ (segmente)				ANODE BRACELETS TYPE / MASS (kg) / SPACING (joints)	ALUMINIU (50x775) / 198 / 1 LA 10 SEGMENTE / AI (50x775) / 198 / 1 EVERY 10 JOINTS	
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)		PIPELINE WEIGHT (kN/m)	IN AIR (DRY) (kN/m)	11.274	
		IN APA	GOALA (kN/m) / SG		EMPTY (kN/m) / SG	4.039 / 1.56	
			INUNDATA (kN/m) / SG	SUBMERGED	FLOODED (kN/m) / SG	8.165 / 2.13	
			IN FUNCTIUNE (kN/m) / SG		OPERATION (kN/m) / SG	4.172 / 1.58	
LUCRARI PRE INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)			PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE	
	SUPORTI / SALTELE BETON				SLEEPERS / MATTRESSES	NU EXISTA / NONE	
LUCRARI POST INSTALARE CONDUCTA	ADANCIME SANT (m)			POST-LAY INT. WORKS	TRENCHING DEPTH (m)	NU EXISTA / NONE	
	TIP UMPLUTURA / STRAT ACOPERITOR (m)				BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE	
	STRAT PIETRIS				GRAVEL DUMPING	NU EXISTA / NONE	
LUNGIME TRONSON ADMISA	INSTALARE (m)			ALLOWABLE SPAN LENGTH	INSTALLATION (m)	50.8	57.4
	HIDRO-TEST (m)				HYDROTEST (m)	35.0	39.0
	FUNCTIONARE (m)				OPERATION (m)	35.0	40.0
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)			SPECIFIC REQUIREM.	LAY TOLERANCE (m)	±10	
	ALTELE				OTHER		

ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16 ,300149, PLOIESTI
AUTORIZATIE / ACCREDITATION
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	DATA / DATE	DESCRIERE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
VERIFICATOR / CHECKER			I. BUTNARIU		ANRE
VERIFICATIONS / VERIFICATIONS	RAPORT NR. / REFERINTA NR. / DATA / PROVIDER REPORT / EXPERTISE NO. / DATE		NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / EXIGENCES
2-O	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-C	10.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	04.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2	15DEC17	RE-ISSUED FOR IFD	FK	EP	SS	JG
1	26SEP17	RE-ISSUED FOR IFD	FK	EP	SS	JG
0	04AUG17	ISSUE FOR IFD	RO	EP	SS	JG
REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE GAZE NATURALE 30" 30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT ALIGNMENT SHEET

FISA NR. 013 DIN 016
SHEET 013 OF 016

SCALA / SCALE	NR. PLANSA / DWG. NO.		FAZA / PHASE	REV. / REV.
1 : 20,000	ROND-EW-YDPAL-24-0015-C	DTAC	2-D	

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:20,000)

TIE-IN POINT	
X	Y
283,748.36	819,775.31

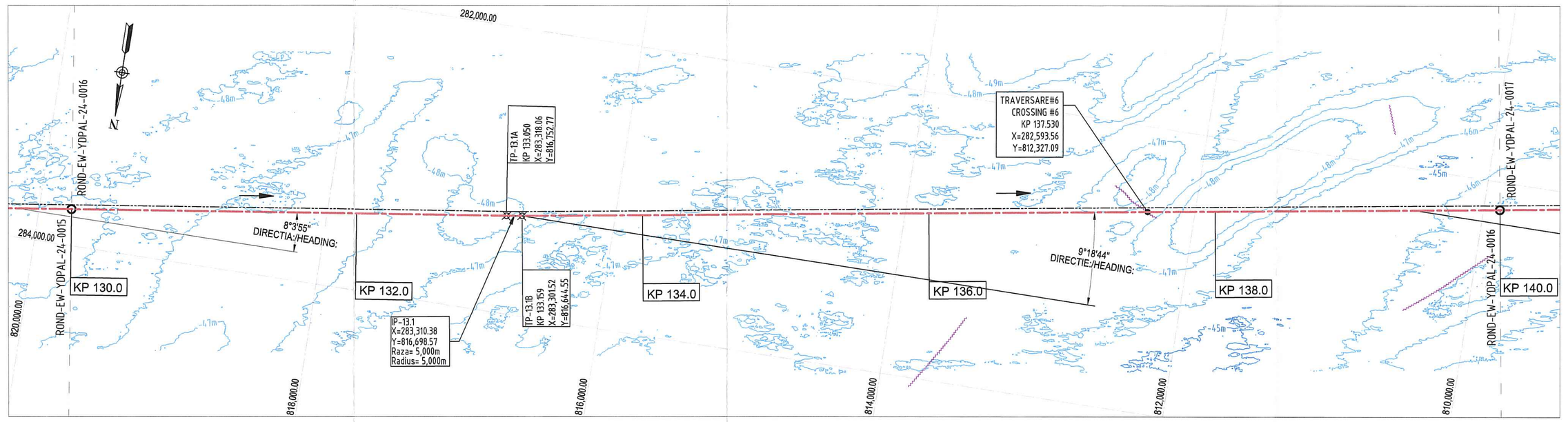
PUNCT DE CONEXIUNE	
X	Y
283,748.36	819,775.31

MATCH POINT END	
X	Y
282,193.52	809,887.44

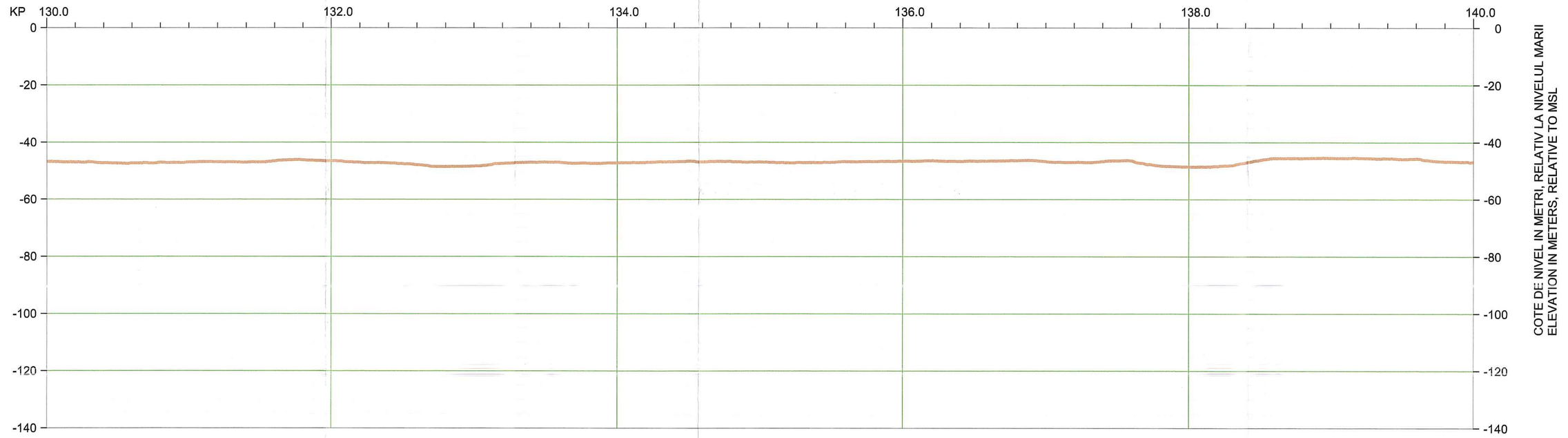
PUNCT LEGATURA DE FINAL	
X	Y
282,193.52	809,887.44

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CONTUR CURBA NIVEL MAJORA / MAJOR CONTOUR
- CONTUR CURBA NIVEL MINORA / MINOR CONTOUR
- CABLU / FIR / CABLE/WIRE



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



NOTA / NOTE:

Planse este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 20,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	10

DATE TEHNICE / ENGINEERING DATA

					KP 130.000	KP 131.469	KP 132.412	KP 133.956 / KP 133.359	KP 137.430 / KP 137.530 / KP 137.630	KP 140.000
ELEMENTE TRASEU	ORIENTARE ('N') / RAZA CURBURI (m)		ROUTE ITEMS	STRAIGHT HEADING ('N') / BEND RADIUS (m)	8° 3' 55"				9° 18' 44"	
	TRAVERSARE CONDUCTA / CABLU			CABLE / PIPELINE CROSSING	5,000				TRAVERSARE CABLU #6 (NOTA 13) / CABLE CROSSING #6 (NOTE 13)	
	TIP SOL LA SUPRAFATA FUNDULUI MARII			SURFACE SEABED SOIL	ZONA 4 - NISIP (NOTA 9) / ZONE 4 - SAND (NOTE 9)				ZONA 5 - ARGILA (NOTA 9) / ZONE 5 - CLAY (NOTE 9)	
DATE CONDUCTA	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)		PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 FDU / 762 / 17.5				DNV SAWL 450 FDU / 762 / 30.0	
	GROS.PERETE DISP. ANTIDEFORMARE (mm) / INTERVAL (m)			BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	NU EXISTA / NONE					
	STRAT ANTI-COROZIV/GROS.(mm)/DENSITATE(kg/m³)			ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	FBE / 0.38 - 0.815 / 1,350					
	STRAT INT. PROT./ GROSIME (µm) / DENSITATE (kg/m³)			INTERNAL COAT. / THICK (µm) / DENSITY (kg/m³)	ACOPERIRE LA INTERIOR (NOTA 10) ACOPERIREA / 50 / 1,500 / INTERNAL FLOW COAT (NOTE 10) COATING / 50 / 1,500					
	STRAT BETON: GROSIME (mm) / DENSITATE (kg/m³)			CONCRETE COATING: THICK (mm) / DENSITY (kg/m³)	100 / 3,050				110 / 3,050	
	TIP SUDURA / TIP UMPLUTURA / DENSITATE (kg/m³)			FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	FBE + POLIURETAN 128 - 224 / FBE + POLYURETHANE / 128 - 224					
	TIP ANOD / MASA (Kg) / INTERVAL MONTAJ (segmente)			ANODE BRACELETS TYPE / MASS (kg) / SPACING (joints)	Al (50x775) / 198 / 1 EVERY 10 JOINTS				ALUMINIU (80x700) / 298 / 1 LA 10 SEGMENTE / Al (80x700) / 298 / 1 EVERY 10 JOINTS	
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)		PIPELINE WEIGHT (kN/m)	IN AIR (DRY) (kN/m)		11.274		13.349	
		IN APA	GOALA (kN/m) / SG		SUBMERGED	EMPTY (kN/m) / SG	4.039 / 1.56		6.811 / 1.90	
			INUNDATA (kN/m) / SG			FLOODED (kN/m) / SG	8.165 / 2.13		10.657 / 2.41	
			IN FUNCTIUNE (kN/m) / SG			OPERATION (kN/m) / SG	4.172 / 1.58		6.933 / 1.92	
LUCRARI PRE-INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)		PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE					
	SUPORTI / SALTELE BETON			SLEEPERS / MATTRESSES	TRAVERSARE CABLU #6 (NOTA 15) / CABLE CROSSING #6 (NOTE 15)					
LUCRARI POST INSTALARE CONDUCTA	ADANCIME SANT (m)		POST-LAY INT. WORKS	TRENCHING DEPTH (m)	NU EXISTA / NONE					
	TIP UMPLUTURA / STRAT ACOPERITOR (m)			BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE					
	STRAT PIETRIS			GRAVEL DUMPING	NU EXISTA / NONE					
LUNGIME TRONSON ADMISA	INSTALARE (m)		ALLOWABLE SPAN LENGTH	INSTALLATION (m)	57.4	66.1	65.0			
	HIDRO-TEST (m)			HYDROTEST (m)	39.0	44.0	39.0			
	FUNCTIONARE (m)			OPERATION (m)	40.0	35.0	35.0			
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)		SPECIFIC REQUIREM.	LAY TOLERANCE (m)	±10				±2	±10
	ALTELE			OTHER						

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATA IN 2014, DOCUMENT FUGRO J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP.
4. DATELE DE SOL PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRRPT-00-0015-001 A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002.
5. DIRECTIILE SUNT INDICATE IN RAPORT CU NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND MODUL DE CONECTARE LA LOCATIA PLATFORMEI SE VA CONSULTA PLANSA ROND-EW-YDPAL-22-0011 - ARANJAMENT CONDUCTA DE ADUCTIUNE SI CONDUCTA DE GAZE NATURALE LA PLATFORMA (SWP).
7. STERS.
8. PENTRU DETALII PRIVIND ANOZII CONSULTATI PLANSA ROND-EW-YDCPD-24-0002 SI DOCUMENTUL ROND-EW-YRSTY-24-0002.
9. CARACTERIZAREA SOLULUI ESTE BAZATA PE NOTA TEHNICA 408009-00349-TN-003 (A SE VEDEA SI NOTA 4).
10. STRAT INTERIOR CONDUCTA CONFORM SPECIFICATIEI STRAT EPOXIDIC INTERN ROND-EW-YSPDS-20-0039.
11. TRAVERSARE CABLU DIN BAZA DE DATE GLOBALA MARINA. CONSTRUCTORUL VA DETERMINA LOCATIA EXACTA.
12. POSIBILE TRAVERSARI PENTRU HCDC ROMANIA TURCIA. CONTRACTORUL VA VERIFICA CU PROPRIETARUL CABLULUI DATA CONSTRUCTIEI.
13. TRAVERSARE CABLU CONFORM BAZEI DE DATE GIS FURNIZATA DE FUGRO.
14. STERS.
15. TRAVERSARE CABLU CONFORM PLANSA ROND-EW-YDPLX-24-0002 SOLUTIE TIPICA TRAVERSARE CABLU.
16. A SE NOTA CA GROSIMEA ANOZILOR SI DISTANTA ADMISA DINTRE EI VOR FI RE-EVALUATE IN DETALIILE DE EXECUTIE, IN BAZA GROSIMII ACTUALE A STRATULUI DE BETON.

NOTES

1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT.
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM LOCATION REFER TO DRAWING : ROND-EW-YDPAL-22-0011 - FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
7. DELETED.
8. FOR ANODE DETAILS REFER TO DRAWING ROND-EW-YDCPD-24-0002 & DOCUMENT ROND-EW-YRSTY-24-0002.
9. SOIL CHARACTERIZATION BASED ON TECHNICAL NOTE 408009-00349-TN-003 (SEE ALSO NOTE 4).
10. INTERNAL FLOW COAT AS PER INTERNAL EPOXY COATING SPECIFICATION ROND-EW-YSPDS-20-0039.
11. CABLE CROSSING FROM GLOBAL MARINE DATABASE. CONTRACTOR TO DETERMINE EXACT LOCATION.
12. POTENTIAL CROSSING FOR FUTURE HCDC ROMANIA TURKEY. CONTRACTOR TO CHECK WITH THE CABLE OWNER FOR THE CONSTRUCTION DATE.
13. CABLE CROSSING FROM GIS DATABASE PROVIDED BY FUGRO.
14. DELETED
15. CABLE CROSSING AS PER DRAWING ROND-EW-YDPLX-24-0002 TYPICAL CABLE CROSSING G.A.
16. NOTE THAT ALLOWABLE SPANS AND ANODE THICKNESSES ARE TO BE RE-ASSESSED IN DETAILED DESIGN BASED UPON ACTUAL CONCRETE COATING THICKNESSES.

DOCUMENTE DE REFERINTA / REFERENCE DOCUMENTS

NUMAR PLANSA	DENUMIRE	DRAWING NUMBER	DESCRIPTION
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOD CONDUCTA DE GAZE NATURALE	ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS

SCALA / SCALE BAR

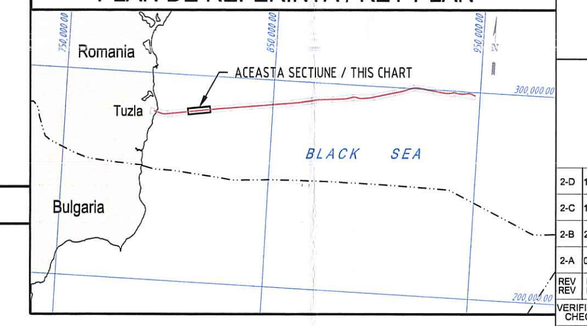
0 200 METRI 1,000 2,000
SCALA ORIZONTALA 1:20,000 (FORMAT "A1")

0 200 METERS 1,000 2,000
HORIZONTAL SCALE 1:20,000 (AT "A1" SIZE)

PARAMETRII GEODEZIE SI PROIECTIE / GEODETIC & PROJECTION PARAMETERS

DATE GEODEZICE	:	STEREO 70	GEODETIC DATUM	: STEREO 70
PROIECTIE	:	Dublu Stereografica	PROJECTION	: Double Stereographic
Meridianul central (MC)	:	25.0	Central meridian (CM)	: 25.0
Latitudine Origine	:	46.0	Latitude of Origin	: 46.0
Falsa origine estica	:	500,000.0	False Easting at origin	: 500,000.0
Falsa origine nordica	:	500,000.0	False Northing at origin	: 500,000.0
Factor de scala la MC	:	0.99975	Scale factor at CM	: 0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)	VERTICAL DATUM	: MSL

PLAN DE REFERINTA / KEY PLAN



ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor afiate dupa simbolul punct.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

BUTNARIU VIOREL FLORIN NR. VI610001171 INGINER INSPECTOR PROIECT

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV. REV	DATA DATE	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
2-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-C	10.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	04.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
REV. REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
VERIFICATOR / CHECKER			I. BUTNARIU		ANRE
DESENATOR/ DRAWN/DEPR	REFERAT NR. / EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE		NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NERURU VIDEA NR.19 ,1001-65, PLOIESTI
J29/3071/2007, RO 22804822
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
2	15DEC17	RE-ISSUED FOR IFD	FK	EP	SS	JG
1	26SEP17	RE-ISSUED FOR IFD	FK	EP	SS	JG
0	04AUG17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE GAZE NATURALE 30" 30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT ALIGNMENT SHEET

FISA NR. 014 DIN 016 SHEET 014 OF 016

1 : 20,000	ROND-EW-YDPAL-24-0016-C	DTAC	2-D
SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:20,000)

TIE-IN POINT	
X	Y
282,193.52	809,887.44

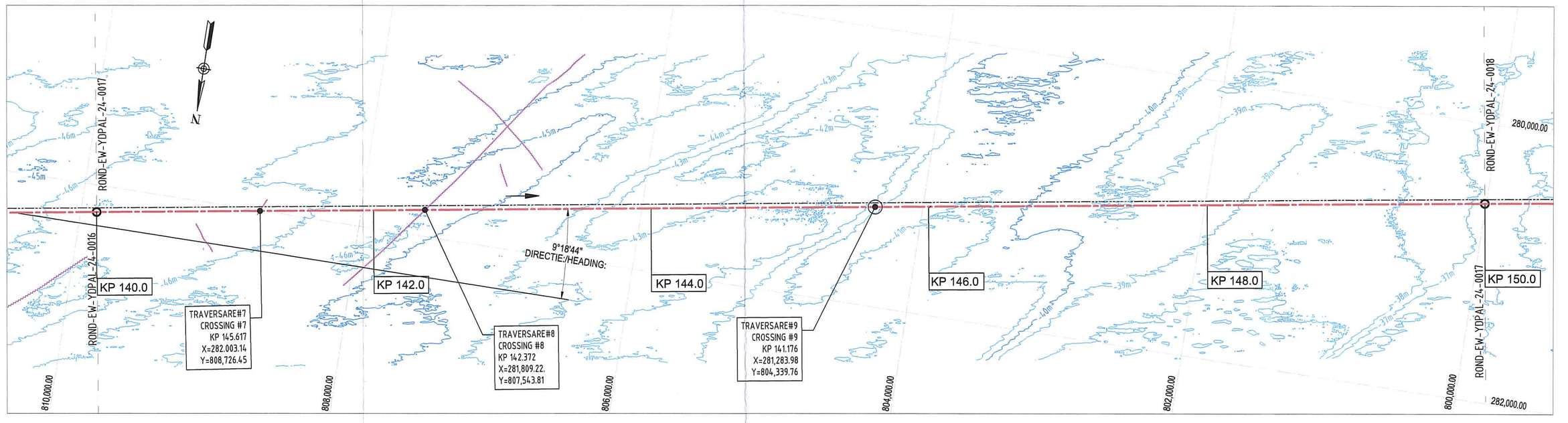
MATCH POINT END	
X	Y
280,573.91	800,010.34

PUNCT DE CONEXIUNE	
X	Y
282,193.52	809,887.44

PUNCT LEGATURA DE FINAL	
X	Y
280,573.91	800,010.34

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CONTUR CURBA NIVEL MAJORA / MAJOR CONTOUR
- CONTUR CURBA NIVEL MINORA / MINOR CONTOUR
- CABLU / FIR / CABLE/WIRE



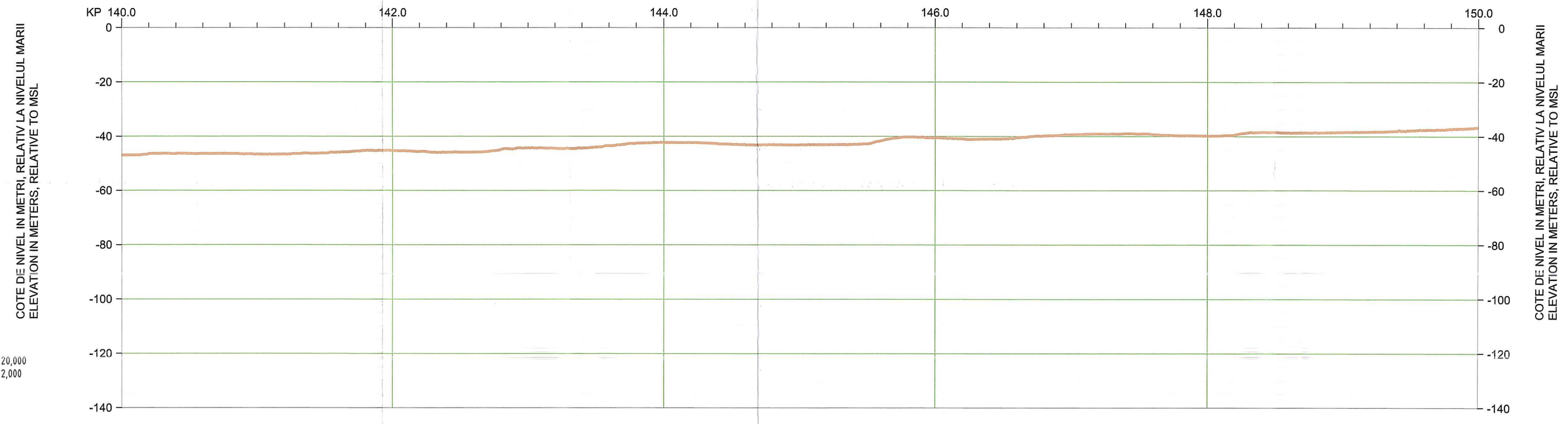
PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE

NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 20,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	10



DATE TEHNICE / ENGINEERING DATA

					KP 140.000	KP 141.076 / KP 141.176 / KP 141.276	KP 142.272 / KP 142.372 / KP 142.472	KP 143.328	KP 145.617	KP 147.353	KP 150.000
ELEMENTE TRASEU	ORIENTARE (°N) / RAZA CURBURI (m)			ROUTE ITEMS	STRAIGHT HEADING (°N) / BEND RADIUS (m)	9° 18' 44"					
	TRAVERSARE CONDUCTA / CABLU				CABLE / PIPELINE CROSSING	TRAVERSARE CABLU #8 (NOTA 13) / CABLE CROSSING #8 (NOTE 13)			TRAVERSARE CABLU #9 (NOTA 13) / CABLE CROSSING #9 (NOTE 13)		
	TIP SOL LA SUPRAFATA FUNDULUI MARII				SURFACE SEABED SOIL	TRAVERSARE CABLU #7 (NOTA 13)/ CABLE CROSSING #7 (NOTE 13)		ZONA 5 – ARGILA (NOTA 9) / ZONE 5 – CLAY (NOTE 9)			
DATE CONDUCTA	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)			PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 FDU / 762 / 30.0					
	GROS.PERETE DISP. ANTIDEFORMARE (mm)/ INTERVAL (m)				BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	NU EXISTA / NONE					
	STRAT ANTI-COROZIV/GROS.(mm)/DENSITATE(kg/m³)				ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	FBE / 0.38 – 0.815 / 1,350					
	STRAT INT. PROT./ GROSIME (µm) / DENSITATE (kg/m³)				INTERNAL COAT. / THICK (µm) / DENSITY (kg/m³)	ACOPERIRE LA INTERIOR (NOTA 10) ACOPERIREA / 50 / 1,500 / INTERNAL FLOW COAT (NOTE 10) COATING / 50 / 1,500					
	STRAT BETON: GROSIME (mm) / DENSITATE (kg/m³)				CONCRETE COATING: THICK (mm) / DENSITY (kg/m³)	110 / 3,050				120 / 3,050	
	TIP SUDURA / TIP UMPLUTURA / DENSITATE (kg/m³)				FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	FBE + POLIURETAN / 128 – 224 / FBE + POLYURETHANE / 128 – 224					
	TIP ANOD / MASA (Kg) / INTERVAL MONTAJ (segmente)				ANODE BRACELETS TYPE / MASS (kg) / SPACING (joints)	ALUMINIU (80x700) / 298 / 1 LA 10 SEGMENTE / AI (80x700) / 298 / 1 EVERY 10 JOINTS				ALUMINIU (110x625) / 380 / 1 LA 10 SEGMENTE / AI (110x625) / 380 / 1 EVERY 10 JOINTS	
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)			PIPELINE WEIGHT (kN/m) IN AIR (DRY) (kN/m)	13.349				15.282	
		IN APA	GOALA (kN/m) / SG		PIPELINE WEIGHT (kN/m) SUBMERGED EMPTY (kN/m) / SG	6.811 / 1.90				7.434 / 1.95	
			INUNDATA (kN/m) / SG		PIPELINE WEIGHT (kN/m) SUBMERGED FLOODED (kN/m) / SG	10.657 / 2.41				11.280 / 2.44	
			IN FUNCTIUNE (kN/m) / SG		PIPELINE WEIGHT (kN/m) SUBMERGED OPERATION (kN/m) / SG	6.933 / 1.92				7.555 / 1.96	
LUCRARI PRE INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)			PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE					
	SUPORTI / SALTELE BETON				SLEEPERS / MATTRESSES	TRAVERSARE CABLU #8 (NOTA 15) / CABLE CROSSING #8 (NOTE 15)			TRAVERSARE CABLU / CABLE CROSSING #9 (NOTE 15)		
LUCRARI POST INSTALARE CONDUCTA	ADANCIME SANT (m)			POST-LAY INT. WORKS	TRENCHING DEPTH (m)	TRAVERSARE CABLU #7 (NOTA 15) / CABLE CROSSING #7 (NOTE 15)			NU EXISTA / NONE		
	TIP UMPLUTURA / STRAT ACOPERITOR (m)				BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE					
	STRAT PIETRIS				GRAVEL DUMPING	NU EXISTA / NONE					
LUNGIME TRONSON ADMISA	INSTALARE (m)			ALLOWABLE SPAN LENGTH	INSTALLATION (m)	65.0		53.1		26.9	
	HIDRO-TEST (m)				HYDROTEST (m)	39.0		31.0		24.0	
	FUNCTIONARE (m)				OPERATION (m)	35.0		29.0		23.0	
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)			SPECIFIC REQUIREM.	LAY TOLERANCE (m)	±10	±2	±10	±2	±10	±2 ±10
	ALTELE				OTHER						

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATA IN 2014, DOCUMENT FUGRO J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP.
4. DATELE DESPRE SOLUL DE PE FUNDUL MARII PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP, ROND-EW-GRRPT-00-0015-001.
   VEZI DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002.
5. DIRECTILE SUNT INDICATE IN RAPORT CU NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND MODUL DE CONECTARE LA LOCATIA PLATFORMEI SE VA CONSULTA PLANSA ROND-EW-YDPAL-22-0011 - ARANJAMENT CONDUCTA DE ADUCTIUNE SI CONDUCTA DE GAZE NATURALE LA PLATFORMA (SWP).
7. STERS.
8. PENTRU DETALII PRIVIND ANOZII CONSULTATI PLANSA ROND-EW-YDCPD-24-0002 SI DOC. ROND-EW-YRSTY-24-0002.
9. CARACTERISTICILE SOLULUI SUNT BAZATE PE NOTA TEHNICA 408009-00349-TN-003 (A SE VEDEA SI NOTA 4).
10. STRAT INTERIOR CONDUCTA CONFORM SPECIFICATIEI STRAT EPOXIDIC INTERN ROND-EW-YSPDS-20-0039.
11. PUNCT TRAVERSARE CABLU CONFORM BAZEI DE DATE MARINE GLOBALA. CONTRACTORUL VA DETERMINA LOCATIA EXACTA.
12. POSIBILE TRAVERSARI PENTRU HCDC ROMANIA TURCIA. CONTRACTORUL VA VERIFICA CU PROPRIETARUL CABLULUI DATA CONSTRUCTIEI.
13. TRAVERSARE CABLU CONFORM BAZA DE DATE GIS ASIGURATA DE FUGRO.
14. STERS.
15. TRAVERSARE CABLU CONFORM PLANSA ROND-EW-YDPLX-24-0002 SOLUTIE TIPICA TRAVERSARE CABLU.
16. GROSIMEA ANOZILOR SI DISTANTA ADMISA DINTRE EI VOR FI RE-EVALUATE IN DETALILE DE EXECUTIE, IN BAZA GROSIMII ACTUALE A STRATULUI DE BETON.

NOTES

1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT.
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002.
   HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
5. FOR DETAILS OF TIE-INS AT PLATFORM LOCATION REFER TO DRAWING : ROND-EW-YDPAL-22-0011 - FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
6. DELETED.
7. FOR ANODE DETAILS REFER TO DRAWING ROND-EW-YDCPD-24-0002 & DOCUMENT ROND-EW-YRSTY-24-0002.
8. SOIL CHARACTERIZATION BASED ON TECHNICAL NOTE 408009-00349-TN-003 (SEE ALSO NOTE 4).
9. INTERNAL FLOW COAT AS PER INTERNAL EPOXY COATING SPECIFICATION ROND-EW-YSPDS-20-0039.
10. CABLE CROSSING FROM GLOBAL MARINE DATABASE. CONTRACTOR TO DETERMINE EXACT LOCATION.
11. POTENTIAL CROSSING FOR FUTURE HCDC ROMANIA TURKEY. CONTRACTOR TO CHECK WITH THE CABLE OWNER FOR THE CONSTRUCTION DATE.
12. CABLE CROSSING FROM GIS DATABASE PROVIDED BY FUGRO.
13. DELETED.
14. CABLE CROSSING AS PER DRAWING ROND-EW-YDPLX-24-0002 TYPICAL CABLE CROSSING G.A.
15. NOTE THAT ALLOWABLE SPANS AND ANODE THICKNESSES ARE TO BE RE-ASSESSED IN DETAILED DESIGN BASED UPON ACTUAL CONCRETE COATING THICKNESSES.

DOCUMENTE DE REFERINTA

NUMAR PLANSA	DENUMIRE
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOD CONDUCTA DE GAZE NATURALE
ROND-EW-YDPLX-24-0002	SOLUTIE TIPICA TRAVERSARE CABLU

REFERENCE DOCUMENTS

DRAWING NUMBER	DESCRIPTION
ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS
ROND-EW-YDPLX-24-0002	TYPICAL CABLE CROSSING GENERAL ARRANGEMENT

SCALA

METRI
0 200 1,000 2,000
SCALA ORIZONTALA 1:20,000 (FORMAT "A1")

SCALE BAR

METERS
0 200 1,000 2,000
HORIZONTAL SCALE 1:20,000 (AT "A1" SIZE)

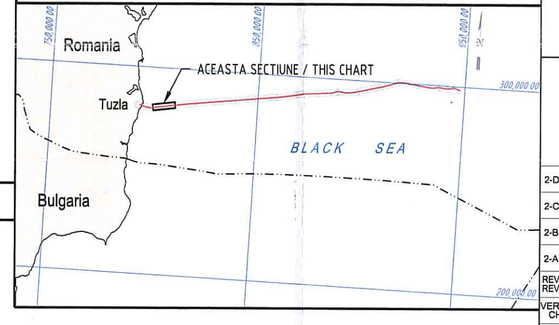
PARAMETRII GEODEZIE SI PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA / KEY PLAN



ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

PROIECT NEPTUN DEEP /
NEPTUN DEEP PROJECT

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
2-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-C	10.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	04.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA

VERIFICATOR / CHECKER: I. BUTNARIU — ANRE

DEPUNEREA / DEPOSITOR	REFERAT NR. / EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE	NUME / NAME	SEMNATURA / SIGNATURE	DOVEZILE / EVIDENCES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR. 19, 100145, PLOIESTI
J29/307/12007, RO 22804829
S.C. JEREMY PROMASTER S.R.L.
STR. COROIEBULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
2	15DEC17	RE-ISSUED FOR IFD	FK	EP	SS	JG
1	26SEP17	RE-ISSUED FOR IFD	FK	EP	SS	JG
0	04AUG17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE GAZE NATURALE 30"
30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA NR. 015 DIN 016
SHEET 015 OF 016

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 20,000	ROND-EW-YDPAL-24-0017-C	DTAC	2-D

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:20,000)

TIE-IN POINT	
X	Y
280,573.91	800,010.34

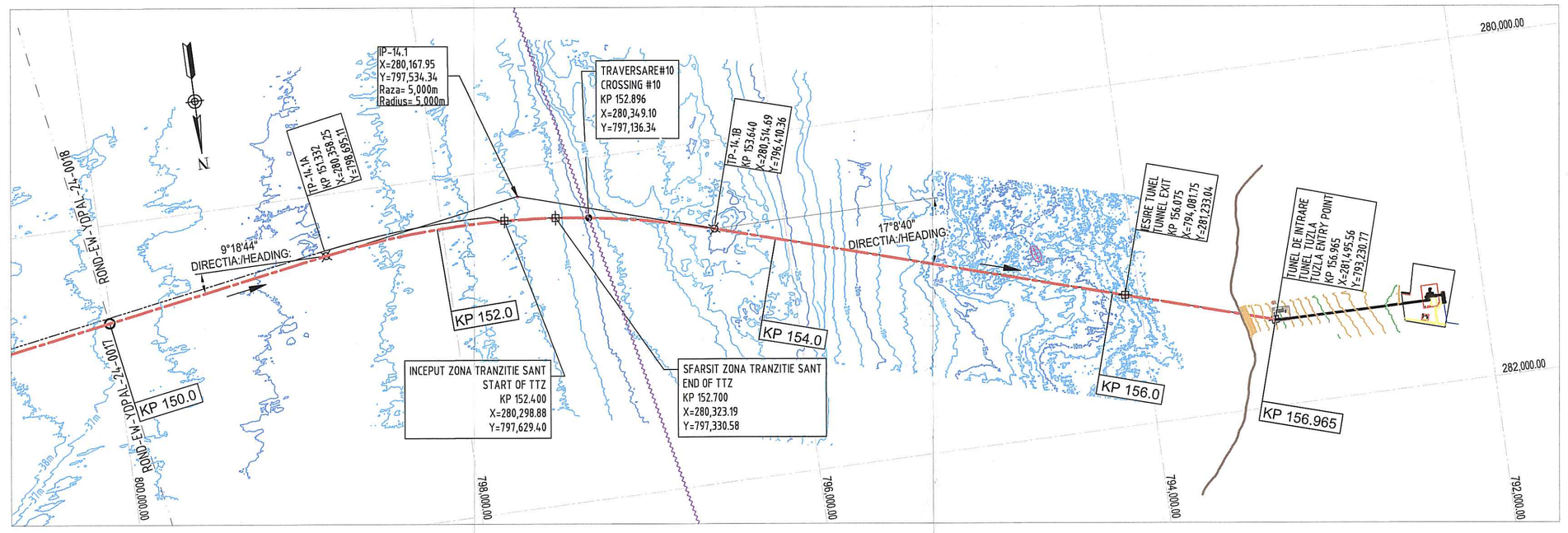
PUNCT DE CONEXIUNE	
X	Y
280,573.91	800,010.34

MATCH POINT END	
X	Y
281,495.56	793,230.77

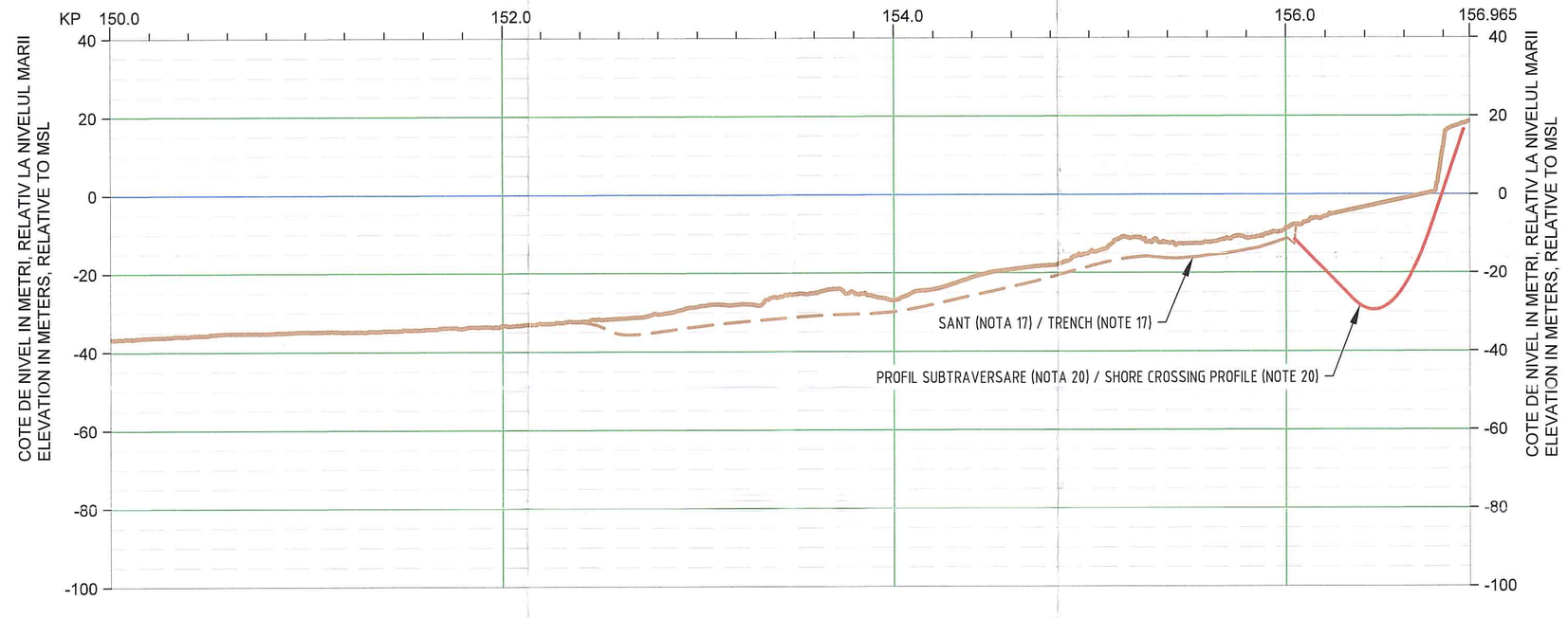
PUNCT LEGATURA DE FINAL	
X	Y
281,495.56	793,230.77

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- EPAVA / WRECK
- CONTUR CURBA NIVEL MAJORA / MAJOR CONTOUR
- CONTUR CURBA NIVEL MINORA / MINOR CONTOUR
- CABLU / FIR / CABLE/WIRE



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



SCALA ORIZONTALA / HORIZONTAL SCALE 1 : 20,000
SCALA VERTICALA / VERTICAL SCALE 1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION 10

CONTINUARE NOTE

16. CONTRACTORUL EPC1 VA SELECTA METODA ADECVATA DE PROTECTIE LA ABRAZIUNE PENTRU INSTALAREA CONDUCTEI LA APROPIEREA DE TARM INTRE KP 154.448 SI KP156.935. TUNELUL VA FI INTARIT/CONSOLIDAT DUPA MONTAJUL CONDUCTEI SI FIBREI OPTICE
17. DE LA PUNCTUL DE IESIRE DE PE TARM PANA LA STATIA DE MASURARE VEZI DOC. ROND-EW-YDPAL-25-0003.
18. CONTRACTORUL EPC2 VA PROIECTA SANTUL DUPA STUDIUL GEOTEHNIC.
19. DE LA KP 154.448 LA KP 156.965 VEZI PROFIL LONGITUDINAL SUBTRAVERSARE, VEZI DOC, ROND-EW-YDPAL-24-0002.
20. A SE CONSULTA PLANSA ROND-EW-YDPAL-24-0001. TUNELUL PENTRU SUBTRAVERSAREA TARMULUI VA FI CONSTRUIT DE CATRE CONTRACTORUL EPC2.
21. GROSIMEA ANOZILOR SI DISTANTA ADMISA DINTRE EI VOR FI RE-EVALUATE IN DETALILE DE EXECUTIE IN BAZA GROSIMII ACTUALE A STRATULUI DE BETON.
22. CA O OPTIUNE LEGATURA INTRE EPC-2 SI EPC-1 POATE FI EXECUTATA CA LEGATURA DEASUPRA APEI INTRE 15m-20m (MSL) ADANCIMEA APEI.
23. SANTUL VA FI UMPLUT PANA LA NIVELUL NATURAL, NEPERTURBAT AL FUNDULUI MARII .

NOTES CONT'D

16. EPC1 CONTRACTOR TO SELECT SUITABLE ABRASION PROTECTION FOR PIPELINE INSTALLATION ON THE SHORE APPROACH BETWEEN KP 154.448 AND KP 156.935. TUNNEL TO BE GROUTED AFTER PIPELINE AND FOC INSTALLATION INTO THE TUNNEL.
17. FROM THE ONSHORE TUNNEL EXIT POINT TO METERING STATION REFER TO ROND-EW-YDPAL-25-0003.
18. EPC2 TO DESIGN THE TRENCHING AFTER GEOTECHNICAL SURVEY
19. FROM KP 154.448 TO KP 156.965 REFER TO SHORE CROSSING ALIGNMENT SHEET, ROND-EW-YDPAL-24-0002.
20. REFER TO DRAWING ROND-EW-YDPAL-24-0001. SHORE CROSSING TUNNEL TO BE CONSTRUCTED BY EPC2 CONTRACTOR.
21. NOTE THAT ALLOWABLE SPANS AND ANODE THICKNESSES ARE TO BE RE-ASSESSED IN DETAILED DESIGN BASED UPON ACTUAL CONCRETE COATING THICKNESSES.
22. AS AN OPTION TIE-IN BETWEEN EPC-2 AND EPC-1 CAN BE MADE BY ABOVE WATER TIE-IN BETWEEN 15 m - 20 m (MSL) WATER DEPTH.
23. TRENCH SHALL BE BACKFILLED TO BE FLUSH WITH THE NATURAL, UNDISTURBED SEAFLOOR.

DATE TEHNICE / ENGINEERING DATA

					KP 150.000	KP 151.332	KP 152.200	KP 152.400	KP 152.700	KP 152.896	KP 153.319	KP 153.640	KP 154.089	KP 154.478	KP 154.817	KP 155.174	KP 156.075	KP 156.965
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA CURBURI (m)		ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)	9° 18' 44"			5,000							17° 8' 40"			
	TRAVERSARE CONDUCTA / CABLU			CABLE / PIPELINE CROSSING	TRAVERSARE CABLU#10 (NOTA 12) / CABLE CROSSING #10 (NOTE 12)													
	TIP SOL LA SUPRAFATA FUNDULUI MARII (NOTA 9)			SURFACE SEABED SOIL (NOTE 9)	ZONA 5 - ARGILA (NOTA 9) / ZONE 5 - CLAY (NOTE 9)						FORMATIUNE STANCOASA (NOTA 9) / ROCK OUTCROP (NOTE 9)	ZONA 6 - ARGILA (NOTA 9) / ZONE 6 - CLAY (NOTE 9)				FORMATIUNE STANCOASA (NOTA 9) / ROCK OUTCROP (NOTE 9)		ZONA 7 - NISIP (NOTA 9) / ZONE 7 - SAND (NOTE 9)
DATE CONDUCTA	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)		PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 FDU / 762 / 30.0													
	GROS.PERETE DISP. ANTIDEFORMARE (mm)/ INTERVAL (m)			BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	NU EXISTA / NONE													
	STRAT ANTI-COROZIV/GROS.(mm)/DENSITATE(kg/m³)			ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	FBE / 0.38 - 0.815 / 1,350										3LPE / 3.4 / 950 (NOTA 16) / 3LPE / 3.4 / 950 (NOTE 16)			
	STRAT INT. PROT./ GROSIME (µm) / DENSITATE (kg/m³)			INTERNAL COAT. / THICK (µm) / DENSITY (kg/m³)	ACOPERIRE LA INTERIOR (NOTA 10) ACOPEIREA / 50 / 1,500 / INTERNAL FLOW COAT (NOTE 10) COATING / 50 / 1,500													
	STRAT BETON: GROSIME (mm) / DENSITATE (kg/m³)			CONCRETE COATING: THICK (mm) / DENSITY (kg/m³)	120 / 3,050					110 / 3,050					NU EXISTA (NOTA 16) / NONE (NOTE 16)			
	TIP SUDURA / TIP UMPLUTURA / DENSITATE (kg/m³)			FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	FBE + POLIURETAN / 128 - 224 / FBE + POLYURETHANE / 128 - 224													
	TIP ANOD / MASA (Kg) / INTERVAL MONTAJ (segmente)			ANODE BRACELETS TYPE / MASS (kg) / SPACING (joints)	ALUMINIU (110x625) / 380 / 1 LA 10 SEGMENTE / AI (110x625) / 380 / 1 EVERY 10 JOINTS										IMBINARE ANOD TRIPLA / TRIPLE ANODE JOINT			7 IMBINARI ANOD/7 ANODES JOINTS
	GREUTATE CONDUCTA (kN/m)	IN APA	IN AER (USCATA) (kN/m)	PIPELINE WEIGHT (kN/m) IN AIR (DRY) (kN/m)	15.282					13.349					5.389			
			GOALA (kN/m) / SG	SUBMERGED EMPTY (kN/m) / SG	7.434 / 1.95					6.811 / 1.90					0.776 / 1.17			
			INUNDATA (kN/m) / SG	SUBMERGED FLOODED (kN/m) / SG	11.280 / 2.44					10.657 / 2.41					4.622 / 2.00			
			IN FUNCTIUNE (kN/m) / SG	SUBMERGED OPERATION (kN/m) / SG	7.555 / 1.96					6.933 / 1.92					0.902 / 1.20			
LUCRARI PRE INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)		PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE			0 - 2.5		2.5 - 4.0 / VA FI CONFIRMAT (NOTA 18) / 2.5 - 4.0 / TBD (NOTE 18)							SUBTRAVERSARE (NOTA 20) / SHORE CROSSING (NOTE 20)	
	SUPORTI / SALTELE BETON			SLEEPERS / MATTRESSES	TRAVERSARE CABLU #10 (NOTA 14) / CABLE CROSSING #10 (NOTE 14)													
LUCRARI POST INSTALARE CONDUCTA	ADANCIME SANT (m)		POST-LAY INT. WORKS	TRENCHING DEPTH (m)	VA FI CONFIRMAT / 0-15 (NOTA 23) / TBD / 0-15 (NOTE 23)						NU EXISTA / NONE							
	TIP UMPLUTURA / STRAT ACOPERITOR (m)			BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE								VA FI CONFIRMAT / 1.5 (NOTA 23) / TBD / 1.5 (NOTE 23)					SUBTRAVERSARE / SHORE CROSSING
	STRAT PIETRIS			GRAVEL DUMPING	NU EXISTA / NONE								VA FI CONFIRMAT / TBD					
LUNGIME PERMISIBILA DESCHIDERE	INSTALARE (m)		ALLOWABLE SPAN LENGTH	INSTALLATION (m)	26.9		23.5				NU EXISTA / NONE							
	HIDRO-TEST (m)			HYDROTEST (m)	24.0		21.0				NU EXISTA / NONE							
	FUNCTIONARE (m)			OPERATION (m)	23.0		20.0				NU EXISTA / NONE							
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)		SPECIFIC REQUIREM.	LAY TOLERANCE (m)	±10					±2								
	ALTELE			OTHER					TTZ		SANT (NOTA 19) / TRENCH (NOTE 19)							SUBTRAVERSARE (NOTA 20) / SHORE CROSSING (NOTE 20)

PROFIL LONGITUDINAL PE USCAT DE LA KP 156.965 LA STATIA DE MASURARE PE USCAT (NOTE 17)
ONSHORE ALIGNMENT SHEET FROM KP 156.965 TO ONSHORE METERING STATION (NOTE 17)

ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATE IN 2014, DOCUMENT FUGRO ROND-FU-GRRPT-00-0015-001 PENTRU PROIECTUL NEPTUN DEEP.
4. DATELE DE SOL PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-FU-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002.
5. DIRECTIILE SUNT INDICATE IN RAPORT CU NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND MODUL DE CONECTARE LA LOCATIA PLATFORMEI SE VA CONSULTA PLANSA ROND-EW-YDPAL-22-0011 - ARANJAMENT CONDUCTA DE ADUCTIUNE SI CONDUCTA DE GAZE NATURALE LA PLATFORMA (SWP)
7. STERS.
8. PENTRU DETALII PRIVIND ANOZII CONSULTA PLANSA ROND-EW-YDCPD-24-0002 SI DOCUMENT ROND-EW-YRSTY-24-0002.
9. DESCRIERE SOL BAZATA PE BULETIN TEHNIC 408009-00349-TN-003 (VEZI SI NOTA 4).
10. STRAT INTERIOR CONDUCTA CONFORM SPECIFICATIEI STRAT EPOXIDIC INTERN ROND-EW-YSPDS-20-0039.
11. PUNCT TRAVERSARE CABLU CONFORM BAZEI DE DATE MARINE GLOBALE. LOCATIA EXACTA VA FI DETERMINATA DE CONTRACTOR.
12. POSIBILA TRAVERSARE PENTRU VIITOR CABLU HCDC ROMANIA TURCIA. CONTRACTORUL VA VERIFICA CU PROPRIETARUL CABLULUI DATA CONSTRUCTIEI.
13. TRAVERSARE CABLU CONFORM BAZA DE DATE GIS ASIGURATA DE FUGRO.
14. TRAVERSARE CABLU CONFORM DESEN ROND-EW-YDPLX-24-0002 SOLUTIE TIPICA TRAVERSARE CABLU.
15. TTZ = ZONA TRANZITIE SANT

NOTES

1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DELIVERABLE ROND-FU-GRRPT-00-0015-001 FOR THE NEPTUN DEEP DEVELOPMENT.
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-FU-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM LOCATION REFER TO DRAWING : ROND-EW-YDPAL-22-0011 - FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
7. DELETED.
8. FOR ANODE DETAILS REFER TO DRAWING ROND-EW-YDCPD-24-0002 & DOCUMENT ROND-EW-YRSTY-24-0002.
9. SOIL CHARACTERIZATION BASED ON TECHNICAL NOTE 408009-00349-TN-003 (SEE ALSO NOTE 4).
10. INTERNAL FLOW COAT AS PER INTERNAL EPOXY COATING SPECIFICATION ROND-EW-YSPDS-20-0039.
11. CABLE CROSSING FROM GLOBAL MARINE DATABASE. CONTRACTOR TO DETERMINE EXACT LOCATION.
12. POTENTIAL CROSSING FOR FUTURE HCDC ROMANIA TURKEY. CONTRACTOR TO CHECK WITH THE CABLE OWNER FOR THE CONSTRUCTION DATE.
13. CABLE CROSSING FROM GIS DATABASE PROVIDED BY FUGRO.
14. CABLE CROSSING AS PER DRAWING ROND-EW-YDPLX-24-0002 TYPICAL CABLE CROSSING G.A.
15. TTZ= TRENCH TRANSITION ZONE.

DOCUMENTE DE REFERINTA

NUMAR PLANSA	DENUMIRE
ROND-EW-YDPAL-24-0001	PROFIL SUBTRAVERSARE CONDUCTA DE GAZE NATURALE
ROND-EW-YDPLX-24-0002	SOLUTIE TIPICĂ SUBTRAVERSARE CABLU
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOZI CONDUCTA DE GAZE NATURALE
ROND-EW-YDPAL-24-0002	PROFIL SUBTRAVERSARE

REFERENCE DOCUMENTS

DRAWING NUMBER	DESCRIPTION
ROND-EW-YDPAL-24-0001	PRODUCTION PIPELINE SHORE CROSSING PROFILE
ROND-EW-YDPLX-24-0002	TYPICAL CABLE CROSSING GENERAL ARRANGEMENT
ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS
ROND-EW-YDPAL-24-0002	SHORE CROSSING APPROACH ALIGNMENT

SCALA

METRI 0 200 1,000 2,000

SCALA ORIZONTALA 1:20,000 (FORMAT "A1")

SCALE BAR

METERS 0 200 1,000 2,000

HORIZONTAL SCALE 1:20,000 (AT "A1" SIZE)

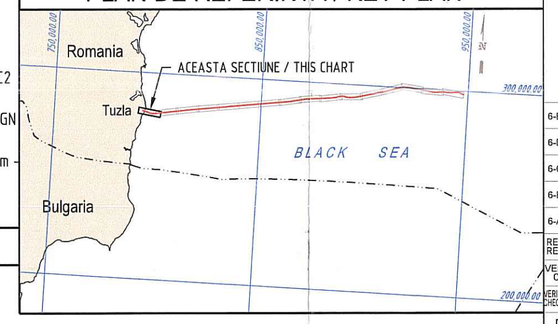
PARAMETRII GEODEZIE SI PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA / KEY PLAN



PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	PREPARED	PROIECTAT / DESIGNED	APROBAT / APPROVED
5-E	15.04.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
5-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
5-C	10.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
5-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	G. MOISE	C. STEFAN	N. EREMIA
5-A	04.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	G. MOISE	C. STEFAN	N. EREMIA
REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	PREPARED	PROIECTAT / DESIGNED	APROBAT / APPROVED
VERIFICATOR / CHECKER			I. BUTNARU		ANRE
REFERENT / INDEPENDENT REVIEWER		REFERAT NR. / EXPERTIZA NR. / DATA / REPORT / EXPERTISE NO / DATE	NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / ENDORSES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR.TIPOGRAFILOR, NR.36-38, FLORESTI
CLUJ-NAPOCA, JUD.CLUJ
S.C. JEREMY PROMASTER S.R.L.
STR. CUCUREDEA, NR. 16A, PLOIESTI

REV.	REV. DATE	REV. DESCRIPTION	ORG	REV	APP	PROJ APP
6	8-OCT-18	RE-ISSUED FOR DESIGN (IFD)	BW	TR	JH	JG
5	19-JUL-18	RE-ISSUED FOR DESIGN (IFD)	TV	TR	JH	JG
4	18-DEC-17	RE-ISSUED FOR DESIGN (IFD)	FK	SS	SS	JG
3	15-DEC-17	RE-ISSUED FOR DESIGN (IFD)	FK	SS	SS	JG
2	25-OCT-17	RE-ISSUED FOR DESIGN (IFD)	FK	EP	SS	JG
1	26-SEP-17	RE-ISSUED FOR DESIGN (IFD)	FK	EP	SS	JG
0	04-AUG-17	ISSUED FOR DESIGN (IFD)	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE GAZE NATURALE 30" 30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT ALIGNMENT SHEET

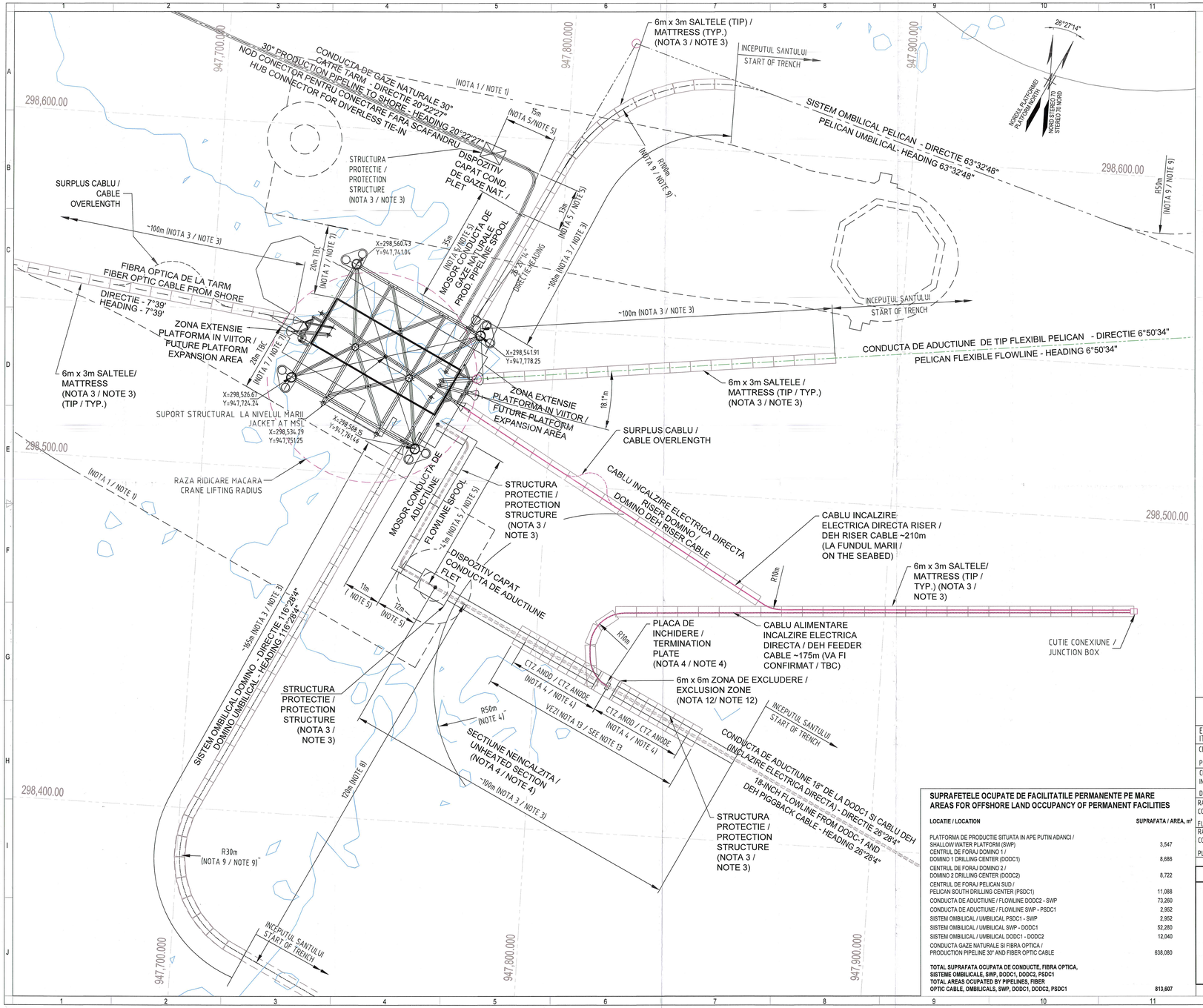
FISA NR. 016 DIN 016 SHEET 016 OF 016

SCALA / SCALE	NR. PLANSA / DWG. NO.		FAZA / PHASE	REV. / REV.
1 : 20,000	ROND-EW-YDPAL-24-0018-C	DTAC	6-E	

A1+ (1092x594)

Appendix C. Onshore and Offshore Site Layout Plans

6 – SWP and connection to flowlines and production pipeline



SUPRAFETELE OCUPATE DE FACILITATILE PERMANENTE PE MARE
AREAS FOR OFFSHORE LAND OCCUPANCY OF PERMANENT FACILITIES

LOCATIE / LOCATION	SUPRAFATA / AREA, m²
PLATFORMA DE PRODUCTIE SITUATA IN APE PUTIN ADANCI / SHALLOW WATER PLATFORM (SWP)	3,547
CENTRUL DE FORAJ DOMINO 1 / DOMINO 1 DRILLING CENTER (DODC1)	8,686
CENTRUL DE FORAJ DOMINO 2 / DOMINO 2 DRILLING CENTER (DODC2)	8,722
CENTRUL DE FORAJ PELICAN SUD / PELICAN SOUTH DRILLING CENTER (PSDC1)	11,088
CONDUCTA DE ADUCTIUNE / FLOWLINE DODC2 - SWP	73,260
CONDUCTA DE ADUCTIUNE / FLOWLINE SWP - PSDC1	2,952
SISTEM OMBILICAL / UMBILICAL PSDC1 - SWP	2,952
SISTEM OMBILICAL / UMBILICAL SWP - DODC1	52,280
SISTEM OMBILICAL / UMBILICAL DODC1 - DODC2	12,040
CONDUCTA GAZE NATURALE SI FIBRA OPTICA / PRODUCTION PIPELINE 30" AND FIBER OPTIC CABLE	638,080
TOTAL SUPRAFATA OCUPATA DE CONDUCTE, FIBRA OPTICA, SISTEME OMBILICALE, SWP, DODC1, DODC2, PSDC1	
TOTAL AREAS OCUPATED BY PIPELINES, FIBER OPTIC CABLE, OMBILICALS, SWP, DODC1, DODC2, PSDC1	**813,607**

ACRONIME
CTZ - ZONA TRANSFER CURENT

ACRONYMS
CTZ - CURRENT TRANSFER ZONE

CONTINUARE NOTE

7. DISTANTA MINIMA REALA DINTRE NAVA DE MONTAJ A CONDUCTEI SI SUPORTUL STRUCTURAL SAU SUPRASTRUCTURA, VA FI DETERMINATA DE CONTRACTORUL DE INSTALARE, IAR RUTELE CONDUCTEI DE GAZE NATURALE SI/SAU CONDUCTEI DE ADUCTIUNE SI CONFIGURATIA MOSOARELOR DE CONECTARE VOR FI REVIZUITE CORESPUNZATOR.
8. DISTANTA MINIMA DE 100m INTRE SISTEMUL OMBILICAL DOMINO SI CABLUL INCALZIRII DIRECTE ESTE PRESUPUSA; TOLERANTELE VOR FI CALCULATE CONFORM DOC. ROND-EW-YRRPT-21-0047.
9. ACTUALELE RAZE PRELIMINARE ALE TUBULUI FLEXIBIL SI AL CABLURILOR SUNT BAZATE PE PRIMA CONEXIUNE. CONTRACTORUL EPC POATE MODIFICA PRESUPUNERILE ACTUALE.
10. TUBURILE- J SI SI RISER-ELE SUPORTULUI STRUCTURAL SI ALE SUPRASTRUCTURII ACTUALIZATE CONFORM PLANSA ROND-EW-NDWG-30-0170.
11. ZONA INTERZISA DE 500m DIN ZONA DE SIGURANTA A PLATFORMEI PENTRU PESCUIT/TRAULARE.
12. ZONA DE EXCLUDERE 6m x 6m VA FI UTILIZATA PENTRU PLASAREA IN VIITOR A SANIEI ANODULUI.
13. SALTELELE DE BETON FLEXIBILE VOR FI AMPLASATE CA FUNDATIE SUB LUNGIMEA ZONEI DE TRANSFER CURENT (APROX. 60m). SALTELELE VOR AVEA DIMENSIUNILE 6m x 3m X 0.15m, UN TOTAL DE APROXIMATIV 20 BUC SUNT NECESARE PENTRU UN STRAT. VA FI FINALIZAT IN PROIECTUL DETALIAT.

NOTES CONT'D

7. ACTUAL MINIMUM SEPARATION BETWEEN THE PIPELINE INSTALLATION VESSEL AND THE JACKET OR TOPSIDE TO BE DETERMINED BY INSTALLATION CONTRACTOR, AND THE PIPELINE AND / OR FLOWLINE ROUTES AND TIE-IN SPOOLS CONFIGURATION TO BE REVISED ACCORDINGLY.
8. MINIMUM DISTANCE OF 100m BETWEEN DOMINO UMBILICAL AND DEH CABLE IS ASSUMED, TOLERANCES TO BE CONSIDERED SEE DOCUMENT ROND-EW-YRRPT-21-0047.
9. CURRENT PRELIMINARY RADIUS OF FLEXIBLES AND CABLES IS BASED ON FIRST CONNECTION. EPC MAY MODIFY THE CURRENT ASSUMPTION.
10. JACKET TOPSIDE J-TUBE AND RISERS UPDATED BASED ON DRAWING ROND-EW-NDWG-30-0170.
11. 500m PLATFORM SAFETY ZONE RESTRICTED AREA APPLIES FOR FISHING/TRAWLIN ACTIVITY.
12. 6m x 6m EXCLUSION ZONE TO BE USED FOR FUTURE PLACEMENT OF ANODE SLED.
13. CONCRETE FLEXIBLE MATTRESSES TO BE PLACED AS A FOUNDATION UNDER THE LENGTH OF THE CTZ (APPROX. 60m). MATTRESSES ARE TO BE 6m x 3m X 0.15m, A TOTAL OF APPROXIMATELY 20 ARE REQUIRED ON ONE LAYER. TO BE FINALIZED DURING DETAILED DESIGN.

NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

TABEL COORDONATE / COORDINATE TABLE

ELEMENT / ITEM	X	Y
CENTRU PLATFORMA / PLATFORM CENTRE	298,534.29	947,751.25
CENTRU CUTIE CONEXIUNE INCALZIRE ELECTRICA DIRECTA / DEH JUNCTION BOX CENTRE	298,473.76	947,972.17
RACORD DISPOZITIV CAPAT DE CONDUCTA DE ADUCTIUNE / FLET CONNECTOR FACE	298,468.41	947,769.65
RACORD DISPOZITIV CAPAT DE CONDUCTA DE GAZE NATURALE / PLET CONNECTOR FACE	298,595.20	947,777.93

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- CONDUCTA DE ADUCTIUNE DOMINO / DOMINO FLOWLINE
- SISTEM OMBILICAL DOMINO / UMBILICAL DOMINO
- CABLU INCALZIRE ELECTRICA DIRECTA / DEH CABLE
- FIBRA OPTICA / FIBER OPTIC CABLE
- SISTEM OMBILICAL PELICAN / UMBILICAL PELICAN
- CONDUCTA DE ADUCTIUNE DE TIP FLEXIBIL PELICAN / PELICAN FLEXIBLE FLOWLINE

NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. LINIA PUNCTATA REPREZINTA AMBARCATIUNE TIPICA PENTRU MONTAJ CONDUCTA (200m x 46m).
2. CONDUCTA DE GAZE NATURALE, CONDUCTA DE ADUCTIUNE SI CELELALTE CONEXIUNI SUNT PLANIFICATE PENTRU A FI INSTALATE MAINTEA MONTARII SUPRASTRUCTURII.
3. ESTE NECESARA PROTECTIE IMPOTRIVA IMPACTULUI SI AGATARII CU ECHIPAMENTUL DE TRAULARE – SE VA CONSULTA PLANSA ROND-EW-YDDWG-20-0002 PENTRU DETALIILE STRUCTURII DE PROTECTIE. STRUCTURA DE PROTECTIE VA FI PROIECTATA DE CONTRACTORUL EPC, STRUCTURA NEVOPSITA VA FI CONFIRMATA DE CONTRACTORUL INCALZIRII ELECTRICE DIRECTE.
4. PLACA DE INCHIDERE A INCALZIRII DIRECTE ESTE LOCALIZATA LA 50m NOMINAL SI 30m NINIMUM DEPARTARE DE CAPATUL CONDUCTEI DE ADUCTIUNE DOMINO 18" SI STRUCTURILE SUBACVATICE, ACEASTA SECTIUNE ESTE NEINCALZITA. PENTRU ZONA DE CURENT DE TRANSFER (CTZ) SE VA CONSULTA PLANSA ROND-EW-YDDET-21-0001.
5. DIMENSIUNILE MOSORULUI SUNT CONFIRMATE DE PLANSELE ROND-EW-YDLAY-21-0015- PLAN AMPLASARE MOSOR DOMINO RISER SI ROND-EW-YDLAY-22-0010 – PLAN AMPLASARE MOSOR RISER 30". DIMENSIUNILE TUBULUI-J SUNT CONFIRMATE DE PLANSA ROND-EW-NDDWG-30-0170- PLAN ASAMBLARE TUB-J.
6. PLANSA CONFORM INFORMATIILOR EXISTENTE DESPRE PLATFORMA SI INCALZIREA ELECTRICA DIRECTA SI A DATELOR FURNIZATE PANA LA MOMENTUL ACTUAL, DATE CARE POT FI ACTUALIZATE.

NOTES

1. DASHED LINE REPRESENTS A TYPICAL PIPELINE INSTALLATION VESSEL (200m x 46m).
2. PIPELINE, FLOWLINE AND ASSOCIATED TIE-IN ARE CURRENTLY PLANNED TO BE INSTALLED BEFORE TOPSIDE INSTALLATION.
3. PROTECTION AGAINST POSSIBLE TRAWL GEAR IMPACT AND SNAGGING IS REQUIRED, SEE DRAWING ROND-EW-YDDWG-20-0002 FOR DETAILS OF PROTECTION STRUCTURES. EPC TO DESIGN THE PROTECTION STRUCTURE, UNPAINTED STRUCTURE TBC BY DEH CONTRACTOR
4. DEH TERMINATION PLATE LOCATED 50m NOMINAL AND 30m MINIMUM AWAY FROM 18" DOMINO FLET AND SUBSEA STRUCTURES, THIS SECTION IS UNHEATED. FOR CURRENT TRANSFER ZONE (CTZ) REFER TO ROND-EW-YDDET-21-0001.
5. SPOOL DIMENSIONS CONFIRMED BY ROND-EW-YDLAY-21-0015 AND ROND-EW-YDLAY-22-0010 DOMINO RISER SPOOL GA AND 30" RISER SPOOL GA. J-TUBE DIMENSIONS CONFIRMED BY ROND-EW-NDDWG-30-0170 TO 0177 J-TUBE GENERAL ARRANGEMENT.
6. DRAWING BASED UPON CURRENT PLATFORM AND DEH INFORMATION AND PROVIDED DATA WHICH MAY BE UPDATED.

DOCUMENTE REFERINTA / REFERENCE DOCUMENTS

NUMAR PLANSA	DESCRIERE	DRAWING NUMBER	DESCRIPTION
ROND-EW-YDPAL-24-0003/ 0036	FISA ALINIAMENT CONDUCTA DE GAZE NATURALE	ROND-EW-YDPAL-24-0003/ 0036	PRODUCTION ALIGNMENT SHEETS
ROND-EW-YDPAL-21-0004/ 0011	FISA ALINIAMENT CONDUCTA ADUCTIUNE DOMINO	ROND-EW-YDPAL-21-0004/ 0011	DOMINO FLOWLINE ALIGNMENT SHEETS
ROND-EW-YDPAL-21-0002	FISA ALINIAMENT CONDUCTA ADUCTIUNE PELICAN SUD	ROND-EW-YDPAL-21-0002	PELICAN SOUTH FLOWLINE ALIGNMENT SHEET
ROND-EW-YDLAY-21-0015	PLAN AMPLASARE MOSOR RISER DOMINO	ROND-EW-YDLAY-21-0015	DOMINO RISER SPOOL G.A.
ROND-EW-YDLAY-22-0010	PLAN AMPLASARE MOSOR RISER 30"	ROND-EW-YDLAY-22-0010	30" RISER SPOOL G.A.
ROND-EW-YDLAY-21-0006/ 0007	DETALII CONEXIUNE MOSOR DOMINO	ROND-EW-YDLAY-21-0006/ 0007	DOMINO SPOOL TIE-IN DETAILS
ROND-EW-YDLAY-21-0012/ 0013	DETALII CONEXIUNE MOSOR 30"	ROND-EW-YDLAY-21-0012/ 0013	30" SPOOL TIE-IN DETAILS
ROND-EW-YRRPT-21-0046	RAPORT PLAN ANOD INCALZIRE ELECTRICA DIRECTA	ROND-EW-YRRPT-21-0046	DEH ANODE LAYOUT REPORT
ROND-EW-YRRPT-21-0047	INFERENTA INCALZIRE ELECTRICA DIRECTA ASUPRA LINIILOR SI STRUCTURILOR ADIACENTE	ROND-EW-YRRPT-21-0047	DEH INFERENCE ON ADJACENT LINES AND STRUCTURES
ROND-EW-YRRPT-20-0003	EVALUARE OBIECT LANSAT	ROND-EW-YRRPT-20-0003	DROPPED OBJECT ASSESSMENT
ROND-EW-YDDWG-20-0002	STRUCTURA PROTECTIE OBIECT LANSAT-PLAN AMPLASARE SALTELE	ROND-EW-YDDWG-20-0002	DROPPED OBJECT PROTECTION STRUCTURE - MATTRESSES G.A.
ROND-EW-YRRPT-24-0003	RAPORT PROIECTARE MOSOR RISER 30"	ROND-EW-YRRPT-24-0003	30" RISER SPOOL DESIGN REPORT
ROND-EW-NDDWG-30-0170/ 0177	PLAN AMPLASARE TUB-J	ROND-EW-NDDWG-30-0170/ 0177	J-TUBE GENERAL ARRANGEMENT

SCALA / SCALE BAR

METRI / METERS
0 5 25 50
SCALA ORIZONTALA 1:500 (FORMAT "A1") / HORIZONTAL SCALE 1:500 (AT "A1" SIZE)

PARAMETRII GEODEZIE SI PROIECTIE / GEODETIC & PROJECTION PARAMETERS

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dubiu Stereographica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PROJECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA / DATE	DESCRIERE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
1-F	19.04.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
1-E	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	I. DUMITRU	C. STEFAN	N. EREMIA
1-D	15.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	I. DUMITRU	C. STEFAN	N. EREMIA
1-C	21.01.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	I. DUMITRU	C. STEFAN	N. EREMIA
1-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
1-A	04.03.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR / CHECKER			I. BUTNARU		ANRE
MEMORIZATOR / REMEMBERER	REFERAT NR. / EXPERTIZA NR. / DATA / REFERAT NR. / EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE		NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR. 3B, 1867481, PLOIESTI
J29/3057/2007, RO 22904820
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORG	REV	APP	PROJ APP
1	17NOV17	RE-ISSUED FOR IFD	FK	EP	SS	JG
0	31AUG17	ISSUED FOR IFD	RO	EP	SS	JG
A	20JUN17	ISSUED FOR IDC	RO	EP	SS	

ExxonMobil
Exploration and Production Romania Limited

CONDUCTE DE ADUCTIUNE SI CONDUCTA GAZE NATURALE/ FLOWLINES AND PRODUCTION LINE

APROPIERE DE PLATFORMA (SWP) PLATFORMA (SWP) APPROACH

ARANJAMENT (CAZ RUTA DE BAZA) ARRANGEMENT (BASE CASE ROUTE)

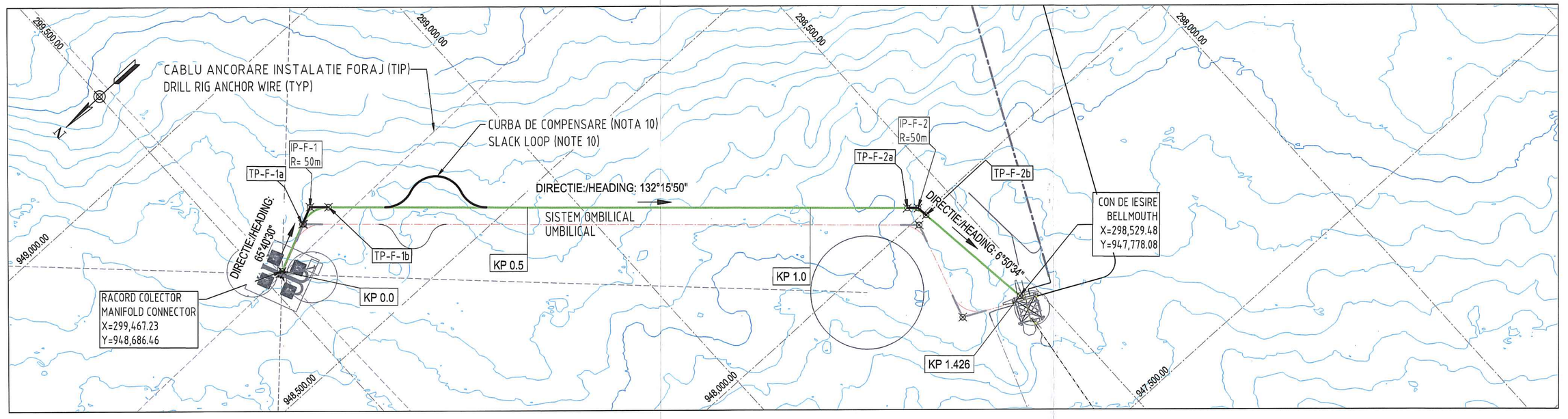
1:500	ROND-EW-YDPAL-22-0011-C	DTAC	1-F
SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.

A1+ (1092x594)

Appendix C. Onshore and Offshore Site Layout Plans

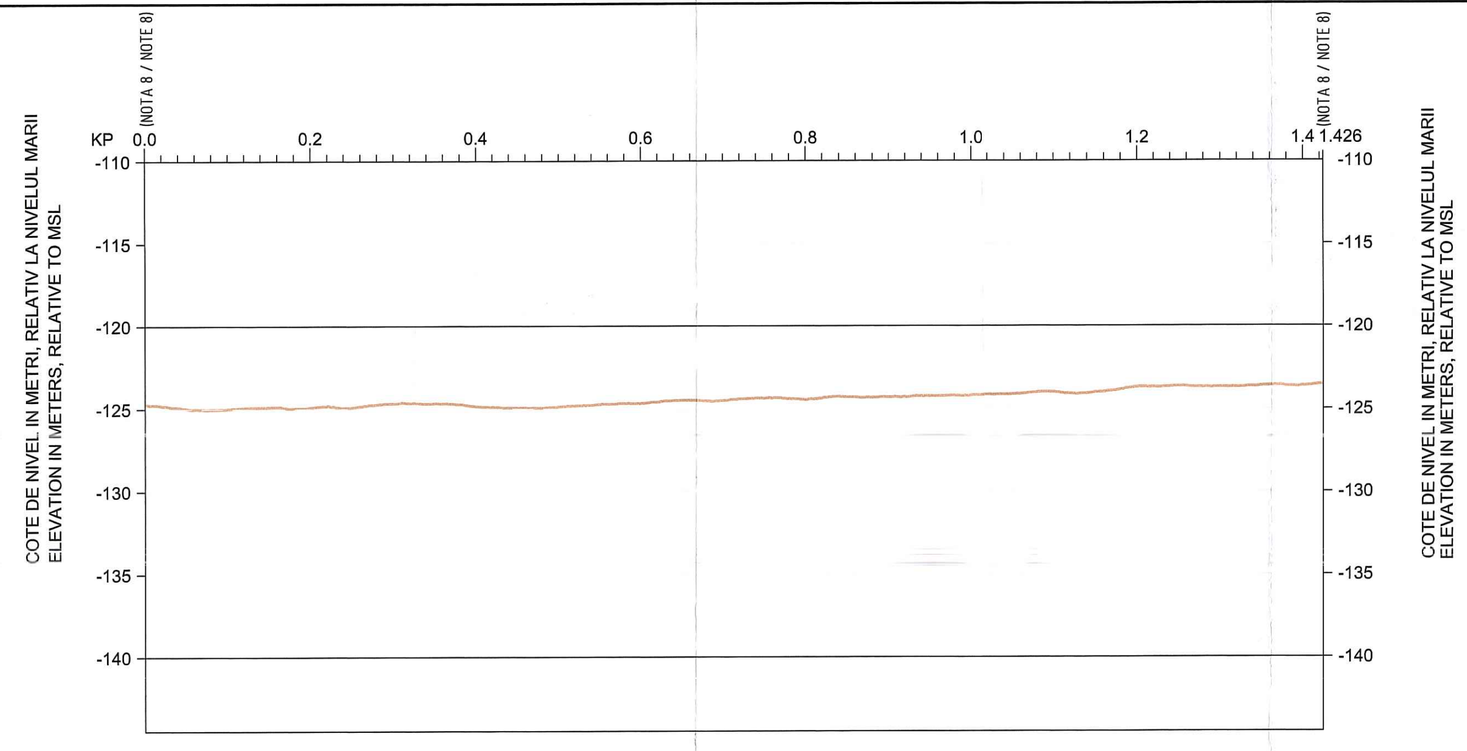
7 – Pelican flexible flowline alignment sheet

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:5,000)



NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.

PROFIL LONGITUDINAL CONDUCTA DE ADUCTIUNE / LONGITUDINAL PROFILE ALONG FLOWLINE



ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 5,000
SCALA VERTICALA / VERTICAL SCALE	1 : 250
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	20

TABEL COORDONATE / COORDINATE TABLE

	TP / IP	X	Y	KP	RAZA (m) / RADIUS (m)
RACORD COLECTOR	MANIFOLD CONNECTOR	299,467.23	948,686.46	0.000	
TP-F-1a	TP-F-1a	299,384.46	948,723.88	0.091	
IP-F-1	IP-F-1	299,354.49	948,737.42		50
TP-F-1b	TP-F-1b	299,330.15	948,715.30	0.149	
Surplus Start	Overage Start	299,256.02	948,647.94	0.249	
Surplus Sfarsit	Overage End	299,123.74	948,527.73	0.427	
TP-F-2a	TP-F-2a	298,571.52	948,025.88	1.172	
IP-F-2	IP-F-2	298,557.71	948,013.32		50
TP-F-2b	TP-F-2b	298,555.48	947,994.78	1.208	
CON DE IESIRE	BELLMOUTH	298,529.48	947,778.08	1.426	
PUNCT ANCORARE (PRINDERE) TUB J	J-TUBE HANG-OFF	NU SE APLICA/ NA	NU SE APLICA/ NA		18m (Min.)

TABEL COORDONATE SURPLUS / OVERAGE COORDINATE TABLE

	TP / IP	X	Y	KP/ LUNGIME / LENGTH	RAZA (m) / RADIUS (m)
Surplus Start - TPov1a	Overage Start - TPov1a	299,256.02	948,647.94	0.249/0	
IPov1	IPov1	299,233.24	948,627.24		50
TPov1b/2a	TPov1b/2a	299,205.05	948,638.00	55	
IPov2	IPov2	299,175.72	948,649.20		50
TPov2b/3a	TPov2b/3a	299,153.16	948,628.70	110	
IPov3	IPov3	299,130.15	948,607.79		50
TPov3b/4a	TPov3b/4a	299,137.95	948,579.60	165	
IPov4	IPov4	299,146.53	948,548.43		50
TPov4b - Surplus Sfarsit	TPov4b - Overage End	299,123.74	948,527.73	0.421/220	

DATE TEHNICE / ENGINEERING DATA

				KP 0.000	KP 0.091	KP 0.100	KP 0.149	KP 1.172	KP 1.208	KP 1.326	KP 1.426
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA DE CURBURA (m)	ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)		50			50		6° 50' 34"	
	TRAVERSARE CABLU		CABLE CROSSING	65° 40' 30"							
	TIP SOL LA SUPRAFATA FUNDULUI MARII		SURFACE SEABED SOIL	ARGILA (NOTA 4) / CLAY (NOTE 4)							
DATE CONDUCTA DE ADUCTIUNE (NOTA 7)	TIP FLEXIBIL; D. EXT. (mm)	FLOWLINE DATA (NOTE 7)	FLEXIBLE O.D. (mm)	398.0 (VA FI CONFIRMAT - NOTA 7 / TBC - NOTE 7)							
	TIP FLEXIBIL; D. INT. (inch)		FLEXIBLE I.D. (inch)	10.75							
	RIGIDITATE LA INDOIRE (kN/m²) / RIGIDITATE AXIALA (MN)		BENDING STIFFNESS (kN/m²) / AXIAL STIFFNESS (MN)	683 / 854 (VA FI CONFIRMAT - NOTA 7 / TBC - NOTE 7)							
	RAZA DE INDOIRE MINIMA (m) MONTAJ/ DEPOZITARE / IN OPERARE		MINIMUM BEND RADIUS (m) INSTALLATION / STORAGE / SERVICE	3.26 / 2.77 / 2.77 (VA FI CONFIRMAT - NOTA 7 / TBC - NOTE 7)							
	GREUTATE CONDUCTA DE ADUCTIUNE (kg/m) — IN AER (USCATA)		FLOWLINE WEIGHT (kg/m) — IN AIR (DRY)	197.4 (VA FI CONFIRMAT - NOTA 7 / TBC - NOTE 7)							
	IN APA — GOALA		SUBMERGED — EMPTY	69.9 (VA FI CONFIRMAT - NOTA 7 / TBC - NOTE 7)							
	IN APA — INUNDATA		FLOODED	132.1 (VA FI CONFIRMAT - NOTA 7 / TBC - NOTE 7)							
LUCRARI PRE-INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)	PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU SE APLICA / N/A							
	SUPORTI / SALTELE		SLEEPERS / MATTRESSES	NU SE APLICA / N/A							
LUCRARI POST-INSTALARE CONDUCTA	ADANCIME SANT (m)	POST-LAY INT. WORKS	TRENCHING DEPTH (m)	VA FI CONFIRMAT/ TBD							
	TIP UMPLUTURA / STRAT ACOPERIRE (m)		BACKFILLING TYPE / COVER TOP (m)	UMPLUTURA NATURALA / 0.2 (MIN.) / NATURAL BACKFILLING / 0.2 (MIN.)							
	DEPUNERE PIETRIS/AGREGAT		GRAVEL DUMPING	NU SE APLICA / N/A							
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)	SPECIFIC REQUIREM.	LAY TOLERANCE (m)	±2.5		±5					±2.5
	STRAT PIATRA / SALTELE		ROCK DUMP / MATTRESSES	NU SE APLICA / N/A							SALTELE/ MATTRESSES

NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numere care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN RAPORTUL DE CONSULTANTA AL PLATFORMEI PELICAN DIN 2017, RAPORTUL GEOFIZIC FINAL AL STUDIULUI GEOFIZIC, DOCUMENT FUGRO 160424.V3 PENTRU DEZVOLTAREA PROIECTULUI NEPTUN DEEP.
4. DATELE PRIVIND SOLUL DE LA FUNDUL MARII LUATE DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-FU-GRRPT-00-0015-002 ACOPERA PARTIAL ARIA TOTALA, STUDIUL GEOTEHNIC AFLANDU-SE IN DESFASURARE.
5. PENTRU DETALIILE PLANULUI DE ACCES A CONDUCTEI DE ADUCTIUNE LA PLATFORMA, SE VA CONSULTA DOC. ROND-EW-YDPAL-22-0011.
6. PENTRU DETALIILE PLANULUI DE ACCES A CONDUCTEI DE ADUCTIUNE DE TIP FLEXIBIL PELICAN LA SONDA, SE VA CONSULTA DOC. ROND-EW-YDPAL-22-0003.
7. DATELE CONDUCTEI DE ADUCTIUNE DE TIP FLEXIBIL VOR FI CONFIRMATE SI ACTUALIZATE DUPA DESEMNAREA FURNIZORULUI.
8. LUNGIMEA TOTALA ESTE EGALA CU 1,556m INCLUZAND LUNGIMEA TUBULUI J DE 130m DAR EXCLUDE SURPLUSUL DE APROXIMATIV 40m.
9. ORIENTARILE INDICATE DUPA NORDUL STEREO 70.
10. CURBA DE COMPENSARE INITIALA ESTE CONSIDERATA DE APROXIMATIV 40m. AJUSTAJUL INITIAL SI FINAL AL CURBEI DE COMPENSARE IN APROPIEREA CENTRULUI DE FORAJ VA FI DETERMINAT IN PROIECTUL DETALIAT.

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2017 CONSULTANCY REPORT PELICAN PLATFORM GEOPHYSICAL SURVEY FINAL GEOPHYSICAL REPORT, FUGRO DOCUMENT 160424.V3 FOR NEPTUN DEEP DEVELOPMENT.
4. SEABED SOIL DATA TAKEN FROM NEPTUN DEEP INTEGRATED REPORT ROND-FU-GRRPT-00-0015-002, PARTIALLY COVERS THE OVERALL AREA. GEOTECHNICAL SURVEY ON-GOING.
5. FOR DETAILS OF PELICAN FLOWLINE PLATFORM APPROACH LAYOUT REFER TO ROND-EW-YDPAL-22-0011.
6. FOR DETAILS OF PELICAN FLEXIBLE WELL APPROACH LAYOUT REFER TO DRAWING ROND-EW-YDLAY-22-0003.
7. FLEXIBLE DATA TO BE CONFIRMED AND UPDATED AFTER FLEXIBLE SUPPLY AWARD.
8. TOTAL LENGTH IS EQUAL TO 1,556m INCLUDING J-TUBE LENGTH OF 130m BUT EXCLUDING OVERAGE OF APPROXIMATELY 40m .
9. HEADING INDICATED IS RELATIVE TO STEREO 70 NORTH.
10. INITIAL SLACK LOOP OF APPROXIMATELY 40m ASSUMED. INITIAL AND FINAL SLACK ADJUSTMENT NEAR DRILL CENTRE TO BE DETERMINED DURING DETAIL DESIGN.

LEGENDA

- CONDUCTA DE ADUCTIUNE PELICAN
- PROFIL FUNDUL MARII
- CABLU ANCORARE PLATFORMA FORAJ
- SISTEM OMBILICAL

LEGEND

- PELICAN FLOWLINE
- SEABED PROFILE
- DRILL RIG ANCHOR WIRE
- UMBILICAL

SCALA

METRI
0 50 250 500
SCALA ORIZONTALA 1:5,000 (FORMAT "A1")

SCALE BAR

METERS
0 50 250 500
HORIZONTAL SCALE 1:5,000 (AT "A1" SIZE)

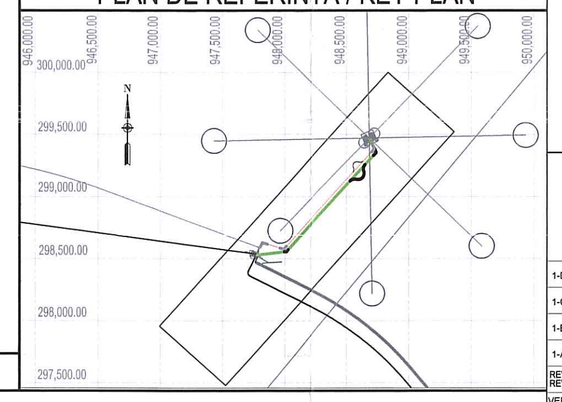
PARAMETRII GEODEZIE SI PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA / KEY PLAN



PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI/ ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
1-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-C	11.01.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
1-A	23.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR / CHECKER			I. BUTNARIU		ANNE
DESIGNER / DESIGNER	REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE		NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / ENGINEERS

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. HEDERU VODA NR.10, 100145, PLOIESTI
J29/307/12007, RO 32804820
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORG	REV	APP	PROJ APP
1	08SEP-17	RE-ISSUED FOR IFD	RO	EP	SS	JG
0	14JUN17	ISSUED FOR IFD	RO	EP	SS	JG
A	11MAY17	ISSUE FOR IDC	RO	EP	SS	

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE ADUCTIUNE DE TIP FLEXIBIL PELICAN/ PELICAN FLEXIBLE FLOWLINE
FISA ALINIAMENT
ALIGNMENT SHEET
FISA NR. 1 DIN 1
SHEET 1 OF 1

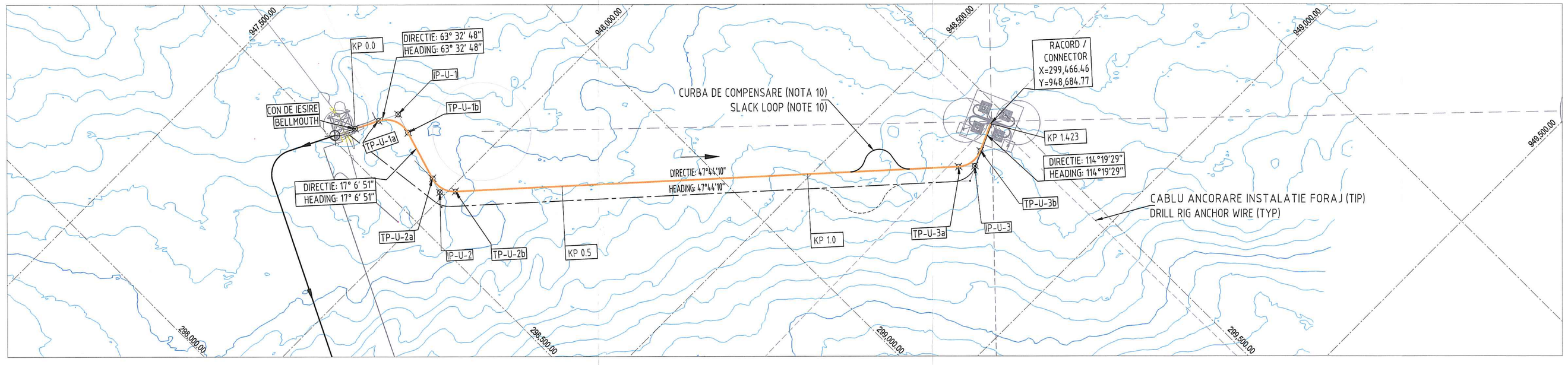
SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 5000	ROND-EW-YDPAL-21-0002-C	DTAC	1-D

A1+ (1092x594)

Appendix C. Onshore and Offshore Site Layout Plans

8 – Pelican umbilical alignment sheet

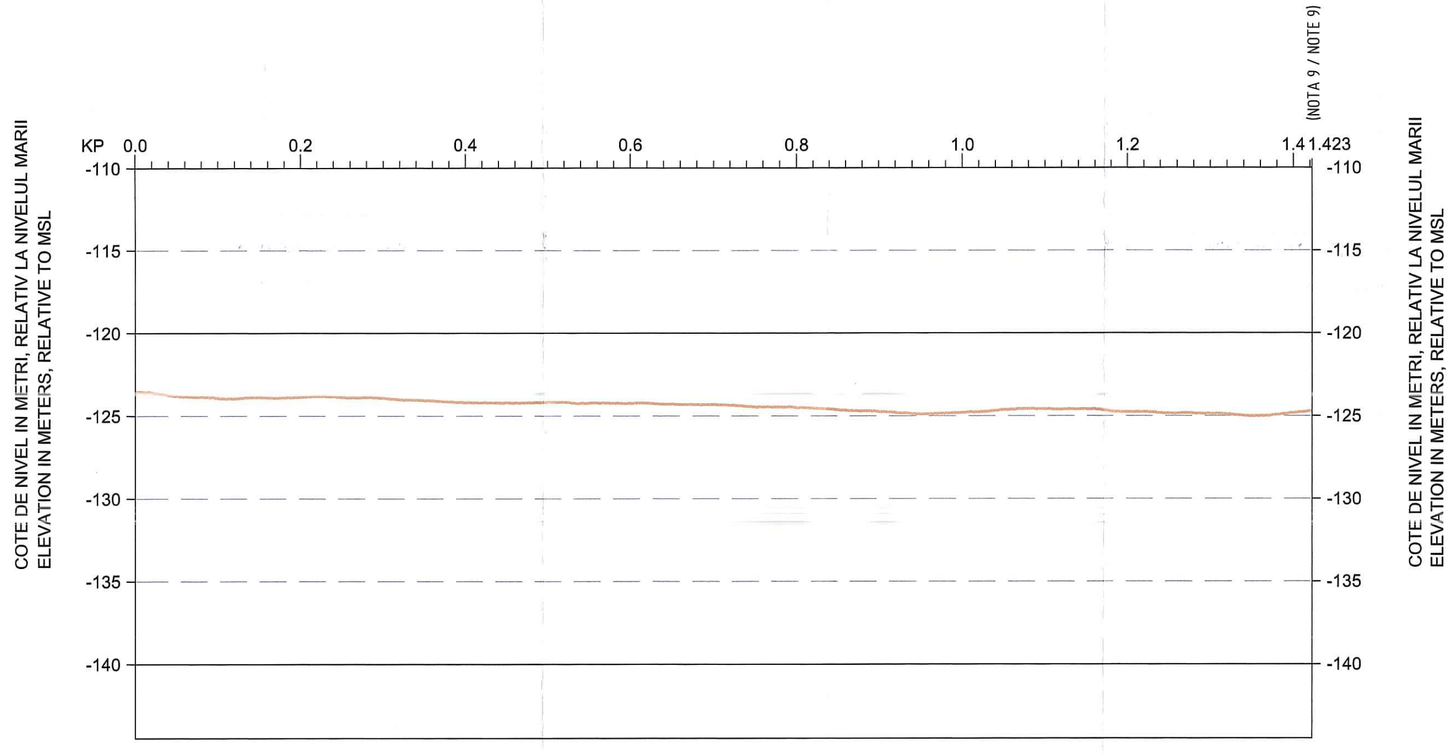
PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:5,000)



PROFIL LONGITUDINAL SISTEM OMBILICAL / LONGITUDINAL PROFILE ALONG UMBILICAL

ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT



SCALA ORIZONTALA / HORIZONTAL SCALE 1 : 5,000
SCALA VERTICALA / VERTICAL SCALE 1 : 250
EXAGERARE VERTICALA / VERTICAL EXAGGERATION 20

TABEL COORDONATE / COORDINATE TABLE

	TP / IP	X	Y	KP	RAZA (m) / RADIUS (m)
	TP / IP	X	Y	KP	RADIUS (m)
PUNCT ANCORARE (PRINDERE) TUB J	J-TUBE HANG-OFF	NU SE APLICA/ NA	NU SE APLICA/ NA	-0.13	18m (Min.)
CON DE IESIRE	BELLMOUTH	298,546.51	947,776.63	0.0	
TP-U-1a	TP-U-1a	298,591.35	947,798.94	0.050	
IP-U-1	IP-U-1	298,629.41	947,817.88		50
TP-U-1b	TP-U-1b	298,616.90	947,858.51	0.120	
TP-U-2a	TP-U-2a	298,585.84	947,959.38	0.226	
IP-U-2	IP-U-2	298,576.47	947,989.79		50
TP-U-2b	TP-U-2b	298,600.02	948,011.18	0.282	
Surplus Start	Overage Start	299,196.25	948,553.08	1.086	30
Surplus Sfarsit	Overage End	299,284.37	948,633.10	1.205	30
TP-U-3a	TP-U-3a	299,358.49	948,700.46	1.306	
TP-U-3	TP-U-3	299,382.83	948,722.57		50
TP-U-3b	TP-U-3b	299,412.80	948,709.03	1.364	
RACORD	CONNECTOR	299,466.46	948,684.77	1.423	

DATE TEHNICE / ENGINEERING DATA

| | | |

Appendix C. Onshore and Offshore Site Layout Plans

9 – Layout plan of Pelican umbilical & flexible flowline within the area of PSDC1 drill center

TABEL LUNGIMI FIRE DE LEGATURA (NOTA 8)
FLYING LEAD LENGTH TABLE (NOTE 8)

ELEMENT ITEM	INTERCONEXIUNE/ JUMPER	CABLU DE LEGATURA ELECTRIC 1 (m) EFL1 (m)	CABLU DE LEGATURA ELECTRIC 2 (m) EFL2 (m)	FURTUN DE LEGATURA HIDRAULIC (m) HFL (m)
CAP DE ERUPTIE 1 TREE 1	65.6	67.4	69.3	91.7
CAP DE ERUPTIE 2 TREE 2	65.6	67.4	69.3	88.9
CAP DE ERUPTIE 3 TREE 3	65.6	70.3	72.2	88.0
CAP DE ERUPTIE 4 TREE 4	65.6	70.3	72.2	87.7
RELOCARE FORAJ IN POZITIA 1 RE-SPUD LOC. 1	65.6	-	-	-
RELOCARE FORAJ IN POZITIA 2 RE-SPUD LOC. 2	65.6	-	-	-

TOLERANTE/ TOLERANCES

ELEMENT ITEM	POZITIE POSITION	DIRECTIE HEADING	VERTICAL VERTICAL
MANIFOLD MANIFOLD	2m (RAZA / RADIUS)	± 5°	± 2°
CAP DE ERUPTIE TREE	2m (RAZA / RADIUS)	± 5°	± 2°

NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonateior WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

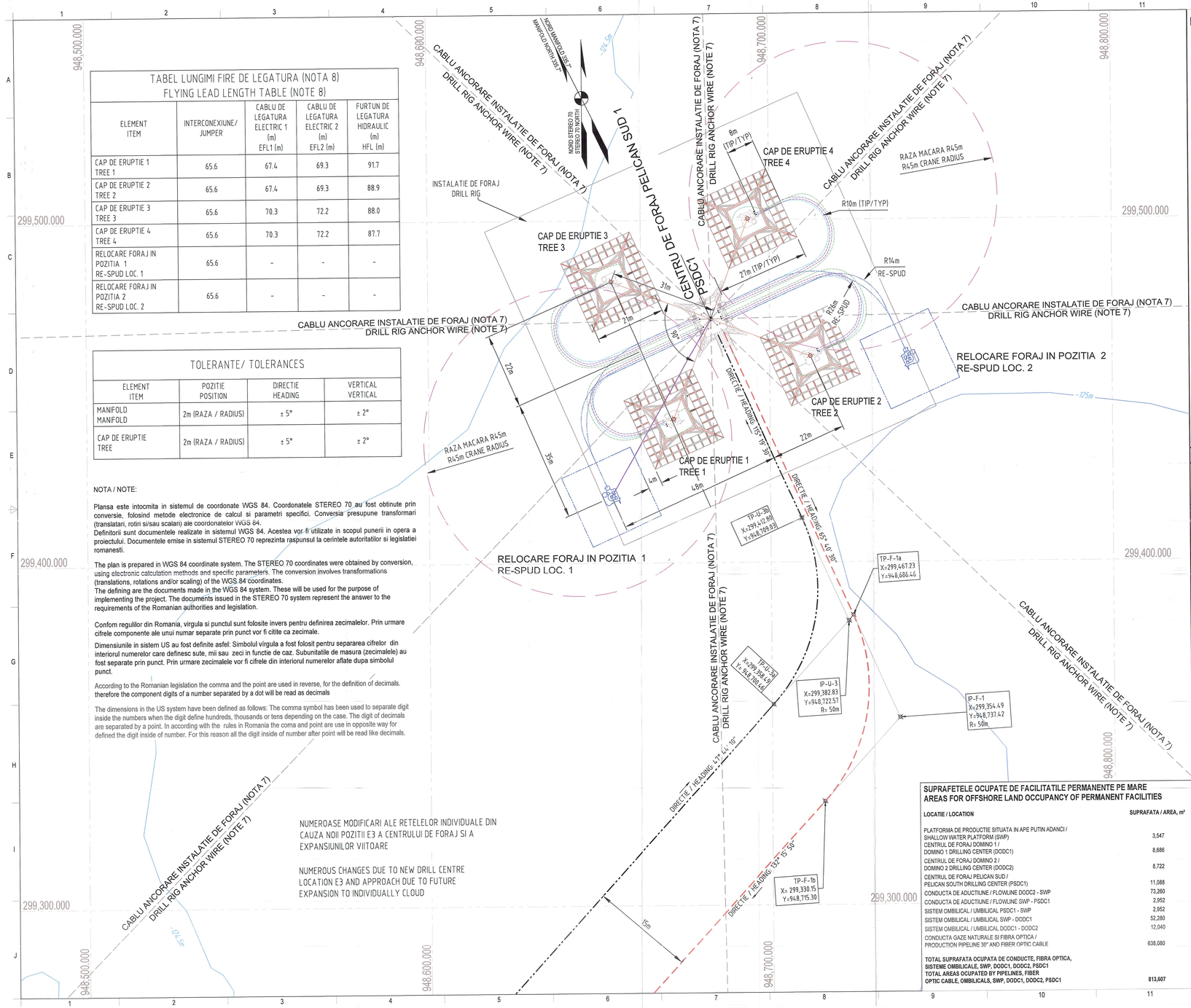
The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Confom reguilor din Romania, virgula si punctul sunt folosite invers pentru definirea zecimalelor. Prin urmare cifrele componente ale unui numar separate prin punct vor fi citite ca zecimale.

Dimensiunile in sistem US au fost definite asfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals. therefore the component digits of a number separated by a dot will be read as decimals

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.



SUPRAFETELE OCUPATE DE FACILITATILE PERMANENTE PE MARE
AREAS FOR OFFSHORE LAND OCCUPANCY OF PERMANENT FACILITIES

LOCATIE / LOCATION	SUPRAFATA / AREA, m²
PLATFORMA DE PRODUCTIE SITUATA IN APE PUTIN ADANCI / SHALLOW WATER PLATFORM (SWP)	3,547
CENTRUL DE FORAJ DOMINO 1 / DOMINO 1 DRILLING CENTER (DODC1)	8,686
CENTRUL DE FORAJ DOMINO 2 / DOMINO 2 DRILLING CENTER (DODC2)	8,722
CENTRUL DE FORAJ PELICAN SUD / PELICAN SOUTH DRILLING CENTER (PSDC1)	11,088
CONDUCTA DE ADUCTIUNE / FLOWLINE DODC2 - SWP	73,260
CONDUCTA DE ADUCTIUNE / FLOWLINE SWP - PSDC1	2,952
SISTEM OMBILICAL / UMBILICAL PSDC1 - SWP	2,952
SISTEM OMBILICAL / UMBILICAL SWP - DODC1	52,280
SISTEM OMBILICAL / UMBILICAL DODC1 - DODC2	12,040
CONDUCTA GAZE NATURALE SI FIBRA OPTICA / PRODUCTION PIPELINE 30" AND FIBER OPTIC CABLE	638,080
TOTAL SUPRAFATA OCUPATA DE CONDUCTE, FIBRA OPTICA, SISTEME OMBILICALE, SWP, DODC1, DODC2, PSDC1	
TOTAL AREAS OCUPATED BY PIPELINES, FIBER OPTIC CABLE, OMBILICALS, SWP, DODC1, DODC2, PSDC1	**813,607**

NUMEROASE MODIFICARI ALE RETELELOR INDIVIDUALE DIN CAUZA NOII POZITII E3 A CENTRULUI DE FORAJ SI A EXPANSIUNILOR VIITOARE

NUMEROUS CHANGES DUE TO NEW DRILL CENTRE LOCATION E3 AND APPROACH DUE TO FUTURE EXPANSION TO INDIVIDUALLY CLOUD

LEGENDA

- FURTUNE DE LEGATURA HIDRAULICE
- CABLURI DE LEGATURA ELECTRICE
- INTERCONEXIUNE SONDA
- SISTEM OMBILICAL
- CONDUCTA DE ADUCTIUNE DE TIP FLEXIBIL 10.75-INCH D.I.
- CABLU ANCORARE INSTALATIE DE FORAJ
- RELOCARE INTERCONEXIUNIE

ABREVIERI

EFL - CABLURI DE LEGATURA ELECTRICE
HFL - FURTUNE DE LEGATURA HIDRAULICE
PSDC-1 - CENTRU DE FORAJ PELICAN SUD 1
SDU - UNITATE DISTRIBUTIE SUBMARINA
UTA - ANSAMBLU TERMINATIE SISTEM OMBILICAL
SWP - PLATFORMA DE PRODUCTIE LOCALIZATA IN APE PUTIN ADANCI

LEGEND

- HYDRAULICAL FLYING LEAD
- ELECTRICAL FLYING LEAD
- WELL JUMPER
- UMBILICAL
- 10.75-INCH I.D. FLEXIBLE FLOWLINE
- DRILL RIG ANCHOR WIRE
- RE-SPUD JUMPER

ABBREVIATIONS

EFL - ELECTRICAL FLYING LEAD
HFL - HYDRAULIC FLYING LEAD
PSDC-1 - PELICAN SOUTH DRILL CENTRE 1
SDU - SUBSEA DISTRIBUTION UNIT
UTA - UMBILICAL TERMINATION ASSEMBLY
SWP - SHALLOW WATER PLATFORM

SCALA

METRI
0 5 25 50
SCALA ORIZONTALA 1:500 (FORMAT "A1")

SCALE BAR

METERS
0 5 25 50
HORIZONTAL SCALE 1:500 (AT "A1" SIZE)

NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optic cables, hydraulic pipes, chemical injection pipes, etc., in a joint metal coating.

TABEL COORDONATE
COORDINATE TABLE

ELEMENT ITEM	X	Y	DIRECTIE HEADING
MANIFOLD (CENTRU) MANIFOLD (CENTER)	299,471.10	948,682.67	155.7°
CAP DE ERUPTIE 1 / TREE 1	299,441.95	948,671.66	245.8°
CAP DE ERUPTIE 2 / TREE 2	299,460.10	948,711.82	65.7°
CAP DE ERUPTIE 3 /TREE 3	299,482.11	948,653.51	245.8°
CAP DE ERUPTIE 4 / TREE 4	299,500.26	948,693.67	65.7°
NOD SISTEM OMBILICAL UMBILICAL HUB	299,467.23	948,686.46	NU SE APLICA N/A
NOD TUB FLEXIBIL FLEXIBLE HUB	299,466.47	948,684.77	NU SE APLICA N/A
RELOCARE FORAJ IN POZITIA 1 (NOTA 9) RE-SPUD LOC. 1 (NOTE 9)	299,419.35	948,653.26	335.7°
RELOCARE FORAJ IN POZITIA 2 (NOTA 9) RE-SPUD LOC. 2 (NOTE 9)	299,458.99	948,714.94	335.7°

PARAMETRII GEODEZIE SI PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

NOTE

1. INTERCONEXIUNE SONDA GAZE NATURALE LA MANIFOLD PELICAN:
   a. CONFIGURATIE FLEXIBILA FORMA "U".
   b. DIMENSIUNE NOMINALA 130.2mm (5-1/8") DI
   c. LUNGIME NOMINALA= 65.6m
   d. RACORDUL MANIFOLDULUI ESTE ORIZONTAL
   e. RACORDUL LA CAPUL DE ERUPTIE ESTE VERTICAL
2. CU LINIE PUNCTATA ALBASTRA CONFIGURATIE RELOCARE FORAJ, PENTRU CAPUL DE ERUPTIE CU CONFIGURATIE INTERCONEXIUNE: FORMA "L".
3. SURPLUS SISTEM OMBILICAL APROXIMATIV 40m, ALINIEREA BUCLEI FINALE VA FI DETERMINATA IN TIMPUL PROIECTARII DETALILOR DE EXECUTIE. SURPLUS CONDUCTA DE ADUCTIUNE DE TIP FLEXIBIL DE APROXIMATIV 40m SI ALINIEREA BUCLEI FINALE VA FI DETERMINATA IN TIMPUL PROIECTARII DETALILOR DE EXECUTIE.
4. CONTRACTORUL EPC 1 VA FINALIZA SEPARAREA RUTEI SISTEMULUI OMBILICAL SI CONDUCTEI DE TIP FLEXIBIL, ZONA SURPLUSULUI SI PROIECTAREA MONTAJULUI SAPATURA/MONTAJ INGROPAT (UN SANT SAU SANTURI SEPARATE) IN APROPIEREA MANIFOLDULUI CENTRULUI DE FORAJ.
5. MODEL SISTEM AMARARE CU ANCORA INSTALATIE FORAJ ASIGURATA DE EXXON MOBIL (MODEL ARANJAMENT TIPIC PENTRU SISTEM AMARARE CU 8 LINII).
6. LUNGIME SUPLIMENTARA DE 3m PENTRU TERMINATIA SISTEMULUI OMBILICAL /BUCLA AJUSTARE FLEXIBILA DACA ESTE NEVOIE PENTRU ALINIAMENT.
7. PUNCTELE DE CONTACT ALE CABLULUI DE ANCORARE PLATFORMA FORAJ CU SISTEMUL INTACT SUNT LA APROXIMATIV 550m DE LA LOCATIA PSDC1 (MODEL SISTEM AMARARE CU ANCORARE LUNG DE 1250m DE LA LOCATIA PSDC1) DACA NU ESTE ALTFEL SPECIFICAT.
8. LUNGIMEA FIRELOR DE LEGATURA NU IA IN CONSIDERARE COTA DE NIVEL VERTICALA.
9. RELOCARE FORAJ IN POZITIA 1 LUCREAZA PENTRU CAPETELE DE ERUPTIE 1 SAU 3, RELOCARE FORAJ IN POZITIA 2 FINALA LUCREAZA PENTRU CAPETELE DE ERUPTIE 2 SAU 4 SI COORDONATELE ACESTORA VOR FI CONFIRMATE IN BAZA MANIFOLDULUI SI CAPULUI DE ERUPTIE EXISTENT, SI IN BAZA LUNGIMII INTERCONEXIUNII CURENTE.
10. EPC 1 SA CONFIRME CA CONDUCTA DE TIP FLEXIBIL/SISTEMUL OMBILICAL NU SUNT SUB MACARALELE INSTALATIEI DE FORAJ.

DOCUMENTE DE REFERINTA

NUMAR PLANSA	DESCRIERE
ROND-EW-YBDBM-20-002	BAZELE PROIECTARII CONDUCTEI S.F.
ROND-ED-UDBAT-11-0036	INTERCONEXIUNE (FLEXIBILA), SONDA PELICAN, PLANSA LIMITA PROIECT
ROND-ED-YDDET-21-0025	PLANSA LIMITA S.F. CONDUCTA DE ADUCTIUNE PRODUCTIE PELICAN
ROND-EW-YDPAL-21-0002/0003	FISA ALINIAMENT CONDUCTA DE ADUCTIUNE PELICAN SUD
ROND-ED-UDLAY-12-0038/ 001 & 002	ARANJAMENT CONCEPTUAL STRUCTURA PROTECTIE SONDA UNICA
ROND-ED-YDLAY-12-0040	ARANJAMENT CONCEPTUAL SISTEM MANIFOLD PELICAN SUD
ROND-ED-YDPAL-22-0001/ 0002	FISA ALINIAMENT SISTEM OMBILICAL PELICAN

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTES

1. WELL JUMPER PRODUCTION WELL TO PELICAN MANIFOLD:
   a. FLEXIBLE CONFIGURATION U-SHAPE.
   b. NOMINAL SIZE 130.2mm (5-1/8") ID
   c. NOMINAL LENGTH= 65.6m
   d. MANIFOLD CONNECTOR IS HORIZONTAL
   e. TREE CONNECTOR IS VERTICAL
2. IN BLUE DASHED LINE RE-SPUD CONFIGURATION FOR THE TREE WITH JUMPER: L-SHAPE CONFIGURATION.
3. UMBILICAL OVERLENGTH APPROXIMATELY 40m FINAL SLACK ALIGNMENT TO BE DETERMINED DURING DETAIL DESIGN. FLEXIBLE FLOWLINE OVERLENGTH OF APPROXIMATELY 40m FINAL SLACK ALIGNMENT TO BE DETERMINED DURING DETAIL DESIGN.
4. EPC1 TO FINALIZE THE FLEXIBLE AND THE UMBILICAL ROUTE SEPARATION, LENGTH OVERAGE AREA AND TRENCHING/BURIAL DESIGN (ONE TRENCH OR SEPARATE TRENCH) NEAR THE MANIFOLD DRILL CENTER.
5. DRILL RIG ANCHOR MOORING PATTERN PROVIDED BY EXXON MOBIL (TYPICAL PATTERN FOR 8 LINE MOORING ARRANGEMENT)
6. 3m EXTRA LENGTH FOR TERMINATION OF UMBILICAL/FLEXIBLE ADJUSTMENT LOOP IF NEEDED FOR ALIGNMENT.
7. DRILL RIG ANCHOR WIRE TOUCH DOWN POINTS WITH SYSTEM INTACT IS APPROX. 550m FROM PSDC1 LOCATION. (ANCHOR MOORING PATTERN 1250m LONG FROM PSDC1 LOCATION) UNLESS NOTED OTHERWISE.
8. FLYING LEADS LENGTH DOES NOT TAKE IN TO ACCOUNT THE VERTICAL ELEVATION.
9. FINAL RE-SPUD LOCATION 1 IS WORKING FOR TREE NUMBER 1 OR 3, FINAL RE-SPUD LOCATION 2 IS WORKING FOR TREE NUMBER 2 OR 4, AND ITS COORDINATE WILL BE CONFIRMED BASED ON EXISTING MANIFOLD AND TREE, AND BASED ON THE CURRENT JUMPER LENGTH.
10. EPC1 TO CONFIRM FLEXIBLE/UMBILICAL ARE NOT UNDER THE DRILL RIG CRANES.

DOCUMENTE DE REFERINTA

DRAWING NUMBER	DESCRIPTION
ROND-EW-YBDBM-20-002	PIPELINE DESIGN BASIS
ROND-ED-UDBAT-11-0036	PELICAN WELLHEAD JUMPER (FLEXIBLE), FEED BATTERY LIMIT DRAWING
ROND-ED-YDDET-21-0025	PELICAN PRODUCTION FLOWLINE FEED BATTERY LIMIT DRAWING
ROND-EW-YDPAL-21-0002/0003	PELICAN SOUTH FLOWLINE ALIGNMENT SHEET
ROND-ED-UDLAY-12-0038/ 001 & 002	SINGLE WELL PROTECTIVE STRUCTURE CONCEPTUAL ARRANGEMENT
ROND-ED-YDLAY-12-0040	PELICAN SOUTH MANIFOLD SYSTEM CONCEPTUAL ARRANGEMENT
ROND-ED-YDPAL-22-0001/ 0002	PELICAN UMBILICAL ALIGNMENT SHEETS

ACRONIME

TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS

TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

PROIECT NEPTUN DEEP
NEPTUN DEEP PROJECT

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
2-F	19.04.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	A. CUSMUTRU	C. STEFAN	N. EREMIA
2-E	12.03.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	A. CUSMUTRU	C. STEFAN	N. EREMIA
2-D	15.02.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	A. CUSMUTRU	C. STEFAN	N. EREMIA
2-C	12.02.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	A. CUSMUTRU	C. STEFAN	N. EREMIA
2-B	17.06.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	25.02.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR CHECKER			I. BUTNARIU		ANRE

VERIFICATOR/EXPERT CHECKER/EXPERT	REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EAGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.18, 100145, PLOIESTI
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
2	01SEP17	ISSUED FOR IFD	RO	EP	SS	JG
1	23JUN17	ISSUED FOR IFD	RO	EP	SS	JG
0	15JUN17	ISSUED FOR IFD	RO	EP	SS	JG
A	12MAY17	ISSUE FOR IDC	RO	EP	SS	

ExxonMobil
Exploration and Production Romania Limited

SISTEM OMBILICAL PELICAN SI CONDUCTA DE ADUCTIUNE DE TIP FLEXIBIL
PELICAN UMBILICAL & FLEXIBLE FLOWLINE

PLAN DE SITUATIE
IN APROPIEREA SONDEI PSDC1
WELL APPROACH PSDC1
LAYOUT

1:500	ROND-EW-YDLAY-22-0003-C	DTAC	2-F
SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.

A1+ (1092x594)

Appendix C. Onshore and Offshore Site Layout Plans

10 – Domino flowline alignment sheets

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)

MATCH POINT START	
X	Y
279,817.86	964,874.81

MATCH POINT END	
X	Y
282,362.44	960,567.50

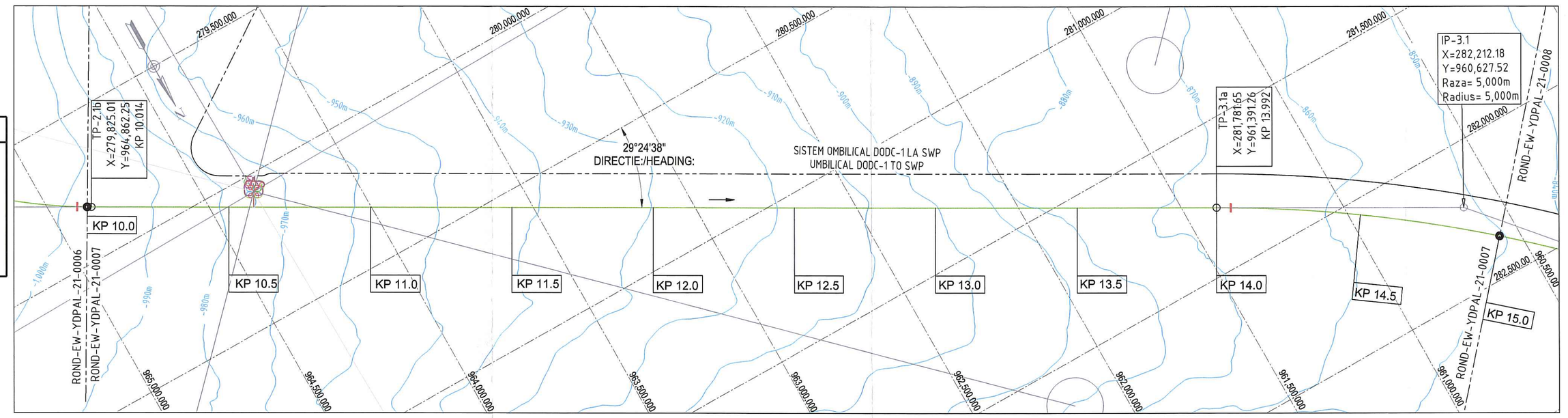
PUNCT LEGATURA DE INCEPUT	
X	Y
279,817.86	964,874.81

PUNCT LEGATURA DE FINAL	
X	Y
282,362.44	960,567.50

LEGENDA / LEGEND

- CONDUCTA DE ADUCTIUNE DOMINO / DOMINO FLOWLINE
- SISTEM OMBILICAL DOMINO/ DOMINO UMBILICAL
- PROFIL FUNDUL MARII / SEABED PROFILE
- SUPORT CONDUCTA / SLEEPER
- CABLURI ANCORAJ SI ZONA EXCLUDERE ANCORA / MOORING LINES & ANCHOR EXCLUSION ZONE

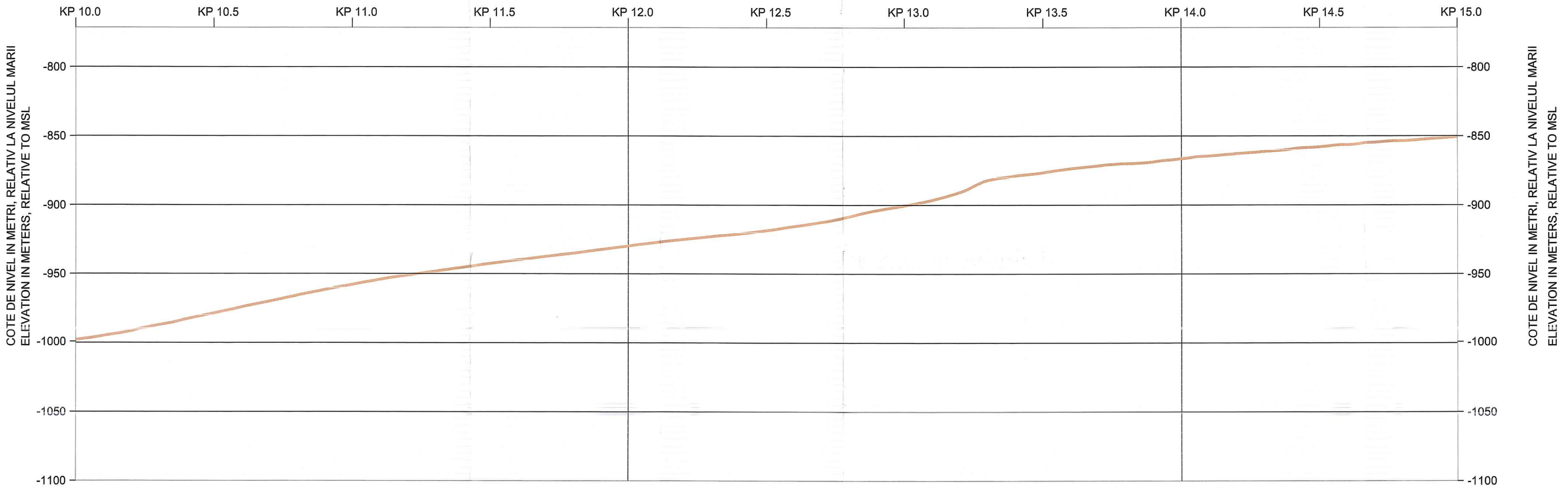
NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE

ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT



SCALA ORIZONTALA / HORIZONTAL SCALE 1 : 10,000
SCALA VERTICALA / VERTICAL SCALE 1 : 1,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION 5

DATE TEHNICE / ENGINEERING DATA

ELEMENTE TRASEU	ORIENTARE ('N) / RAZA DE CURBURA (m)	ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)	29° 24' 38"		5000
	TRAVERSARE CABLU / CONDUCTA		CABLE / PIPELINE CROSSING	1,750	NU EXISTA / NONE	
	TIP SOL LA SUPRAFATA FUNDULUI MARII		SURFACE SEABED SOIL	ZONA 1 - ARGILA VERZUI-INCHIS CU REZISTENTA FOARTE SCAZUTA (NOTA 4) / ZONE 1 - EXTREMELY LOW STRENGTH DARK GREENISH CLAY (NOTE 4)		
DATE CONDUCTA	TIP OTEL / D. EXT. (mm) / GROSIME PERETE (mm)	PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SMLS 450 SFDPU / 355.6 / 21.8	DNV SAWL 450 SFDPU / 457.2 / 26.1	
	GROSIME PERETE DISP. ANTIDEFORMARI(mm)/ INTERVAL (m)		BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	NU EXISTA / NONE	29.7 / 1000	
	STRAT ANTI-COROZIV/GROSIME(mm)/DENSITATE(kg/m³)		ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	NU SE APLICA / N/A		
	STRAT TERMOIZOLANT/GROSIME (mm)/DENSITATE (kg/m³)		EXT. THER. INS. COAT./THICK (mm)/DENSITY (kg/m³)	FBE + POLIPROPILENA SINTETICA / 75 / 790 (NOTA 11) / FBE + SYNTACTIC POLYPROPYLENE / 75 / 790 (NOTE 11)		
	STRAT BETON / STRAT INTERIOR PROTECTIE		CONCRETE COATING / INTERNAL COATING	NU EXISTA / NONE		
	TIP SUDURA/TIP UMPLUTURA/DENSITATE (kg/m³)		FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	1 IMBINARE ANOD DUBLA / DOUBLE ANODE JOINT	1 IMBINARE ANOD DUBLA / 1 DOUBLE ANODE JOINT POLIURETAN / POLYURETHANE / 950 (TIP / TYP)	
	TIP ANOD PROTECTIE / INTERVAL PLASARE INR. DE SEGMENTE		ANODE BRACELETS TYPE / SPACING (joints)	ALUMINIU (300mm x 50mm) 1 LA 24 SEGMENTE / AL (300mm x 50mm) / 1 EVRY 24 JOINTS		
	GREUTATE CONDUCTA (kN/m) — IN AER (USCATA) (kN/m)		PIPELINE WEIGHT (kN/m) — IN AIR (DRY) (kN/m)	2.5459	3.6927	
	GREUTATE CONDUCTA (kN/m) — IN APA — GOALA (kN/m) / SG		SUBMERGED — EMPTY (kN/m) / SG	0.5278 / 1.26	0.7820 / 1.27	
	GREUTATE CONDUCTA (kN/m) — IN APA — INUNDATA (kN/m) / SG		SUBMERGED — FLOODED (kN/m) / SG	1.2963 / 1.64	2.0769 / 1.71	
	GREUTATE CONDUCTA (kN/m) — IN APA — FUNCTIONARE (kN/m) / SG		SUBMERGED — OPERATION (kN/m) / SG	0.6050 (IN MEDIE/ AVERAGE) / 1.30	0.9361 (IN MEDIE / AVERAGE) / 1.32	
DATE INCALZIRE ELECTRICA DIRECTA (NOTE 13)	GREUTATE CABLU DEH (kN/m) — D. EXT. (mm)	DEH DATA (NOTE 13)	DEH CABLE WEIGHT (kN/m) — O.D. (mm)	125		
	GREUTATE CABLU DEH (kN/m) — IN AER (USCATA) (kg/m)		IN AIR (DRY) (kg/m)	43		
	GREUTATE CABLU DEH (kN/m) — IN APA (kg/m) / SG		SUBMERGED (kg/m) / SG	32 / 3.9		
	TIP LEGATURI/NR. DE LEGATURI PE SEGMENT		TYPE OF STRAP/No. OF STRAPS PER JOINT	VA FI CONFIRMAT / T.B.D.		
LUCRARI PRE-INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)	PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE		
	SUPORTI		SLEEPERS			INITIATOR FLAMBAJ (NOTA 9)/BUCKLE INITIATOR BI-18-01 (NOTE 9)
LUCRARI POST-INSTALARE CONDUCTA	ADANCIME SANT (m)	POST-LAY INT. WORKS	TRENCHING DEPTH (m)	NU SE APLICA / N/A		
	TIP UMPLUTURA / INALTIME STRAT ACOPERIRE (m)		BACKFILLING TYPE / COVER TOP (m)	NU SE APLICA / N/A		
	DEPUNERE AGREGAT/PIETRIS		GRAVEL DUMPING	NU SE APLICA / N/A		
LUNGIMEA TRONSON ADMISA	INSTALARE (m)	ALLOWABLE SPAN LENGTH (NOTE 12)	INSTALLATION (m)	43.5	62.0	
	HYDRO-TEST (m)		HYDROTEST (m)	28.1	23.7	29.1
	FUNCTIONARE (m)		OPERATION (m)	33.0	39.4	
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (+/-m)	SPECIFIC REQUIREM.	LAY TOLERANCE (+/-m)	±2 ±1.5	±10	±2 ±10
	ALTELE		OTHER	CTZ ITA		

KP 10.000 / KP 10.014 / KP 10.064 / KP 10.500 / KP 10.563 / KP 10.588 / KP 11.088 / KP 11.700 / KP 12.202 / KP 13.942 / KP 13.992 / KP 14.042 / KP 14.142 / KP 15.000

2x 14" ROBINETE DE IZOLARE / 2x 14" ISOLATION VALVES

NOTA / NOTE:

Planse este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numere care definesc suite, mil sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATE IN 2014, DOCUMENT FUGRO 131135-R-001(03). PENTRU PROIECTUL NEPTUN DEEP: BATIMETRIA PENTRU ACCESUL LA LOCATIA PLATFORMEI A FOST ACTUALIZATA PRIN DOCUMENTUL FUGRO 160424.V3 (2017)
4. DATELE DESPRE SOLUL DE PE FUNDUL MARII PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRRPT-00-0015-001 A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002 PENTRU DATE DESPRE SOL LA LOCATIA PLATFORMEI ACTUALIZAT CU MASURATORILE FUGRO 2017.
5. ORIENTARILE INDICATE DUPA NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND LEGATURILE CU PLATFORMA SI LA LOCATIA SONDELOR SUBMARINE VEZI DOCUMENTELE : ROND-EW-YDLAY-22-0012, ROND-EW-YDLAY-22-0005 SI ROND-EW-YDPAL-22-0011.
7. PORTIUNILE CONDUCTEI DE ADUCTIUNE SITUATE IN AFARA SANTURILOR SI IN APROPIEREA MOSORULUI PLATFORMEI DE PRODUCTIE, VOR FI PROTEJATE CU SALTELE.
8. DISTANTA MINIMA INTRE CONDUCTA DE ADUCTIUNE SI SISTEMUL OMBILICAL ESTE DE 100m (NOMINAL 120m, INCLUZAND TOLERANTE) DATORITA CERINTELOR INCALZIRII ELECTRICE DIRECTE (DEH).
9. PENTRU POZITIA SI CONFIGURATIA INITIATORULUI DE CURBURA VEZI DOC. ROND-EW-YDLAY-21-0012 / 0013.
10. PENTRU DETALII PRIVIND LUCRARILE PRE-INTERVENTIE LEGATE DE PROFILUL SANTULUI CONSULTA DOC. ROND-EW-YDPLX-21-0003/0004.
11. SE VA CONFIRMA GROSIMEA NECESARA PENTRU IZOLATIE CONFORM FISEI DE DATE TEHNICE PENTRU IZOLATIE ROND-EW-YSTDS-20-0031.
12. A SE CONSULTA ROND-EW-YRSTS-21-0002, RAPORT TRONSON.
13. A SE CONFIRMA PROPRIETATILE INCALZIRII ELECTRICE DIRECTE (DEH) IN PROIECTUL DETALIAT.
14. CTZ = ZONA TRANSFER CURENT

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT 131135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM LOCATION APPROACH BATHYMETRY UPDATED BY FUGRO DOCUMENT 160424.V3 (2017)
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001.
   SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002 FOR PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM AND SUBSEA WELL LOCATION REFER TO DRAWING : ROND-EW-YDLAY-22-0012, ROND-EW-YDLAY-22-0005 AND ROND-EW-YDPAL-22-0011.
7. AT SHALLOW WATER PLATFORM SPOOL AND NO TRENCHED FLOWLINE SECTION WILL BE PROTECTED BY MATTRESSES.
8. MINIMUM DISTANCE OF 100m BETWEEN FLOWLINE AND UMBILICAL (120m NOMINAL INCLUDING TOLERANCES) DUE TO DEH REQUIREMENTS.
9. FOR BUCKLE INITIATOR POSITION AND CONFIGURATION REFER TO ROND-EW-YDLAY-21-0012 / 0013.
10. PRE-INTERVENTION WORKS FOR TRENCHING PROFILE DETAILS REFER TO ROND-EW-YDPLX-21-0003/0004.
11. THICKNESS TO BE CONFIRMED WHILE MEETING INSULATION REQUIREMENTS IN ROND-EW-YSTDS-20-0031, TECHNICAL DATA SHEET FOR INSULATION.
12. REFERENCE ROND-EW-YRSTS-21-0002, SPAN REPORT.
13. DEH PROPERTIES TO BE CONFIRMED DURING DETAILED DESIGN.
14. CTZ= CURRENT TRANSFER ZONE.

DOCUMENTE DE REFERINTA

NUMAR PLANSA	DESCRIERE
ROND-EW-YDLAY-22-0012	PLAN ACCES SISTEM OMBILICAL LA DOMINO DODC1
ROND-EW-YDLAY-22-0005	PLAN ACCES SISTEM OMBILICAL LA DOMINO DODC2
ROND-EW-YDLAY-22-0011	ARANJAMENT ACCES CONDUCTA DE ADUCTIUNE SI CONDUCTA GAZE NATURALE LA PLATFORMA (SWP)
ROND-EW-YDPAL-22-0003/0008	FISE ALINIAMENT SISTEM OMBILICAL DOMINO
ROND-EW-YDLAY-21-0012/0013	PLAN LUCRARI ATENUARE DEFORMARE LATERALA CONDUCTA ADUCTIUNE DOMINO
ROND-EW-YDPLX-21-0003/0004	LUCRARI INTERVENTIE PRE-INSTALARE

REFERENCE DOCUMENTS

DRAWING NUMBER	DESCRIPTION
ROND-EW-YDLAY-22-0012	DOMINO FLOWLINE WELL APPROACH LAYOUT DODC-1.
ROND-EW-YDLAY-22-0005	DOMINO FLOWLINE WELL APPROACH LAYOUT DODC-2
ROND-EW-YDLAY-22-0011	FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT
ROND-EW-YDPAL-22-0003/0008	DOMINO UMBILICAL ALIGNMENT SHEETS
ROND-EW-YDLAY-21-0012/0013	DOMINO LATERAL BUCKLING MITIGATION WORKS LAYOUT
ROND-EW-YDPLX-21-0003/0004	DOMINO PRE-LAY INTERVENTION WORKS

SCALA

0 100 METRI 500 1,000

SCALA ORIZONTALA 1:10,000 (FORMAT "A1")

SCALE BAR

0 100 METERS 500 1,000

HORIZONTAL SCALE 1:10,000 (AT "A1" SIZE)

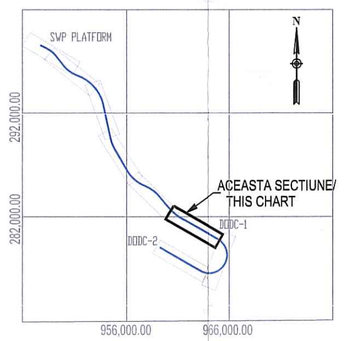
PARAMETRI GEODEZIE SI DE PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA/KEY PLAN



PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
0-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
0-C	11.01.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
0-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
0-A	03.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR / CHECKER			I. BUTNARIU		ANRE
VERIFICATOR/ INGINER/ENGINEER		REFERAT NR. / EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO / DATE	NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / EXIGENCES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.15 , 050149, PLOIESTI
J29/3071/2007, RO 22054820
S.C. JEREMY PROMASTER S.R.L.
STR. CUPCINIULUI, NR. 14A, PLOIESTI.

REV.	REV. DATE	REV. DESCRIPTION	ORG	REV	APP	PROJ APP
0	15DEC17	ISSUE FOR IFD	FK	SS	SS	JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE ADUCTIUNE DOMINO
DOMINO FLOWLINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA NR. 3 DIN 8 (OPTIUNI DE IZOLARE)
SHEET 3 OF 8 (ISOLATION OPTION)

1:10,000	ROND-EW-YDPAL-21-0004-C	DTAC	0-D
SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.

A1+ (1092x594)

DODC-2 FLET	
X	Y
279,025.23	959,218.52

MATCH POINT END	
X	Y
276,593.26	963,589.91

PUNCT REPER DODC-2	
X	Y
279,025.23	959,218.52

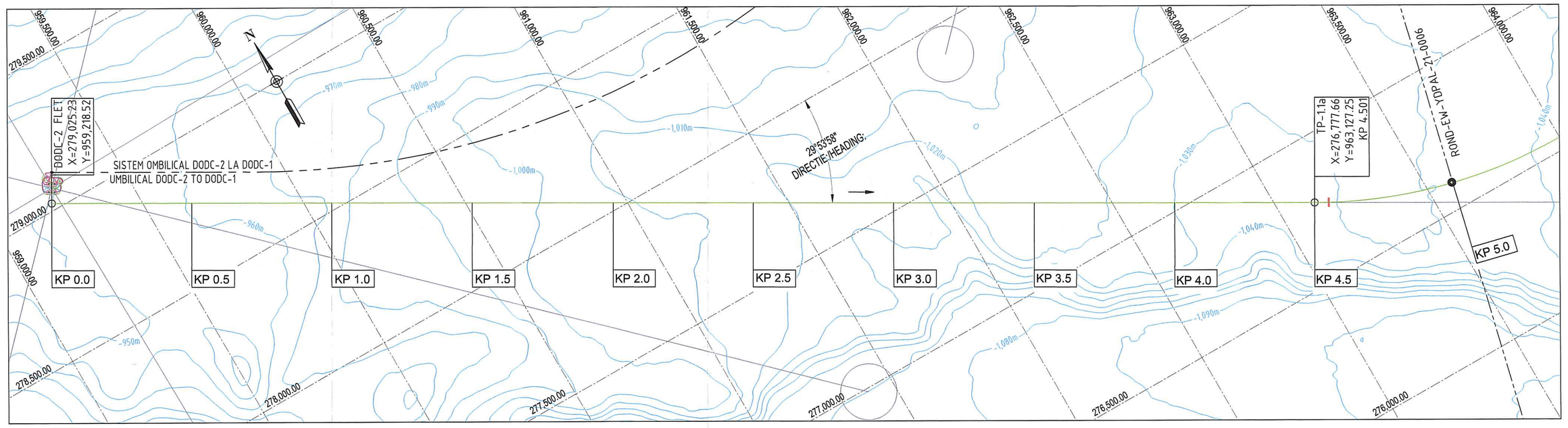
PUNCT LEGATURA DE FINAL	
X	Y
276,593.26	963,589.91

LEGENDA / LEGEND

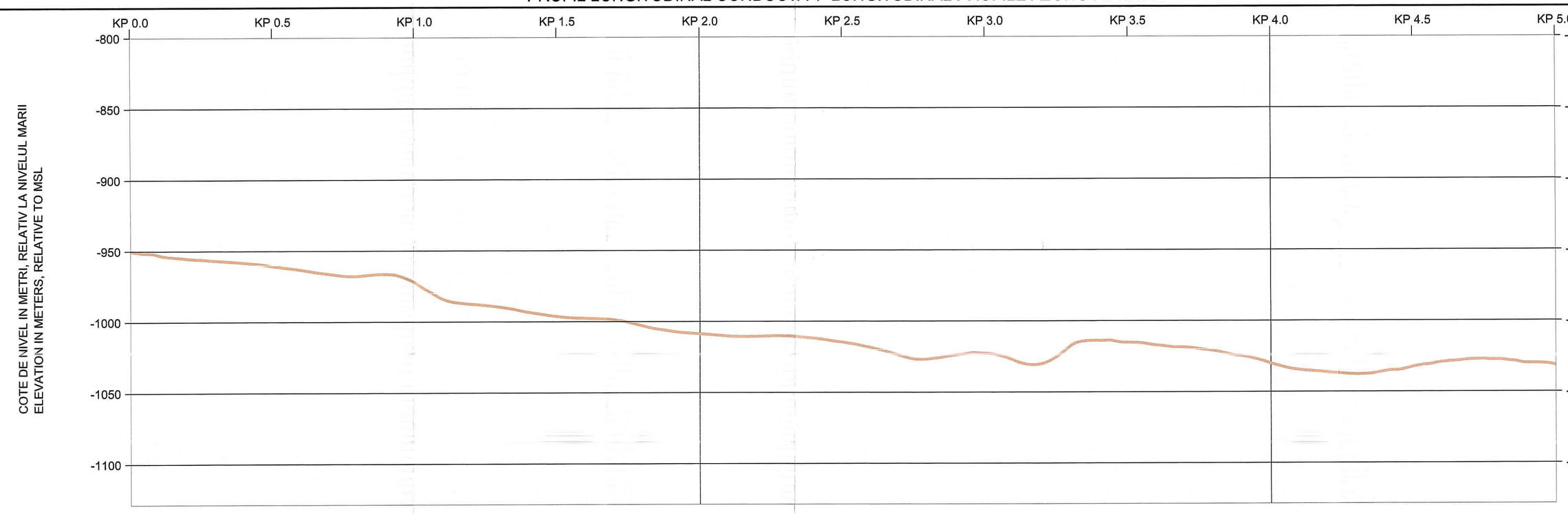
- CONDUCTA DE ADUCTIUNE DOMINO / DOMINO FLOWLINE
- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
- PROFIL FUNDUL MARII / SEABED PROFILE
- SUPORT CONDUCTA / SLEEPER
- CABLURI ANCORAJ SI ZONA EXCLUDERE ANCORA / MOORING LINES & ANCHOR EXCLUSION ZONE

NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



SCALA ORIZONTALA / HORIZONTAL SCALE 1: 10,000
SCALA VERTICALA / VERTICAL SCALE 1: 1,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION 5

ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT

DATE TEHNICE / ENGINEERING DATA

| | | |

MATCH POINT START	
X	Y
276,593.26	963,589.91

MATCH POINT END	
X	Y
279,817.86	964,874.81

PUNCT LEGATURA DE INCEPUT	
X	Y
276,593.26	963,589.91

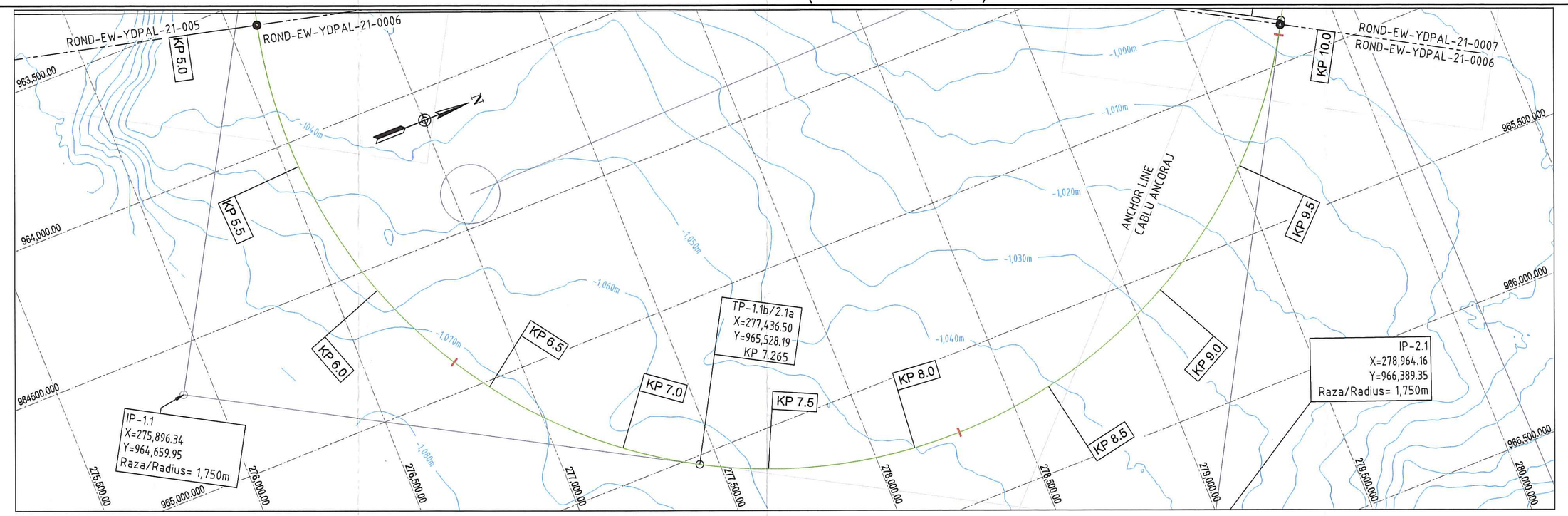
PUNCT LEGATURA DE FINAL	
X	Y
279,817.86	964,874.81

LEGENDA / LEGEND

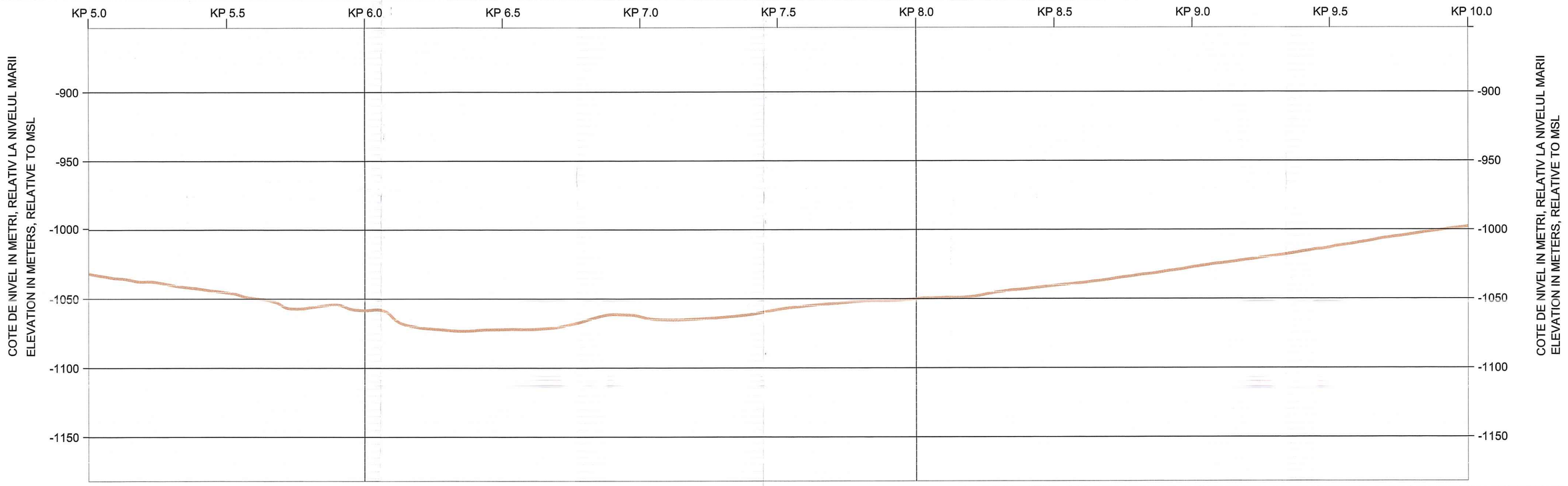
- CONDUCTA DE ADUCTIUNE DOMINO / DOMINO FLOWLINE
- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
- PROFIL FUNDUL MARII / SEABED PROFILE
- SUPORT CONDUCTA / SLEEPER
- CABLURI ANCORAJ SI ZONA EXCLUDERE ANCORA / MOORING LINES & ANCHOR EXCLUSION ZONE

NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 10,000
SCALA VERTICALA / VERTICAL SCALE	1 : 1,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	5

DATE TEHNICE / ENGINEERING DATA

							KP 5.000	KP 5.560	KP 5.660	KP 5.710	KP 6.010	KP 6.110	KP 6.355	KP 6.455	KP 7.265	KP 8.060	KP 8.160	KP 8.260	KP 9.864	KP 9.966	KP 10.000
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA DE CURBURA (m)			ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)		1,750													1,750	
	TRAVERSARE CABLU/CONDUCTA				CABLE / PIPELINE CROSSING		NU EXISTA / NONE														
	TIP SOL LA SUPRAFATA FUNDULUI MARII				SURFACE SEABED SOIL		ZONA 1 - ARGILA VERZUI-INCHIS CU REZISTENTA FOARTE SCAZUTA (NOTA 4)/ ZONE 1 - EXTREMELY LOW STRENGTH DARK GREENISH CLAY (NOTE 4)														
DATE CONDUCTA	TIP OTEL / D. EXT. (mm) / GROSIME PERETE (mm)			PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)		DNV SMLS 450 SFDPU / 355.6 / 21.8														
	GROSIME PERETE DISP. ANTIDEFORMARE(mm)/ INTERVAL (m)				BUCKLE ARRESTOR W.T. (mm) / SPACING (m)		NU EXISTA / NONE														
	STRAT ANTI-COROZIV/GROSIME(mm)/DENSITATE(kg/m³)				ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)		NU SE APLICA / N/A														
	STRAT TERMOIZOLANT/GROSIME (mm)/DENSITATE (kg/m³)				EXT. THER. INS. COAT /THICK (mm)/DENSITY (kg/m³)		FBE + POLIPROPILENA SINTETICA / 75 / 790 (NOTA 11) / FBE + SYNTACTIC POLYPROPYLENE / 75 / 790 (NOTE 11)														
	STRAT BETON / STRAT INTERIOR PROTECTIE				CONCRETE COATING / INTERNAL COATING		NU EXISTA / NONE														
	TIP SUDURA/TIP UMPLUTURA/DENSITATE (kg/m³)				FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)		POLIURETAN / POLYURETHANE / 950 (TIP / TYP)														
	TIP ANOD PROTECTIE / INTERVAL PLASARE INR. DE SEGMENTE				ANODE BRACELETS TYPE / SPACING (joints)		ALUMINIU (300mm x 50mm) 1 LA 24 SEGMENTE / AL (300mm x 50mm) / 1 EVRY 24 JOINTS														
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)			PIPELINE WEIGHT (kN/m)	IN AIR (DRY) (kN/m)	2.5459														
		IN APA	GOALA (kN/m) / SG			SUBMERGED	EMPTY (kN/m) / SG	0.5278 / 1.26													
			INUNDATA (kN/m) / SG				FLOODED (kN/m) / SG	1.2963 / 1.64													
			FUNCTIONARE (kN/m) / SG				OPERATION (kN/m) / SG	0.6050 (IN MEDIE / AVERAGE) / 1.30													
DATE INCALZIRE ELECTRICA DIRECTA (NOTE 13)	GREUTATE CABLU DEH (kN/m)	D. EXT. (mm)			DEH DATA (NOTE 13)	DEH CABLE WEIGHT (kN/m)	O.D. (mm)	125													
		IN AER (USCATA) (kg/m)					IN AIR (DRY) (kg/m)	43													
		IN APA (kg/m) / SG					SUBMERGED (kg/m) / SG	32 / 3.9													
	TIP LEGATURI/NR. DE LEGATURI PE SEGMENT				TYPE OF STRAP/No. OF STRAPS PER JOINT		VA FI CONFIRMAT / T.B.D.														
LUCRARI PRE-INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)			PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)		0.7 / 5.0 (NOTE 10)				2.2 / 5.0 (NOTE 10)				NU EXISTA / NONE						
	SUPORTI				SLEEPERS								INTIATOR FLAMBAJ BI-14-02 (NOTA 9) / BUCKLE INITIATOR BI-14-02 (NOTE 9)					INTIATOR FLAMBAJ BI-14-03 (NOTA 9) / BUCKLE INITIATOR BI-14-03 (NOTE 9)		
LUCRARI POST-INSTALARE CONDUCTA	ADANCIME SANT (m)			POST-LAY INT. WORKS	TRENCHING DEPTH (m)		NU SE APLICA / N/A												INTIATOR FLAMBAJ BI-14-04 (NOTA 9) / BUCKLE INITIATOR BI-14-04 (NOTE 9)		
	TIP UMPLUTURA / INALTIME STRAT ACOPERIRE (m)				BACKFILLING TYPE / COVER TOP (m)		NU SE APLICA / N/A														
	DEPUNERE AGREGAT/PIETRIS				GRAVEL DUMPING		NU SE APLICA / N/A														
LUNGIMEA TRONSON ADMISA	INSTALARE (m)			ALLOWABLE SPAN LENGTH (NOTE 12)	INSTALLATION (m)		43.5														
	HYDRO-TEST (m)				HYDROTEST (m)		28.1														
	FUNCTIONARE (m)				OPERATION (m)		33.0														
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (+/-m)			SPECIFIC REQUIREM.	LAY TOLERANCE (+/-m)		±10		±2		±10		±2		±10		±2		±10		±2
	ALTELE				OTHER		-														

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATE IN 2014, DOCUMENT FUGRO J31135-R-001003). PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCESUL LA LOCATIA PLATFORMEI A FOST ACTUALIZATA PRIN DOCUMENTUL FUGRO 160424.V3 (2017).
4. DATELE DESPRE SOLUL DE PE FUNDUL MARII PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP, ROND-EW-GRRPT-00-0015-001. A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002 PENTRU DATE DESPRE SOL LA LOCATIA PLATFORMEI ACTUALIZAT CU MASURATORILE FUGRO 2017.
5. ORIENTARILE INDICATE DUPA NORDUL, STEREO 70.
6. PENTRU DETALII PRIVIND LEGATURILE CU PLATFORMA SI LA LOCATIA SONDELOR SUBMARINE VEZI DOCUMENTELE : ROND-EW-YDLAY-22-0012, ROND-EW-YDLAY-22-0005 SI ROND-EW-YDPAL-22-0011.
7. PORTIUNILE CONDUCTEI DE ADUCTIUNE SITUATE IN AFARA SANTURILOR SI IN APROPIEREA MOSORULUI PLATFORMEI DE PRODUCTIE, VOR FI PROTEJATE CU SALTELE.
8. DISTANTA MINIMA INTRE CONDUCTA DE ADUCTIUNE SI SISTEMUL OMBILICAL ESTE DE 100m.(NOMINAL:120m, INCLUZAND TOLERANTE) DATORITA CERINTELOR INCALZIRII ELECTRICE DIRECTE (DEH).
9. PENTRU POZITIA SI CONFIGURATIA INITIATORULUI DE CURBURA VEZI DOC. ROND-EW-YDLAY-21-0012 / 0013.
10. PENTRU DETALII PRIVIND LUCRARILE DE PRE-INTERVENTIE, LEGATE DE PROFILUL SANTULUI CONSULTATI DOC. ROND-EW-YDPLX-21-0003/0004.
11. SE VA CONFIRMA GROSIMEA NECESARA PENTRU IZOLATIE CONFORM FISA DE DATE TEHNICE PENTRU IZOLATIE ROND-EW-YSTDS-20-0031.
12. A SE CONSULTA ROND-EW-YRSTS-21-0002, RAPORT TRONSON.
13. A SE CONFIRMA PROPRIETILE INCALZIRII ELECTRICE DIRECTE (DEH) IN PROIECTUL DETALIAT.

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001003) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM LOCATION APPROACH BATHYMETRY UPDATED BY FUGRO DOCUMENT 160424.V3 (2017)
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT, ROND-EW-GRRPT-00-0015-001.
   SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002 FOR PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM AND SUBSEA WELL LOCATION REFER TO DRAWING : ROND-EW-YDLAY-22-0012, ROND-EW-YDLAY-22-0005 AND ROND-EW-YDPAL-22-0011.
7. AT SHALLOW WATER PLATFORM SPOOL AND NO TRENCHED FLOWLINE SECTION WILL BE PROTECTED BY MATTRESSES.
8. MINIMUM DISTANCE OF 100m BETWEEN FLOWLINE AND UMBILICAL (120m NOMINAL INCLUDING TOLERANCES) DUE TO DEH REQUIREMENTS.
9. FOR BUCKLE INITIATOR POSITION AND CONFIGURATION REFER TO ROND-EW-YDLAY-21-0012 / 0013.
10. PRE-INTERVENTION WORKS FOR TRENCHING PROFILE DETAILS REFER TO ROND-EW-YDPLX-21-0003/0004.
11. THICKNESS TO BE CONFIRMED WHILE MEETING INSULATION REQUIREMENTS IN ROND-EW-YSTDS-20-0031, TECHNICAL DATA SHEET FOR INSULATION.
12. REFERENCE ROND-EW-YRSTS-21-0002, SPAN REPORT.
13. DEH PROPERTIES TO BE CONFIRMED DURING DETAILED DESIGN.

DOCUMENTE DE REFERINTA

NUMAR PLANSA	DESCRIERE
ROND-EW-YDLAY-22-0012	PLAN ACCES SISTEM OMBILICAL LA DOMINO DODC1
ROND-EW-YDLAY-22-0005	PLAN ACCES SISTEM OMBILICAL LA DOMINO DODC2
ROND-EW-YDLAY-22-0011	ARANJAMENT ACCES CONDUCTA DE ADUCTIUNE SI CONDUCTA GAZE NATURALE LA PLATFORMA (SWP)
ROND-EW-YDPAL-22-0003/0008	FISE ALINIAMENT SISTEM OMBILICAL DOMINO
ROND-EW-YDLAY-21-0012/0013	PLAN LUCRARI ATENUARE DEFORMARE LATERALA CONDUCTA ADUCTIUNE DOMINO
ROND-EW-YDPLX-21-0003/0004	LUCRARI INTERVENTIE PRE-INSTALARE

REFERENCE DOCUMENTS

DRAWING NUMBER	DESCRIPTION
ROND-EW-YDLAY-22-0012	DOMINO FLOWLINE WELL APPROACH LAYOUT DODC-1.
ROND-EW-YDLAY-22-0005	DOMINO FLOWLINE WELL APPROACH LAYOUT DODC-2
ROND-EW-YDLAY-22-0011	FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT
ROND-EW-YDPAL-22-0003/0008	DOMINO UMBILICAL ALIGNMENT SHEETS
ROND-EW-YDLAY-21-0012/0013	DOMINO LATERAL BUCKLING MITIGATION WORKS LAYOUT
ROND-EW-YDPLX-21-0003/0004	DOMINO PRE-LAY INTERVENTION WORKS

SCALA

METRI 0 100 500 1,000

SCALA ORIZONTALA 1:10,000 (FORMAT "A1")

SCALE BAR

METERS 0 100 500 1,000

HORIZONTAL SCALE 1:10,000 (AT "A1" SIZE)

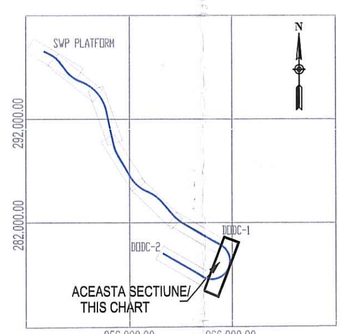
PARAMETRI GEODEZIE SI DE PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA/KEY PLAN



NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite asfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numere care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

PROIECT NEPTUN DEEP /
NEPTUN DEEP PROJECT

REV	DATA / DATE	REASON / REVIZIE	DRAWN	CHECKED	APPROVED
1-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-C	11.01.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
1-A	03.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
REV / REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
VERIFICATOR / CHECKER			I. BUTNARIU		ANRE

ENGLISH	ROMANIAN
ORIGINATOR/DESIGNER	REFERAT NR. /EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE
	NUME / NAME
	SEMNATURA / SIGNATURE
	DOMENIU / EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.1E, 100146, PLOIESTI
J29/207/2007, RO 22654620
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI.

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	ISSU / APP
1	16OCT17	RE-ISSUED FOR IFD		RO	EP	SS	JG
0	07JUL17	ISSUE FOR IFD		RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE ADUCTIUNE DOMINO
DOMINO FLOWLINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA NR. 2 DIN 8
SHEET 2 OF 8

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 10,000	ROND-EW-YDPAL-21-0006-C	DTAC	1-D

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)

MATCH POINT START	
X	Y
279,817.86	964,874.81

PUNCT LEGATURA DE INCEPUT	
X	Y
279,817.86	964,874.81

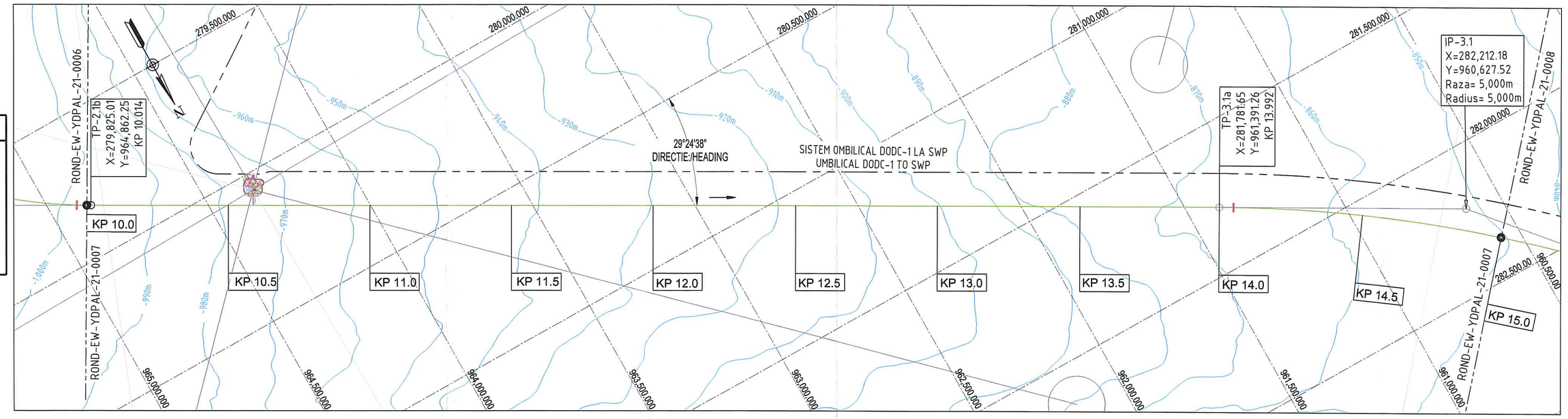
MATCH POINT END	
X	Y
282,362.44	960,567.50

PUNCT LEGATURA DE FINAL	
X	Y
282,362.44	960,567.50

LEGENDA / LEGEND

- CONDUCTA DE ADUCTIUNE DOMINO / DOMINO FLOWLINE
- SISTEM OMBILICAL DOMINO/ DOMINO UMBILICAL
- PROFIL FUNDUL MARII / SEABED PROFILE
- SUPORT CONDUCTA / SLEEPER
- CABLURI ANCORAJ SI ZONA EXCLUDERE ANCORA / MOORING LINES & ANCHOR EXCLUSION ZONE

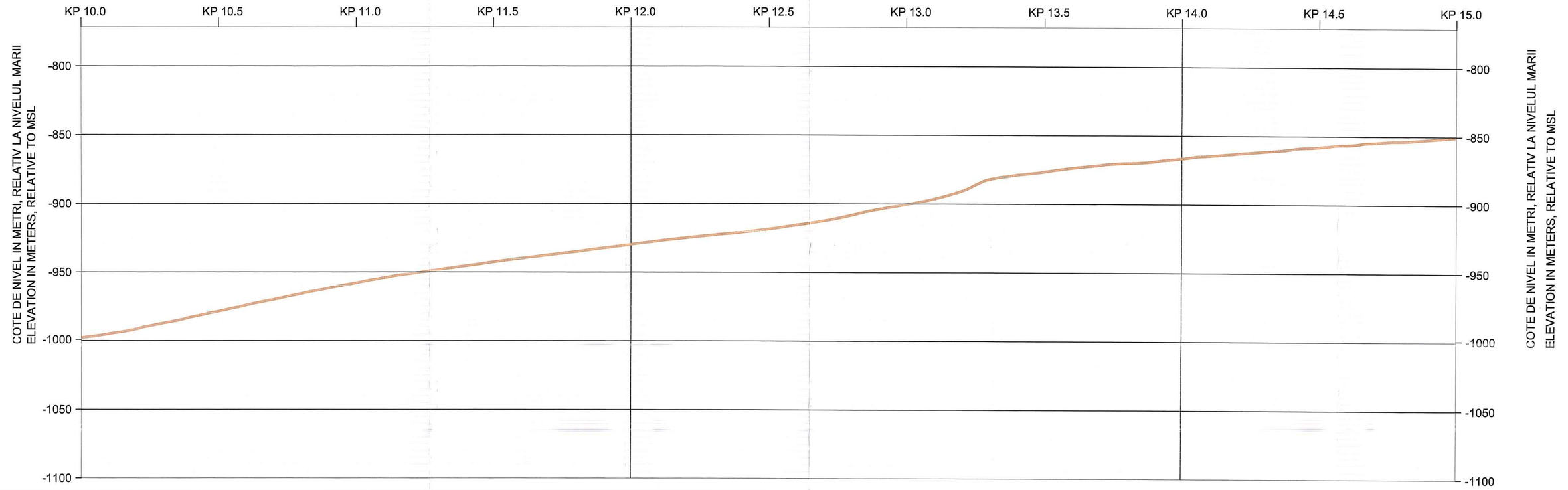
NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE

ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT



SCALA ORIZONTALA / HORIZONTAL SCALE 1: 10,000
SCALA VERTICALA / VERTICAL SCALE 1: 1,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION 5

DATE TEHNICE / ENGINEERING DATA

					KP 10.000	KP 10.014	KP 10.064	KP 10.500	KP 10.563	KP 10.588	KP 11.088	KP 11.700	KP 12.202	KP 13.942	KP 13.992	KP 14.042	KP 14.142	KP 15.000
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA DE CURBURA (m)		ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)	29° 24' 38"												5000	
	TRAVERSARE CABLU / CONDUCTA			CABLE / PIPELINE CROSSING	1,750	NU EXISTA / NONE												
	TIP SOL LA SUPRAFATA FUNDULUI MARII			SURFACE SEABED SOIL	ZONA 1 - ARGILA VERZUI-INCHIS CU REZISTENTA FOARTE SCAZUTA (NOTA 4) / ZONE 1 - EXTREMELY LOW STRENGTH DARK GREENISH CLAY (NOTE 4)													
DATE CONDUCTA	TIP OTEL / D. EXT. (mm) / GROSIME PERETE (mm)		PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SMLS 450 SFDPU / 355.6 / 21.8			DNV SAWL 450 SFDPU / 457.2 / 26.1										
	GROSIME PERETE DISP. ANTIDEFORMARE(mm)/ INTERVAL (m)			BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	NU EXISTA / NONE			29.7 / 1000										
	STRAT ANTI-COROZIV/GROSIME(mm)/DENSITATE(kg/m³)			ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	NU SE APLICA / N/A													
	STRAT TERMOIZOLANT/GROSIME (mm)/DENSITATE (kg/m³)			EXT. THER. INS. COAT./THICK (mm)/DENSITY (kg/m³)	FBE + POLIPROPILENA SINTETICA / 75 / 790 (NOTA 11) / FBE + SYNTACTIC POLYPROPYLENE / 75 / 790 (NOTE 11)													
	STRAT BETON / STRAT INTERIOR PROTECTIE			CONCRETE COATING / INTERNAL COATING	NU EXISTA / NONE													
	TIP SUDURA/TIP UMPLUTURA/DENSITATE (kg/m³)			FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	1 IMBINARE ANOD DUBLA / 1 DOUBLE ANODE JOINT			1 IMBINARE ANOD DUBLA / 1 DOUBLE ANODE JOINT			POLIURETAN / POLYURETHANE / 950 (TIP / TYP)							
	TIP ANOD PROTECTIE / INTERVAL PLASARE (NR. DE SEGMENTE)			ANODE BRACELETS TYPE / SPACING (joints)				ALUMINIU (300mm x 50mm) 1 LA 24 SEGMENTE / AL (300mm x 50mm) / 1 EVRY 24 JOINTS										
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)		PIPELINE WEIGHT (kN/m) IN AIR (DRY) (kN/m)	2.5459			3.6927										
		IN APA	GOALA (kN/m) / SG	SUBMERGED EMPTY (kN/m) / SG	0.5278 / 1.26			0.7820 / 1.27										
			INUNDATA (kN/m) / SG	FLOODED (kN/m) / SG	1.2963 / 1.64			2.0769 / 1.71										
			FUNCTIONARE (kN/m) / SG	OPERATION (kN/m) / SG	0.6050 (IN MEDIE/ AVERAGE) / 1.30			0.9361 (IN MEDIE / AVERAGE) / 1.32										
DATE INCALZIRE ELECTRICA DIRECTA (NOTE 13)	GREUTATE CABLU DEH (kN/m)	D. EXT. (mm)	DEH DATA (NOTE 13)	DEH CABLE WEIGHT (kN/m) O.D. (mm)	125													
		IN AER (USCATA) (kg/m)		IN AIR (DRY) (kg/m)	43													
		IN APA (kg/m) / SG		SUBMERGED (kg/m) / SG	32 / 3.9													
	TIP LEGATURI/NR. DE LEGATURI PE SEGMENT			TYPE OF STRAP/No. OF STRAPS PER JOINT	VA FI CONFIRMAT / T.B.D.													
LUCRARI PRE-INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)		PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE													
	SUPORTI			SLEEPERS													INITIATOR FLAMBAJ BI-18-01 (NOTA 9) / BUCKLE INITIATOR BI-18-01 (NOTE 9)	
LUCRARI POST-INSTALARE CONDUCTA	ADANCIME SANT (m)		POST-LAY INT. WORKS	TRENCHING DEPTH (m)	NU SE APLICA / N/A													
	TIP UMPLUTURA / INALTIME STRAT ACOPERIRE (m)			BACKFILLING TYPE / COVER TOP (m)	NU SE APLICA / N/A													
	DEPUNERE AGREGAT/PIETRIS			GRAVEL DUMPING	NU SE APLICA / N/A													
LUNGIMEA TRONSON ADMISA	INSTALARE (m)		ALLOWABLE SPAN LENGTH (NOTE 10)	INSTALLATION (m)	43.5			62.0										
	HYDRO-TEST (m)			HYDROTEST (m)	28.1			23.7				29.1						
	FUNCTIONARE (m)			OPERATION (m)	33.0			39.4										
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (+/-m)		SPECIFIC REQUIREM.	LAY TOLERANCE (+/-m)	±2	±1.5		±10								±2	±10	
	ALTELE			OTHER	CTZ	ITA												

2x 14" ROBINETE DE IZOLARE / 2x 14" ISOLATION VALVES

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATE IN 2014, DOCUMENT FUGRO J31135-R-001(03). PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCESUL LA LOCATIA PLATFORMEI A FOST ACTUALIZATA PRIN DOCUMENTUL FUGRO 160424.V3 (2017).
4. DATELE DESPRE SOLUL DE PE FUNDUL MARII PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRRPT-00-0015-001. A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002 PENTRU DATE DESPRE SOL LA LOCATIA PLATFORMEI ACTUALIZAT CU MASURATORILE FUGRO 2017.
5. ORIENTARILE INDICATE DUPA NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND LEGATURILE CU PLATFORMA SI LA LOCATIA SONDELOR SUBMARINE VEZI DOCUMENTELE : ROND-EW-YDLAY-22-0012, ROND-EW-YDLAY-22-0005 SI ROND-EW-YDPAL-22-0011.
7. PORTIUNILE CONDUCTEI DE ADUCTIUNE SITUATE IN AFARA SANTURILOR SI IN APROPIEREA MOSORULUI PLATFORMEI DE PRODUCTIE, VOR FI PROTEJATE CU SALTELE.
8. DISTANTA MINIMA INTRE CONDUCTA DE ADUCTIUNE SI SISTEMUL OMBILICAL ESTE DE 100m (NOMINAL!120m, INCLUZAND TOLERANTE) DATORITA CERINTELOR INCALZIRII ELECTRICE DIRECTE (DEH).
9. PENTRU POZITIA SI CONFIGURATIA INITIATORULUI DE CURBURA VEZI DOC. ROND-EW-YDLAY-21-0012 / 0013.
10. PENTRU DETALII PRIVIND LUCRARILE PRE-INTERVENTIE LEGATE DE PROFILUL SANTULUI CONSULTA DOC. ROND-EW-YDPLX-21-0003/0004.
11. SE VA CONFIRMA GROSIMEA NECESARA PENTRU IZOLATIE CONFORM FISEI DE DATE TEHNICE PENTRU IZOLATIE ROND-EW-YSTDS-20-0031.
12. A SE CONSULTA ROND-EW-YRSTS-21-0002, RAPVOR TRONSON.
13. A SE CONFIRMA PROPRIETATILE INCALZIRII ELECTRICE DIRECTE (DEH) IN PROIECTUL DETALIAT.

DOCUMENTE DE REFERINTA

NUMAR PLANSA	DESCRIERE
ROND-EW-YDLAY-22-0012	PLAN ACCES SISTEM OMBILICAL LA DOMINO DODC1
ROND-EW-YDLAY-22-0005	PLAN ACCES SISTEM OMBILICAL LA DOMINO DODC2
ROND-EW-YDLAY-22-0011	ARANJAMENT ACCES CONDUCTA DE ADUCTIUNE SI CONDUCTA GAZE NATURALE LA PLATFORMA (SWP)
ROND-EW-YDPAL-22-0003/0008	FISE ALINIAMENT SISTEM OMBILICAL DOMINO
ROND-EW-YDLAY-21-0012/0013	PLAN LUCRARI ATENUARE DEFORMARE LATERALA CONDUCTA ADUCTIUNE DOMINO
ROND-EW-YDPLX-21-0003/0004	LUCRARI INTERVENTIE PRE-INSTALARE

REFERENCE DOCUMENTS

DRAWING NUMBER	DESCRIPTION
ROND-EW-YDLAY-22-0012	DOMINO FLOWLINE WELL APPROACH LAYOUT DODC-1
ROND-EW-YDLAY-22-0005	DOMINO FLOWLINE WELL APPROACH LAYOUT DODC-2
ROND-EW-YDLAY-22-0011	FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT
ROND-EW-YDPAL-22-0003/0008	DOMINO UMBILICAL ALIGNMENT SHEETS
ROND-EW-YDLAY-21-0012/0013	DOMINO LATERAL BUCKLING MITIGATION WORKS LAYOUT
ROND-EW-YDPLX-21-0003/0004	DOMINO PRE-LAY INTERVENTION WORKS

SCALA

METRI 0 100 500 1,000

SCALA ORIZONTALA 1:10,000 (FORMAT "A1")

SCALE BAR

METERS 0 100 500 1,000

HORIZONTAL SCALE 1:10,000 (AT "A1" SIZE)

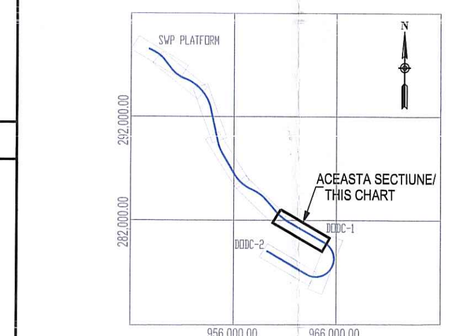
PARAMETRI GEODEZIE SI DE PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA/KEY PLAN



NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numere care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

PROIECT NEPTUN DEEP /
NEPTUN DEEP PROJECT

REV.	DATA / DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1-D	12.03.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA	
1-C	11.01.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA	
1-B	29.05.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA	
1-A	03.02.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA	
REV. REV.	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI/ ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED	
VERIFICATOR/ CHECKER			I. BUTNARU		ANRE	

DENUMIRE DOCUMENT / DESCRIPTION	REFERAT NR. / REPORT NO.	NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / DISCIPLINE
VERIFICARE / CHECKER REPORT				

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. CURCUBEULUI, NR. 14A, PLOIESTI, 100145, PLOIESTI
J29/3571/2007, RO 22054827
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	16OCT17	RE-ISSUED FOR IFD	RO	EP	SS	JG
0	07JUL17	ISSUE FOR IDC	RO	EP	SS	

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE ADUCTIUNE DOMINO
DOMINO FLOWLINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA NR. 3 DIN 8
SHEET 3 OF 8

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.	STEREO 70
1:10,000	ROND-EW-YDPAL-21-0007-C	DTAC	1-D	

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)

MATCH POINT START	
X	Y
282,362.44	960,567.50

MATCH POINT END	
X	Y
285,563.41	956,788.57

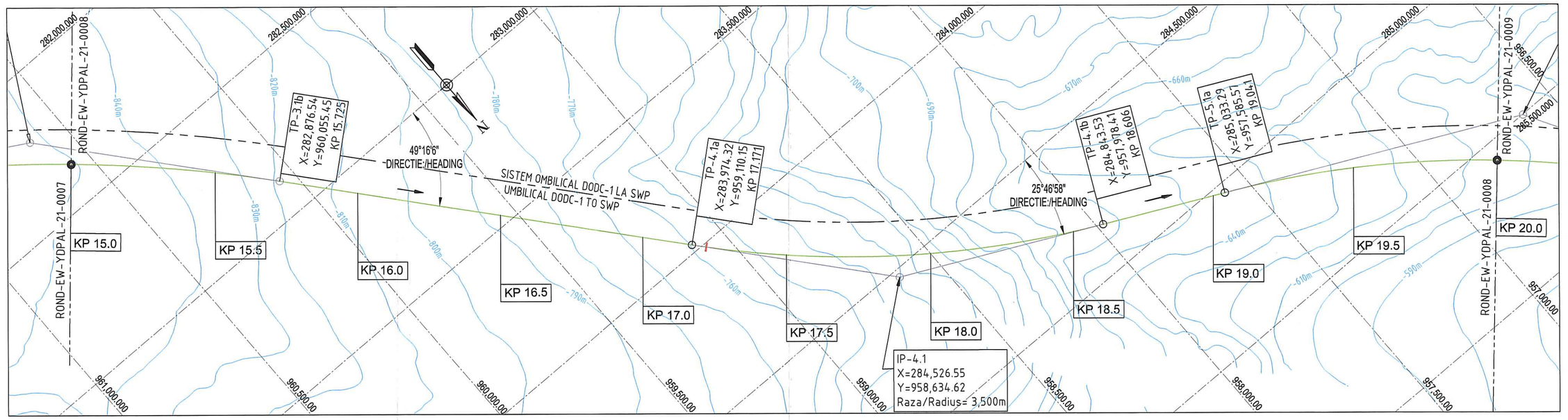
PUNCT LEGATURA DE INCEPUT	
X	Y
282,362.44	960,567.50

PUNCT LEGATURA DE FINAL	
X	Y
285,563.41	956,788.57

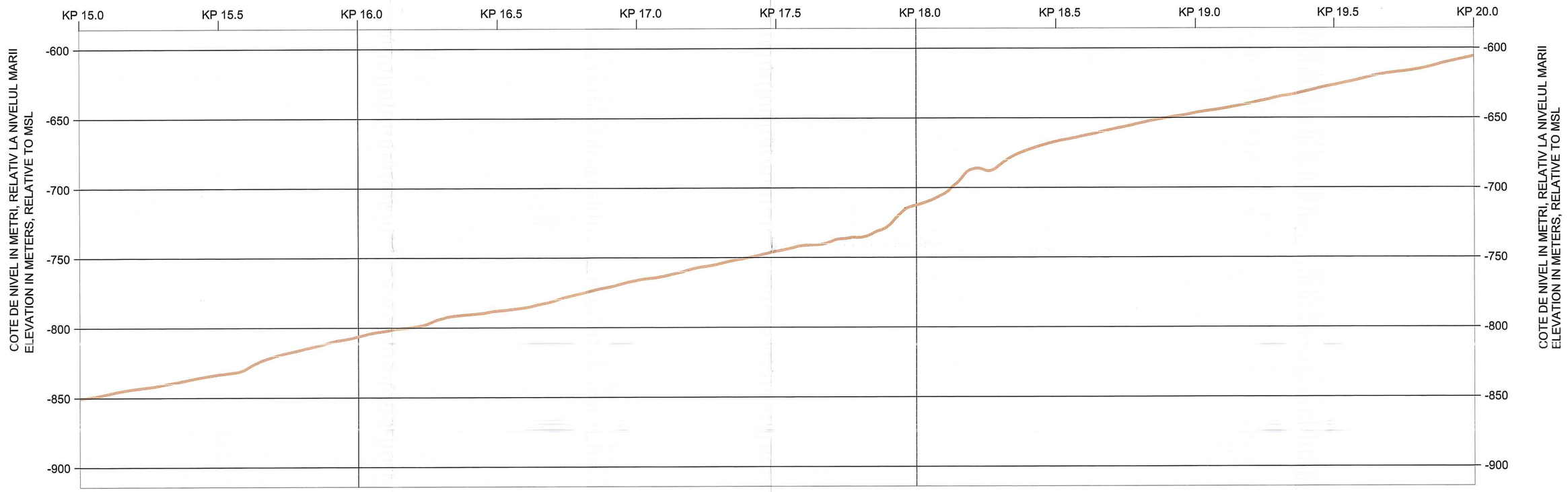
LEGENDA / LEGEND

- CONDUCTA DE ADUCTIUNE DOMINO / DOMINO FLOWLINE
- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
- PROFIL FUNDUL MARII / SEABED PROFILE
- SUPORT CONDUCTA / SLEEPER

NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



SCALA ORIZONTALA / HORIZONTAL SCALE 1 : 10,000
SCALA VERTICALA / VERTICAL SCALE 1 : 1,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION 5

ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

DATE TEHNICE / ENGINEERING DATA

				KP 15.000 / KP 15.022	KP 15.470	KP 15.570	KP 15.725 / KP 15.760	KP 15.860	KP 17.121 / KP 17.171 / KP 17.221	KP 17.400	KP 17.530	KP 17.630	KP 18.250 / KP 18.281	KP 18.350	KP 18.686	KP 19.041	KP 19.600	KP 20.000
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA DE CURBURA (m)		ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)	5,000			4.9° 16' 6"	3,500			25° 46' 58"	3,500					
	TRAVERSARE CABLU/CONDUCTA			CABLE / PIPELINE CROSSING	NU EXISTA / NONE													
	TIP SOL LA SUPRAFATA FUNDULUI MARII			SURFACE SEABED SOIL	ZONA 1 - ARGILA VERZUI-INCHIS CU REZISTENTA FOARTE SCAZUTA (NOTA 4) / ZONE 1 - EXTREMELY LOW STRENGTH DARK GREENISH CLAY (NOTE 4)													
DATE CONDUCTA	TIP OTEL / D. EXT. (mm) / GROSIME PERETE (mm)		PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 SFDPU / 457.2 / 26.1													
	GROSIME PERETE DISP. ANTIDEFORMARE(mm)/ INTERVAL (m)			BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	29.7 / 1000	NU EXISTA / NONE												
	STRAT ANTI-COROZIV/GROSIME(mm)/DENSITATE(kg/m³)			ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	NU SE APLICA / N/A													
	STRAT TERMOIZOLANT/GROSIME (mm)/DENSITATE (kg/m³)			EXT. THER. INS. COAT./THICK (mm)/DENSITY (kg/m³)	FBE + POLIPROLILENA SINTETICA / 75 / 790 (NOTA 11) / FBE + SYNTACTIC POLYPROPYLENE / 75 / 790 (NOTE 11)													
	STRAT BETON / STRAT INTERIOR PROTECTIE			CONCRETE COATING / INTERNAL COATING	NU EXISTA / NONE													
	TIP SUDURA/TIP UMPLUTURA/DENSITATE (kg/m³)			FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	POLIURETAN / POLYURETHANE / 950 (TIP / TYP)													
	TIP ANOD PROTECTIE / INTERVAL PLASARE (NR. DE SEGMENTE)			ANODE BRACELETS TYPE / SPACING (joints)	ALUMINIU (300mm x 50mm) 1 LA 24 SEGMENTE / AL (300mm x 50mm) / 1 EVRY 24 JOINTS													
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)	PIPELINE WEIGHT (kN/m)	IN AIR (DRY) (kN/m)	3.6927													
		IN APA: GOALA (kN/m) / SG		SUBMERGED: EMPTY (kN/m) / SG	0.7820 / 1.27													
		IN APA: INUNDATA (kN/m) / SG		SUBMERGED: FLOODED (kN/m) / SG	2.0769 / 1.71													
		IN APA: FUNCTIONARE (kN/m) / SG		SUBMERGED: OPERATION (kN/m) / SG	0.9361 (IN MEDIE/AVERAGE) / 1.32													
DATE INCALZIRE ELECTRICA DIRECTA (NOTE 13)	GREUTATE CABLU DEH (kN/m)	D. EXT. (mm)	DEH DATA (NOTE 13)	DEH CABLE WEIGHT (kN/m)	O.D. (mm)	125												
		IN AER (USCATA) (kg/m)		IN AIR (DRY) (kg/m)	43													
		IN APA (kg/m) / SG		SUBMERGED (kg/m) / SG	32 / 3.9													
	TIP LEGATURI/NR. DE LEGATURI PE SEGMENT			TYPE OF STRAP/No. OF STRAPS PER JOINT	VA FI CONFIRMAT / T.B.D.													
LUCRARI PRE-INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)		PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	2.2 / 5.0 (NOTA 10 / NOTE 10)								2.8 / 5.0 (NOTA10)/(NOTE 10)					
	SUPORTI			SLEEPERS	INITIATOR FLAMBAJ BI-18-02 (NOTA 9) / BUCKLE INITIATOR BI-18-02 (NOTE 9)										SUPORT (NOTA 14) / SUPPORT (NOTE 14)				
LUCRARI POST-INSTALARE CONDUCTA	ADANCIME SANT (m)		POST-LAY INT. WORKS	TRENCHING DEPTH (m)	NU SE APLICA / N/A													
	TIP UMPLUTURA / INALTIME STRAT ACOPERIRE (m)			BACKFILLING TYPE / COVER TOP (m)	NU SE APLICA / N/A													
	DEPUNERE AGREGAT/PIETRIS			GRAVEL DUMPING	NU SE APLICA / N/A													
LUNGIMEA TRONSON ADMISA	INSTALARE (m)		ALLOWABLE SPAN LENGTH (NOTE 12)	INSTALLATION (m)	62.0					59.2								
	HYDRO-TEST (m)			HYDROTEST (m)	35.3					51.4						25.6		
	FUNCTIONARE (m)			OPERATION (m)	40.1													
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (+/-m)		SPECIFIC REQUIREM.	LAY TOLERANCE (+/-m)	±10	±2	±10		±2				±10					
	ALTELE			OTHER	-													

NOTA / NOTE:

Piansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numere care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESINE NEPTUN DEEP SI A CONTRACTELOR OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATE IN 2014, DOCUMENT FUGRO J3135-R-001(03). PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCESUL LA LOCATIA PLATFORMEI A FOST ACTUALIZATA PRIN DOCUMENTUL FUGRO 160424.V3 (2017).
4. DATELE DESPRE SOLUL DE PE FUNDUL MARII PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRRPT-00-0015-001. A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002 PENTRU DATE DESPRE SOL LA LOCATIA PLATFORMEI ACTUALIZAT CU MASURATORILE FUGRO 2017.
5. ORIENTARILE INDICATE DUPA NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND LEGATURILE CU PLATFORMA SI LA LOCATIA SONDELOR SUBMARINE VEZI DOCUMENTELE : ROND-EW-YDLAY-22-0012, ROND-EW-YDLAY-22-0005 SI ROND-EW-YDPAL-22-0011.
7. PORTIUNILE CONDUCTEI DE ADUCTIUNE SITUATE IN APARA SANTURILOR SI IN APROPIEREA MODOBULUI PLATFORMEI DE PRODUCTIE, VOR FI PROTEJATE CU SALTELE.
8. DISTANTA MINIMA INTRE CONDUCTA DE ADUCTIUNE SI SISTEMUL OMBILICAL ESTE DE 100m.(NOMINAL 120m, INCLUZAND TOLERANTE) DATORITA CERINTELOR INCALZIRII ELECTRICE DIRECTE (DEH).
9. PENTRU POZITIA SI CONFIGURATIA INITIATORULUI DE CURBURA VEZI DOC. ROND-EW-YDLAY-21-0012 / 0013.
10. PENTRU DETALII PRIVIND LUCRARILE DE PRE-INTERVENTIE, LEGATE DE PROFILUL SANTULUI CONSULTATI DOC. ROND-EW-YDPLX-21-0003/0004.
11. SE VA CONFIRMA GROSIMEA NECESARA PENTRU IZOLATIE CONFORM FISA DE DATE TEHNICE PENTRU IZOLATIE ROND-EW-YSTDS-20-0031.
12. A SE CONSULTA ROND-EW-YRSTS-21-0002, RAPORT TRONSON.
13. A SE CONFIRMA PROPRIETATILE INCALZIRII ELECTRICE DIRECTE (DEH) IN PROIECTUL DETALIAT.
14. STRUCTURA SUPORT PRE-INSTALATA CU INALTIMEA DE APROXIMATIV 1m INALTIME (EX:SALTELE).

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J3135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM LOCATION APPROACH BATHYMETRY UPDATED BY FUGRO DOCUMENT 160424.V3 (2017).
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001. SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002 FOR PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM AND SUBSEA WELL LOCATION REFER TO DRAWING : ROND-EW-YDLAY-22-0012, ROND-EW-YDLAY-22-0005 AND ROND-EW-YDPAL-22-0011.
7. AT SHALLOW WATER PLATFORM SPOOL AND NO TRENCHED FLOWLINE SECTION WILL BE PROTECTED BY MATTRESSES.
8. MINIMUM DISTANCE OF 100m BETWEEN FLOWLINE AND UMBILICAL (120m NOMINAL INCLUDING TOLERANCES) DUE TO DEH REQUIREMENTS.
9. FOR BUCKLE INITIATOR POSITION AND CONFIGURATION REFER TO ROND-EW-YDLAY-21-0012 / 0013.
10. PRE-INTERVENTION WORKS FOR TRENCHING PROFILE DETAILS REFER TO ROND-EW-YDPLX-21-0003/0004.
11. THICKNESS TO BE CONFIRMED WHILE MEETING INSULATION REQUIREMENTS IN ROND-EW-YSTDS-20-0031, TECHNICAL DATA SHEET FOR INSULATION.
12. REFERENCE ROND-EW-YRSTS-21-0002, SPAN REPORT.
13. DEH PROPERTIES TO BE CONFIRMED DURING DETAILED DESIGN.
14. PRE-INSTALLED SUPPORT STRUCTURE WITH APPROX. 1m HEIGHT (E.G. MATTRESSES)

DOCUMENTE DE REFERINTA / REFERENCE DOCUMENTS

NUMAR PLANSA	DESCRIERE	DRAWING NUMBER	DESCRIPTION
ROND-EW-YDLAY-22-0012	PLAN ACCES SISTEM OMBILICAL LA DOMINO DODC1	ROND-EW-YDLAY-22-0012	DOMINO FLOWLINE WELL APPROACH LAYOUT DODC-1.
ROND-EW-YDLAY-22-0005	PLAN ACCES SISTEM OMBILICAL LA DOMINO DODC2	ROND-EW-YDLAY-22-0005	DOMINO FLOWLINE WELL APPROACH LAYOUT DODC-2
ROND-EW-YDLAY-22-0011	ARANJAMENT ACCES CONDUCTA DE ADUCTIUNE SI CONDUCTA GAZE NATURALE LA PLATFORMA (SWP)	ROND-EW-YDLAY-22-0011	FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT
ROND-EW-YDPAL-22-0003/0008	FISE ALINIAMENT SISTEM OMBILICAL DOMINO	ROND-EW-YDPAL-22-0003/0008	DOMINO UMBILICAL ALIGNMENT SHEETS
ROND-EW-YDLAY-21-0012/0013	PLAN LUCRARI ATENUARE DEFORMARE LATERALA CONDUCTA ADUCTIUNE DOMINO	ROND-EW-YDLAY-21-0012/0013	DOMINO LATERAL BUCKLING MITIGATION WORKS LAYOUT
ROND-EW-YDPLX-21-0003/0004	LUCRARI INTERVENTIE PRE-INSTALARE	ROND-EW-YDPLX-21-0003/0004	DOMINO PRE-LAY INTERVENTION WORKS

SCALA / SCALE BAR

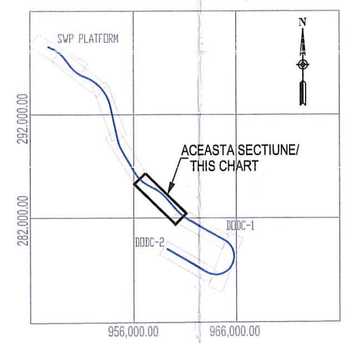
METRI: 0 — 100 — 500 — 1,000
SCALA ORIZONTALA 1:10,000 (FORMAT "A1")

METERS: 0 — 100 — 500 — 1,000
HORIZONTAL SCALE 1:10,000 (AT "A1" SIZE)

PARAMETRI GEODEZIE SI DE PROIECTIE / GEODETIC & PROJECTION PARAMETERS

DATE GEODEZICE	:	STEREO 70	GEODETIC DATUM	: STEREO 70
PROIECTIE	:	Dublu Stereografica	PROJECTION	: Double Stereographic
Meridianul central (MC)	:	25.0	Central meridian (CM)	: 25.0
Latitudine Origine	:	46.0	Latitude of Origin	: 46.0
Falsa origine estica	:	500,000.0	False Easting at origin	: 500,000.0
Falsa origine nordica	:	500,000.0	False Northing at origin	: 500,000.0
Factor de scala la MC	:	0.99975	Scale factor at CM	: 0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)	VERTICAL DATUM	: MSL

PLAN DE REFERINTA/KEY PLAN



PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
1-O	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW		M. DUMITRU	C. STEFAN / N. EREMIA
1-C	11.01.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW		M. DUMITRU	C. STEFAN / N. EREMIA
1-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW		O. MOISE	C. STEFAN / N. EREMIA
1-A	03.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW		O. MOISE	C. STEFAN / N. EREMIA
VERIFICATOR / CHECKER				I. BUTNARIU	ANRE
DISPOZITIONIST / DESIGNER	REFERAT NR. / EXPEDITIA NR. / DATA / CHECKER REPORT / EXPEDITIE NO. / DATE		NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / ENGINEERS

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. CUROZU NR. 1-3, CLADIREA 1, 100145, PLOIESTI
JUDETUL PRAHOVA
S.C. JEREMY PROMASTER S.R.L.
STR. CUROZU BULEVARD, NR. 14A, PLOIESTI.

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	REV. APP
1	16OCT17	RE-ISSUED FOR IFD	RO	EP	SS	JG
0	07JUL17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE ADUCTIUNE DOMINO
DOMINO FLOWLINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA NR. 4 DIN 8
SHEET 4 OF 8

1 : 10,000	ROND-EW-YDPAL-21-0008-C	DTAC	1-D
SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)

MATCH POINT START	
X	Y
285,563.41	956,788.57

MATCH POINT END	
X	Y
289,906.07	954,403.78

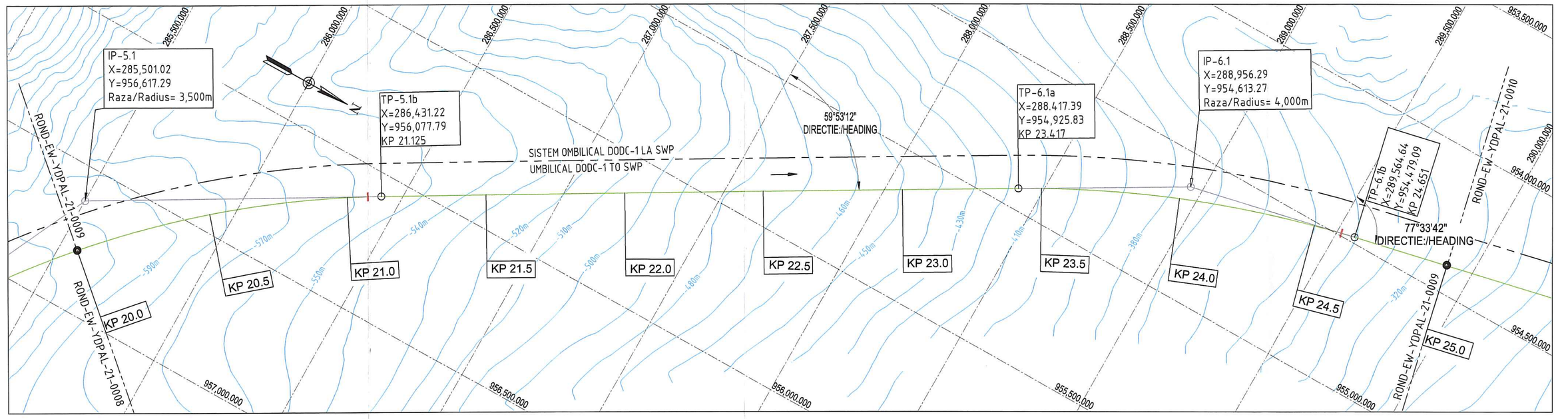
PUNCT LEGATURA DE INCEPUT	
X	Y
285,563.41	956,788.57

PUNCT LEGATURA DE FINAL	
X	Y
289,906.07	954,403.78

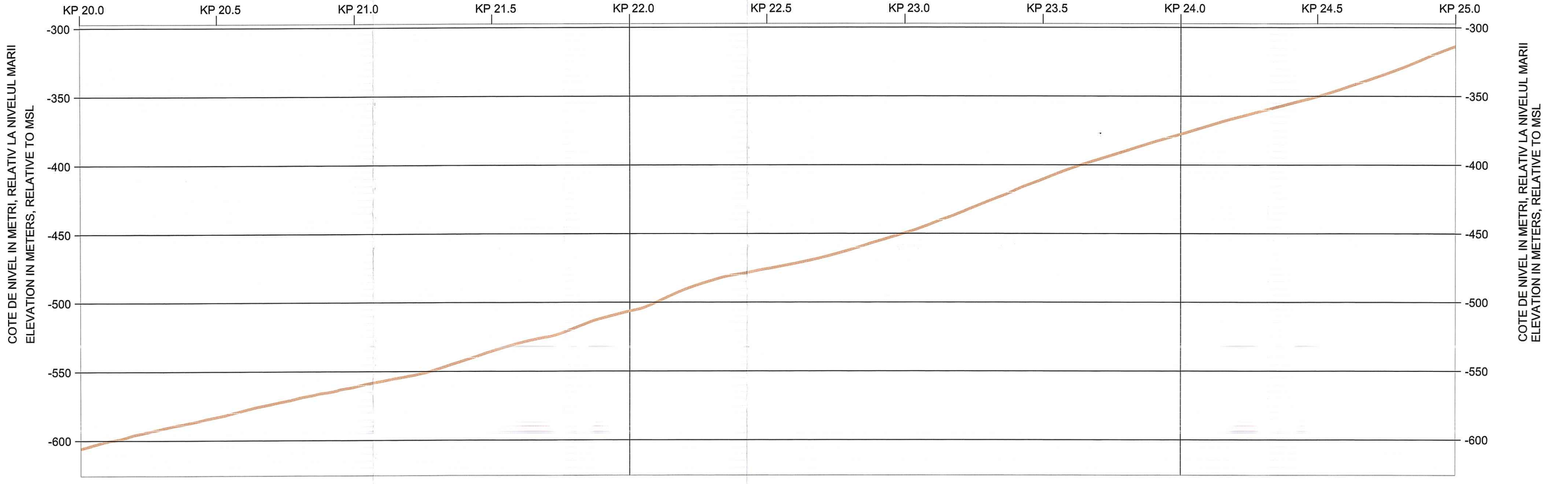
LEGENDA / LEGEND

- CONDUCTA DE ADUCTIUNE DOMINO / DOMINO FLOWLINE
- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
- PROFIL FUNDUL MARII / SEABED PROFILE
- SUPORT CONDUCTA / SLEEPER

NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 10,000
SCALA VERTICALA / VERTICAL SCALE	1 : 1,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	5

DATE TEHNICE / ENGINEERING DATA

| | | |

MATCH POINT START	
X	Y
289,906.07	954,403.78

MATCH POINT END	
X	Y
294,574.30	952,793.57

PUNCT LEGATURA DE INCEPUT	
X	Y
289,906.07	954,403.78

PUNCT LEGATURA DE FINAL	
X	Y
294,574.30	952,793.57

LEGENDA / LEGEND

- CONDUCTA DE ADUCTIUNE DOMINO / DOMINO FLOWLINE
- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
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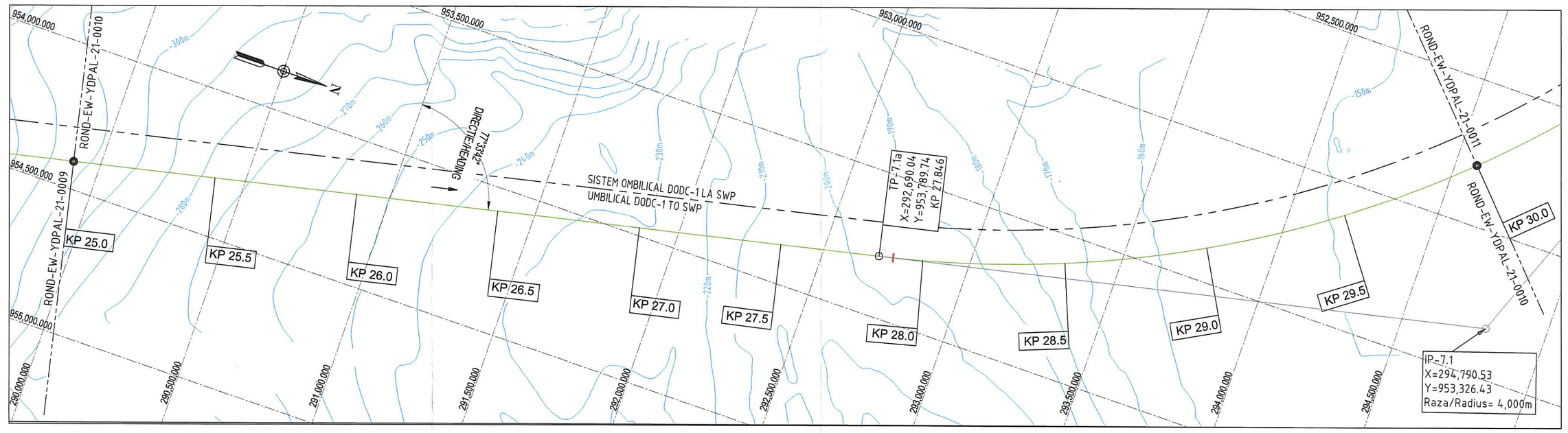
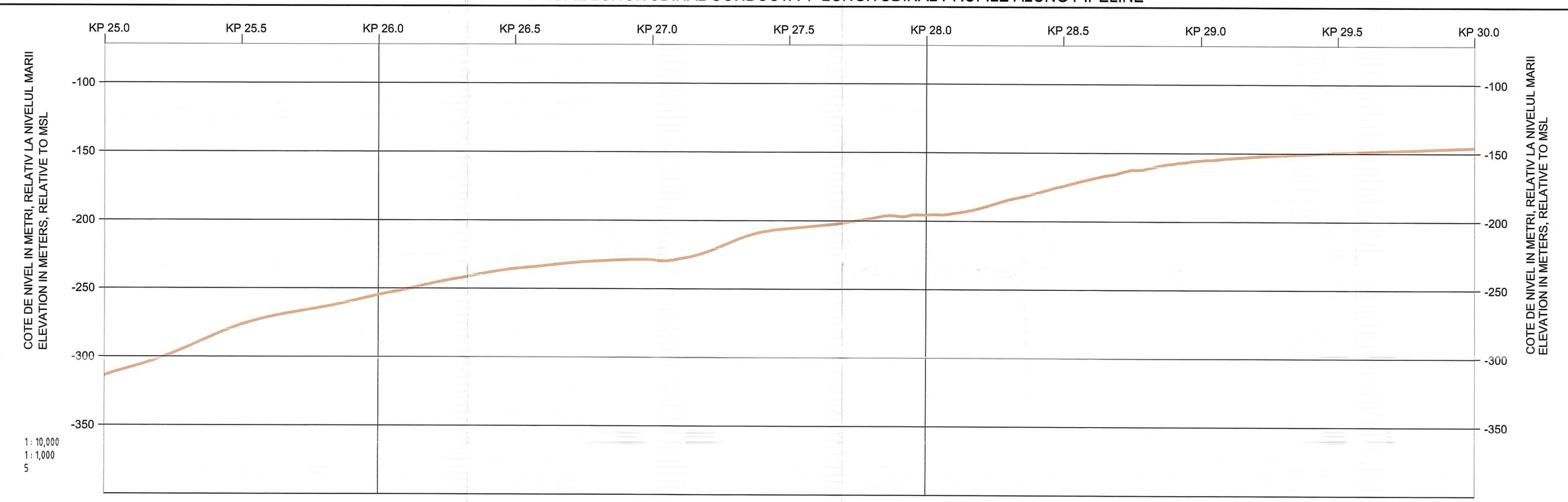
NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

SCALA ORIZONTALA / HORIZONTAL SCALE 1 : 10,000
SCALA VERTICALA / VERTICAL SCALE 1 : 1,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION 5

DATE TEHNICE / ENGINEERING DATA

						KP 25.000	KP 27.174	KP 27.796	KP 27.846	KP 27.896	KP 27.996	KP 28.115	KP 29.600	KP 30.000
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA DE CURBURA (m)			ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)	77° 33' 42"						4,000		
	TRAVERSARE CABLU/CONDUCTA				CABLE / PIPELINE CROSSING	NU EXISTA / NONE								
	TIP SOL LA SUPRAFATA FUNDULUI MARII				SURFACE SEABED SOIL	ZONA 3 - ARGILA VERZUI-INCHIS CU REZISTENTA FOARTE SCAZUTA (NOTA 4) / ZONE 3 - EXTREMELY LOW STRENGTH DARK GREENISH CLAY (NOTE 4)						ZONA4 - ARGILA PRAFOASA, GRI CU REZISTENTA SCAZUTA SPRE MEDIE (USOR SUPRACONSOLIDATA) (NOTA 4) / ZONE 4 - LOW TO MEDIUM STRENGTH (SLIGHTLY OVER CONSOLIDATED) GREY SLIGHTLY SILTY CLAY (NOTE 4)	
DATE CONDUCTA	TIP OTEL / D. EXT. (mm) / GROSIME PERETE (mm)			PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 SFDPU / 457.2 / 26.1								
	GROSIME PERETE DISP. ANTIDEFORMARE(mm)/ INTERVAL (m)				BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	NU EXISTA / NONE								
	STRAT ANTI-COROZIV/GROSIME(mm)/DENSITATE(kg/m³)				ANTI-CORR. COAT / THCK (mm) / DENSITY (kg/m³)	NU SE APLICA / N/A								
	STRAT TERMOIZOLANT/GROSIME (mm)/DENSITATE (kg/m³)				EXT. THER. INS. COAT./THCK (mm)/DENSITY (kg/m³)	FBE + POLIPROLILENA SINTETICA / 75 / 790 (NOTA 11)/ FBE + SYNTACTIC POLYPROPYLENE / 75 / 790 (NOTE 11)								
	STRAT BETON / STRAT INTERIOR PROTECTIE				CONCRETE COATING / INTERNAL COATING	NU EXISTA / NONE								
	TIP SUDURA/TIP UMPLUTURA/DENSITATE (kg/m³)				FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	POLIURETAN / POLYURETHANE / 950 (TIP / TYP)								
	TIP ANOD PROTECTIE / INTERVAL PLASARE INR. DE SEGMENTE				ANODE BRACELETS TYPE / SPACING (joints)	ALUMINIU (300mm x 50mm) 1 LA 24 SEGMENTE / AL (300mm x 50mm) / 1 EVRY 24 JOINTS								
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)			PIPELINE WEIGHT (kN/m)	IN AIR (DRY) (kN/m)	3.6927							
		IN APA	GOALA (kN/m) / SG			SUBMERGED EMPTY (kN/m) / SG	0.7820 / 1.27							
			INUNDATA (kN/m) / SG			FLOODED (kN/m) / SG	2.0769 / 1.71							
			FUNCTIONARE (kN/m) / SG			OPERATION (kN/m) / SG	0.9361 (IN MEDIE / AVERAGE) / 1.32							
DATE INCALZIRE ELECTRICA DIRECTA (NOTE 13)	GREUTATE CABLU DEH (kN/m)	D. EXT. (mm)		DEH DATA (NOTE 13)	DEH CABLE WEIGHT (kN/m)	O.D. (mm)	125							
		IN AER (USCATA) (kg/m)				IN AIR (DRY) (kg/m)	43							
		IN APA (kg/m) / SG				SUBMERGED (kg/m) / SG	32 / 3.9							
	TIP LEGATURI/NR. DE LEGATURI PE SEGMENT					TYPE OF STRAP/No. OF STRAPS PER JOINT	VA FI CONFIRMAT / T.B.D.							
LUCRARI PRE-INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)			PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE								
	SUPORTI				SLEEPERS	INTIATOR FLAMBAJ BI-18-05 (NOTA 9 SI 16)/ BUCKLE INITIATOR BI-18-05 (NOTE 9 & 16)								
LUCRARI POST-INSTALARE CONDUCTA	ADANCIME SANT (m)			POST-LAY INT. WORKS	TRENCHING DEPTH (m)	NU SE APLICA / N/A	VA FI CONFIRMAT (NOTA 15) / T.B.D. (NOTE 15)							
	TIP UMPLUTURA / INALTIME STRAT ACOPERIRE (m)				BACKFILLING TYPE / COVER TOP (m)	NU SE APLICA / N/A	UMPLUTURA NATURALA / 0.2m (TBC) (NOTA 15) / NATURAL BACKFILL / 0.2m (TBC) (NOTE 15)							
	DEPUNERE AGREGAT/PIETRIS				GRAVEL DUMPING	NU SE APLICA / N/A								
LUNGIME TRONSON ADMISA	INSTALARE (m)			ALLOWABLE SPAN LENGTH (NOTE 12)	INSTALLATION (m)	53.3							53.4	
	HYDRO-TEST (m)				HYDROTEST (m)	22.3							21.3	
	FUNCTIONARE (m)				OPERATION (m)	39.1						39.1 (NOTA 14 / NOTE 14)		43.4 (NOTA 14 /NOTE 14)
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (+/-m)			SPECIFIC REQUIREM.	LAY TOLERANCE (+/-m)	±10						±10		
	ALTELE				OTHER	-						±2 (NOTA 16 / NOTE 16)		

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTELOR DE OPERATIUNE COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATE IN 2014, DOCUMENT FUGRO J31135-R-001(03). PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCESUL LA LOCATIA PLATFORMEI A FOST ACTUALIZATA PRIN DOCUMENTUL FUGRO 160424.V3 (2017)
4. DATELE DESPRE SOLUL DE PE FUNDUL MARII PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP, ROND-EW-GRRPT-00-0015-001. A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002 PENTRU DATE DESPRE SOL LA LOCATIA PLATFORMEI ACTUALIZAT CU MASURATORILE FUGRO 2017.
5. ORIENTARILE INDICATE DUPA NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND LEGATURILE CU PLATFORMA SI LA LOCATIA SONDELOR SUBMARINE VEZI DOCUMENTELE : ROND-EW-YDLAY-22-0012, ROND-EW-YDLAY-22-0005 SI ROND-EW-YDPAL-22-0011.
7. PORTIUNILE CONDUCTEI DE ADUCTIUNE SITUATE IN AFARA SANTURILOR SI IN APROPIEREA MOSORULUI PLATFORMEI DE PRODUCTIE, VOR FI PROTEJATE CU SALTELE.
8. DISTANTA MINIMA INTRE CONDUCTA DE ADUCTIUNE SI SISTEMUL OMBILICAL ESTE DE 100m.(NOMINAL120m, INCLUZAND TOLERANTE) DATORITA CERINTELOR INCALZIRII ELECTRICE DIRECTE (DEH).
9. PENTRU POZITIA SI CONFIGURATIA INITIATORULUI DE CURBURA VEZI DOC. ROND-EW-YDLAY-21-0012 / 0013.
10. PENTRU DETALII PRIVIND LUCRARILE DE PRE-INTERVENTIE, LEGATE DE PROFILUL SANTULUI CONSULTATI DOC. ROND-EW-YDPLX-21-0003/0004.
11. SE VA CONFIRMA GROSIMEA NECESARA PENTRU IZOLATIE CONFORM FISA DE DATE TEHNICE PENTRU IZOLATIE ROND-EW-YSTDS-20-0031.
12. A SE CONSULTA ROND-EW-YRSTS-21-0002, RAPORT TRONSON.
13. A SE CONFIRMA PROPRIETATILE INCALZIRII ELECTRICE DIRECTE (DEH) IN PROIECTUL DETALIAT.
14. NU ESTE APLICABIL PENTRU CONDUCTE INGROPATE.
15. TIPUL DE UMPLUTURA VA FI CONFIRMAT IN PROIECTUL DETALIAT.
16. LOCATIA SI NECESITATEA INITIATORULUI DE CURBURA VOR FI CONFIRMATE IN PROIECTUL DETALIAT IN FUNCTIE DE CERINTELE PROCESULUI EXTINS DE INGROPARE A CONDUCTEI.

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM LOCATION APPROACH BATHYMETRY UPDATED BY FUGRO DOCUMENT 160424.V3 (2017).
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT, ROND-EW-GRRPT-00-0015-001. SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002 FOR PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM AND SUBSEA WELL LOCATION REFER TO DRAWING : ROND-EW-YDLAY-22-0012, ROND-EW-YDLAY-22-0005 AND ROND-EW-YDPAL-22-0011.
7. AT SHALLOW WATER PLATFORM SPOOL AND NO TRENCHED FLOWLINE SECTION WILL BE PROTECTED BY MATTRESSES.
8. MINIMUM DISTANCE OF 100m BETWEEN FLOWLINE AND UMBILICAL (120m NOMINAL INCLUDING TOLERANCES) DUE TO DEH REQUIREMENTS.
9. FOR BUCKLE INITIATOR POSITION AND CONFIGURATION REFER TO ROND-EW-YDLAY-21-0012 / 0013.
10. PRE-INTERVENTION WORKS FOR TRENCHING PROFILE DETAILS REFER TO ROND-EW-YDPLX-21-0003/0004.
11. THICKNESS TO BE CONFIRMED WHILE MEETING INSULATION REQUIREMENTS IN ROND-EW-YSTDS-20-0031, TECHNICAL DATA SHEET FOR INSULATION.
12. REFERENCE ROND-EW-YRSTS-21-0002, SPAN REPORT.
13. DEH PROPERTIES TO BE CONFIRMED DURING DETAILED DESIGN.
14. NOT APPLICABLE IN CASE OF BURIED PIPE.
15. TYPE OF BACKFILL TO BE CONFIRMED IN DETAILED DESIGN.
16. LOCATION AND NEED OF BUCKLE INITIATOR TO BE CONFIRMED IN DETAILED DESIGN DEPENDING UPON EXTENDED BURIAL FLOWLINE REQUIREMENTS.

DOCUMENTE DE REFERINTA / REFERENCE DOCUMENTS

NUMAR PLANSA	DENUMIRE	DRAWING NUMBER	DESCRIPTION
ROND-EW-YDLAY-22-0012	PLAN ACCES SISTEM OMBILICAL LA DOMINO DODC1	ROND-EW-YDLAY-22-0012	DOMINO FLOWLINE WELL APPROACH LAYOUT DODC-1.
ROND-EW-YDLAY-22-0005	PLAN ACCES SISTEM OMBILICAL LA DOMINO DODC2	ROND-EW-YDLAY-22-0005	DOMINO FLOWLINE WELL APPROACH LAYOUT DODC-2
ROND-EW-YDLAY-22-0011	ARANJAMENT ACCES CONDUCTA DE ADUCTIUNE SI CONDUCTA GAZE NATURALE LA PLATFORMA (SWP)	ROND-EW-YDLAY-22-0011	FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT
ROND-EW-YDPAL-22-0003/0008	FISE ALINIAMENT SISTEM OMBILICAL DOMINO	ROND-EW-YDPAL-22-0003/0008	DOMINO UMBILICAL ALIGNMENT SHEETS
ROND-EW-YDLAY-21-0012/0013	PLAN LUCRARI ATENUARE DEFORMARE LATERALA CONDUCTA ADUCTIUNE DOMINO	ROND-EW-YDLAY-21-0012/0013	DOMINO LATERAL BUCKLING MITIGATION WORKS LAYOUT
ROND-EW-YDPLX-21-0003/0004	LUCRARI INTERVENTIE PRE-INSTALARE	ROND-EW-YDPLX-21-0003/0004	DOMINO PRE-LAY INTERVENTION WORKS

SCALA / SCALE BAR

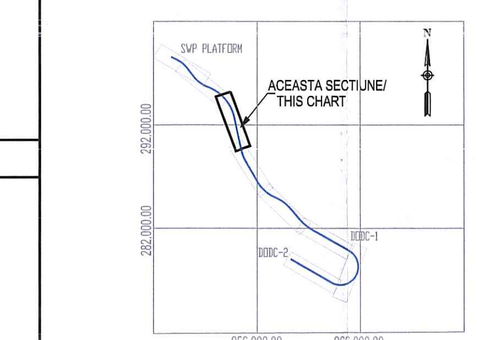
0 100 METRI 500 1,000
SCALA ORIZONTALA 1:10,000 (FORMAT "A1")

0 100 METERS 500 1,000
HORIZONTAL SCALE 1:10,000 (AT "A1" SIZE)

PARAMETRI GEODEZIE SI DE PROIECTIE / GEODETIC & PROJECTION PARAMETERS

DATE GEODEZICE	:	STEREO 70	GEODETIC DATUM	: STEREO 70
PROIECTIE	:	Dublu Stereografica	PROJECTION	: Double Stereographic
Meridianul central (MC)	:	25.0	Central meridian (CM)	: 25.0
Latitudine Origine	:	46.0	Latitude of Origin	: 46.0
Falsa origine estica	:	500,000.0	False Easting at origin	: 500,000.0
Falsa origine nordica	:	500,000.0	False Northing at origin	: 500,000.0
Factor de scala la MC	:	0.99975	Scale factor at CM	: 0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)	VERTICAL DATUM	: MSL

PLAN DE REFERINTA/KEY PLAN



NOTA / NOTE:

Planul este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numere care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

ILF CONSULTING ENGINEERS ROMANIA

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

1-D	12.03.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-C	11.01.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
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VERIFICATOR / CHECKER			I. BUTNARU		ANRE
SEF/CO-DESSEF/ CO-DESIGNER	REFERAT NR. / EVENTUL NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE		NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / EXCEEDENCES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16 ,100149, PLOIESTI
J29/307/2007, RO 20934820
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI.

1	16OCT17	RE-ISSUED FOR IFD		RO	EP, SS	JG
0	07JUL17	ISSUE FOR IFD		RO	EP, SS	JG
REV.	REV. DATE	REV. DESCRIPTION		ORIG	REV	APP

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE ADUCTIUNE DOMINO
DODC-2 - SWP/ DOMINO FLOWLINE
DODC-2 - SWP
FISA ALINIAMENT
ALIGNMENT SHEET
FISA 6 DIN 8
SHEET 6 OF 8

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 10,000	ROND-EW-YDPAL-21-0010-C	DTAC	1-D

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)

MATCH POINT START	
X	Y
294,574.30	952,793.57

MATCH POINT END	
X	Y
297,728.18	949,010.52

PUNCT LEGATURA DE INCEPUT	
X	Y
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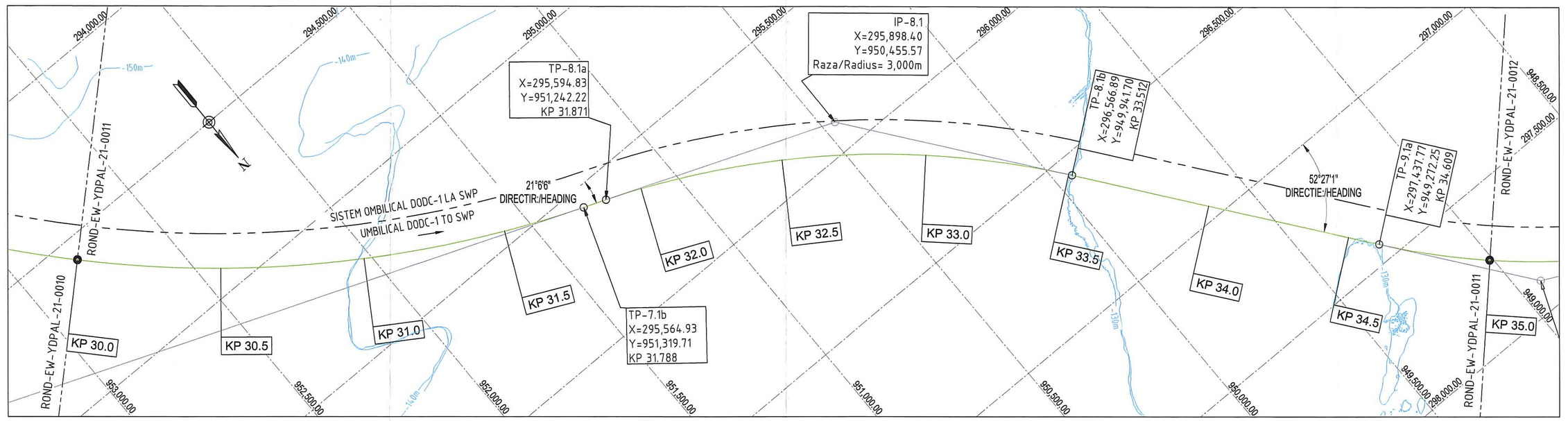
PUNCT LEGATURA DE FINAL	
X	Y
297,728.18	949,010.52

LEGENDA / LEGEND

- CONDUCTA DE ADUCTIUNE DOMINO / DOMINO FLOWLINE
- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
- PROFIL FUNDUL MARII / SEABED PROFILE

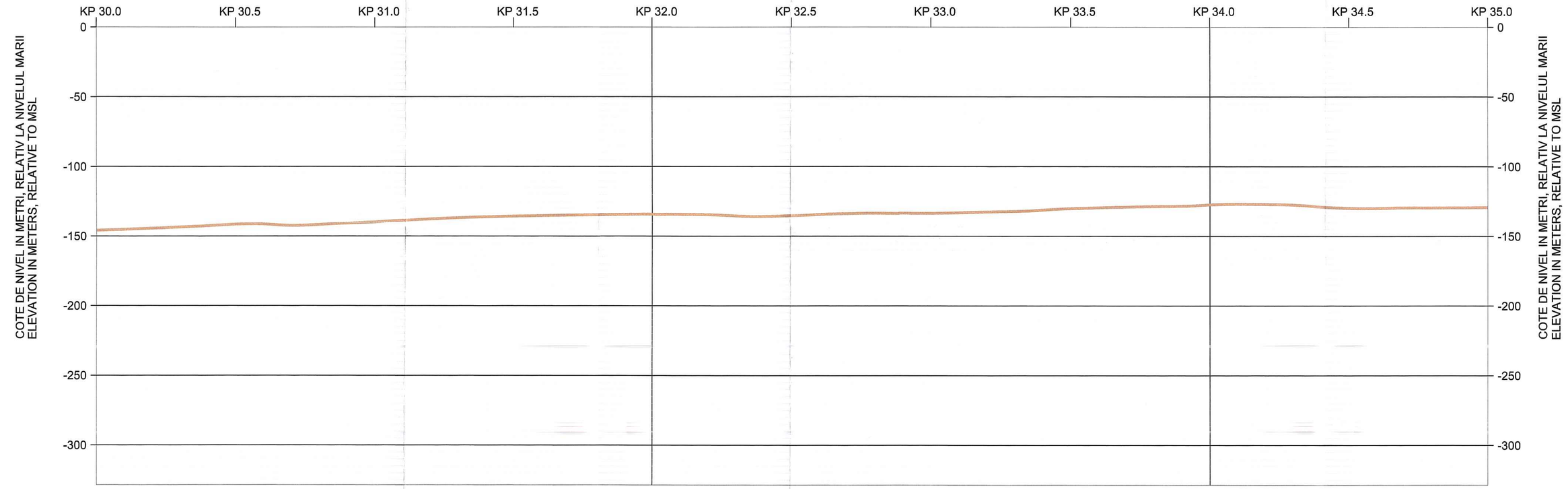
NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE

ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT



SCALA ORIZONTALA / HORIZONTAL SCALE 1: 10,000
SCALA VERTICALA / VERTICAL SCALE 1: 1,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION 5

DATE TEHNICE / ENGINEERING DATA

					KP 30.000	KP 31.247	KP 31.788	KP 31.871	KP 33.512	KP 34.609	KP 35.000
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA DE CURBURA (m)		ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)	4,000				3,000		2,500
	TRAVERSARE CABLU/CONDUCTA			CABLE / PIPELINE CROSSING				21° 6' 6"	NU EXISTA / NONE		
	TIP SOL LA SUPRAFATA FUNDULUI MARII			SURFACE SEABED SOIL	ARGILA CU REZISTENTA SCAZUTA PANA LA FOARTE SCAZUTA (NOTA 4) / EXTREMELY LOW TO LOW STRENGTH CLAY (NOTE 4)						
DATE CONDUCTA	TIP OTEL / D. EXT. (mm) / GROSIME PERETE (mm)		PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	ZONA4 - ARGILA USOR PRAFOASA, GRI, CU REZISTENTA SCAZUTA SPRE MEDIE (USOR SUPRACONSOLIDATA) (NOTE 4) DNV SAWL 450 SFDPU / 457.2 / 26.1						
	GROSIME PERETE DISP. ANTIDEFORMARE(mm)/ INTERVAL (m)			BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	ZONE 4 - LOW TO MEDIUM STRENGTH (SLIGHTLY OVER CONSOLIDATED) GREY SLIGHTLY SILTY CLAY (NOTE 4) NU EXISTA / NONE						
	STRAT ANTI-COROZIV/GROSIME(mm)/DENSITATE(kg/m³)			ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	NU SE APLICA / N/A						
	STRAT TERMOIZOLANT/GROSIME (mm)/DENSITATE (kg/m³)			EXT. THER. INS. COAT./THICK (mm)/DENSITY (kg/m³)	FBE + POLIPROPILENA SINTETICA / 75 / 790 (NOTA 11) / FBE + SYNTACTIC POLYPROPYLENE / 75 / 790 (NOTE 11)						
	STRAT BETON / STRAT INTERIOR PROTECTIE			CONCRETE COATING / INTERNAL COATING	NU EXISTA / NONE						
	TIP SUDURA/TIP UMPLUTURA/DENSITATE (kg/m³)			FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	POLIURETAN / POLYURETHANE / 950 (TIP / TYP)						
	TIP ANOD PROTECTIE / INTERVAL PLASARE INR. DE SEGMENTE			ANODE BRACELETS TYPE / SPACING (joints)	ALUMINIU (300mm x 50mm) 1 LA 24 SEGMENTE / AL (300mm x 50mm) / 1 EVRY 24 JOINTS						
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)		PIPELINE WEIGHT (kN/m)	IN AIR (DRY) (kN/m)	3.6927					
		IN APA	GOALA (kN/m) / SG	SUBMERGED	EMPTY (kN/m) / SG	0.7820 / 1.27					
			INUNDATA (kN/m) / SG		FLOODED (kN/m) / SG	2.0769 / 1.71					
			FUNCTIONARE (kN/m) / SG		OPERATION (kN/m) / SG	0.9361 (IN MEDIE / AVERAGE) / 1.32					
DATE INCALZIRE ELECTRICA DIRECTA (NOTE 13)	GREUTATE CABLU DEH (kN/m)	D. EXT. (mm)	DEH DATA (NOTE 13)	DEH CABLE WEIGHT (kN/m)	O.D. (mm)	125					
		IN AER (USCATA) (kg/m)			IN AIR (DRY) (kg/m)	43					
		IN APA (kg/m) / SG			SUBMERGED (kg/m) / SG	32 / 3.9					
	TIP LEGATURI/NR. DE LEGATURI PE SEGMENT			TYPE OF STRAP/No. OF STRAPS PER JOINT	VA FI CONFIRMAT / T.B.D.						
LUCRARI PRE-INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)		PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE						
	SUPORTI/ SALTELE			SLEEPERS / MATTRESSES	NU EXISTA / NONE						
LUCRARI POST-INSTALARE CONDUCTA	ADANCIME SANT (m)		POST-LAY INT. WORKS	TRENCHING DEPTH (m)	VA FI CONFIRMAT (NOTA 15)/ T.B.D. (NOTE 15)						
	TIP UMPLUTURA / INALTIME STRAT ACOPERIRE (m)			BACKFILLING TYPE / COVER TOP (m)	UMPLUTURA NATURALA / 0.2m (TBC) (NOTA 15) / NATURAL BACKFILL / 0.2m (TBC) (NOTE 15)						
	DEPUNERE AGREGAT/PIETRIS			GRAVEL DUMPING	NU SE APLICA / N/A						
LUNGIME TRONSON ADMISA	INSTALARE (m)		ALLOWABLE SPAN LENGTH (NOTE 12)	INSTALLATION (m)	53.4						
	HYDRO-TEST (m)			HYDROTEST (m)	21.3						
	FUNCTIONARE (m)			OPERATION (m)	43.4 (NOTA 14 / NOTE 14)						
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (+/-m)		SPECIFIC REQUIREM.	LAY TOLERANCE (+/-m)	±10						
	ALTELE			OTHER	-						

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERARE COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATE IN 2014, DOCUMENT FUGRO J31135-R-001(03). PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCESUL LA LOCATIA PLATFORMEI A FOST ACTUALIZATA PRIN DOCUMENTUL FUGRO 160424.V3 (2017).
4. DATELE DESPRE SOLUL DE PE FUNDUL MARII PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP, ROND-EW-GRRPT-00-0015-001. A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002 PENTRU DATE DESPRE SOL LA LOCATIA PLATFORMEI ACTUALIZAT CU MASURATORILE FUGRO 2017.
5. ORIENTARILE INDICATE DUPA NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND LEGATURILE CU PLATFORMA SI LA LOCATIA SONDELOR SUBMARINE VEZI DOCUMENTELE : ROND-EW-YDLAY-22-0012, ROND-EW-YDLAY-22-0005 SI ROND-EW-YDPAL-22-0011.
7. PORTIUNILE CONDUCTEI DE ADUCTIUNE SITUATE IN AFARA SANTURILOR SI IN APROPIEREA MOSORULUI PLATFORMEI DE PRODUCTIE, VOR FI PROTEJATE CU SALTELE.
8. DISTANTA MINIMA INTRE CONDUCTA DE ADUCTIUNE SI SISTEMUL OMBILICAL ESTE DE 100m.(NOMINAL/120m, INCLUZAND TOLERANTE) DATORITA CERINTELOR INCALZIRII ELECTRICE DIRECTE (DEH).
9. PENTRU POZITIA SI CONFIGURATIA INITIATORULUI DE CURBURA VEZI DOC. ROND-EW-YDLAY-21-0012 / 0013.
10. PENTRU DETALII PRIVIND LUCRARILE DE PRE-INTERVENTIE, LEGATE DE PROFILUL SANTULUI CONSULTATI DOC. ROND-EW-YDPLX-21-0003/0004.
11. SE VA CONFIRMA GROSIMEA NECESARA PENTRU IZOLATIE CONFORM FISA DE DATE TEHNICE PENTRU IZOLATIE ROND-EW-YSTDS-20-0031.
12. A SE CONSULTA ROND-EW-YRSTS-21-0002, RAPORT TRONSON.
13. A SE CONFIRMA PROPRIETATILE INCALZIRII ELECTRICE DIRECTE (DEH) IN PROIECTUL DETALIAT.
14. NU ESTE APLICABIL IN CAZUL CONDUCTEI INGROPATE.
15. TIPUL DE UMPLUTURA VA FI CONFIRMAT IN PROIECTUL DETALIAT.

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM LOCATION APPROACH BATHYMETRY UPDATED BY FUGRO DOCUMENT 160424.V3 (2017).
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT, ROND-EW-GRRPT-00-0015-001. SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002 FOR PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM AND SUBSEA WELL LOCATION REFER TO DRAWING : ROND-EW-YDLAY-22-0012, ROND-EW-YDLAY-22-0005 AND ROND-EW-YDPAL-22-0011.
7. AT SHALLOW WATER PLATFORM SPOOL AND NO TRENCHED FLOWLINE SECTION WILL BE PROTECTED BY MATTRESSES.
8. MINIMUM DISTANCE OF 100m BETWEEN FLOWLINE AND UMBILICAL (120m NOMINAL INCLUDING TOLERANCES) DUE TO DEH REQUIREMENTS.
9. FOR BUCKLE INITIATOR POSITION AND CONFIGURATION REFER TO ROND-EW-YDLAY-21-0012 / 0013.
10. PRE-INTERVENTION WORKS FOR TRENCHING PROFILE DETAILS REFER TO ROND-EW-YDPLX-21-0003/0004.
11. THICKNESS TO BE CONFIRMED WHILE MEETING INSULATION REQUIREMENTS IN ROND-EW-YSTDS-20-0031, TECHNICAL DATA SHEET FOR INSULATION.
12. REFERENCE ROND-EW-YRSTS-21-0002, SPAN REPORT.
13. DEH PROPERTIES TO BE CONFIRMED DURING DETAILED DESIGN.
14. NOT APPLICABLE IN CASE OF BURIED PIPE.
15. TYPE OF BACKFILL TO BE CONFIRMED IN DETAILED DESIGN.

DOCUMENTE DE REFERINTA / REFERENCE DOCUMENTS

NUMAR PLANSA	DENUMIRE	DRAWING NUMBER	DESCRIPTION
ROND-EW-YDLAY-22-0012	PLAN ACCES SISTEM OMBILICAL LA DOMINO DODC1	ROND-EW-YDLAY-22-0012 -	DOMINO FLOWLINE WELL APPROACH LAYOUT DODC-1
ROND-EW-YDLAY-22-0005	PLAN ACCES SISTEM OMBILICAL LA DOMINO DODC2	ROND-EW-YDLAY-22-0005	DOMINO FLOWLINE WELL APPROACH LAYOUT DODC-2
ROND-EW-YDLAY-22-0011	ARANJAMENT ACCES CONDUCTA DE ADUCTIUNE SI CONDUCTA GAZE NATURALE LA PLATFORMA (SWP)	ROND-EW-YDLAY-22-0011	FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT
ROND-EW-YDLAY-22-0003/0008	FISE ALINIAMENT SISTEM OMBILICAL DOMINO	ROND-EW-YDLAY-22-0003/0008	DOMINO UMBILICAL ALIGNMENT SHEETS
ROND-EW-YDPLX-21-0003/0004	LUCRARI INTERVENTIE PRE-INSTALARE	ROND-EW-YDPLX-21-0003/0004	DOMINO PRE-LAY INTERVENTION WORKS

SCALA / SCALE BAR

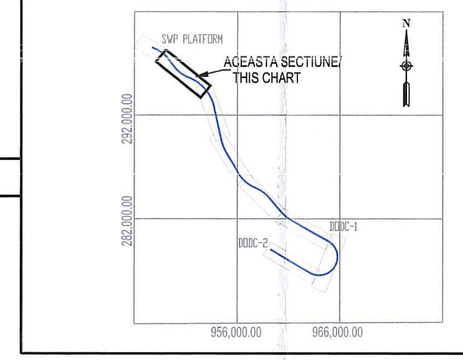
METRI: 0 100 500 1,000
SCALA ORIZONTALA 1:10,000 (FORMAT "A1")

METERS: 0 100 500 1,000
HORIZONTAL SCALE 1:10,000 (AT "A1" SIZE)

PARAMETRI GEODEZIE SI DE PROIECTIE / GEODETIC & PROJECTION PARAMETERS

DATE GEODEZICE	:	STEREO 70	GEODETIC DATUM	: STEREO 70
PROIECTIE	:	Dublu Stereografica	PROJECTION	: Double Stereographic
Meridianul central (MC)	:	25.0	Central meridian (CM)	: 25.0
Latitudine Origine	:	46.0	Latitude of Origin	: 46.0
Falsa origine estica	:	500,000.0	False Easting at origin	: 500,000.0
Falsa origine nordica	:	500,000.0	False Northing at origin	: 500,000.0
Factor de scala la MC	:	0.99975	Scale factor at CM	: 0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)	VERTICAL DATUM	: MSL

PLAN DE REFERINTA/KEY PLAN



NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numere care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

PROIECT NEPTUN DEEP /
NEPTUN DEEP PROJECT

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	APROBAT / APPROVED
1-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-C	11.01.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-B	20.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
1-A	03.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR / CHECKER			I. BUTNARU		ANRE
DESCRIPTOR / DESCRIPTOR		REFERAT NR./ EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE	NUME / NAME	SEMNATURA / SIGNATURE	DOSARUL EVIDENCES

PROIECTANT / ENGINEERING CONTRACTOR
B.P. CONSULTING ENGINEERS ROMANIA
STR. NEGRUZZI VODA NR. 16, 100149, PLOIESTI
TEL: 0722.777.999; 0244.596.460
S.C. JEREMY PROMASTER S.R.L.
STR. CONSTANTEANU, NR. 16A, PLOIESTI.

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	16OCT17	RE-ISSUED FOR IFD	RO	EP	SS	JG
0	07JUL17	ISSUE FOR IDC	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE ADUCTIUNE DOMINO
DOMINO FLOWLINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA 7 DIN 8
SHEET 7 OF 8

1 : 10,000	ROND-EW-YDPAL-21-0011-C	DTAC	1-D
SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)

MATCH POINT START	
X	Y
297,728.18	949,010.52

18-INCH FLET	
X	Y
298,468.41	947,769.65

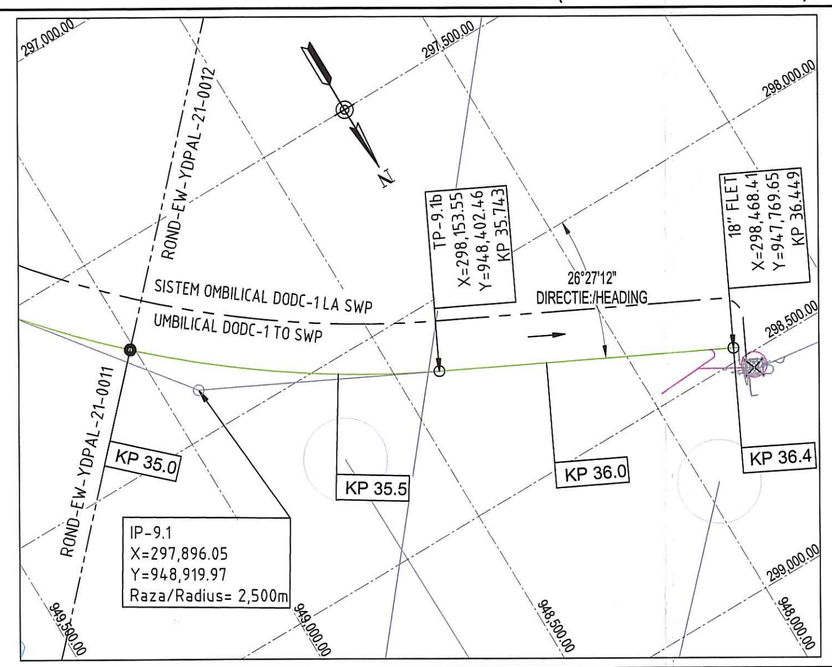
PUNCT LEGATURA DE INCEPUT	
X	Y
297,728.18	949,010.52

DISPOZITIV CAPAT CONDUCTA ADUCTIUNE18-INCH	
X	Y
298,468.41	947,769.65

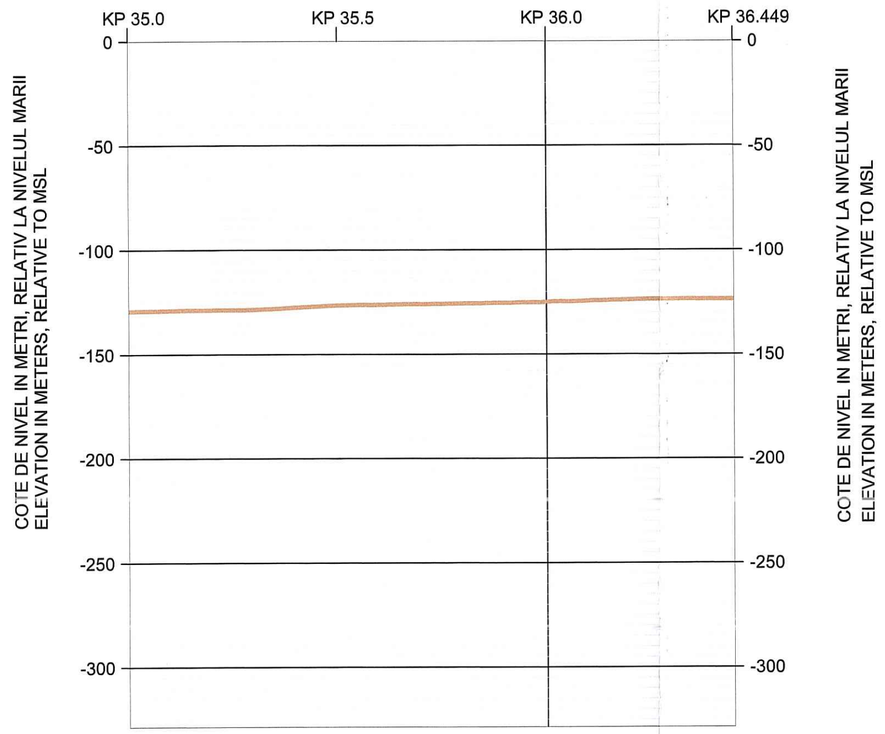
LEGENDA / LEGEND

- CONDUCTA DE ADUCTIUNE DOMINO / DOMINO FLOWLINE
- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
- PROFIL FUNDUL MARII / SEABED PROFILE
- CABLU SISTEM INCALZIRE ELECTRIC DIRECT/DEH CABLE
- CABLURI ANCORAJ SI ZONA EXCLUDERE ANCORA / MOORING LINES & ANCHOR EXCLUSION ZONE

NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



SCALA ORIZONTALA / HORIZONTAL SCALE 1 : 10,000
SCALA VERTICALA / VERTICAL SCALE 1 : 1,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION 5

ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

DATE DE TEHNICE / ENGINEERING DATA

						KP 35.000	KP 35.592	KP 35.793	KP 35.949	KP 36.349	KP 36.392	KP 36.449
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA DE CURBURA (m)			ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)	2,500			26° 27' 12"			
	TRAVERSARE CABLU/CONDUCTA				CABLE / PIPELINE CROSSING	NU EXISTA / NONE						
	TIP SOL LA SUPRAFATA FUNDULUI MARII				SURFACE SEABED SOIL	ARGILA CU REZISTENTA SCAZUTA PANA LA FOARTE SCAZUTA (NOTA 4) / EXTREMELY LOW TO LOW STRENGTH CLAY (NOTE 4)						
DATE CONDUCTA	TIP OTEL / D. EXT. (mm) / GROSIME PERETE (mm)			PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 SFDPU / 457.2 / 26.1						DNV SAWL 450 SFDPU / 457.2 / 29.7
	GROSIME PERETE DISP. ANTIDEFORMARE(mm)/ INTERVAL (m)				BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	NU EXISTA / NONE						
	STRAT ANTI-COROZIV/GROSIME(mm)/DENSITATE(kg/m³)				ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	NU SE APLICA / N/A						
	STRAT TERMOIZOLANT/GROSIME (mm)/DENSITATE (kg/m³)				EXT. THER. INS. COAT./THICK (mm)/DENSITY (kg/m³)	FBE + POLIPROPILENA SINTETICA / 75 / 790 / (NOTA 11) / FBE + SYNTACTIC POLYPROPYLENE / 75 / 790 (NOTE 11)						
	STRAT BETON / STRAT INTERIOR PROTECTIE				CONCRETE COATING / INTERNAL COATING	NU EXISTA / NONE						
	TIP SUDURA/TIP UMPLUTURA/DENSITATE (kg/m³)				FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	POLIURETAN / POLYURETHANE / 950 (TIP / TYP)						IMBINARE ANOD TRIPLA / TRIPLE ANODE JOINT
	TIP ANOD PROTECTIE / INTERVAL PLASARE (NR. DE SEGMENTE)				ANODE BRACELETS TYPE / SPACING (joints)	ALUMINIU (300mm x 50mm) / 1 LA 24 SEGMENTE / AL (300mm x 50mm) / 1 EVRY 24 JOINTS						
	GREUTATE CONDUCTA (kN/m)	IN AER (USCATA) (kN/m)			PIPELINE WEIGHT (kN/m)	IN AIR (DRY) (kN/m)	3.6927			4.0421		
		IN APA	GOALA (kN/m) / SG			SUBMERGED	FLOODED (kN/m) / SG	2.0769 / 1.71			2.3807 / 1.82	
			INUNDATA (kN/m) / SG				OPERATION (kN/m) / SG	0.9361 (IN MEDIE / AVERAGE) / 1.32			1.2801(IN MEDIE/AVERAGE)/1.44	
			FUNCTIONARE (kN/m) / SG									
DATE INCALZIRE ELECTRICA DIRECTA (NOTE 13)	GREUTATE CABLU DEH (kN/m)	D. EXT. (mm)		DEH DATA (NOTE 13)	DEH CABLE WEIGHT (kN/m)	O.D. (mm)	125					NU EXISTA / NONE
		IN AER (USCATA) (kg/m)				IN AIR (DRY) (kg/m)	43					NU EXISTA / NONE
		IN APA (kg/m) / SG				SUBMERGED (kg/m) / SG	32 / 13.9					NU EXISTA / NONE
	TIP LEGATURI/NR. DE LEGATURI PE SEGMENT				TYPE OF STRAP/No. OF STRAPS PER JOINT	VA FI CONFIRMAT / T.B.D.						NU EXISTA / NONE
LUCRARI PRE-INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)			PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE						
	SUPORTI/ SALTELE				SLEEPERS / MATTRESSES	NU EXISTA / NONE						
LUCRARI POST-INSTALARE CONDUCTA	ADANCIME SANT (m)			POST-LAY INT. WORKS	TRENCHING DEPTH (m)	VA FI CONFIRMAT (NOTA 10) / T.B.D. (NOTE 10)						
	TIP UMPLUTURA / INALTIME STRAT ACOPERIRE (m)				BACKFILLING TYPE / COVER TOP (m)	UMPLUTURA NATURALA / 0.2m (TBC) (NOTA 10) / NATURAL BACKFILL / 0.2m (TBC) (NOTE 10)						
	DEPUNERE AGREGAT/PIETRIS				GRAVEL DUMPING	NU SE APLICA / N/A						
LUNGIME TRONSON ADMISA	INSTALARE (m)			ALLOWABLE SPAN LENGTH (NOTE 12)	INSTALLATION (m)	53.4				59.7		
	HYDRO-TEST (m)				HYDROTEST (m)	21.3				49.2		
	FUNCTIONARE (m)				OPERATION (m)	43.4 (NOTA 9 / NOTE 9)				43.0 (NOTA 9 / NOTE 9)		
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (+/-m)			SPECIFIC REQUIREM.	LAY TOLERANCE (+/-m)	±10				±1.5		SALTELE / MATTRESS
	ALTELE				OTHER	-						18" DISPOZITIV CAPAT CONDUCTA DE ADUCTIUNE / FLET
												PUNCT SPECIAL CU PLACA DE INCHEIERE SI ZONA TRANSFER CURENT / SPECIAL JOINT WITH TERMINATION PLATE AND CTZ

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATE IN 2014, DOCUMENT FUGRO J31135-R-001(03). PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCESUL LA LOCATIA PLATFORMEI A FOST ACTUALIZATA PRIN DOCUMENTUL FUGRO 160424.V3 (2017)
4. DATELE DESPRE SOLUL DE PE FUNDUL MARII PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP, ROND-EW-GRRPT-00-0015-001. A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002 PENTRU DATE DESPRE SOL LA LOCATIA PLATFORMEI ACTUALIZAT CU MASURATORILE FUGRO 2017.
5. ORIENTARILE INDICATE DUPA NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND LEGATURILE CU PLATFORMA SI LA LOCATIA SONDELOR SUBMARINE VEZI DOCUMENTELE : ROND-EW-YDLAY-22-0012, ROND-EW-YDLAY-22-0005 SI ROND-EW-YDPAL-22-0011.
7. PORTIUNILE CONDUCTEI DE ADUCTIUNE SITUATE IN AFARA SANTURILOR SI IN APROPIEREA MOSORULUI PLATFORMEI DE PRODUCTIE, VOR FI PROTEJATE CU SALTELE.
8. DISTANTA MINIMA INTRE CONDUCTA DE ADUCTIUNE SI SISTEMUL OMBILICAL ESTE DE 100m.(NOMINAL120m, INCLUZAND TOLERANTE) DATORITA CERINTELOR INCALZIRII ELECTRICE DIRECTE (DEH).
9. PENTRU POZITIA SI CONFIGURATIA INITIATORULUI DE CURBURA VEZI DOC. ROND-EW-YDLAY-21-0012 / 0013.
10. PENTRU DETALII PRIVIND LUCRARILE DE PRE-INTERVENTIE, LEGATE DE PROFILUL SANTULUI CONSULTATI DOC. ROND-EW-YDPLX-21-0003/0004.
11. SE VA CONFIRMA GROSIMEA NECESARA PENTRU IZOLATIE CONFORM FISA DE DATE TEHNICE PENTRU IZOLATIE ROND-EW-YSTDS-20-0031.
12. A SE CONSULTA ROND-EW-YRSTS-21-0002, RAPORT TRONSON.
13. A SE CONFIRMA PROPRIETATILE INCALZIRII ELECTRICE DIRECTE (DEH) IN PROIECTUL DETALIAT.

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM LOCATION APPROACH BATHYMETRY UPDATED BY FUGRO DOCUMENT 160424.V3 (2017).
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT, ROND-EW-GRRPT-00-0015-001.
   SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002 FOR PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM AND SUBSEA WELL LOCATION REFER TO DRAWING : ROND-EW-YDLAY-22-0012, ROND-EW-YDLAY-22-0005 AND ROND-EW-YDPAL-22-0011.
7. AT SHALLOW WATER PLATFORM SPOOL AND NO TRENCHED FLOWLINE SECTION WILL BE PROTECTED BY MATTRESSES.
8. MINIMUM DISTANCE OF 100m BETWEEN FLOWLINE AND UMBILICAL (120m NOMINAL INCLUDING TOLERANCES) DUE TO DEH REQUIREMENTS.
9. NOT APPLICABLE IN CASE OF BURIED PIPE.
10. TYPE OF BACKFILL TO BE CONFIRMED IN DETAILED DESIGN.
11. THICKNESS TO BE CONFIRMED WHILE MEETING INSULATION REQUIREMENTS IN ROND-EW-YSTDS-20-0031, TECHNICAL DATA SHEET FOR INSULATION.
12. REFERENCE ROND-EW-YRSTS-21-0002, SPAN REPORT.
13. DEH PROPERTIES TO BE CONFIRMED DURING DETAILED DESIGN.

DOCUMENTE DE REFERINTA / REFERENCE DOCUMENTS

NUMAR PLANSA	DENUMIRE	DRAWING NUMBER	DESCRIPTION
ROND-EW-YDLAY-22-0012	PLAN ACCES SONDA CONDUCTA DE ADUCTIUNE DOMINO DODC-1	ROND-EW-YDLAY-22-0012	DOMINO FLOWLINE WELL APPROACH LAYOUT DODC-1.
ROND-EW-YDLAY-22-0005	PLAN ACCES SONDA CONDUCTA DE ADUCTIUNE DOMINO DODC-2	ROND-EW-YDLAY-22-0005	DOMINO FLOWLINE WELL APPROACH LAYOUT DODC-2
ROND-EW-YDLAY-22-0011	ARANJAMENT ACCES CONDUCTA DE ADUCTIUNE SI CONDUCTA GAZE NATURALE LA PLATFORMA (SWP)	ROND-EW-YDLAY-22-0011	FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT
ROND-EW-YDLAY-22-0003/0008	FISE ALINIAMENT SISTEM OMBILICAL DOMINO	ROND-EW-YDLAY-22-0003/0008	DOMINO UMBILICAL ALIGNMENT SHEETS

SCALA / SCALE BAR

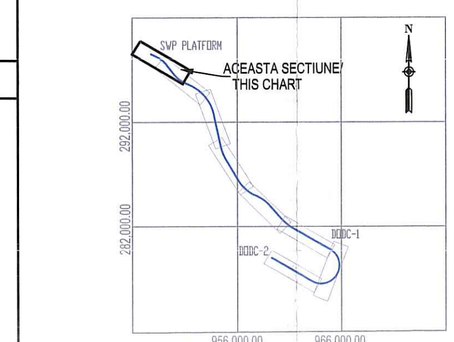
METRI: 0 — 100 — 500 — 1,000
SCALA ORIZONTALA 1:10,000 (FORMAT "A1")

METERS: 0 — 100 — 500 — 1,000
HORIZONTAL SCALE 1:10,000 (AT "A1" SIZE)

PARAMETRI GEODEZIE SI DE PROIECTIE / GEODETIC & PROJECTION PARAMETERS

DATE GEODEZICE	:	STEREO 70	GEODETIC DATUM	: STEREO 70
PROIECTIE	:	Dublu Stereografica	PROJECTION	: Double Stereographic
Meridianul central (MC)	:	25.0	Central meridian (CM)	: 25.0
Latitudine Origine	:	46.0	Latitude of Origin	: 46.0
Falsa origine estica	:	500,000.0	False Easting at origin	: 500,000.0
Falsa origine nordica	:	500,000.0	False Northing at origin	: 500,000.0
Factor de scala la MC	:	0.99975	Scale factor at CM	: 0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)	VERTICAL DATUM	: MSL

PLAN DE REFERINTA/KEY PLAN



NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numere care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
1-D	12.03.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-C	11.01.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-B	29.05.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
1-A	03.02.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR CHECKER			I. BUTNARIU		ANRE
VERIFICATOR/EXPERT CHECKER/EXPERT		REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16, 100149, PLOIESTI
J29/3071/2007, RO 22804820
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	16OCT17	RE-ISSUED FOR IFD	RO	EP	SS	JG
0	07JUL17	ISSUE FOR IDC	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE ADUCTIUNE DOMINO
DOMINO FLOWLINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA 8 DIN 8
SHEET 8 OF 8

1 : 10,000	ROND-EW-YDPAL-21-0012-C	DTAC	1-D
SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.

A1 841x594

Appendix C. Onshore and Offshore Site Layout Plans

11 –Domino umbilical from SWP to DODC1 alignment sheets

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)

MATCH POINT START	
X	Y
298,507.64	947,757.29

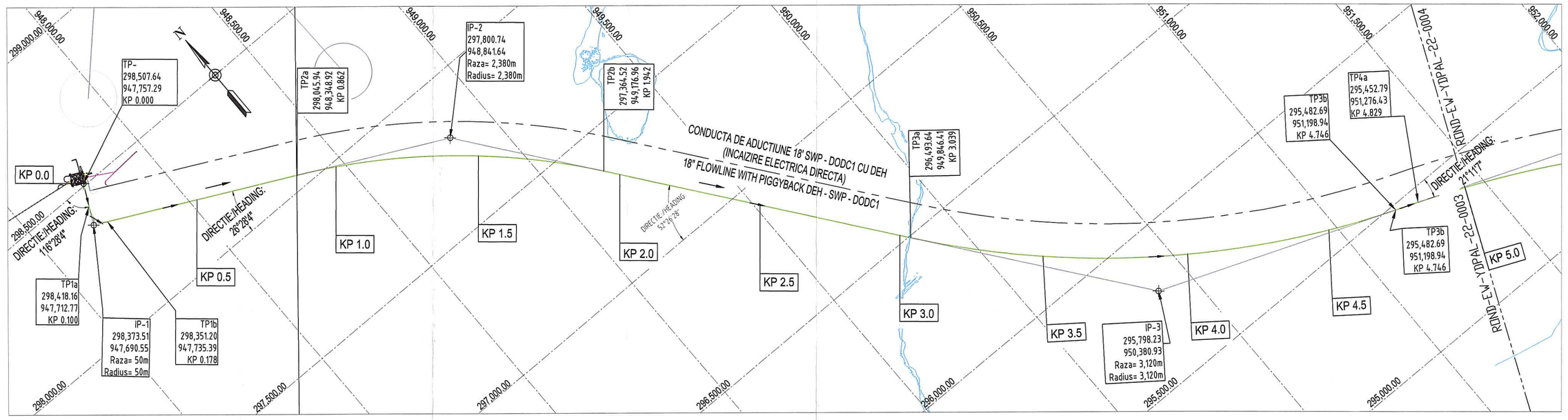
PUNCT LEGATURA DE INCEPUT	
X	Y
298,507.64	947,757.29

MATCH POINT END	
X	Y
295,387.87	951,434.21

PUNCT LEGATURA DE FINAL	
X	Y
295,387.87	951,434.21

LEGENDA / LEGEND

- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
- CONDUCTA DE ADUCTIUNE DOMINO / DOMINO FLOWLINE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CABLURI ANCORA/ SI ZONA EXCLUDERE ANCORA / MOORING LINES & ANCHOR EXCLUSION ZONE



NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.

PROFIL LONGITUDINAL SISTEM OMBILICAL / LONGITUDINAL PROFILE ALONG UMBILICAL

ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 10,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	5

DATE TEHNICE / ENGINEERING DATA

| | | |

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)

MATCH POINT START	
X	Y
295,387.87	951,434.21

MATCH POINT END	
X	Y
291,347.45	953,962.80

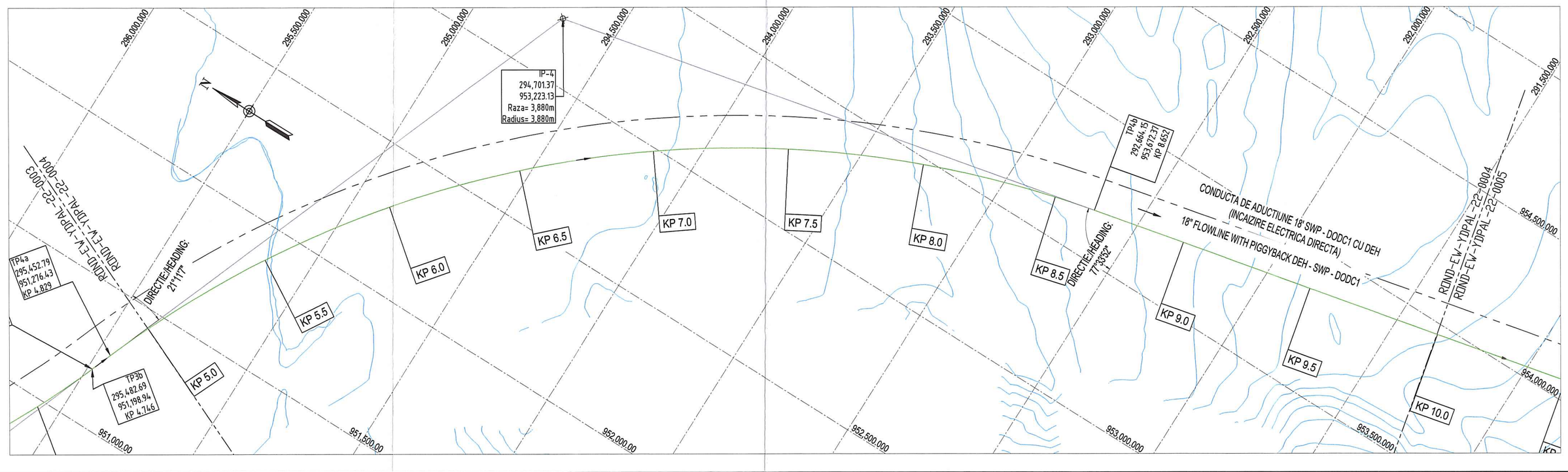
PUNCT LEGATURA DE INCEPUT	
X	Y
295,387.87	951,434.21

PUNCT LEGATURA DE FINAL	
X	Y
291,347.45	953,962.80

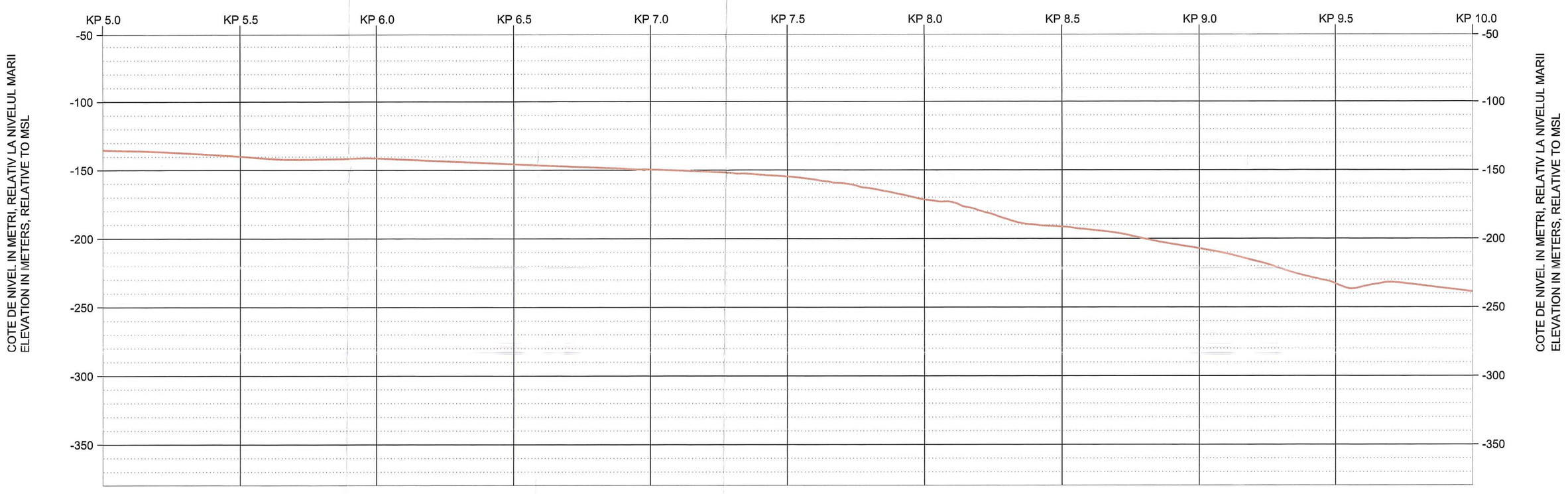
LEGENDA / LEGEND

- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
- CONDUCTA DE ADUCTIUNE DOMINO / DOMINO FLOWLINE
- PROFIL FUNDUL MARII / SEABED PROFILE

NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.



PROFIL LONGITUDINAL SISTEM OMBILICAL / LONGITUDINAL PROFILE ALONG UMBILICAL



ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 10,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	5

DATE TEHNICE / ENGINEERING DATA

				KP 5.000 – KP 5.202	KP 8.334 – KP 8.652	KP 10.000
ELEMENTE PE TRASEU	ORIENTARE ('N) / RAZA CURBA (m)	ROUTE ITEMS	STRAIGHT HEADING ('N) / CURVE RADIUS (m)	21° 11' 7" — 3,880	77° 33' 43"	
	TRAVERSARE: CONDUCTA		PIPELINE	NU SE APLICA / N.A.		
	TRAVERSARE: CABLU		CROSSING: CABLE	NU SE APLICA / N.A.		
	TIP SOL PE SUPRAFATA FUNDULUI MARII		SEABED GROUND SOIL	ZONA4 - ARGILA PRAFOASA, GRI CU REZISTENTA SCAZUTA SPRE MEDIE (USOR SUPRACONSOLIDATA) (NOTA 4) / ZONE 4 - LOW TO MEDIUM STRENGTH (SLIGHTLY OVER CONSOLIDATE) GREY SILTY CLAY (NOTE 4)		ZONA 3 - ARGILA VERZUI-INCHIS CU REZISTENTA FOARTE SCAZUTA (NOTA 4) / ZONE 3 - EXTREMELY LOW STRENGTH DARK GREENISH CLAY (NOTE 4)
DATE SISTEM OMBILICAL	DIAMETRU EXTERIOR (mm)	UMBILICAL DATA	OD (mm)	ARGILA CU REZISTENTA SCAZUTA PANA LA FOARTE SCAZUTA (NOTA 4) / EXTREMELY LOW TO LOW STRENGTH CLAY (NOTE 4) — 160		
	GREUTATE IN AER (USCATA)		DRY WEIGHT	347		
	GREUTATE IN APA		SUBMERGED WEIGHT	144		
	RAZA MINIMA CURBA (m) INSTALARE / FUNCTIUNE		MIN. CURVE RADIUS (m) INSTALLATION / OPERATION	6.6 / 9.5		
SAPATURA & UMPLERE	ADANCIME SANT (m)	TRENCHING & BACKFILLING	TRENCHING DEPTH (m)	VA FI CONFIRMAT(NOTA 14) / TBD (NOTE 14)	NU EXISTA / NONE	
	TIP UMPLUTURA / STRAT ACOPERIRE (m)		BACKFILLING TYPE / COVER TOP (m)	UMPLUTURA NATURALA (TBC) / 0.2 (MIN.) (NOTA 14) / NATURAL BACK FILLING (TBC) / 0.2 (MIN.) (NOTE 14)	NU EXISTA / NONE	
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)	SPECIFIC REQUIREMENTS	LAY TOLERANCE (m)	±10		
	STRAT PIATRA / SALTELE		ROCK DUMP / MATTRESSES	NU SE APLICA / N.A.		

NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite asfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numere care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT.SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATE IN 2014, DOCUMENT FUGRO J31135-R-001(03). PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCESUL LA LOCATIA PLATFORMEI A FOST ACTUALIZATA PRIN DOCUMENTUL FUGRO 160424 V3 (2017)
4. DATELE DESPRE SOLUL DE PE FUNDUL MARII PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP, ROND-EW-GRRPT-00-0015-001. A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002 PENTRU DATE DESPRE SOL LA LOCATIA PLATFORMEI ACTUALIZAT CU MASURATORILE FUGRO 2017.
5. PENTRU DETALII PRIVIND CONEXIUNILE DINTRE PLATFORMA SI SONDELE SUBMARINE, SE VOR CONSULTA PLANSELE:
   - ROND-EW-YDLAY-22-0012 - PLAN ACCES SISTEM OMBILICAL CONDUCTA ADUCTIUNE DOMINO LA DODC1
   - ROND-EW-YDLAY-22-0005 - PLAN ACCES SISTEM OMBILICAL CONDUCTA ADUCTIUNE DOMINO LA DODC2;
   - ROND-EW-YDPAL-22-0011 - PLAN ACCES CONDUCTA ADUCTIUNE SI CONDUCTA GAZE NATURALE LA PLATFORMA DE PRODUCTIE (SWP)
6. IN ZONA PLATFORMEI DE PRODUCTIE, SISTEMUL OMBILICAL VA FI PROTEJAT CU SALTELE DIN BETON.
7. SISTEMUL OMBILICAL VA FI AMPLASAT IN SANT, DE LA PLATFORMA DE PRODUCTIE, PANA LA O ADANCIME DE 200m.
8. LUNGIMEA TOTALA A SISTEMULUI OMBILICAL NU INCLUDE LUNGIMEA TUBULUI J SI LUNGIMEA SURPLUSULUI DE PE FUNDUL MARII PENTRU TRACTARE SAU SITUATII NEPREVAZUTE.
9. DATELE SISTEMULUI OMBILICAL TREBUIE SA FIE CONFIRMATE DUPA DESEMNAREA FURNIZORULUI. VALORILE CURENTE SUNT INDICATIVE SI VOR FI ADOPTATE CAND VOR FI STIUTE.
10. ORIENTARILE INDICATE DUPA NORDUL STEREO 70.
11. LUNGIMEA FINALA A SISTEMULUI OMBILICAL DOMINO DE LA SWP LA DODC-1 ESTE EGALA CU 26,010m. ACEASTA EXCLUDE LUNGIMEA DE 130m A TUBULUI J SI APROXIMATIV 60m LUNGIMEA SURPLUSULUI.
12. CURBA DE COMPENSARE DE APROXIMATIV 60m. A JUSTAREA FINALA A LUNGIMI CURBEI DE COMPENSARE VA FI DETERMINATA IN PROIECTUL DETALIAT. AJUSTAREA FINALA A SISTEMULUI OMBILICAL DE 3m, DACA ESTE NECESARA PENTRU ALINIERE.
13. DISTANTA MINIMA DE 100m INTRE CONDUCTA DE ADUCTIUNE SI SISTEMUL OMBILICAL (120m INCLUZAND TOLERANTE) DATORITA CERINTELOR INCALZIRII ELECTRICE DIRECTE (DEH).
14. TIPUL DE UMPLUTURA VA FI CONFIRMAT IN PROIECTUL DETALIAT.

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM LOCATION APPROACH BATHYMETRY UPDATED BY FUGRO DOCUMENT NUMBER 160424 V3 (2017)
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002 FOR PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. FOR DETAILS OF TIE-INS TO THE PLATFORM AND THE SUBSEA WELLS REFER TO DRAWINGS:
   - ROND-EW-YDLAY-22-0012 - DOMINO FLOWLINE UMBILICAL WELL APPROACH LAYOUT DODC1
   - ROND-EW-YDLAY-22-0005 - DOMINO FLOWLINE UMBILICAL WELL APPROACH LAYOUT DODC2
   - ROND-EW-YDPAL-22-0011 FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
6. AT THE SHALLOW WATER PLATFORM LOCATION THE UMBILICAL WILL BE PROTECTED BY CONCRETE MATTRESSES.
7. THE UMBILICAL WILL BE TRENCHED FROM THE SHALLOW WATER PLATFORM TO A WATER DEPTH OF 200m.
8. TOTAL LENGTH OF UMBILICAL DOES NOT INCLUDE J-TUBE LENGTH AND OVERAGE LENGTH ON THE SEABED FOR PULL-IN OR CONTINGENCY.
9. UMBILICAL DATA TO BE CONFIRMED AFTER UMBILICAL SUPPLY AWARDED. CURRENT VALUES ARE INDICATIVE AND WILL BE UPDATED WHEN KNOWN.
10. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
11. TOTAL LENGTH OF DOMINO UMBILICAL FROM SWP TO DODC-1 IS EQUAL TO 26,010m. THIS EXCLUDES 130m J-TUBE LENGTH AND APPROX. 60m OVERAGE LENGTH.
12. SLACK LOOP OF APPROX. 60m FINAL SLACK ADJUSTMENT TO BE DETERMINED DURING DETAIL DESIGN. FINAL ADJUSTMENT OF UMBILICAL OF 3m, IF NEEDED FOR ALIGNMENT.
13. MINIMUM DISTANCE OF 100m BETWEEN THE FLOWLINE AND THE UMBILICAL (120m NOMINAL INCLUDING TOLERANCES) DUE TO DEH REQUIREMENTS.
14. TYPE OF BACKFILL TO BE CONFIRMED DURING DETAILED DESIGN.

SCALA

METRI
0 100 500 1,000
SCALA ORIZONTALA 1:10,000 (FORMAT "A1")

SCALE BAR

METERS
0 100 500 1,000
HORIZONTAL SCALE 1:10,000 (AT "A1" SIZE)

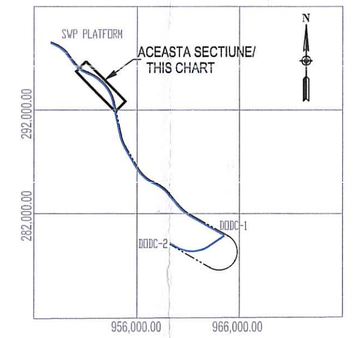
PARAMETRI GEODEZIE SI DE PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA/KEY PLAN



PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
1-D	12.02.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-C	21.01.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-B	29.05.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-A	03.02.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR CHECKER			I. BUTNARU		ANRE

DISCIPLINA DISCIPLINE	REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENTES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.19, 100145, PLOIESTI
J29/3071/2007, RO 22804630
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	13OCT17	RE-ISSUED FOR IFD	RO	EP	SS	JG
0	21JUN17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

SISTEM OMBILICAL DOMINO SWP - DODC-1
DOMINO UMBILICAL SWP - DODC-1

FISA ALINIAMENT
ALIGNMENT SHEET

FISA 2 DIN 6
SHEET 2 OF 6

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 10000	ROND-EW-YDPAL-22-0004-C	DTAC	1-D

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)

MATCH POINT START	
X	Y
291,347.45	953,962.80

MATCH POINT END	
X	Y
286,729.08	955,766.11

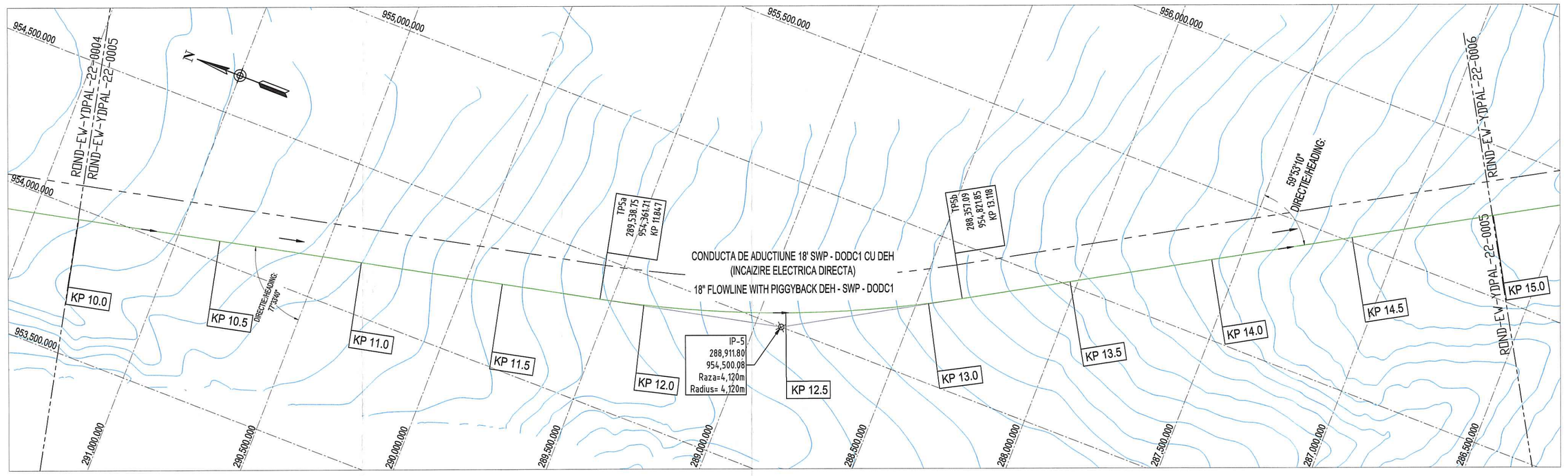
PUNCT LEGATURA DE INCEPUT	
X	Y
291,347.45	953,962.80

PUNCT LEGATURA DE FINAL	
X	Y
286,729.08	955,766.11

LEGENDA / LEGEND

- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
- CONDUCTA DE ADUCTIUNE DOMINO / DOMINO FLOWLINE
- PROFIL FUNDUL MARII / SEABED PROFILE

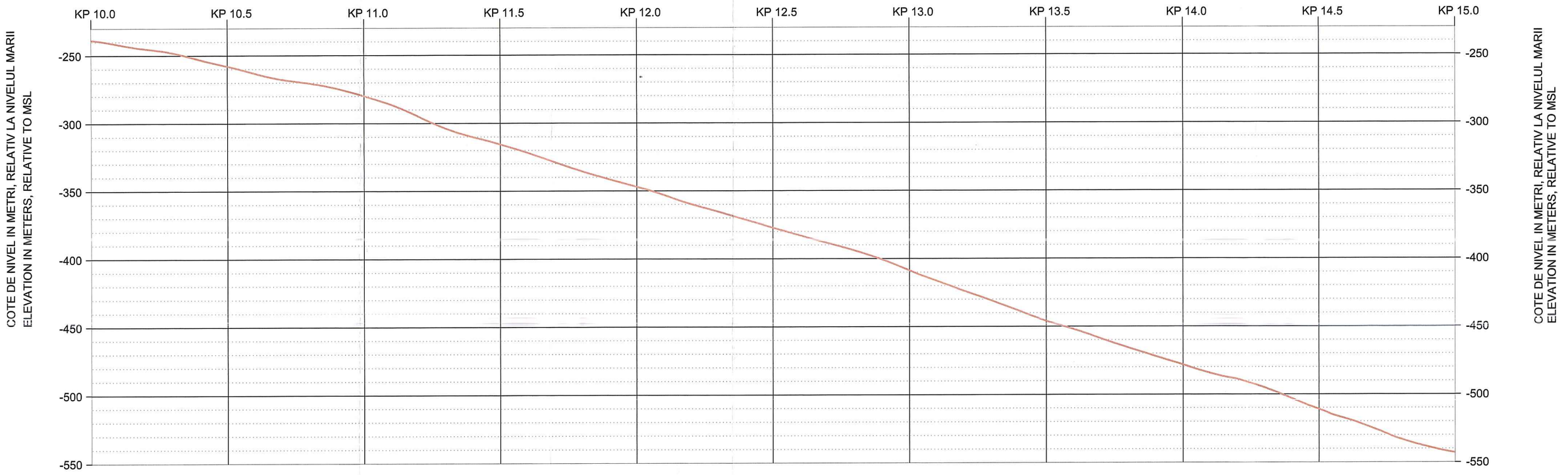
NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.



PROFIL LONGITUDINAL SISTEM OMBILICAL / LONGITUDINAL PROFILE ALONG UMBILICAL

ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT



SCALA ORIZONTALA / HORIZONTAL SCALE 1 : 10,000
SCALA VERTICALA / VERTICAL SCALE 1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION 5

DATE TEHNICE / ENGINEERING DATA

				KP 10.000	KP 11.847	KP 13.118	KP 14.994 / KP 15.000
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA CURBA (m)	ROUTE ITEMS	STRAIGHT HEADING ('N) / CURVE RADIUS (m)	77° 33' 40"	4,120	59° 53' 10"	
	TRAVERSARE: CONDUCTA		PIPELINE	NU SE APLICA / N.A.			
	TRAVERSARE: CABLU		CROSSING: CABLE	NU SE APLICA / N.A.			
	TIP SOL PE SUPRAFATA FUNDULUI MARII		SEABED GROUND SOIL	ZONA3 - ARGILA VERZUI-INCHIS CU REZISTENTA FOARTE SCAZUTA (NOTA 4) / ZONE 3 - EXTREMELY LOW STRENGTH DARK GREENISH CLAY (NOTE 4)			ZONA1 - ARGILA VERZUI-INCHIS CU REZISTENTA FOARTE SCAZUTA (NOTA 4) / ZONE 1 - EXTREMELY LOW STRENGTH DARK GREENISH CLAY (NOTE 4)
DATE SISTEM OMBILICAL	DIAMETRU EXTERIOR (mm)	UMBILICAL DATA	OD (mm)	160			
	GREUTATE IN AER (USCATA)		DRY WEIGHT	34.7			
	GREUTATE IN APA		SUBMERGED WEIGHT	14.4			
	RAZA MINIMA CURBA (m) INSTALARE / FUNCTIUNE		MIN. CURVE RADIUS (m) INSTALLATION / OPERATION	6.6 / 9.5			
SAPATURA & UMPLERE	ADANCIME SANT (m)	TRENCHING & BACKFILLING	TRENCHING DEPTH (m)	NU EXISTA / NONE			
	TIP UMPLUTURA / STRAT ACOPERIRE (m)		BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE			
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)	SPECIFIC REQUIREMENTS	LAY TOLERANCE (m)	±10			
	STRAT PIATRA / SALTELE		ROCK DUMP / MATTRESSES	NU SE APLICA / N.A.			

NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitoriii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numere care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATE IN 2014, DOCUMENT FUGRO J31135-R-001(03). PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCESUL LA LOCATIA PLATFORMEI A FOST ACTUALIZATA PRIN DOCUMENTUL FUGRO 160424 V3 (2017)
4. DATELE DESPRE SOLUL DE PE FUNDUL MARII PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP, ROND-EW-GRRPT-00-0015-001. A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002 PENTRU DATE DESPRE SOL LA LOCATIA PLATFORMEI ACTUALIZAT CU MASURATORILE FUGRO 2017".
5. PENTRU DETALII PRIVIND CONEXIUNILE DINTRE PLATFORMA SI SONDELE SUBMARINE, SE VOR CONSULTA PLANSELE:
   -ROND-EW-YDLAY-22-0012 - PLAN ACCES SISTEM OMBILICAL CONDUCTA ADUCTIUNE DOMINO LA DODC1;
   -ROND-EW-YDLAY-22-0005 - PLAN ACCES SISTEM OMBILICAL CONDUCTA ADUCTIUNE DOMINO LA DODC2;
   -ROND-EW-YDPAL-22-0011 - PLAN ACCES CONDUCTA ADUCTIUNE SI CONDUCTA GAZE NATURALE LA PLATFORMA DE PRODUCTIE (SWP).
6. IN ZONA PLATFORMEI DE PRODUCTIE, SISTEMUL OMBILICAL VA FI PROTEJAT CU SALTELE DIN BETON.
7. SISTEMUL OMBILICAL VA FI AMPLASAT IN SANT, DE LA PLATFORMA DE PRODUCTIE, PANA LA O ADANCIME DE 200m.
8. LUNGIMEA TOTALA A SISTEMULUI OMBILICAL NU INCLUDE LUNGIMEA TUBULUI J SI LUNGIMEA SUPLIMENTULUI DE PE FUNDUL MARII PENTRU TRACTARE SAU SITUATII NEPREVAZUTE.
9. DATELE SISTEMULUI OMBILICAL TREBUIE SA FIE CONFIRMATE DUPA DESEMNAREA FURNIZORULUI. VALORILE CURENTE SUNT INDICATIVE SI VOR FI ADOPTATE CAND VOR FI STIUTE.
10. ORIENTARILE INDICATE DUPA NORDUL STEREO 70.
11. LUNGIMEA FINALA A SISTEMULUI OMBILICAL DOMINO DE LA SWP LA DODC-1 ESTE EGALA CU 26,010m. ACEASTA EXCLUDE LUNGIMEA DE 130m A TUBULUI J SI APROXIMATIV 60m LUNGIMEA SURPLUSULUI.
12. CURBA DE COMPENSARE DE APROXIMATIV 60m. AJUSTAREA FINALA A LUNGIMII CURBEI DE COMPENSARE VA FI DETERMINATA IN PROIECTUL DETALIAT. AJUSTAREA FINALA A SISTEMULUI OMBILICAL DE 3m, DACA ESTE NECESARA PENTRU ALINIERE.
13. DISTANTA MINIMA DE 100m INTRE CONDUCTA DE ADUCTIUNE SI SISTEMUL OMBILICAL (120m INCLUZAND TOLERANTE) DATORITA CERINTELOR NCALZIRII ELECTRICE DIRECTE (DEH)
14. TIPUL DE UMPLUTURA VA FI CONFIRMAT IN PROIECTUL DETALIAT.

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM LOCATION APPROACH BATHYMETRY UPDATED BY FUGRO DOCUMENT NUMBER 160424 V3 (2017)
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001,
   SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002 FOR PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. FOR DETAILS OF TIE-INS TO THE PLATFORM AND THE SUBSEA WELLS REFER TO DRAWINGS:
   - ROND-EW-YDLAY-22-0012 - DOMINO FLOWLINE UMBILICAL WELL APPROACH LAYOUT DODC1
   - ROND-EW-YDLAY-22-0005 - DOMINO FLOWLINE UMBILICAL WELL APPROACH LAYOUT DODC2
   - ROND-EW-YDPAL-22-0011 FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
6. AT THE SHALLOW WATER PLATFORM LOCATION THE UMBILICAL WILL BE PROTECTED BY CONCRETE MATTRESSES.
7. THE UMBILICAL WILL BE TRENCHED FROM THE SHALLOW WATER PLATFORM TO A WATER DEPTH OF 200m.
8. TOTAL LENGTH OF UMBILICAL DOES NOT INCLUDE J-TUBE LENGTH AND OVERAGE LENGTH ON THE SEABED FOR PULL-IN OR CONTINGENCY.
9. UMBILICAL DATA TO BE CONFIRMED AFTER UMBILICAL SUPPLY AWARDED. CURRENT VALUES ARE INDICATIVE AND WILL BE UPDATED WHEN KNOWN.
10. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
11. TOTAL LENGTH OF DOMINO UMBILICAL FROM SWP TO DODC-1 IS EQUAL TO 26,010m. THIS EXCLUDES 130m J-TUBE LENGTH AND APPROX. 60m OVERAGE LENGTH.
12. SLACK LOOP OF APPROX. 60m FINAL SLACK ADJUSTMENT TO BE DETERMINED DURING DETAIL DESIGN. FINAL ADJUSTMENT OF UMBILICAL OF 3m, IF NEEDED FOR ALIGNMENT.
13. MINIMUM DISTANCE OF 100m BETWEEN THE FLOWLINE AND THE UMBILICAL (120m NOMINAL INCLUDING TOLERANCES) DUE TO DEH REQUIREMENTS.
14. TYPE OF BACKFILL TO BE CONFIRMED DURING DETAILED DESIGN.

SCALA

METRI
0 100 500 1,000
SCALA ORIZONTALA 1:10,000 (FORMAT "A1")

SCALE BAR

METERS
0 100 500 1,000
HORIZONTAL SCALE 1:10,000 (AT "A1" SIZE)

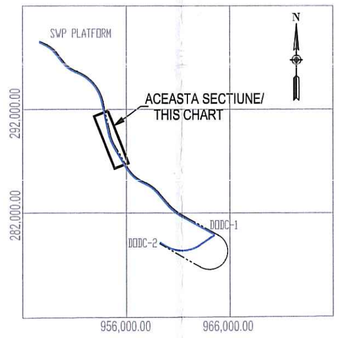
PARAMETRI GEODEZIE SI DE PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA/KEY PLAN



PROIECT NEPTUN DEEP /
NEPTUN DEEP PROJECT

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
1-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M.DUMITRU	C. STEFAN	N. EREMIA
1-C	21.01.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M.DUMITRU	C. STEFAN	N. EREMIA
1-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
0-A	03.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR / CHECKER			I. BUTNARU		ANNE

DESCOPERIRE / DISCOVERY	REFERAT NR. / EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE	NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / EXIGENCES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. IZEDINU VODA NR.18, 100145, PLOIESTI
J29/3073/2007, RO 22804833
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	13OCT17	RE-ISSUED FOR IFD	RO	EP	SS	JG
0	21JUN17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production
Romania Limited

SISTEM OMBILICAL DOMINO SWP - DODC-1
DOMINO UMBILICAL SWP - DODC-1

ALIGNMENT SHEET
FISA ALINIAMENT

SHEET 3 OF 6
FISA 3 DIN 6

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 10000	ROND-EW-YDPAL-22-0005-C	DTAC	1-D

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)

MATCH POINT START	
X	Y
286,729.08	955,766.11

PUNCT LEGATURA DE INCEPUT	
X	Y
286,729.08	955,766.11

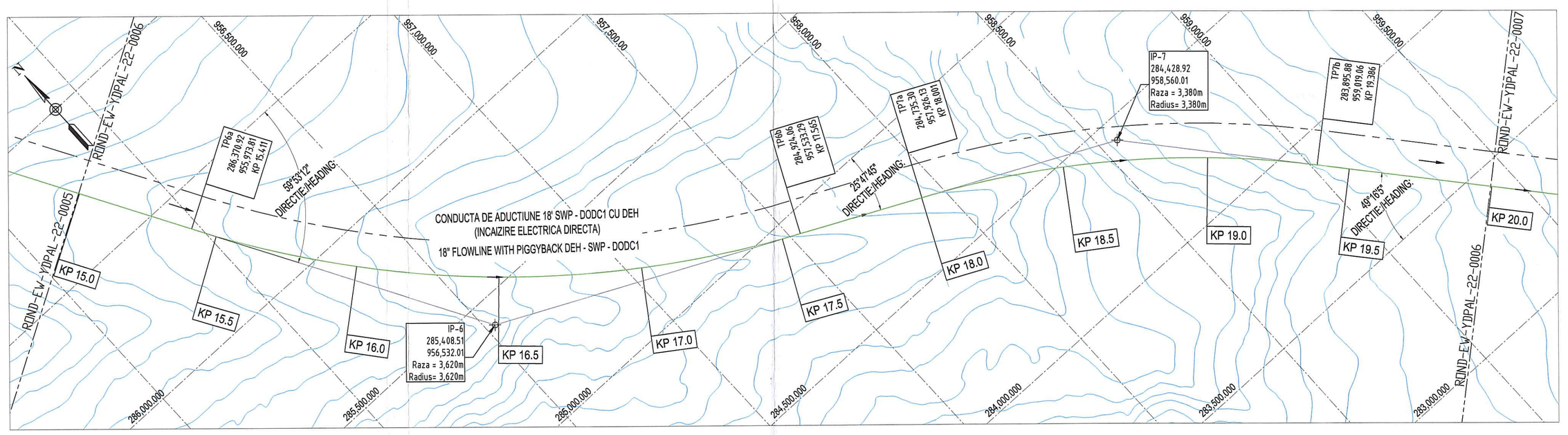
MATCH POINT END	
X	Y
283,432.97	959,417.68

PUNCT LEGATURA DE FINAL	
X	Y
283,432.97	959,417.68

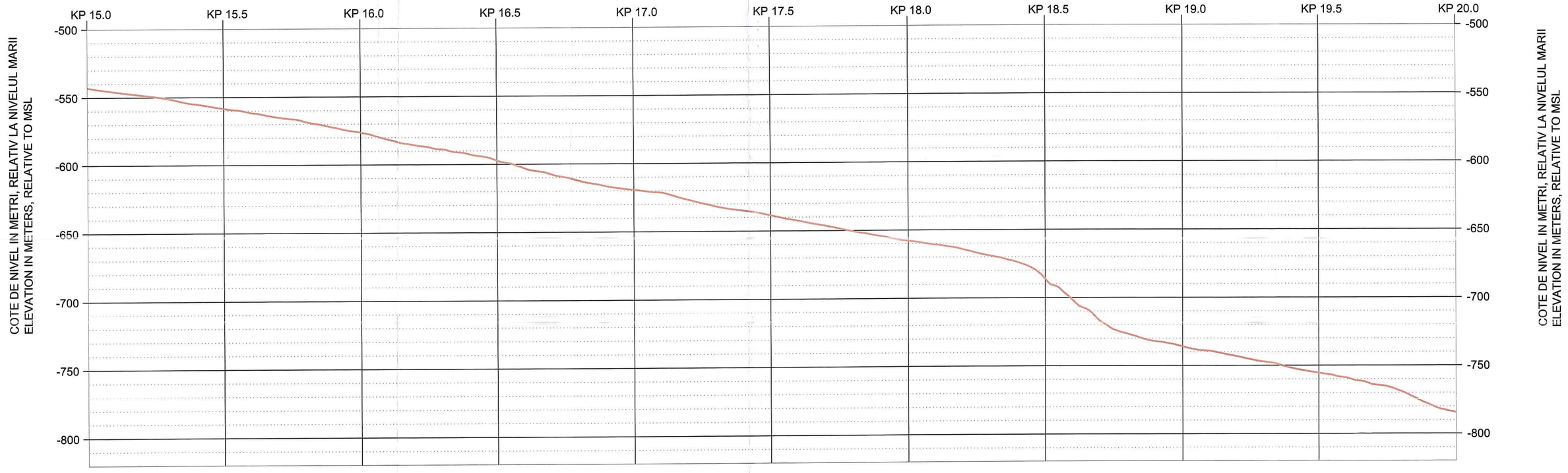
LEGENDA / LEGEND

- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
- CONDUCTA DE ADUCTIUNE DOMINO / DOMINO FLOWLINE
- PROFIL FUNDUL MARII / SEABED PROFILE

NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.



PROFIL LONGITUDINAL SISTEM OMBILICAL / LONGITUDINAL PROFILE ALONG UMBILICAL



ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 10,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	5

DATE TEHNICE / ENGINEERING DATA

				KP 15.000	KP 15.411	KP 17.565	KP 18.001	KP 19.386	KP 20.000
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA CURBA (m)		ROUTE ITEMS	STRAIGHT HEADING ('N) / CURVE RADIUS (m)		59° 53' 12"	3,620	25° 47' 45"	3,380	49° 16' 5"	
	TRAVERSARE	CONDUCTA		CROSSING	PIPELINE	NU SE APLICA / N.A.					
		CABLU			CABLE	NU SE APLICA / N.A.					
	TIP SOL PE SUPRAFATA FUNDULUI MARII			SEABED GROUND SOIL		ZONA1 - ARGILA VERZUI-INCHIS CU REZISTENTA FOARTE SCAZUTA (NOTA 4) / ZONE 1 - EXTREMELY LOW STRENGTH DARK GREENISH CLAY (NOTE 4)					
DATE SISTEM OMBILICAL	DIAMETRU EXTERIOR (mm)		UMBILICAL DATA	OD (mm)		160					
	GREUTATE IN AER (USCATA)			DRY WEIGHT		34.7					
	GREUTATE IN APA			SUBMERGED WEIGHT		14.4					
	RAZA MINIMA CURBA (m) INSTALARE / FUNCTIUNE			MIN. CURVE RADIUS (m) INSTALLATION / OPERATION		6.6 / 9.5					
SAPATURA & UMPLERE	ADANCIME SANT (m)		TRENCHING & BACKFILLING	TRENCHING DEPTH (m)		NU EXISTA / NONE					
	TIP UMPLUTURA / STRAT ACOPERIRE (m)			BACKFILLING TYPE / COVER TOP (m)		NU EXISTA / NONE					
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)		SPECIFIC REQUIREMENTS	LAY TOLERANCE (m)		±10					
	STRAT PIATRA / SALTELE			ROCK DUMP / MATTRESSES		NU SE APLICA / N.A.					

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATE IN 2014, DOCUMENT FUGRO J31135-R-001(03). PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCESUL LA LOCATIA PLATFORMEI A FOST ACTUALIZATA PRIN DOCUMENTUL FUGRO 160424.V3 (2017)
4. DATELE DESPRE SOLUL DE PE FUNDUL MARII PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP, ROND-EW-GRRPT-00-0015-001. A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDMH-20-0002 PENTRU DATE DESPRE SOL LA LOCATIA PLATFORMEI ACTUALIZAT CU MASURATORILE FUGRO 2017.
5. PENTRU DETALII PRIVIND CONEXIUNILE DINTRE PLATFORMA SI SONDELE SUBMARINE, SE VOR CONSULTA PLANSELE:
   -ROND-EW-YDLAY-22-0012 - PLAN ACCES SISTEM OMBILICAL CONDUCTA ADUCTIUNE DOMINO LA DODC1;
   -ROND-EW-YDLAY-22-0005 - PLAN ACCES SISTEM OMBILICAL CONDUCTA ADUCTIUNE DOMINO LA DODC2;
   -ROND-EW-YDPAL-22-0011 - PLAN ACCES CONDUCTA ADUCTIUNE SI CONDUCTA GAZE NATURALE LA PLATFORMA DE PRODUCTIE (SWP).
6. IN ZONA PLATFORMEI DE PRODUCTIE, SISTEMUL OMBILICAL VA FI PROTEJAT CU SALTELE DIN BETON.
7. SISTEMUL OMBILICAL VA FI AMPLASAT IN SANT, DE LA PLATFORMA DE PRODUCTIE, PANA LA O ADANCIME DE 200m.
8. LUNGIMEA TOTALA A SISTEMULUI OMBILICAL NU INCLUDE LUNGIMEA TUBULUI J SI LUNGIMEA SURPLUSULUI DE PE FUNDUL MARII PENTRU TRACTARE SAU SITUATII NEPREVAZUTE.
9. DATELE SISTEMULUI OMBILICAL TREBUIE SA FIE CONFIRMATE DUPA DESEMNAREA FURNIZORULUI . VALORILE CURENTE SUNT INDICATIVE SI VOR FI ADOPTATE CAND VOR FI STIUTE.
10. ORIENTARILE INDICATE DUPA NORDUL STEREO 70.
11. LUNGIMEA TOTALA A SISTEMULUI OMBILICAL DOMINO DE LA SWP LA DODC-1 ESTE EGALA CU 26,010m. ACEASTA EXCLUDE LUNGIMEA DE 150m A TUBULUI J SI APROXIMATIV 60m LUNGIMEA SURPLUS.
12. CURBA DE COMPENSARE DE APROXIMATIV 60m. REGLAJUL FINAL AL CURBEI VA FI DETERMINAT IN PROIECTUL DETALIAT. REGLAJUL FINAL AL SISTEMULUI OMBILICAL DE 3m, DACA ESTE NECESAR PENTRU ALINIERE.
13. DISTANTA MINIMA DE 100m INTRE CONDUCTA DE ADUCTIUNE SI SISTEMUL OMBILICAL (120m INCLUZAND TOLERANTE) DATORITA CERINTELOR INCALZIRII ELECTRICE DIRECTE (DEH).
14. TIPUL DE UMPLUTURA VA FI CONFIRMAT IN PROIECTUL DETALIAT.

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM LOCATION APPROACH BATHYMETRY UPDATED BY FUGRO DOCUMENT NUMBER 160424. V3 (2017)
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001,
   SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDMH-20-0002 FOR PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. FOR DETAILS OF TIE-INS TO THE PLATFORM AND THE SUBSEA WELLS REFER TO DRAWINGS:
   - ROND-EW-YDLAY-22-0012 - DOMINO FLOWLINE UMBILICAL WELL APPROACH LAYOUT DODC1
   - ROND-EW-YDLAY-22-0005 - DOMINO FLOWLINE UMBILICAL WELL APPROACH LAYOUT DODC2
   - ROND-EW-YDPAL-22-0011 FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
6. AT THE SHALLOW WATER PLATFORM LOCATION THE UMBILICAL WILL BE PROTECTED BY CONCRETE MATTRESSES.
7. THE UMBILICAL WILL BE TRENCHED FROM THE SHALLOW WATER PLATFORM TO A WATER DEPTH OF 200m.
8. TOTAL LENGTH OF UMBILICAL DOES NOT INCLUDE J-TUBE LENGTH AND OVERAGE LENGTH ON THE SEABED FOR PULL-IN OR CONTINGENCY.
9. UMBILICAL DATA TO BE CONFIRMED AFTER UMBILICAL SUPPLY AWARDED. CURRENT VALUES ARE INDICATIVE AND WILL BE UPDATED WHEN KNOWN.
10. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
11. TOTAL LENGTH OF DOMINO UMBILICAL FROM SWP TO DODC-1 IS EQUAL TO 26,010m. THIS EXCLUDES 130m J-TUBE LENGTH AND APPROX. 60m OVERAGE LENGTH.
12. SLACK LOOP OF APPROX. 60m FINAL SLACK ADJUSTMENT TO BE DETERMINED DURING DETAIL DESIGN. FINAL ADJUSTMENT OF UMBILICAL OF 3m, IF NEEDED FOR ALIGNMENT.
13. MINIMUM DISTANCE OF 100m BETWEEN THE FLOWLINE AND THE UMBILICAL (120m NOMINAL INCLUDING TOLERANCES) DUE TO DEH REQUIREMENTS.
14. TYPE OF BACKFILL TO BE CONFIRMED DURING DETAILED DESIGN.

SCALA

METRI
0 100 500 1,000
SCALA ORIZONTALA 1:10,000 (FORMAT "A1")

SCALE BAR

METERS
0 100 500 1,000
HORIZONTAL SCALE 1:10,000 (AT "A1" SIZE)

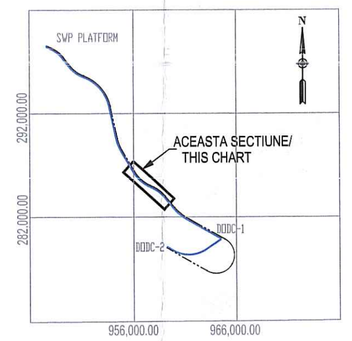
PARAMETRI GEODEZIE SI DE PROIECTIE

DATE GEODEZICE PROIECTIE	:	STEREO 70
Meridianul central (MC)	:	Dublu Stereografica
Latitudine Origine	:	25.0
Falsa origine estica	:	46.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	500,000.0
DATE VERTICALE	:	0.99975
	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA/KEY PLAN



ILF CONSULTING ENGINEERS ROMANIA S.R.L. NR. V18/1000/771 ... INGINER VERIFICATOR PROIECTE

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA / DATE	DESCRIERE REVIZIE / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
1-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-C	21.01.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-B	29.09.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-A	03.07.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR / CHECKER			I. BUTNARIU		ANNE

DESFASURATOR / ENGINEER	REFERAT NR. / EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE	NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / ENGINEERING

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NISIPULVODA NR.18, 100149, PLOIESTI
J29/307/12007, RO 22804820
S.C. JEREMAY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORG	REV	APP	PROJ APP
1	13OCT17	RE-ISSUED FOR IFD		RO	EP	SS JG
0	21JUN17	ISSUE FOR IFD		RO	EP	SS JG

ExxonMobil
Exploration and Production Romania Limited

SISTEM OMBILICAL DOMINO SWP - DODC-1
DOMINO UMBILICAL SWP - DODC-1

FISA ALINIAMENT
ALIGNMENT SHHET

FISA 4 DIN 6
SHEET 4 OF 6

1 : 10000	ROND-EW-YDPAL-22-0006-C	DTAC	1-D
SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.

A1+ (1092x594)

NOTA / NOTE:

Planse este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numere care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)

MATCH POINT START	
X	Y
283,432.97	959,417.68

MATCH POINT END	
X	Y
280,500.00	963,420.36

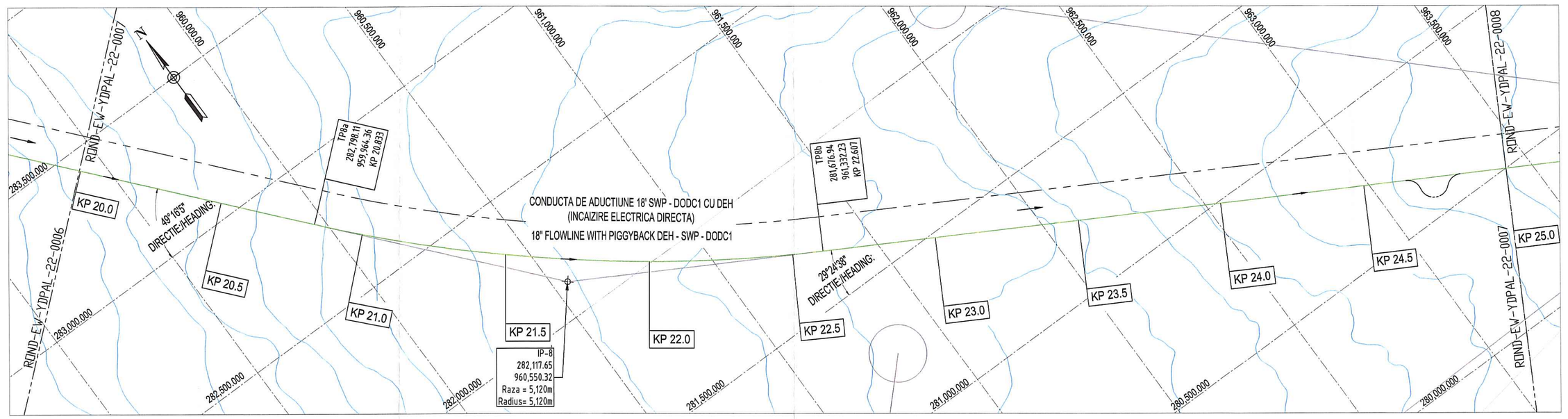
PUNCT LEGATURA DE INCEPUT	
X	Y
283,432.97	959,417.68

PUNCT LEGATURA DE FINAL	
X	Y
280,500.00	963,420.36

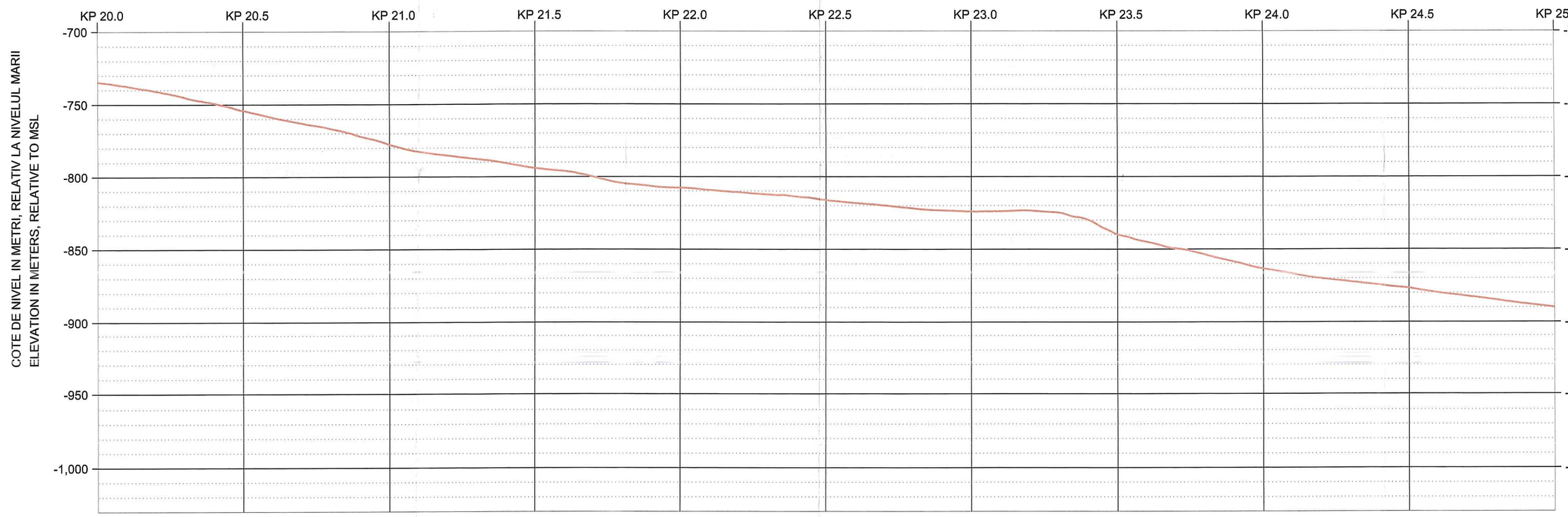
LEGENDA / LEGEND

- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
- CONDUCTA ADUCTIUNE DOMINO / DOMINO FLOWLINE
- PROFIL FUNDUL MARII/ SEABED PROFILE
- CABLURI ANCORAJ SI ZONA EXCLUDERE ANCORA / MOORING LINES & ANCHOR EXCLUSION ZONE

NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.



PROFIL LONGITUDINAL SISTEM OMBILICAL / LONGITUDINAL PROFILE ALONG UMBILICAL



SCALA ORIZONTALA / HORIZONTAL SCALE 1 : 10,000
SCALA VERTICALA / VERTICAL SCALE 1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION 5

DATE TEHNICE / ENGINEERING DATA

					KP 20.000	KP 20.833	KP 22.607
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA CURBA (m)		ROUTE ITEMS	STRAIGHT HEADING ('N) / CURVE RADIUS (m)	49° 16' 5"	5,120	29° 24' 38"
	TRAVERSARE	CONDUCTA		CROSSING PIPELINE	NU SE APLICA / N.A.		
		CABLU		CROSSING CABLE	NU SE APLICA / N.A.		
	TIP SOL PE SUPRAFATA FUNDULUI MARII			SEABED GROUND SOIL	ZONA1 - ARGILA VERZUI-INCHIS CU REZISTENTA FOARTE SCAZUTA (NOTA 4) / ZONE 1 - EXTREMELY LOW STRENGTH DARK GREENISH CLAY (NOTE 4)		
DATE SISTEM OMBILICAL	DIAMETRU EXTERIOR (mm)		UMBILICAL DATA	OD (mm)	160		
	GREUTATE IN AER (USCATA)			DRY WEIGHT	34.7		
	GREUTATE IN APA			SUBMERGED WEIGHT	14.4		
	RAZA MINIMA CURBA (m) INSTALARE / FUNCTIUNE			MIN. CURVE RADIUS (m) INSTALLATION / OPERATION	6.6 / 9.5		
SAPATURA & UMPLERE	ADANCIME SANT (m)		TRENCHING & BACKFILLING	TRENCHING DEPTH (m)	NU EXISTA / NONE		
	TIP UMPLUTURA / STRAT ACOPERIRE (m)			BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE		
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)		SPECIFIC REQUIREMENTS	LAY TOLERANCE (m)	±10		
	STRAT PIATRA / SALTELE			ROCK DUMP / MATTRESSES	NU SE APLICA / N.A.		

ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
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   -ROND-EW-YDLAY-22-0005 - PLAN ACCES SISTEM OMBILICAL CONDUCTA ADUCTIUNE DOMINO LA DODC2;
   -ROND-EW-YDPAL-22-0011 - PLAN ACCES CONDUCTA ADUCTIUNE SI CONDUCTA GAZE NATURALE LA PLATFORMA DE PRODUCTIE (SWP).
6. IN ZONA PLATFORMEI DE PRODUCTIE SISTEMUL OMBILICAL VA FI PROTEJAT CU SALTELE DIN BETON.
7. SISTEMUL OMBILICAL VA FI AMPLASAT IN SANT, DE LA PLATFORMA DE PRODUCTIE, PANA LA O ADANCIME DE 200m.
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11. LUNGIMEA TOTALA A SISTEMULUI OMBILICAL DOMINO DE LA SWP LA DODC-1 ESTE EGALA CU 26,010m. ACEASTA EXCLUDE LUNGIMEA DE 130M A TUBULUI J SI APROXIMATIV 60m LUNGIMEA SURPLUS.
12. CURBA DE COMPENSARE DE APROXIMATIV 60m AJUSTAREA FINALA A LUNGIMII CURBEI DE COMPENSARE VA FI DETERMINATA IN PROIECTUL DETALIAT. AJUSTAREA FINALA A SISTEMULUI OMBILICAL DE 3m, DACA ESTE NECESARA PENTRU ALINIERE.
13. DISTANTA MINIMA DE 100m INTRE CONDUCTA DE ADUCTIUNE SI SISTEMUL OMBILICAL (120m INCLUZAND TOLERANTE) DATORITA CERINTELOR INCALZIRII ELECTRICE DIRECTE (DEH).
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SCALA

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0 100 500 1,000
SCALA ORIZONTALA 1:10,000 (FORMAT "A1")

SCALE BAR

METERS
0 100 500 1,000
HORIZONTAL SCALE 1:10,000 (AT "A1" SIZE)

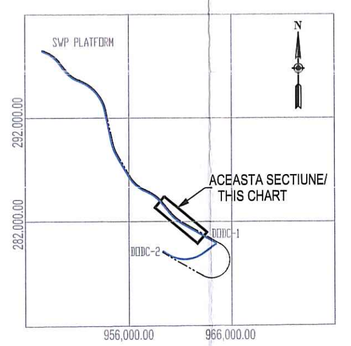
PARAMETRI GEODEZIE SI DE PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dubu Stereographica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA/KEY PLAN



NOTA / NOTE:

Planse este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
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The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

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REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	13OCT17	RE-ISSUED FOR IFD	RO	EP	SS	JG
0	21JUN17	ISSUE FOR IFD	RO	EP	SS	JG

VERIFICATOR CHECKER: I. BUTNARIU; ANRE
VERIFICATOR DESIGN/DESIGN CHECKER: REFERAT NR. / EXPERTIZA NR. / DATA: CHECKER REPORT / EXPERTISE NO. / DATE; NUME NAME; SEMNATURA SIGNATURE; DOMENIU EXIGENCES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.19, 100140, PLOIESTI
22930712007, RO 22904820
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

BUTNARIU IONUT ROMEO MEC. V181000171 VERIFICATOR PROIECTE

ILF CONSULTING ENGINEERS ROMANIA S.R.L. TIMIS - ROMANIA

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV.	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
1-D	12.03.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-C	21.01.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-B	29.05.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
1-A	03.02.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA

ExxonMobil
Exploration and Production Romania Limited

SISTEM OMBILICAL DOMINO SWP - DODC-1
DOMINO UMBILICAL SWP - DODC-1

FISA ALINIAMENT
ALIGNMENT SHEET

FISA 5 DIN 6
SHEET 5 OF 6

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 10000	ROND-EW-YDPAL-22-0007-C	DTAC	1-D

A1+ (1092x594)

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)

MATCH POINT START	
X	Y
280,500.00	963,420.36

PUNCT LEGATURA DE INCEPUT	
X	Y
280,500.00	963,420.36

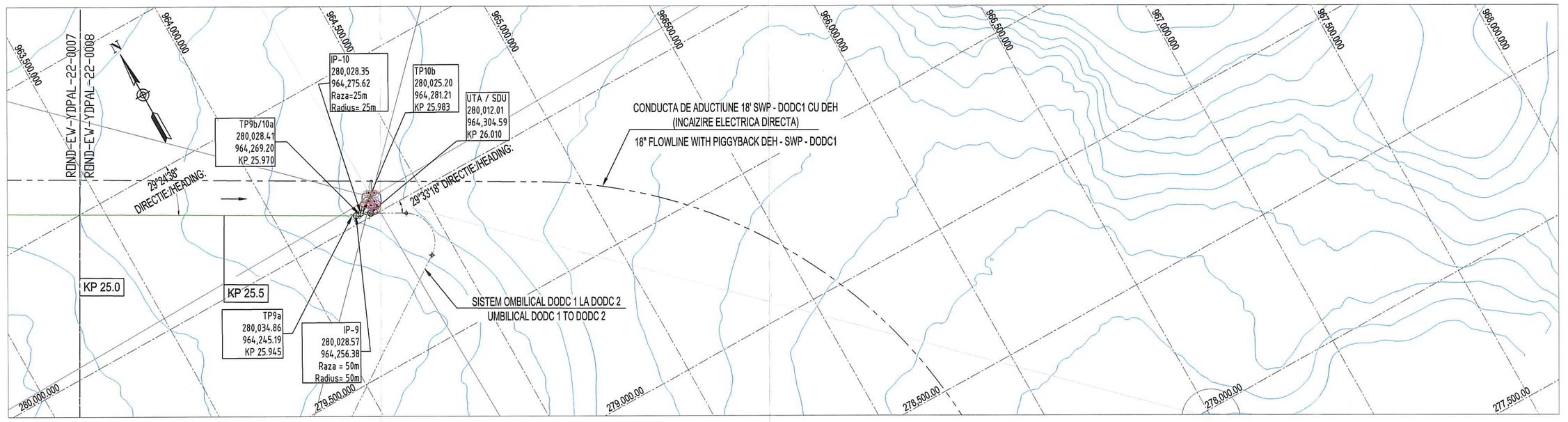
MATCH POINT END	
X	Y
280,012.02	964,304.60

PUNCT LEGATURA DE FINAL	
X	Y
280,012.02	964,304.60

LEGENDA / LEGEND

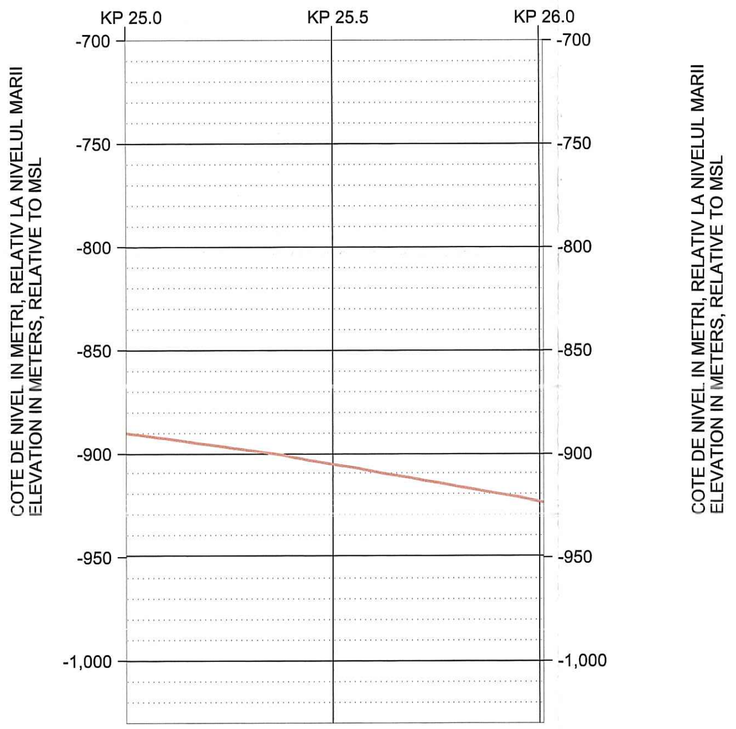
- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
- CONDUCTA ADUCTIUNE DOMINO / DOMINO FLOWLINE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CABLURI ANCORAJ SI ZONA EXCLUDERE ANCORA / MOORING LINES & ANCHOR EXCLUSION ZONE

NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.



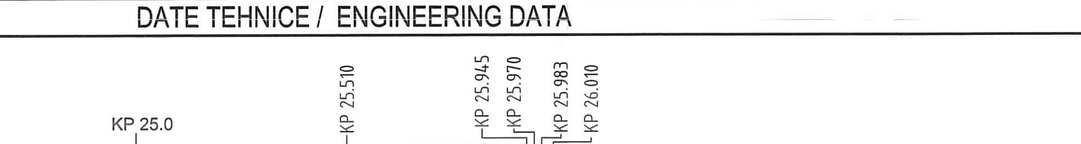
PROFIL LONGITUDINAL SISTEM OMBILICAL / LONGITUDINAL PROFILE ALONG UMBILICAL

ACRONIME	ACRONYMS
TP - PUNCT SCHIMBARE DIRECTIE	TP - TORSION POINT
KP - POZITIE KILOMETRICA (CONDUCTA)	KP - KILOMETRIC POINT
IP - PUNCT INFLEXIUNE	IP - INFLEXION POINT
UTA - ANSAMBLU CAPAT SISTEM OMBILICAL	UTA - UMBILICAL TERMINATION ASSEMBLY
SDU - UNITATE SUBACVATICA DE DISTRIBUTIE	SDU - SUBSEA DISTRIBUTION UNIT



SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 10,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	5

DATE TEHNICE / ENGINEERING DATA



ELEMENTE PE TRASEU	ORIENTARE ('N) / RAZA CURBA (m)		ROUTE ITEMS	STRAIGHT HEADING ('N) / CURVE RADIUS (m)	29° 24' 38"
	TRAVERSARE	CONDUCTA		CROSSING PIPELINE	NU SE APLICA / N.A. 50 (NOTA 13 / NOTE 13)
		CABLU		CROSSING CABLE	NU SE APLICA / N.A.
	TIP SOL PE SUPRAFATA FUNDULUI MARII			SEABED GROUND SOIL	ZONA1 - ARGILA VERZUI-INCHIS CU REZISTENTA FOARTE SCAZUTA (NOTA 4)/ ZONE 1 - EXTREMELY LOW STRENGTH DARK GREENISH CLAY (NOTE 4)
DATE SISTEM OMBILICAL	DIAMETRU EXTERIOR (mm)		UMBILICAL DATA	OD (mm)	160
	GREUTATE IN AER (USCATA)			DRY WEIGHT	347
	GREUTATE IN APA			SUBMERGED WEIGHT	144
	RAZA MINIMA CURBA (m) INSTALARE / FUNCTIUNE			MIN. CURVE RADIUS (m) INSTALLATION / OPERATION	6.6 / 9.5
SAPATURA & UMPLERE	ADANCIME SANT (m)		TRENCHING & BACKFILLING	TRENCHING DEPTH (m)	NU EXISTA / NONE
	TIP UMPLUTURA / STRAT ACOPERIRE (m)			BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)		SPECIFIC REQUIREMENTS	LAY TOLERANCE (m)	±10 ±2.5
	STRAT PIATRA / SALTELE			ROCK DUMP / MATTRESSES	NU SE APLICA / N.A.

NOTA / NOTE:

Planse este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numere care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATE IN 2014, DOCUMENT FUGRO J31135-R-001(03). PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCESUL LA LOCATIA PLATFORMEI A FOST ACTUALIZATA PRIN DOCUMENTUL FUGRO 1604.24 V3 (2017)
4. DATELE DESPRE SOLUL DE PE FUNDUL MARII PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP, ROND-EW-GRRPT-00-0015-001. A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002 PENTRU DATE DESPRE SOL LA LOCATIA PLATFORMEI ACTUALIZAT CU MASATORILE FUGRO 2017.
5. PENTRU DETALII PRIVIND CONEXIUNILE DINTRE PLATFORMA SI SONDELE SUBMARINE, SE VOR CONSULTA PLANSELE:
   -ROND-EW-YDLAY-22-0012 - PLAN ACCES SISTEM OMBILICAL CONDUCTA ADUCTIUNE DOMINO LA DODC1;
   -ROND-EW-YDLAY-22-0005 - PLAN ACCES SISTEM OMBILICAL CONDUCTA ADUCTIUNE DOMINO LA DODC2;
   -ROND-EW-YDPAL-22-0011 - PLAN ACCES CONDUCTA ADUCTIUNE SI CONDUCTA GAZE NATURALE LA PLATFORMA DE PRODUCTIE (SWP).
6. IN ZONA PLATFORMEI DE PRODUCTIE SISTEMUL OMBILICAL VA FI PROTEJAT CU SALTELE DIN BETON.
7. SISTEMUL OMBILICAL VA FI AMPLASAT IN SANT, DE LA PLATFORMA DE PRODUCTIE, PANA LA O ADANCIME DE 200m.
8. LUNGIMEA TOTALA A SISTEMULUI OMBILICAL NU INCLUDE LUNGIMEA TUBULUI J SI LUNGIMEA SUPPLUSULUI DE PE FUNDUL MARII PENTRU TRACTARE SAU SITUATII NEPREVAZUTE.
9. DATELE SISTEMULUI OMBILICAL TREBUIE SA FIE CONFIRMATE DUPA DESEMNAREA FURNIZORULUI. VALORILE CURENTE SUNT ORIENTATIVE SI VOR FI ACTUALIZATE.
10. ORIENTARILE INDICATE DUPA NORDUL STEREO 70.
11. LUNGIMEA TOTALA A SISTEMULUI OMBILICAL DOMINO DE LA SWP LA DODC-1 ESTE EGALA CU 26,010m. ACEASTA EXCLUDE LUNGIMEA DE 130M A TUBULUI J SI APROXIMATIV 60m LUNGIMEA SURPLUS.
12. CURBA DE COMPENSARE DE APROXIMATIV 60m. A AJUSTAREA FINALA A LUNGIMII CURBEI DE COMPENSARE VA FI DETERMINATA IN PROIECTUL DETALIAT. AJUSTAREA FINALA A SISTEMULUI OMBILICAL DE 3m, DACA ESTE NECESARA PENTRU ALINIERE.
13. DISTANTA MINIMA DE 100m INTRE CONDUCTA DE ADUCTIUNE SI SISTEMUL OMBILICAL (120m INCLUZAND TOLERANTE) DATORITA CERINTELOR INCALZIRII ELECTRICE DIRECTE (DEH).
14. TIPUL DE UMPLUTURA VA FI CONFIRMAT IN PROIECTUL DETALIAT.

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM LOCATION APPROACH BATHYMETRY UPDATED BY FUGRO DOCUMENT NUMBER 1604.24 V3 (2017)
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001,
   SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002 FOR PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. FOR DETAILS OF TIE-INS TO THE PLATFORM AND THE SUBSEA WELLS REFER TO DRAWINGS:
   - ROND-EW-YDLAY-22-0012 - DOMINO FLOWLINE UMBILICAL WELL APPROACH LAYOUT DODC1
   - ROND-EW-YDLAY-22-0005 - DOMINO FLOWLINE UMBILICAL WELL APPROACH LAYOUT DODC2
   - ROND-EW-YDPAL-22-0011 FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
6. AT THE SHALLOW WATER PLATFORM LOCATION THE UMBILICAL WILL BE PROTECTED BY CONCRETE MATTRESSES.
7. THE UMBILICAL WILL BE TRENCHED FROM THE SHALLOW WATER PLATFORM TO A WATER DEPTH OF 200m.
8. TOTAL LENGTH OF UMBILICAL DOES NOT INCLUDE J-TUBE LENGTH AND OVERAGE LENGTH ON THE SEABED FOR PULL-IN OR CONTINGENCY.
9. UMBILICAL DATA TO BE CONFIRMED AFTER UMBILICAL SUPPLY AWARDED. CURRENT VALUES ARE INDICATIVE AND WILL BE UPDATED WHEN KNOWN.
10. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
11. TOTAL LENGTH OF DOMINO UMBILICAL FROM SWP TO DODC-1 IS EQUAL TO 26,010m. THIS EXCLUDES 130m J-TUBE LENGTH AND APPROX. 60m OVERAGE LENGTH.
12. SLACK LOOP OF APPROX. 60m FINAL SLACK ADJUSTMENT TO BE DETERMINED DURING DETAIL DESIGN. FINAL ADJUSTMENT OF UMBILICAL OF 3m, IF NEEDED FOR ALIGNMENT.
13. MINIMUM DISTANCE OF 100m BETWEEN THE FLOWLINE AND THE UMBILICAL (120m NOMINAL INCLUDING TOLERANCES) DUE TO DEH REQUIREMENTS.
14. TYPE OF BACKFILL TO BE CONFIRMED DURING DETAILED DESIGN.

SCALA

METRI
0 100 500 1,000
SCALA ORIZONTALA 1:10,000 (FORMAT "A1")

SCALE BAR

METERS
0 100 500 1,000
HORIZONTAL SCALE 1:10,000 (AT "A1" SIZE)

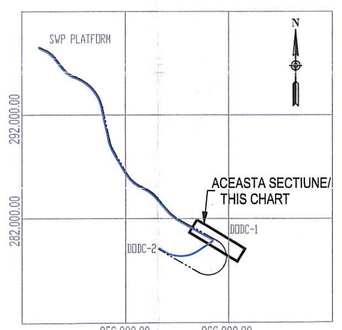
PARAMETRI GEODEZIE SI DE PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA/KEY PLAN



ASOCIATIA CONSILIERILOR ILF CONSULTING ENGINEERS ROMANIA
BUTNARIU ROMEO-IOAN
V181000171
VERIFICATOR PROIECTE

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
1-D	12.03.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-C	31.01.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-B	29.05.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
1-A	03.02.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR CHECKER			L. BUTNARIU		ANRE

VERIFICĂ DESIGNER	REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENȚE

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.19, 100149, PLOIESTI
J29/3071/2007, RO 22804820
S.C. JEREMIY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	13OCT17	RE-ISSUED FOR IFD	RO	EP	SS	JG
0	21JUN17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

SISTEM OMBILICAL DOMINO SWP - DODC-1
DOMINO UMBILICAL SWP - DODC-1

FISA ALINIAMENT
ALIGNMENT SHEET

FISA 6 DIN 6
SHEET 6 OF 6

SCALA / SCALE	NR. PLANSA / DWG. NO.		FAZA / PHASE	REV. / REV.
1 : 10000	ROND-EW-YDPAL-22-0008-C	DTAC	1-D	

A1+ (1092x594)

Appendix C. Onshore and Offshore Site Layout Plans

12 – Layout plan of Domino flowline & umbilical within the area of DODC1 drill center

TABEL LUNGIMI FIRE DE LEGATURA (NOTA10)/ FLYING LEAD LENGTH TABLE (NOTE 10)

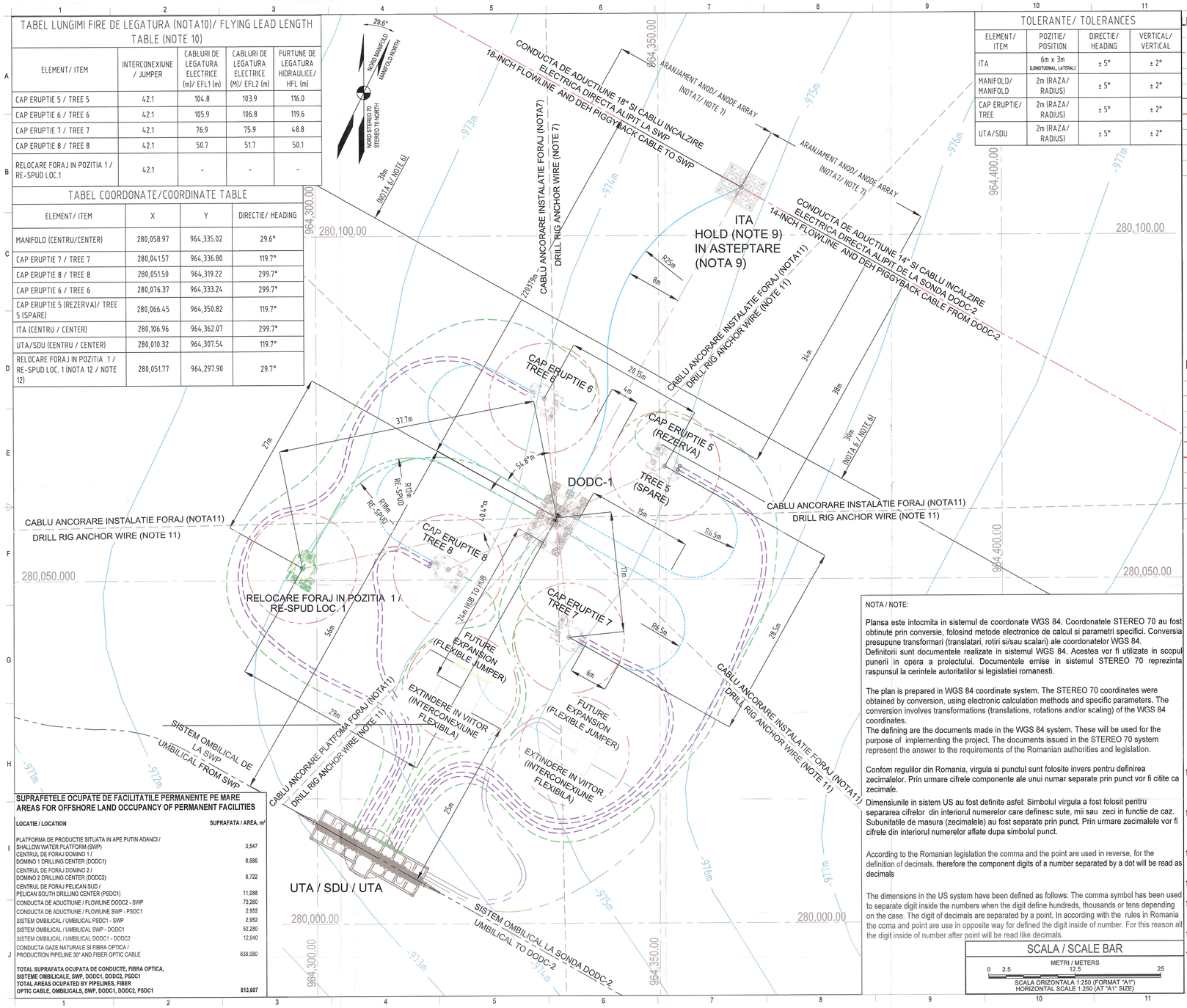
ELEMENT/ ITEM	INTERCONEXIUNE / JUMPER	CABLURI DE LEGATURA ELECTRICE (m)/ EFL1 (m)	CABLURI DE LEGATURA ELECTRICE (M)/ EFL2 (m)	FURTUNE DE LEGATURA HIDRAULICE/ HFL (m)
CAP ERUPTIE 5 / TREE 5	42.1	104.8	103.9	116.0
CAP ERUPTIE 6 / TREE 6	42.1	105.9	106.8	119.6
CAP ERUPTIE 7 / TREE 7	42.1	76.9	75.9	48.8
CAP ERUPTIE 8 / TREE 8	42.1	50.7	51.7	50.1
RELOCARE FORAJ IN POZITIA 1 / RE-SPUD LOC.1	42.1	-	-	-

TABEL COORDONATE/COORDINATE TABLE

ELEMENT/ ITEM	X	Y	DIRECTIE/ HEADING
MANIFOLD (CENTRU/CENTER)	280,058.97	964,335.02	29.6°
CAP ERUPTIE 7 / TREE 7	280,041.57	964,336.80	119.7°
CAP ERUPTIE 8 / TREE 8	280,051.50	964,319.22	299.7°
CAP ERUPTIE 6 / TREE 6	280,076.37	964,333.24	299.7°
CAP ERUPTIE 5 (REZERVA)/ TREE 5 (SPARE)	280,066.45	964,350.82	119.7°
ITA (CENTRU / CENTER)	280,106.96	964,362.07	299.7°
UTA/SDU (CENTRU / CENTER)	280,010.32	964,307.54	119.7°
RELOCARE FORAJ IN POZITIA 1 / RE-SPUD LOC. 1 (NOTA 12 / NOTE 12)	280,051.77	964,297.90	29.7°

SUPRAFETELE OCUPATE DE FACILITATILE PERMANENTE PE MARE
AREAS FOR OFFSHORE LAND OCCUPANCY OF PERMANENT FACILITIES

LOCATIE / LOCATION	SUPRAFATA / AREA, m²
PLATFORMA DE PRODUCTIE SITUATA IN APE PUTIN ADANCI / SHALLOW WATER PLATFORM (SWP)	3,547
CENTRUL DE FORAJ DOMINO 1 / DOMINO 1 DRILLING CENTER (DODC1)	8,686
CENTRUL DE FORAJ DOMINO 2 / DOMINO 2 DRILLING CENTER (DODC2)	8,722
CENTRUL DE FORAJ PELICAN SUD / PELICAN SOUTH DRILLING CENTER (PSDC1)	11,088
CONDUCTA DE ADUCTIUNE / FLOWLINE DODC2 - SWP	73,260
CONDUCTA DE ADUCTIUNE / FLOWLINE SWP - PSDC1	2,952
SISTEM OMBILICAL / UMBILICAL PSDC1 - SWP	2,952
SISTEM OMBILICAL / UMBILICAL SWP - DODC1	52,280
SISTEM OMBILICAL / UMBILICAL DODC1 - DODC2	12,040
CONDUCTA GAZE NATURALE SI FIBRA OPTICA / PRODUCTION PIPELINE 30" AND FIBER OPTIC CABLE	638,080
TOTAL SUPRAFATA OCUPATA DE CONDUCTE, FIBRA OPTICA, SISTEME OMBILICALE, SWP, DODC1, DODC2, PSDC1	
TOTAL AREAS OCUPATED BY PIPELINES, FIBER OPTIC CABLE, OMBILICALS, SWP, DODC1, DODC2, PSDC1	**813,607**



TOLERANTE/ TOLERANCES

ELEMENT/ ITEM	POZITIE/ POSITION	DIRECTIE/ HEADING	VERTICAL/ VERTICAL
ITA	6m x 3m (LONGITUDINAL, LATERAL)	± 5°	± 2°
MANIFOLD/ MANIFOLD	2m (RAZA/ RADIUS)	± 5°	± 2°
CAP ERUPTIE/ TREE	2m (RAZA/ RADIUS)	± 5°	± 2°
UTA/SDU	2m (RAZA/ RADIUS)	± 5°	± 2°

NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84. Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Confom regulilor din Romania, virgula si punctul sunt folosite invers pentru definirea zecimalelor. Prin urmare cifrele componente ale unui numar separate prin punct vor fi citite ca zecimale.

Dimensiunile in sistem US au fost definite asfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals. therefore the component digits of a number separated by a dot will be read as decimals

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

SCALA / SCALE BAR

METRI / METERS
0 2.5 12.5 25
SCALA ORIZONTALA 1:250 (FORMAT "A1")
HORIZONTAL SCALE 1:250 (AT "A1" SIZE)

LEGENDA

- FURTUNE DE LEGATURA HIDRAULICE
- CABLURI DE LEGATURA ELECTRICE
- INTERCONEXIUNE CONDUCTA DE ADUCTIUNE
- INTERCONEXIUNE SONDA
- SISTEM OMBILICAL
- CONDUCTA DE ADUCTIUNE 14"
- VIITOR FURTUN DE LEGATURA HIDRAULIC
- VIITOR CABLU DE LEGATURA ELECTRIC
- VIITOARE INTERCONEXIUNE
- RELOCARE INTERCONEXIUNE SONDA
- R8m ZONA EXCLUDERE CAP ERUPTIE PENTRU ACCES VEHICUL OPERAT DE LA DISTANTA
- R8m VIITOARE ZONA EXCLUDERE CAP ERUPTIE PENTRU ACCES VEHICUL OPERAT DE LA DISTANTA

ABREVIERI

DODC-1	-	CENTRU DE FORAJ DOMINO 1
EFL	-	CABLURI DE LEGATURA ELECTRICE
HFL	-	FURTUNE DE LEGATURA HIDRAULICE
ITA	-	MONTAJ TEU IN LINIE
UTA	-	ANSAMBLU TERMINATIE SISTEM OMBILICAL
SDU	-	UNITATE DISTRIBUTIE SUBACVATICA
SWP	-	PLATFORMA DE PRODUCTIE LOCALIZATA IN APE PUTIN ADANCI

LEGEND

- HYDRAULICAL FLYING LEAD
- ELECTRICAL FLYING LEAD
- FLOWLINE JUMPER
- WELL JUMPER
- UMBILICAL
- 14-INCH FLOWLINE
- FUTURE HYDRAULICAL FLYING LEAD
- FUTURE ELECTRICAL FLYING LEAD
- FUTURE JUMPER
- WELL JUMPER RE-SPUD
- R8m TREE EXCLUSION ZONE FOR ROV ACCESS
- R8M FUTURE TREE EXCLUSION ZONE FOR ROV ACCESS

ABBREVIATIONS

DODC-1	-	DOMINO DRILL CENTRE 1
EFL	-	ELECTRICAL FLYING LEAD
HFL	-	HYDRAULIC FLYING LEAD
ITA	-	INLINE TEE ASSEMBLY
UTA	-	UMBILICAL TERMINATION ASSEMBLY
SDU	-	SUBSEA DISTRIBUTION UNIT
SWP	-	SHALLOW WATER PLATFORM

CONTINUARE NOTE

11. PUNCTELE DE CONTACT ALE CABLULUI DE ANCORARE PLATFORMA FORAJ CU SISTEMUL INTACT ESTE LA APROXIMATIV 1900m DE LA LOCATIA DODC-2 (MODEL SISTEM AMARARE CU ANCORARE LUNGA DE 3000m DE LA LOCATIA DODC-2).
12. RELOCAREA FINALA A FORAJULUI IN POZITIA 1 LUCREAZA PENTRU CAPETELE DE ERUPTIE 6 SAU 8 SI COORDONATELE ACESTEIA VOR FI CONFIRMATE IN BAZA MANIFOLDULUI SI CAPULUI DE ERUPTIE EXISTENT, SI IN BAZA LUNGIMII INTERCONEXIUNII CURENTE.
13. SURPLUSUL SISTEMULUI OMBILICAL ESTE DE APROXIMATIV 60m LUNGIME, ALINIEREA FINALA A BUCLEI VA FI DETERMINATA IN PROIECTUL DETALIAT .
14. CONTRACTORUL EPC1 VA FINALIZA LUNGIMEA SURPLUSULUI SISTEMULUI OMBILICAL.
15. MODEL SISTEM AMARARE CU ANCORA INSTALATIE FORAJ ASIGURATA DE EXXON MOBIL (MODEL ARANJAMENT TIPIC PENTRU SISTEM AMARARE CU 8 LINII).
16. LUNGIME SUPLIMENTARA PENTRU AJUSTAREA BUCLEI SISTEMULUI OMBILICAL, DACA ESTE NECESAR.
17. CONEXIUNILE/TRASEELE FIRELOR DE LEGATURA VOR FI REVIZUITE IN TIMPUL PROIECTULUI DETALIAT IN BAZA TIPULUI UNITATII DE DISTRIBUTIE SUBACVATICA PENTRU A LIMITA TRAVERSARILE EXPANSIUNILOR VIITOARE.

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

NOTES

1. INTERCONEXIUNE SONDA GAZE NATURALE LA MANIFOLD DODC-1.
   a. CONFIGURATIE FLEXIBILA FORMA - U.
   b. DIMENSIUNE NOMINALA 130.2mm (5-1/8") DI
   c. LUNGIME NOMINALA= 42.1m
   d. RACORDUL MANIFOLDULUI ESTE ORIZONTAL
   e. RACORDUL CAPULUI DE ERUPTIE ESTE VERTICAL
2. INTERCONEXIUNEA MANIFOLDULUI CONDUCTEI DE ADUCTIUNE LA ITA:
   a. CONFIGURATIE FLEXIBILA IN FORMA - S
   b. DIMENSIUNE NOMINALA 228.6mm (9") ID
   c. LUNGIME NOMINALA= 54m
   d. RACORDUL MANIFOLDULUI ESTE ORIZONTAL
   e. RACORDUL ITA ESTE VERTICAL
3. CU LINIE PUNCTATA VERDE CONFIGURATIE RELOCARE FORAJ PENTRU CAP ERUPTIE CU INTERCONEXIUNE CONFIGURATIE FORMA - L.
4. TOLERANTELE ITA-MANIFOLD SUNT CONSIDERATE RELATIVE INTRE ELE (DE EXEMPLU UNUL ESTE INSTALAT SI FIXAT PRIMA DATA SI CELALALT ESTE INSTALAT RELATIV LA STRUCTURA INSTALATA.
5. CABLUL INCALZIRII ELECTRICE DIRECTE ALIPIT VA FI RERUTAT PRIN ALIPIRE LA ITA CATRE CONDUCTA DE ADUCTIUNE. DETALIILE VOR FI CONFIRMATE IN PROIECTUL DETALIAT.
6. INFRASTRUCTURA SUBACVATICA VA FI PASTRATA LA MINIM 30m CONSIDERAND TOLERANTELE DE MONTAJ ALE INCALZIRII ELECTRICE DIRECTE A CONDUCTEI DE ADUCTIUNE. DISTANTA DE AMPLASARE A INCALZIRII ELECTRICE DIRECTE VA FI CONFIRMATA IN PROIECTULUI DETALIAT.
7. CERINTELE PENTRU ANOZI ADITIONALI ADIACENTI LA ITA VOR FI CONFIRMATE IN PROIECTUL DETALIAT .
8. POZITIA FURTUNELOR DE LEGATURA HIDRAULICE VA FI CONFIRMATA IN PROIECTUL DETALIAT.
9. DETALII ALE ARANJAMENTELOR ITA IN PLANSA ROND-EW-YDDWG-21-0006/0007.
10. LUNGIMEA FIRELOR DE LEGATURA NU IAU IN COSIDERARE COTELE DE NIVEL.

NOTES

1. WELL JUMPER PRODUCTION WELL TO DODC-1 MANIFOLD:
   a. FLEXIBLE CONFIGURATION U-SHAPE.
   b. NOMINAL SIZE 130.2mm (5-1/8") ID
   c. NOMINAL LENGTH= 42.1m
   d. MANIFOLD CONNECTOR IS HORIZONTAL
   e. TREE CONNECTOR IS VERTICAL
2. FLOWLINE JUMPER MANIFOLD TO ITA:
   a. FLEXIBLE CONFIGURATION IN S-SHAPE
   b. NOMINAL SIZE 228.6mm (9") ID
   c. NOMINAL LENGTH= 54m
   d. MANIFOLD CONNECTOR IS HORIZONTAL
   e. ITA CONNECTOR IS VERTICAL
3. IN GREEN DASHED LINE RE-SPUD CONFIGURATION FOR THE TREE WITH JUMPER: L-SHAPE CONFIGURATION
4. TOLERANCES ITA - MANIFOLD ARE CONSIDERED RELATIVE TO EACH OTHER, (I.E. ONE IS INSTALLED FIRST AND FIXED, AND OTHER IS INSTALLED RELATIVE TO THE INSTALLED STRUCTURE).
5. DEH PIGGYBACK CABLE TO BE ROUTED THROUGH ITA PIGGYBACK TO FLOWLINE. DEH ANODE ARRAY AND PIGGYBACK CABLE DETAILS TO BE CONFIRMED DURING DETAILED DESIGN.
6. SUBSEA INFRASTRUCTURE TO BE KEPT 30m MINIMUM CONSIDERING INSTALLATION TOLERANCE FROM DEH FLOWLINE. REQUIRED DEH STANDOFF DISTANCE TO BE CONFIRMED DURING DETAILED DESIGN.
7. REQUIREMENTS FOR ADDITIONAL ANODES ADJACENT TO ITA TO BE CONFIRMED DURING DETAILED DESIGN.
8. POSITION OF HYDRAULIC FLYING LEAD TO BE CONFIRMED DURING DETAILED DESIGN.
9. DETAILS OF ITA ARRANGEMENTS IN DRAWING ROND-EW-YDDWG-21-0006/0007.
10. FLYING LEADS LENGTH DOES NOT TAKE IN TO ACCOUNT THE VERTICAL ELEVATION.

DOCUMENTE DE REFERINTA / REFERENCE DOCUMENTS

NUMAR PLANSA	DESCRIERE	DRAWING NUMBER	DESCRIPTION
ROND-EW-YBDBM-20-0002	BAZELE PROIECTARII CONDUCTEI S.F.	ROND-EW-YBDBM-20-0002	FEED PIPELINE DESIGN BASIS
ROND-ED-UDBAT-11-035	INTERCONEXIUNE (FLEXIBILA) SONDA DOMINO, PLANSA LIMITA DOMINO	ROND-ED-UDBAT-11-035	DOMINO WELLHEAD JUMPER (FLEXIBLE), DOMINO BATTERY LIMIT DRAWING
ROND-ED-YDDET-21-024	PLANSA LIMITA S.F. CONDUCTA DE ADUCTIUNE PRODUCTIE DOMINO	ROND-ED-YDDET-21-024	DOMINO PRODUCTION FLOWLINE FEED BATTERY LIMIT DRAWING
ROND-ED-YDLAY-21-027	PLANSA LIMITA S.F. INTERCONEXIUNE (FLEXIBILA) ITA DOMINO	ROND-ED-YDLAY-21-027	DOMINO ITA JUMPER (FLEXIBLE) FEED BATTERY LIMIT DRAWING
ROND-EW-YDPAL-21-0004/0011	FISA ALINIAMENT CONDUCTA DE ADUCTIUNE DOMINO	ROND-EW-YDPAL-21-0004/0011	DOMINO FLOWLINE ALIGNMENT SHEETS
ROND-EW-YDPAL-22-0003/0010	FISA ALINIAMENT SISTEM OMBILICAL DOMINO	ROND-EW-YDPAL-22-0003/0010	DOMINO UMBILICAL ALIGNMENT SHEETS
ROND-EW-YRRPT-21-0046	RAPORT AMPLASARE ANOD INCALZIRE ELECTRICA DIRECTA	ROND-EW-YRRPT-21-0046	DEH ANODE LAYOUT REPORT
ROND-EW-YDDWG-21-0006/0007	PLAN CONEXIUNE CONDUCTA DE ADUCTIUNE MARINA	ROND-EW-YDDWG-21-0006/0007	DOMINO FLOWLINE SUBSEA TIE-IN G.A.

NOTES CONT'D

11. DRILL RIG ANCHOR WIRE TOUCH DOWN POINTS WITH SYSTEM INTACT IS APPROX. 1900m FROM DODC-2 LOCATION. (ANCHOR MOORING PATTERN 3000m LONG FROM DODC2 LOCATION).
12. FINAL RE-SPUD LOCATION 1 IS WORKING FOR TREE NUMBER 6 OR 8 AND ITS COORDINATE WILL BE CONFIRMED BASED ON EXISTING MANIFOLD AND TREE, AND BASED ON THE CURRENT JUMPER LENGTH.
13. UMBILICAL OVERLENGTH OF APPROXIMATELY 60m FINAL SLACK ALIGNMENT TO BE DETERMINED DURING DETAIL DESIGN.
14. EPC1 TO FINALIZE THE UMBILICAL OVERAGE LENGTH.
15. DRILL RIG ANCHOR MOORING PATTERN PROVIDED BY EXXON MOBIL (TYPICAL PATTERN 8 LINE MOORING ARRANGEMENT)
16. EXTRA LENGTH FOR TERMINATION OF UMBILICAL ADJUSTMENT LOOP, IF NEEDED.
17. FLYING LEAD ROUTE/CONNECTIONS TO BE REVIEWED DURING DETAILED DESIGN BASED ON SDU DESIGN TO LIMIT CROSSINGS FOR FUTURE EXPANSION.

PARAMETRII GEODEZIE SI PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,0000
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

REV.	REV. DATE	REV. DESCRIPTION	ORG	REV	APP	REV. APP.
1	06OCT17	RE-ISSUED FOR IFD	RO	EP	SS	JG
0	21JUN17	ISSUED FOR IFD	RO	EP	SS	JG
A	30MAY17	ISSUE FOR IDC	RO	EP	SS	

REV.	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
1-F	19.04.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
1-E	12.03.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-D	15.02.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-C	12.02.21	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-B	17.06.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
1-A	09.01.20	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR CHECKER			I. BUTNARU		ANRE
SEMNATURI/DATE SIGNATURES/DATE		REFERAT NR. / EXPERTISA NR. / DATA REPORT / EXPERTISE NO / DATE CHECKER REPORT	NUME NAME	SEMNATURA SIGNATURE	DOMENIU ENGINEERS

PROIECTANT / ENGINEERING CONTRACTOR

ILF CONSULTING ENGINEERS ROMANIA
STR. NECRU VODA NR.19 , 100146, PLOIESTI

S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI;

PROIECT NEPTUN DEEP
NEPTUN DEEP PROJECT

ExxonMobil
Exploration and Production Romania Limited

CONDUCTA DE ADUCTIUNE SI SISTEM OMBILICAL DOMINO/ DOMINO FLOWLINE & UMBILICAL

PLAN DE SITUATIE IN APROPIEREA SONDEI
WELL APPROACH LAYOUT

DODC-1
DODC-1

1:400	ROND-EW-YDPAL-22-0012-C	DTAC	1-F
SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.

A1+ (1092x594)

Appendix C. Onshore and Offshore Site Layout Plans

13 – Domino umbilical from DODC1 drill center to DODC2 drill center alignment sheets

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)

MATCH POINT START	
X	Y
280,012.02	964,304.60

MATCH POINT END	
X	Y
278,628.94	960,158.13

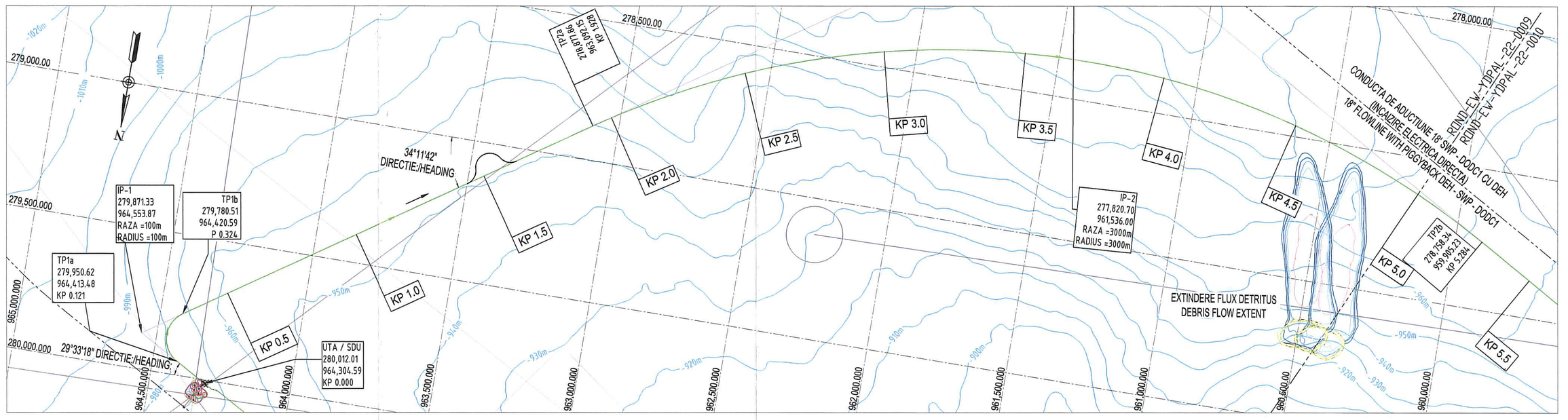
PUNCT LEGATURA DE INCEPUT	
X	Y
280,012.02	964,304.60

PUNCT LEGATURA DE FINAL	
X	Y
278,628.94	960,158.13

LEGENDA / LEGEND

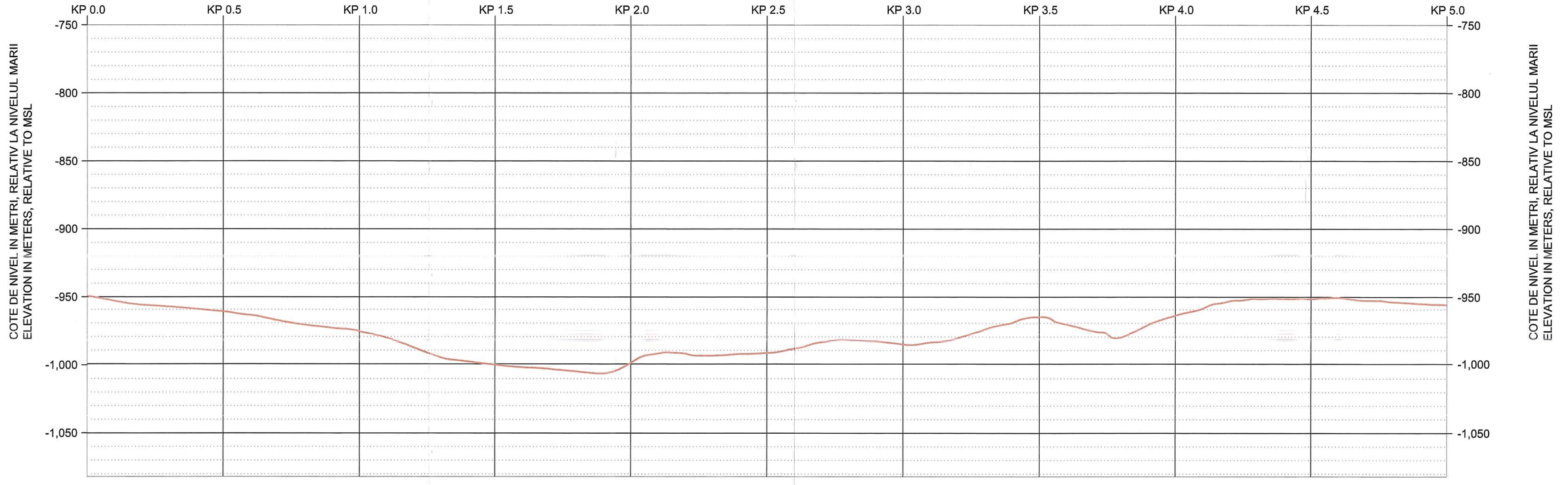
- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
- CONDUCTA DE ADUCTIUNE DOMINO 14"/ 14" DOMINO FLOWLINE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CABLURI ANCORAJ SI ZONA EXCLUDERE ANCORA / MOORING LINES & ANCHOR EXCLUSION ZONE

NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.



PROFIL LONGITUDINAL SISTEM OMBILICAL / LONGITUDINAL PROFILE ALONG UMBILICAL

ACRONIME	ACRONYMS
TP - PUNCT SCHIMBARE DIRECTIE	TP - TORSION POINT
KP - POZITIE KILOMETRICA (CONDUCTA)	KP - KILOMETRIC POINT
IP - PUNCT INFLEXIUNE	IP - INFLEXION POINT
UTA - ANSAMBLU CAPAT SISTEM OMBILICAL	UTA - UMBILICAL TERMINATION ASSEMBLY
SDU - UNITATE SUBACVATICA DE DISTRIBUTIE	SDU - SUBSEA DISTRIBUTION UNIT



SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 10,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	5

DATE TEHNICE / ENGINEERING DATA

					KP 0.0	KP 0.121	KP 0.150	KP 0.324	KP 1.928	KP 5.000
ELEMENTE PE TRASEU	ORIENTARE ('N) / RAZA CURBA (m)		ROUTE ITEMS	STRAIGHT HEADING ('N) / CURVE RADIUS (m)		100			34° 11' 42"	3,000
	TRAVERSARE	CONDUCTA		CROSSING	PIPELINE		29° 33' 18"		NU SE APLICA / N.A.	
		CABLU			CABLE				NU SE APLICA / N.A.	
	TIP SOL PE SUPRAFATA FUNDULUI MARII			SEABED GROUND SOIL					ZONA1 - ARGILA VERZUI-INCHIS (NOTA 4) / ZONE 1 - DARK GREENISH CLAY (NOTE 4)	
DATE SISTEM OMBILICAL	DIAMETRU EXTERIOR (mm)		UMBILICAL DATA	OD (mm)					160	
	GREUTATE IN AER (USCATA) (N/m)			DRY WEIGHT (N/m)					34.7	
	GREUTATE IN APA (N/m)			SUBMERGED WEIGHT (N/m)					14.4	
	RAZA MINIMA CURBA (m) INSTALARE / FUNCTIUNE (m)			MIN. CURVE RADIUS (m) INSTALLATION / OPERATION (m)					6.6 / 9.5	
SAPATURA & UMPLERE	ADANCIME SANT (m)		TRENCHING & BACKFILLING	TRENCHING DEPTH (m)					NU EXISTA / NONE	
	TIP UMPLUTURA / STRAT ACOPERIRE (m)			BACKFILLING TYPE / COVER TOP (m)					NU EXISTA / NONE	
CERINTE SPECIFICE	TOLERANTA LA INSTALARE(m)		SPECIFIC REQUIREMENTS	LAY TOLERANCE (m)		±2.5			±10	
	STRAT PIATRA / SALTELE			ROCK DUMP / MATTRESSES					NU SE APLICA / N.A.	

NOTA / NOTE:

Planse este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numere care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATE IN 2014, DOCUMENT FUGRO J31135-R-001(03). PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCESUL LA LOCATIA PLATFORMEI A FOST ACTUALIZATA PRIN DOCUMENTUL FUGRO 160424-V3 (2017)
4. DATELE DESPRE SOLUL DE PE FUNDUL MARII PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP, ROND-EW-GRRPT-00-0015-001. A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002 PENTRU DATE DESPRE SOL LA LOCATIA PLATFORMEI ACTUALIZAT CU MASURATORILE FUGRO 2017.
5. PENTRU DETALII PRIVIND CONEXIUNILE DINTRE PLATFORMA SI SONDELE SUBMARINE, SE VOR CONSULTA PLANSELE:
   -ROND-EW-YDLAY-22-0012 – PLAN ACCES SISTEM OMBILICAL CONDUCTA ADUCTIUNE DOMINO LA DODC1;
   -ROND-EW-YDLAY-22-0005 – PLAN ACCES SISTEM OMBILICAL CONDUCTA ADUCTIUNE DOMINO LA DODC2;
   -ROND-EW-YDPAL-22-0011 – PLAN ACCES CONDUCTA ADUCTIUNE SI CONDUCTA GAZE NATURALE LA PLATFORMA DE PRODUCTIE (SWP).
6. DATELE SISTEMULUI OMBILICAL TREBUIE SA FIE CONFIRMATE DUPA DESEMNAREA FURNIZORULUI. VALORILE CURENTE SUNT INDICATIVE SI VOR FI ADOPTATE CAND VOR FI STIUTE.
7. ORIENTARILE INDICATE DUPA NORDUL STEREO 70.
8. LUNGIMEA TOTALA A SISTEMULUI OMBILICAL DOMINO DE LA DODC-1 PANA LA DODC-2 ESTE EGALA CU 6,011m. ACEASTA EXCLUDE APROVIMATIV 40m LUNGIME SURPLUS.
9. CURBA DE COMPENSARE DE APROXIMATIV 40m. AJUSTAREA FINALA A CURBEI DE COMPENSARE VA FI DETERMINATA IN PROIECTUL DETALIAT. AJUSTAREA FINALA A SISTEMULUI OMBILICAL DE 3m DACA ESTE NECESAR PENTRU ALINIERE.
10. ORIENTAREA UTA/SDU VA FI OPTIMIZATA IN FAZA PROIECTULUI DETALIAT PENTRU A INCERCA ELIMINAREA CURBELOR CARE NU SUNT NECESARE.
11. DEVIATIA FINALA FATA DE RISCURILE ALUNECARILOR GEOLOGICE VA FI REVIZUITA SI CONFIRMATA IN PROIECTUL DETALIAT.
12. DISTANTA MINIMA DE 100m INTRE CONDUCTA DE ADUCTIUNE SI SISTEMUL OMBILICAL (120m INCLUZAND TOLERANTE) DATORITA CERINTELOR INCALZIRII ELECTRICE DIRECTE (DEH).

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM LOCATION APPROACH BATHYMETRY UPDATED BY FUGRO DOCUMENT NUMBER 160424-V3 (2017).
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001
   SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002 FOR PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. FOR DETAILS OF TIE-INS TO THE PLATFORM AND THE SUBSEA WELLS REFER TO DRAWINGS:
   - ROND-EW-YDLAY-22-0012 – DOMINO FLOWLINE UMBILICAL WELL APPROACH LAYOUT DODC1
   - ROND-EW-YDLAY-22-0005 – DOMINO FLOWLINE UMBILICAL WELL APPROACH LAYOUT DODC2
   - ROND-EW-YDPAL-22-0011 FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
6. UMBILICAL DATA TO BE CONFIRMED AFTER UMBILICAL SUPPLY AWARDED. CURRENT VALUES ARE INDICATIVE AND WILL BE UPDATED WHEN KNOWN.
7. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
8. TOTAL LENGTH OF DOMINO UMBILICAL FROM DODC-1 TO DODC-2 IS EQUAL TO 6,011m. THIS EXCLUDES APPROX. 40m OVERAGE LENGTH.
9. SLACK LOOP OF APPROX. 40m FINAL SLACK ADJUSTMENT TO BE DETERMINED DURING DETAIL DESIGN. FINAL ADJUSTMENT OF UMBILICAL OF 3m, IF NEEDED FOR ALIGNMENT.
10. UTA/SDU ORIENTATION TO BE OPTIMISED DURING DETAIL DESIGN IN ORDER TO TRY TO ELIMINATE ANY UNNECESSARY ROUTING BENDS.
11. FINAL OFFSET BETWEEN GEOHAZARD FLOW TO BE REVIEWED AND CONFIRMED DURING DETAILED DESIGN.
12. MINIMUM DISTANCE OF 100m BETWEEN THE FLOWLINE AND THE UMBILICAL (120m NOMINAL INCLUDING TOLERANCES) DUE TO DEH REQUIREMENTS.

SCALA

METRI
0 100 500 1,000
SCALA ORIZONTALA 1:10,000 (FORMAT "A1")

SCALE BAR

METERS
0 100 500 1,000
HORIZONTAL SCALE 1:10,000 (AT "A1" SIZE)

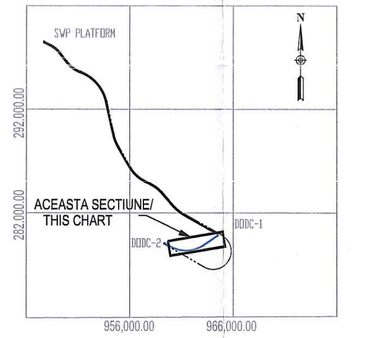
PARAMETRI GEODEZIE SI DE PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA/KEY PLAN



PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
D-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
D-C	31.01.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
D-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
D-A	03.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR / CHECKER			I. BUTNARIU		ARIE
DEPOZITOR/RT / DEPOSITOR/RT	REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE		NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / ENGINEERING

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR. 10, 100145, PLOIESTI
J29/307/12007, RO 22804820
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORG	REV	APP	PROJ APP
0	13OCT17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

SISTEM OMBILICAL DOMINO DODC-1 - DODC-2
DOMINO UMBILICAL DODC-1 - DODC-2

FISA ALINIAMENT
ALIGNMENT SHEET

FISA 1 DIN 2
SHEET 1 OF 2

1 : 10,000	ROND-EW-YDPAL-22-0009-C	DTAC	0-D
SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.

A1+ (1092x594)

PROIECTIA IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)

MATCH POINT START	
X	Y
278,628.94	960,158.13

MATCH POINT END	
X	Y
279,025.23	959,218.52

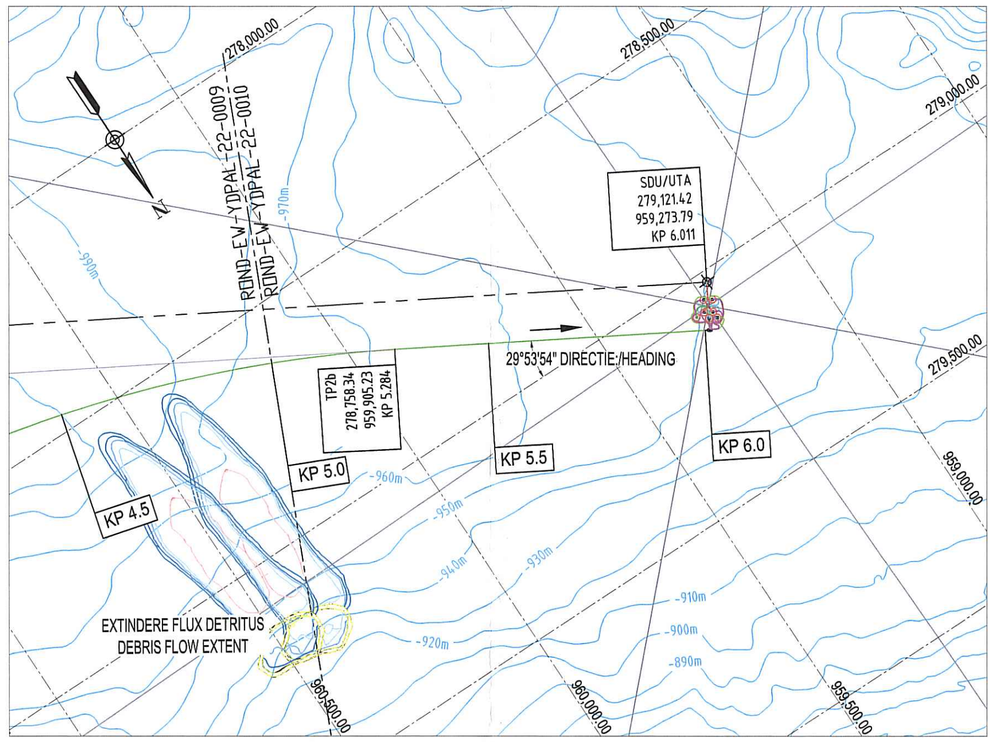
PUNCT LEGATURA DE INCEPUT	
X	Y
278,628.94	960,158.13

PUNCT LEGATURA DE FINAL	
X	Y
279,025.23	959,218.52

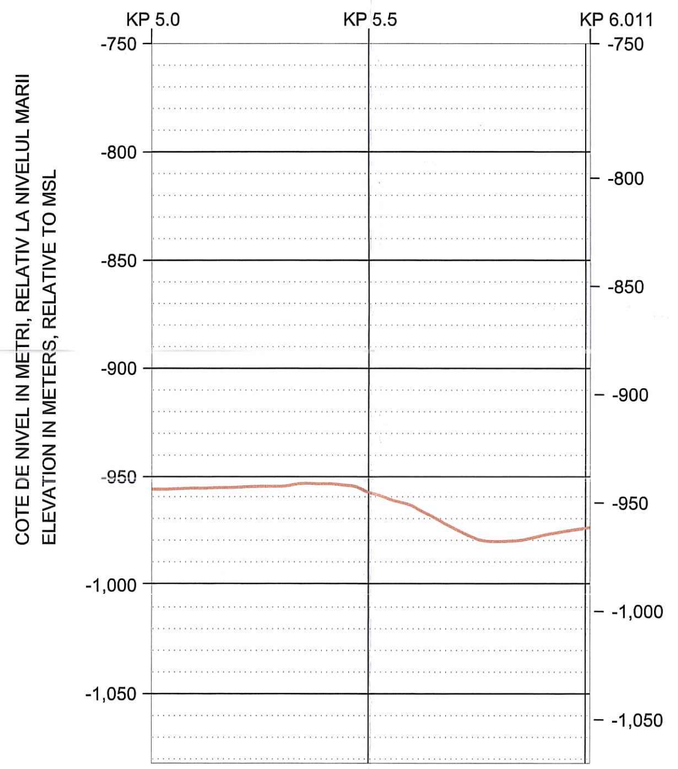
LEGENDA / LEGEND

- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
- CONDUCTA DE ADUCTIUNE DOMINO 14"/ 14" DOMINO FLOWLINE
- PROFIL FUNDUL MARII / SEABED PROFILE

NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.



PROFIL LONGITUDINAL SISTEM OMBILICAL / LONGITUDINAL PROFILE ALONG UMBILICAL



SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 10,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	5

ACRONIME

TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
UTA - ANSAMBLU CAPAT SISTEM OMBILICAL
SDU - UNITATE SUBACVATICA DE DISTRIBUTIE

ACRONYMS

TP - TORSION POINT
KP - KILOMETRIC POINT
UTA - UMBILICAL TERMINATION ASSEMBLY
SDU - SUBSEA DISTRIBUTION UNIT

DATE TEHNICE / ENGINEERING DATA

					KP 5.000	KP 5.184	KP 5.284	KP 5.861	KP 6.011
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA CURBA (m)		ROUTE ITEMS	STRAIGHT HEADING ('N) / CURVE RADIUS (m)	3,000		29° 53' 54"		
	TRAVERSARE	CONDUCTA		CROSSING PIPELINE	NU SE APLICA / N.A.				
		CABLU		CROSSING CABLE	NU SE APLICA / N.A.				
	TIP SOL PE SUPRAFATA FUNDULUI MARII			SEABED GROUND SOIL	ZONA1 - ARGILA VERZUI-INCHIS (NOTA 4) / ZONE 1 - DARK GREENISH CLAY (NOTE 4)				
DATE SISTEM OMBILICAL	DIAMETRU EXTERIOR (mm)		UMBILICAL DATA	OD (mm)	160				
	GREUTATE IN AER (USCATA) (N/m)			DRY WEIGHT (N/m)	347				
	GREUTATE IN APA(N/m)			SUBMERGED WEIGHT (N/m)	144				
	RAZA MINIMA CURBA (m) INSTALARE / FUNCTIUNE (m)			MIN. CURVE RADIUS (m) INSTALLATION / OPERATION (m)	6.6 / 9.5				
SAPATURA & UMPLERE	ADANCIME SANT (m)		TRENCHING & BACKFILLING	TRENCHING DEPTH (m)	NU EXISTA / NONE				
	TIP UMPLUTURA / STRAT ACOPERIRE (m)			BACKFILLING TYPE / COVER TOP (m)	NU EXISTA / NONE				
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)		SPECIFIC REQUIREMENTS	LAY TOLERANCE (m)	±10		±2.5		
	STRAT PIATRA / SALTELE			ROCK DUMP / MATTRESSES	NU SE APLICA / N.A.				

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATE IN 2014, DOCUMENT FUGRO J31135-R-001(03). PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCESUL LA LOCATIA PLATFORMEI A FOST ACTUALIZATA PRIN DOCUMENTUL FUGRO 160424.V3 (2017)
4. DATELE DESPRE SOLUL DE PE FUNDUL MARII PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP, ROND-EW-GRRPT-00-0015-001. A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002 PENTRU DATE DESPRE SOL LA LOCATIA PLATFORMEI ACTUALIZAT CU MASURATORILE FUGRO 2017.
5. PENTRU DETALII PRIVIND CONEXIUNILE DINTRE PLATFORMA SI SONDELE SUBMARINE, SE VOR CONSULTA PLANSELE:
   -ROND-EW-YDLAY-22-0012 - PLAN ACCES SISTEM OMBILICAL CONDUCTA ADUCTIUNE DOMINO LA DODC1;
   -ROND-EW-YDLAY-22-0005 - PLAN ACCES SISTEM OMBILICAL CONDUCTA ADUCTIUNE DOMINO LA DODC2;
   -ROND-EW-YDPAL-22-0011 - PLAN ACCES CONDUCTA ADUCTIUNE SI CONDUCTA GAZE NATURALE LA PLATFORMA DE PRODUCTIE (SWP).
6. DATELE SISTEMULUI OMBILICAL TREBUIE SA FIE CONFIRMATE DUPA DESEMNAREA FURNIZORULUI. VALORILE CURENTE SUNT INDICATIVE SI VOR FI ADOPTATE CAND VOR FI STIUTE.
7. ORIENTARILE INDICATE DUPA NORDUL STEREO 70.
8. LUNGIMEA TOTALA A SISTEMULUI OMBILICAL DIN DODC-1 LA DODC-2 ESTE EGAL CU 6,011m. ACESTA EXCLUDE APROXIMATIV 40m LUNGIME SUPLIMENTARA.
9. CURBA DE COMPENSARE DE APROXIMATIV 40m. AJUSTAREA FINALA A CURBEI DE COMPENSARE VA FI DETERMINATA IN PROIECTUL DETALIAT. AJUSTAREA FINALA A SISTEMULUI OMBILICAL DE 3m, DACA ESTE NECESARA PENTRU ALINIERE.
10. ORIENTAREA UTA/SDU VA FI OPTIMIZATA IN FAZA PROIECTULUI DETALIAT PENTRU A INCERCA ELIMINAREA CURBELOR CARE NU SUNT NECESARE.
11. DEVIATIA FINALA FATA DE RISCURILE ALUNECARILOR GEOLOGICE VA FI REVIZUITA SI CONFIRMATA IN PROIECTUL DETALIAT.
12. DISTANTA MINIMA DE 100m INTRE CONDUCTA DE ADUCTIUNE SI SISTEMUL OMBILICAL (120m INCLUZAND TOLERANTE) DATORITA CERINTELOR INCALZIRII ELECTRICE DIRECTE (DEH).

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM LOCATION APPROACH BATHYMETRY UPDATED BY FUGRO DOCUMENT NUMBER 160424 V3 (2017)
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001
   SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002 FOR PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. FOR DETAILS OF TIE-INS TO THE PLATFORM AND THE SUBSEA WELLS REFER TO DRAWINGS:
   - ROND-EW-YDLAY-22-0012 - DOMINO FLOWLINE UMBILICAL WELL APPROACH LAYOUT DODC1
   - ROND-EW-YDLAY-22-0005 - DOMINO FLOWLINE UMBILICAL WELL APPROACH LAYOUT DODC2
   - ROND-EW-YDPAL-22-0011 FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.
6. UMBILICAL DATA TO BE CONFIRMED AFTER UMBILICAL SUPPLY AWARDED. CURRENT VALUES ARE INDICATIVE AND WILL BE UPDATED WHEN KNOWN.
7. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
8. TOTAL LENGTH OF DOMINO UMBILICAL FROM DODC-1 TO DODC-2 IS EQUAL TO 6,011m. THIS EXCLUDES APPROX. 40m OVERAGE LENGTH.
9. SLACK LOOP OF APPROX. 40m FINAL SLACK ADJUSTMENT TO BE DETERMINED DURING DETAIL DESIGN. FINAL ADJUSTMENT OF UMBILICAL OF 3m, IF NEEDED FOR ALIGNMENT.
10. UTA/SDU ORIENTATION TO BE OPTIMISED DURING DETAIL DESIGN IN ORDER TO TRY TO ELIMINATE ANY UNNECESSARY ROUTING BENDS.
11. FINAL OFFSET BETWEEN GEOHAZARD FLOW TO BE REVIEWED AND CONFIRMED DURING DETAILED DESIGN.
12. MINIMUM DISTANCE OF 100m BETWEEN THE FLOWLINE AND THE UMBILICAL (120m NOMINAL INCLUDING TOLERANCES) DUE TO DEH REQUIREMENTS.

SCALA

METRI
0 100 500 1,000
SCALA ORIZONTALA 1:10,000 (FORMAT "A1")

SCALE BAR

METERS
0 100 500 1,000
HORIZONTAL SCALE 1:10,000 (AT "A1" SIZE)

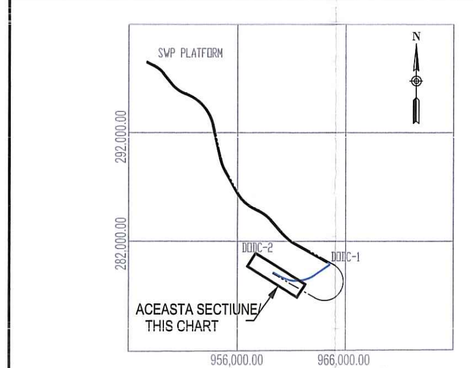
PARAMETRI GEODEZIE SI DE PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

PLAN DE REFERINTA/KEY PLAN



NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite asfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numere care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

SOCIETATEA CONFERENTIARILOR CONSULTING ENGINEERS ROMANIA FILIALA BUCURESTI BRANCH

REGISTRUL ROMAN AL AUDITORILOR DE CALITATE
CERT. NR. V12 1G00177
DOMENIUL: C.C.D.C.
INGINER VERIFICATOR PROIECTE

JEREMY PROMASTER S.R.L.

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
0-E	12.03.21	EMIS PENTRU VERIFICARE ISSUE FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
0-D	21.01.21	EMIS PENTRU VERIFICARE ISSUE FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
0-C	24.08.20	EMIS PENTRU VERIFICARE ISSUE FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
0-B	29.05.20	EMIS PENTRU VERIFICARE ISSUE FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
0-A	03.02.20	EMIS PENTRU VERIFICARE ISSUE FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR CHECKER			I. BUTNARIU		ANRE
VERIFICATOR/EXPERT CHECKER/EXPERT		REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16 ,100149, PLOIESTI
J29/307/12007, RO 22804820
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
0	13OCT17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production Romania Limited

SISTEM OMBILICAL DOMINO DODC-1- DODC-2
DOMINO UMBILICAL DODC-1 - DODC-2

FISA ALINIAMENT
ALIGNMENT SHEET

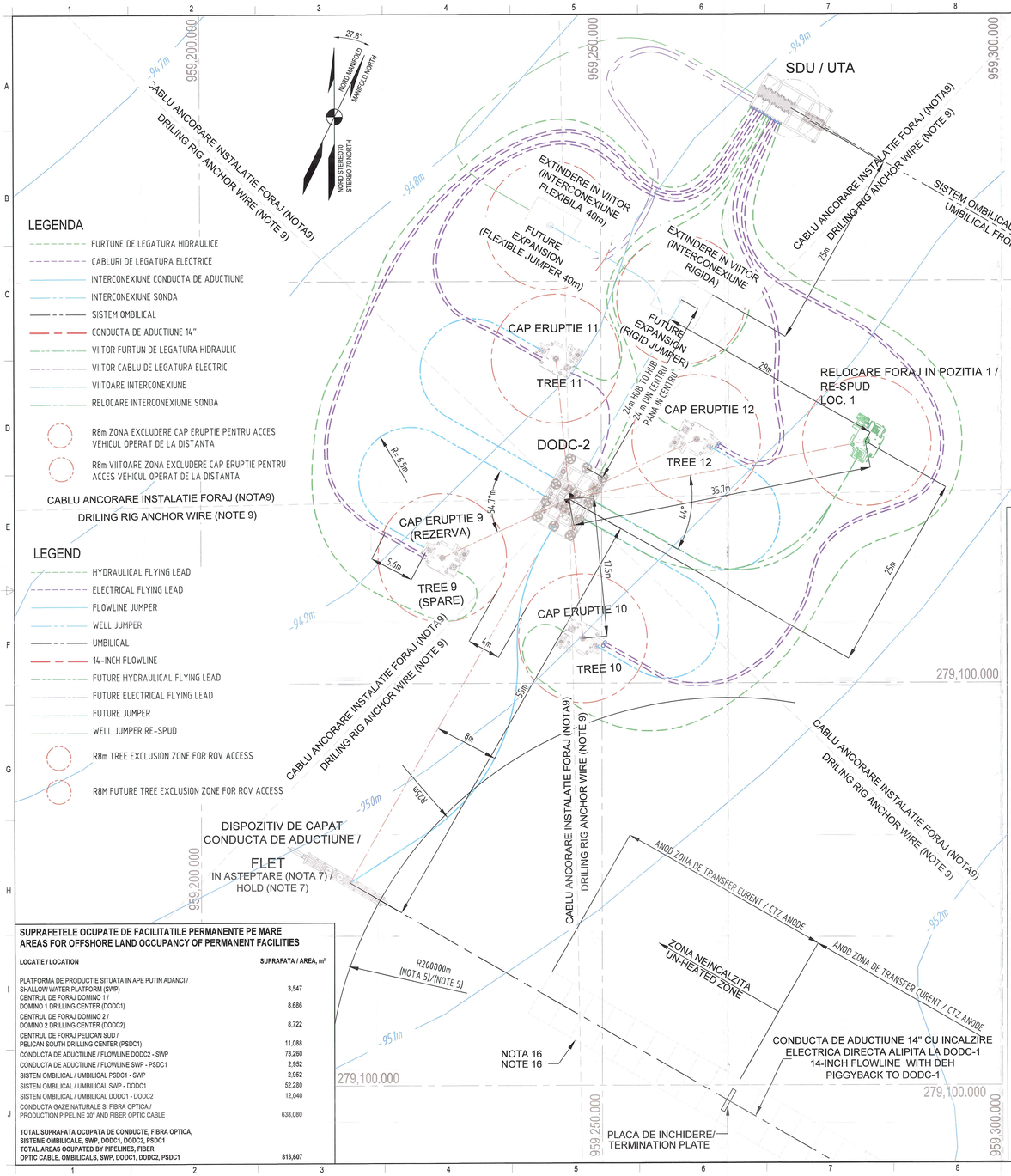
FISA 2 DIN 2
SHEET 2 OF 2

1 : 10,000	ROND-EW-YDPAL-22-0010-C	DTAC	0-E
SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.

A1 841x594

Appendix C. Onshore and Offshore Site Layout Plans

14 – Layout plan of Domino flowline & umbilical within in the area of DODC2 drill center



LEGENDA

- FURTUNE DE LEGATURA HIDRAULICE
- CABLURI DE LEGATURA ELECTRICE
- INTERCONEXIUNE CONDUCTA DE ADUCTIUNE
- INTERCONEXIUNE SONDA
- SISTEM OMBILICAL
- CONDUCTA DE ADUCTIUNE 14"
- VIITOR FURTUN DE LEGATURA HIDRAULIC
- VIITOR CABLU DE LEGATURA ELECTRIC
- VIITOARE INTERCONEXIUNE
- RELOCARE INTERCONEXIUNE SONDA
- R8m ZONA EXCLUDERE CAP ERUPTIE PENTRU ACCES VEHICUL OPERAT DE LA DISTANTA
- R8m VIITOARE ZONA EXCLUDERE CAP ERUPTIE PENTRU ACCES VEHICUL OPERAT DE LA DISTANTA

CABLU ANCORARE INSTALATIE FORAJ (NOTA9)
DRILING RIG ANCHOR WIRE (NOTE 9)

LEGEND

- HYDRAULICAL FLYING LEAD
- ELECTRICAL FLYING LEAD
- FLOWLINE JUMPER
- WELL JUMPER
- UMBILICAL
- 14-INCH FLOWLINE
- FUTURE HYDRAULICAL FLYING LEAD
- FUTURE ELECTRICAL FLYING LEAD
- FUTURE JUMPER
- WELL JUMPER RE-SPUD
- R8m TREE EXCLUSION ZONE FOR ROV ACCESS
- R8M FUTURE TREE EXCLUSION ZONE FOR ROV ACCESS

SUPRAFETELE OCUPATE DE FACILITATILE PERMANENTE PE MARE
AREAS FOR OFFSHORE LAND OCCUPANCY OF PERMANENT FACILITIES

LOCATIE / LOCATION	SUPRAFATA / AREA, m²
PLATFORMA DE PRODUCTIE SITUATA IN APE PUTIN ADANCI / SHALLOW WATER PLATFORM (SWP)	3,547
CENTRUL DE FORAJ DOMINO 1 / DOMINO 1 DRILLING CENTER (DODC1)	8,686
CENTRUL DE FORAJ DOMINO 2 / DOMINO 2 DRILLING CENTER (DODC2)	8,722
CENTRUL DE FORAJ PELICAN SUD / PELICAN SOUTH DRILLING CENTER (PSDC1)	11,088
CONDUCTA DE ADUCTIUNE / FLOWLINE DODC2 - SWP	73,260
CONDUCTA DE ADUCTIUNE / FLOWLINE SWP - PSDC1	2,952
SISTEM OMBILICAL / UMBILICAL PSDC1 - SWP	2,952
SISTEM OMBILICAL / UMBILICAL SWP - DODC1	52,280
SISTEM OMBILICAL / UMBILICAL DODC1 - DODC2	12,040
CONDUCTA GAZE NATURALE SI FIBRA OPTICA / PRODUCTION PIPELINE 30" AND FIBER OPTIC CABLE	638,080
TOTAL SUPRAFATA OCUPATA DE CONDUCTE, FIBRA OPTICA, SISTEME OMBILICALE, SWP, DODC1, DODC2, PSDC1 TOTAL AREAS OCUPATED BY PIPELINES, FIBER OPTIC CABLE, OMBILICALS, SWP, DODC1, DODC2, PSDC1	**813,607**

TABEL COORDONATE
COORDINATE TABLE

ELEMENT ITEM	X	Y	DIRECTIE HEADING
MANIFOLD (CENTRU / CENTRU)	279,072.99	959,245.90	29.8°
CAP ERUPTIE 11/ TREE 11	279,090.39	959,244.35	299.7°
CAP ERUPTIE 12/ TREE 12	279,080.33	959,261.85	119.7°
CAP ERUPTIE 10/ TREE 10	279,055.58	959,247.62	119.7°
CAP ERUPTIE 9/ TREE 9 (DE REZERVA/ SPARE)	279,065.64	959,230.12	299.7°
DISPOZITIV TERMINARE CONDUCTA DE ADUCTIUNE/FLET (CENTRU/ CENTER)	279,025.23	959,218.52	299.9°
UTA/SDU (CENTRU / CENTER)	279,121.44	959,273.76	299.9°
RELOCARE FORAJ IN POZITIA 1 (NOTA 10) / RE-SPUD LOC 1 (NOTE 10)	279,080.05	959,283.13	209.7°

ABREVIERI

DODC-2	-	CENTRU DE FORAJ DOMINO 2
EFL	-	CABLURI DE LEGATURA ELECTRICE
FLET	-	DISPOZITIV DE CAPAT CONDUCTA DE ADUCTIUNE
HFL	-	FURTUNE DE LEGATURA HIDRAULICE
UTA	-	ANSAMBLU TERMINATIE SISTEM OMBILICAL
SDU	-	UNITATE DISTRIBUTIE SUBACVATICA
CTZ	-	ZONA DE TRANSFER CURENT

ABBREVIATIONS

DODC-2	-	DOMINO DRILL CENTRE 2
EFL	-	ELECTRICAL FLYING LEAD
FLET	-	FLOWLINE END TERMINATION
HFL	-	HYDRAULIC FLYING LEAD
UTA	-	UMBILICAL TERMINATION ASSEMBLY
SDU	-	SUBSEA DISTRIBUTION UNIT
CTZ	-	CURRENT TRANSFER ZONE

NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84. Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Confom regulilor din Romania, virgula si punctul sunt folosite invers pentru definirea zecimalelor. Prin urmare cifrele componente ale unui numar separate prin punct vor fi citite ca zecimale.
Dimensiunile in sistem US au fost definite asfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals. therefore the component digits of a number separated by a dot will be read as decimals

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

SCALA / SCALE BAR

METRI / METERS
0 2.5 12.5 25
SCALA ORIZONTALA 1:250 (FORMAT "A1")
HORIZONTAL SCALE 1:250 (AT "A1" SIZE)

PARAMETRII GEODEZIE SI PROIECTIE

DATE GEODEZICE	:	STEREO 70
PROIECTIE	:	Dublu Stereografica
Meridianul central (MC)	:	25.0
Latitudine Origine	:	46.0
Falsa origine estica	:	500,000.0
Falsa origine nordica	:	500,000.0
Factor de scala la MC	:	0.99975
DATE VERTICALE	:	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	:	STEREO 70
PROJECTION	:	Double Stereographic
Central meridian (CM)	:	25.0
Latitude of Origin	:	46.0
False Easting at origin	:	500,000.0
False Northing at origin	:	500,000.0
Scale factor at CM	:	0.99975
VERTICAL DATUM	:	MSL

CONTINUARE NOTE

10. RELOCARE FORAJ IN POZITIA 1 LUCREAZA PENTRU CAPUL DE ERUPTIE SONDA NUMARUL 10 SAU 12 SI COORDONATELE ACESTEIA VOR FI CONFIRMATE IN BAZA MANIFOLDULUI SI CAPULUI DE ERUPTIE EXISTENT SI IN BAZA LUNGIMII INTERCONEXIUNII CURENTE.
11. SURPLUSUL SISTEMULUI OMBILICAL ESTE DE APROXIMATIV 40m LUNGIME. ALINIEREA FINALA A BUCLEI VA FI DETERMINATA IN TIMPUL PROIECTULUI DETALIAT.
12. CONTRACTORUL EPCI VA FINALIZA LUNGIMEA SURPLUSULUI SISTEMULUI OMBILICAL.
13. MODEL SISTEM AMARARE CU ANCORA INSTALATIE FORAJ ASIGURATA DE EXXON MOBIL (MODEL ARANJAMENT TIPIC PENTRU SISTEM AMARARE CU 8 LINII).
14. LUNGIME SUPLIMENTARA PENTRU AJUSTAREA BUCLEI SISTEMULUI OMBILICAL, DACA ESTE NECESAR.
15. CONEXIUNILE/TRASEELE FIRELOR DE LEGATURA VOR FI REVIZUITE IN TIMPUL PROIECTULUI DETALIAT IN BAZA TIPULUI UNITATII DE DISTRIBUTIE SUBACVATICA PENTRU A LIMITA TRAVERSARILE EXPANSIUNILOR VIITOARE.
16. SALTELELE FLEXIBILE DE BETON VOR FI AMPLASATE CA O FUNDATIE SUB TOATA LUNGIMEA ZONEI DE SUBTRAVERSARE CURENT (APROX. 60m). DIMENSIUNILE VOR FI 6m x 3m x 0.3m, SUNT NECESARE UN TOTAL DE APROXIMATIV 40 BUCATI DISPUSE IN DOUA STRATURI (DEPINZAND DE REZISTENTA SOLULUI IN CELE DIN URMA). VA FI FINALIZAT IN FAZA PROIECTULUI DETALIAT.

NOTES CONT'D

10. FINAL RE-SPUD LOCATION 1 IS WORKING FOR TREE NUMBER 10 OR 12 AND ITS COORDINATE WILL BE CONFIRMED BASED ON EXISTING MANIFOLD AND TREE, AND BASED ON THE CURRENT JUMPER LENGTH.
11. UMBILICAL OVERLENGTH OF APPROXIMATELY 40m FINAL SLACK ALIGNMENT TO BE DETERMINED DURING DETAIL DESIGN
12. EPC1 TO FINALIZE THE UMBILICAL OVERAGE LENGTH.
13. DRILL RIG ANCHOR MOORING PATTERN PROVIDED BY EXXON MOBIL (TYPICAL PATTERN 8 LINE MOORING ARRANGEMENT)
14. EXTRA LENGTH FOR TERMINATION OF UMBILICAL ADJUSTMENT LOOP, IF NEEDED.
15. FLYING LEAD ROUTE/CONNECTIONS TO BE REVIEWED DURING DETAILED DESIGN BASED ON SDU DESIGN TO LIMIT CROSSINGS FOR FUTURE EXPANSION.
16. CONCRETE FLEXIBLE MATTRESSES TO BE PLACED AS A FOUNDATION UNDER THE LENGTH OF THE CTZ (APPROX. 60m). MATTRESSES ARE TO BE 6m x 3m x 0.3m, A TOTAL OF APPROXIMATELY 40 ARE REQUIRED IN TWO LAYERS (ULTIMATELY DEPENDENT UPON SOIL STRENGTH). TO BE FINALIZED IN DETAILED DESIGN.

NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optic cables, hydraulic pipes, chemical injection pipes, etc., in a joint metal coating.

TABEL LUNGIMI FIRE DE LEGATURA (NOTA 8)
FLYING LEAD LENGTH TABLE (NOTE 8)

ELEMENT ITEM	INTERCONEXIUNE/ JUMPER	CABLU DE LEGATURA ELECTRIC 1 (m) EFL1 (m)	CABLU DE LEGATURA ELECTRIC 2 (m) EFL2 (m)	FURTUN DE LEGATURA HIDRAULIC (m) HFL (m)
CAP ERUPTIE 9/ TREE 9	4.2.1	103.7	103.1	125.5
CAP ERUPTIE10/ TREE 10	4.2.1	107.1	107.9	129.6
CAP ERUPTIE11/ TREE 11	4.2.1	74.8	74.2	47.0
CAP ERUPTIE12/ TREE 12	4.2.1	51.7	52.5	51.2
RELOCARE FORAJ IN POZITIA 1 RE-SPUD LOCATION 1	4.2.1	-	-	-

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

NOTE

1. INTERCONEXIUNE SONDA GAZE NATURALE LA MANIFOLD DODC-2:
   a. CONFIGURATIE FLEXIBILA FORMA "U".
   b. DIMENSIUNE NOMINALA 130.2mm (5-1/8") DI
   c. LUNGIME NOMINALA= 42.1m
   d. RACORDUL LA MANIFOLD ESTE ORIZONTAL
   e. RACORDUL LA CAPUL DE ERUPTIE ESTE VERTICAL
2. INTERCONEXIUNEA MANIFOLDULUI CONDUCTEI DE ADUCTIUNE LA DISPOZITIVUL DE CAPAT CONDUCTA DE ADUCTIUNE:
   a. CONFIGURATIE FLEXIBILA IN FORMA "S".
   b. DIMENSIUNE NOMINALA 228.6mm (9") DI
   c. LUNGIME NOMINALA= 54m
   d. RACORDUL LA MANIFOLD ESTE ORIZONTAL
   e. RACORDUL LA CAPUL DE ERUPTIE ESTE VERTICAL
3. CU LINIE PUNCTATA VERDE CONFIGURATIE RELOCARE FORAJ PENTRU CAP ERUPTIE CU INTERCONEXIUNE: CONFIGURATIE FORMA "L".
4. TOLERANTELE MANIFOLD - DISPOZITIV DE CAPAT CONDUCTA DE ADUCTIUNE SUNT CONSIDERATE RELATIVE INTRE ELE, IDE EXEMPLU UNUL ESTE INSTALAT SI FIXAT PRIMA DATA, SI CELALALT ESTE INSTALAT RELATIV LA STRUCTURA INSTALATA).
5. INFRASTRUCTURA SUBACVATICA VA FI PASTRATA LA 50m NOMINAL FATA DE PLACA DE INCHIDERE A INCALZIRII ELECTRICE DIRECTE SI MINIMUM 30m DE CABLUL INCALZIRII ELECTRICE DIRECTE ALIPIT. INDUCTORII ELECTRICI POT FI UTILIZATI PENTRU A REDUCE DISTANTA INTRE DISPOZITIVUL DE CAPAT CONDUCTA DE ADUCTIUNE SI ZONA DE TRANSFER CURENT LA 10m - 15m. DISTANTA DE AMPLASARE A INCALZIRII ELECTRICE DIRECTE VA FI CONFIRMATA IN FAZA PROIECTULUI DETALIAT.
6. POZITIA FURTUNELOR HIDRAULICE DE LEGATURA VA FI CONFIRMATA IN PROIECTUL DETALIAT.
7. DETALIILE ARANJAMENTULUI DISPOZITIVULUI DE CAPAT CONDUCTA DE ADUCTIUNE SUNT IN PLANSA ROND-EW-YDLAY-21-0017/0018.
8. LUNGIMEA FIRELOR DE LEGATURA NU IAU IN CONSIDERARE COTA DE NIVEL VERTICALA.
9. PUNCTELE DE ANCORARE ALE PLATFORMEI DE FORAJ CU SISTEMUL INTACT ESTE DE APROXIMATIV 1900m DE LA LOCATIA DODC-2 (MODEL SISTEM AMARARE CU ANCORA, LUNG DE 3000m DE LA LOCATIA DODC-2).

DOCUMENTE DE REFERINTA

NUMAR PLANSA	DESCRIERE
ROND-EW-YBDBM-20-0002	BAZELE PROIECTARII CONDUCTEI S.F.
ROND-ED-UDBAT-11-035	INTERCONEXIUNE (FLEXIBILA) SONDA DOMINO. PLANSA LIMITE DOMINO.
ROND-ED-YDDET-21-024	PLANSA LIMITA S.F. CONDUCTA DE ADUCTIUNE PRODUCTIE DOMINO
ROND-ED-YDLAY-21-028	PLANSA LIMITA S.F. INTERCONEXIUNE(FLEXIBILA) DISPOZITIVUL DE CAPAT CONDUCTA DE ADUCTIUNE DOMINO.
ROND-ED-YDPAL-21-0004/0011	FISA ALINIAMENT CONDUCTA DE ADUCTIUNE DOMINO
ROND-ED-YDPAL-22-0003/0010	FISA ALINIAMENT SISTEM OMBILICAL DOMINO
ROND-EW-YRRPT-21-046	RAPORT AMPLASARE ANOD SISTEM INCALZIRE ELECTRIC DIRECT
ROND-EW-YDLAY-21-0017/0018	PLAN AMPLASARE DISPOZITIV DE CAPAT CONDUCTA DE ADUCTIUNE DOMINO

TOLERANTE
TOLERANCES

ELEMENT ITEM	POZITIE POSITION	DIRECTIE HEADING	VERTICAL VERTICAL
DISPOZITIV TERMINARE CONDUCTA DE ADUCTIUNE/ FLET	6m x 3m (LONGITUDINAL, LATERAL) / (LONGITUDINAL, LATERAL)	± 5°	± 2°
MANIFOLD MANIFOLD	2m (RAZA / RADIUS)	± 5°	± 2°
CAP ERUPTIE/ TREE	2m (RAZA / RADIUS)	± 5°	± 2°
UTA/SDU	2m (RAZA / RADIUS)	± 5°	± 2°

NOTES

1. WELL JUMPER PRODUCTION WELL TO DODC-2 MANIFOLD:
   a. FLEXIBLE CONFIGURATION U-SHAPE.
   b. NOMINAL SIZE 130.2mm (5-1/8") ID
   c. NOMINAL LENGTH= 42.1m
   d. MANIFOLD CONNECTOR IS HORIZONTAL
   e. TREE CONNECTOR IS VERTICAL
2. FLOWLINE JUMPER MANIFOLD TO FLET:
   a. FLEXIBLE CONFIGURATION IN S-SHAPE
   b. NOMINAL SIZE 228.6mm (9") ID
   c. NOMINAL LENGTH= 54m
   d. MANIFOLD CONNECTOR IS HORIZONTAL
   e. FLET CONNECTOR IS VERTICAL.
3. IN GREEN DASHED LINE RE-SPUD CONFIGURATION FOR THE TREE WITH JUMPER: L-SHAPE CONFIGURATION.
4. TOLERANCES FLET - MANIFOLD ARE CONSIDERED RELATIVE TO EACH OTHER, (I.E. ONE IS INSTALLED FIRST AND FIXED, AND OTHER IS INSTALLED RELATIVE TO THE INSTALLED STRUCTURE).
5. SUBSEA INFRASTRUCTURE TO BE KEPT 50m NOMINAL FROM DEH TERMINATION PLATE AND 30m MINIMUM FROM PIGGYBACK DEH CABLE. CURRENT CHOKES CAN BE USED TO REDUCE THE DISTANCE BETWEEN THE FLET AND THE CTZ TO 10m - 15m. REQUIRED DEH STANDOFF DISTANCE TO BE CONFIRMED DURING DETAILED DESIGN.
6. POSITION OF HYDRAULIC FLYING LEAD TO BE CONFIRMED DURING DETAILED DESIGN.
7. DETAILS OF FLET ARRANGEMENT ARE IN DRAWING ROND-EW-YDLAY-21-0017/0018.
8. FLYING LEADS LENGTH DOES NOT TAKE IN TO ACCOUNT THE VERTICAL ELEVATION.
9. DRILL RIG ANCHOR WIRE TOUCH DOWN POINTS WITH SYSTEM INTACT IS APPROX. 1900m FROM DODC-2 LOCATION. (ANCHOR MOORING PATTERN 3000m LONG FROM DODC-2 LOCATION).

REFERENCE DOCUMENTS

DRAWING NUMBER	DESCRIPTION
ROND-EW-YBDBM-20-0002	FEED PIPELINE DESIGN BASIS
ROND-ED-UDBAT-11-035	DOMINO WELLHEAD JUMPER (FLEXIBLE), DOMINO BATTERY LIMIT DRAWING
ROND-ED-YDDET-21-024	DOMINO PRODUCTION FLOWLINE FEED BATTERY LIMIT DRAWING
ROND-ED-YDLAY-21-028	DOMINO FLET JUMPER (FLEXIBLE) TO DODC-2 FEED BATTERY LIMIT DRAWING
ROND-ED-YDPAL-21-0004/0011	DOMINO FLOWLINE ALIGNMENT
ROND-ED-YDPAL-22-0003/0010	DOMINO UMBILICAL ALIGNMENT SHEETS
ROND-EW-YRRPT-21-046	DEH ANODE LAYOUT REPORT
ROND-EW-YDLAY-21-0017/0018	14" FLET GA DOMINO FLOWLINE

PROIECT NEPTUN DEEP
NEPTUN DEEP PROJECT

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
2-F	19.04.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. DUMITRU	C. STEFAN	N. EREMIA
2-E	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-D	15.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-C	12.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-B	17.06.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	20.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR CHECKER			I. BUTNARU		ANRE
ÎNREGISTRĂRIPRIVIND SCHIMBĂRILE	REFERAT NR. / EXPERTIZA NR. / DATA - CHECKER REPORT / EXPERTISE NO. / DATE		NUME NAME	SEMNĂTURA SIGNATURE	DOMENIU EXIGENCES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
S.R. NEGRU VODA NR.19, 100146, PLOIESTI
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
2	17NOV17	RE-ISSUED FOR IFD	FK	EP	SS	JG
1	05OCT17	RE-ISSUED FOR IFD	RO	EP	SS	JG
0	21JUN17	ISSUED FOR IFD	RO	EP	SS	JG
A	30MAY17	ISSUED FOR IDC	RO	EP	SS	

ExxonMobil
Exploration and Production Romania Limited

SISTEM OMBILICAL SI CONDUCTA DE ADUCTIUNE DOMINO
DOMINO FLOWLINE & UMBILICAL
PLAN DE SITUATIE IN APROPIEREA SONDEI
WELL APPROACH LAYOUT
DODC-2
DODC-2

1:250	ROND-EW-YDLAY-22-0005-C	DTAC	2-F
SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.

A1+ (1092x594)

Appendix D. Process flow diagrams

Appendix D. Process flow diagrams

1 – NGMS process flow

MAK60301
FILTRU SEPARATOR/
FILTER SEPARATOR
CS + 3MM CA

KGR60301
GARA DE PRIMIRE GODEVIL/
PIG RECEIVER
CS + 3MM CA

KAU79701
SKID DE MASURARE TRANSFER CUSTODIE/
CUSTODY TRANSFER METER SKID
CS + 3MM CA

HAP60301
INCALZITOR NGMS (VIITOR)/
NGMS HEATER(FUTURE)
NOTA 6/NOTE 6
CS /SS SHEATHS

STK61602
COS DISPERSIE GAZE/
VENT STACK
316 SS

LIMITA OPERARE TRANSGAZ/ OPERATIONAL BATTERY LIMIT

CONDUCTA DE GAZE NATURALE OFFSHORE/ OFFSHORE PIPELINE

STATIE DE MASURARE/ METERING STATION

DE LA NEPTUL DEEP/ FROM NEPTUN DEEP
DN750

SDV
FC
E8E
A11A
LA COS DISPERSIE GAZE/ TO VENT STACK
KGR60301

CONDUCTA DE GAZE NATURALE OFFSHORE/ OFFSHORE PIPELINE
STATIE DE MASURARE/ METERING STATION
LIMITA CONSTRUCTIE TRANSGAZ/ CONSTRUCTION BATTERY LIMIT
E8E
E8E

DEBITMETRU TIP TURBINA/ TURBINE METER

TRANSFER TEMPORAR AL CUSTODIEI DEBITMETRULUI DE CALITATE PENTRU MASURAREA GAZELOR DE LA TRANSGAZ IN TIMPUL PRESURIZARII INITIALE A CONDUCTEI DE TRANSPORT. DEBITMETRUL VA FI INDEPARTAT SI VOR FI INSTALATE FLANSE OARBE DUPA DAREA IN EXPLOATARE ./
TEMPORARY CUSTODY TRANSFER QUALITY METER FOR MEASUREMENT OF GAS FROM TRANSGAZ DURING INITIAL PIPELINE PRESSURIZATION. METER REMOVED WITH BLIND FLANGES INSTALLED FOLLOWING COMMISSIONING.

CATRE GAZ INSTRUMENTAL/ TO INSTRUMENT GAS

901

NOTA 8/ NOTE 8
PSV
A11A
CATRE COS DISPERIE GAZE/ AMORTIZOR ZGOMOT TO VENT STACK / SILENCER
LO
E8E
E8E
FILTRU SEPARATOR/ FILTER SEPARATOR
MAK60301
E11A
KGR60301

E8E
NOTA 5/ NOTE 5

HAP60301
INCALZITOR NGMS/ NGMS HEATER

NOTA 9/ NOTE 9
CUSTODIE/ CUSTODY
FE
FE
VERIFICARE/ CHECK

DEBITMETRU TIP TURBINA (VERIFICARE)/ TURBINE METER (VERICATION)

E8E

CONDUCTA DE GAZE NATURALE CATRE TRANSGAZ/ PIPELINE TO TRANSGAZ

NOTA 3/ NOTE 3

DE CATRE TRANSGAZ/ BY TRANSGAZ
LIMITA CONSTRUCTIE SI OPERARE TRANSGAZ/ CONSTRUCTION AND OPERATIONAL BATTERY LIMIT
STATIE DE MASURARE/ METERING STATION
E8E

MIJ (IMBINARE MONOLITICA DE IZOLARE)/ MIJ (MONOLITHIC ISOLATION JOINT)
NOTA 4/ NOTE 4

FC
SDV
NOTA 7/ NOTE 7
FC
PI
FCV
FCV

E8E
902

DE LA COLECTOR EVACUARE/ DESCARCARE GAZE LA COS FROM VENT/RELIEF HEADER

STK61602
COS DISPESIE GAZE/ VENT STACK

A11A

Parametrii Transgaz/ Transgas Parameters	
Presiune Gaz La Livrare (barg)/ Gas Delivery Pressure (barg)	
Maxim/Maximum	63
Minim/Minimum	50
Temperatura Gaz La Livrare (degC)/ Gas Delivery Temperature (degC)	
Maxim/Maximum	50
Minim/Minimum	(TBC)

PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

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PLANSE DE REFERINTA / REFERENCE DRAWINGS:

NOTE / NOTES:

1. PENTRU PARAMETRII TEHNOLOGICI SE VA CONSULTA BILANTUL TERMIC SI DE MATERIALE, DOCUMENTELE ROND-EW-PCHMB-30-0001 PANA LA ROND-EW-PCHMB-30-005./
   FOR STREAM DATA REFER TO HEAT AND MATERIAL BALANCES, DOC ROND-EW-PCHMB-30-0001 THROUH ROND-EW-PCHMB-30-0005.
2. PROIECTAREA CONDUCTELOR ESTE CONFORM ASME B31,8, CU FACTOR DE SIGURANTA F=0.5./
   PIPING DESIGN PER ASME B31,8, WITH DESIGN FACTOR F=0.5.
3. ECHIPAMENTUL AFERENT TRANSGAZ SI DIMENSIUNILE CONDUCTELOR SUNT INDICATE DOAR SPRE INFORMARE./
   TRANSGAZ EQUIPMENT AND LINE SIZES SHOWN FOR INFORMATION ONLY.
4. IZOLATIA ELECTRICA ESTE NECESARA LA AMBELE CAPETE ALE STATIEI DE MASURARE PENTRU A O IZOLA DE CONDUCTA DE GAZE NATURALE PENTRU PROTECTIA CATODICA./
   ELECTRICAL ISOLATION REQUIRED AT BOTH ENDS OF MS TO ISOLATE FROM PL FOR CATHODIC PROTECTION PURPOSES.
5. PROIECTAREA VA INCLUDE INSTALAREA DE ECHIPAMENTE PENTRU ANALIZA UMIDITATII SI CROMATOGRAF GAZE LA LOCATIA STATIEI DE MASURARE. ECHIPAMENTELE PENTRU ANALIZA GAZELOR POT FI MONITORIZATE DE LA DISTANTA DIN CENTRUL DE CONTROL./
   DESIGN SHALL INCLUDE MOISTURE ANALYZER AND GAS CHROMATOGRAPH EQUIPMENT INSTALLED AT METER STATION SITE. GAS ANALYZER EQUIPMENT CAN BE REMOTELY MONITORED AT THE CONTROL CENTER./
6. INCALZITOR ELECTRIC OPTIONAL./
   OPTIONAL ELECTIC HEATER
7. METODA PRINCIPALA DE CONTROL CONSTA IN CONTROLUL DEBITULUI CU ANULAREA PRESIUNII DIN AVAL PRIN UTILIZAREA ROBINETILOR DE CONTROL DEBIT./
   PRIMARY CONTROL METHOD IS FLOW CONTROL WITH DOWNSTREAM PRESSUREOVERRIDES USING THE FCV CONTROL VALVE(S).
8. SUPAPA DE SIGURANTA DIMENSIONATA DOAR PENTRU PROTECTIA FILTRULUI SEPARATOR. NU ESTE PREVAZUTA PENTRU OPP (PROTECTIA LA SUPRAPRESIUNE) A CONDUCTEI DE TRANSPORT DIN AVAL. TRANSGAZ VA FURNIZA PROPRIUL ECHIPAMENT OPP./
   RELIEF VALVE SIZED FOR PROTECTION OF FILTER SEPARATOR ONLY. IT IS NOT INTENDED FOR OPP (OVER PRESSURE PROTECTION) OF DOWNSTREAM PIPELINE. TRANSGAZ SHALL PROVIDE THEIR OWN OPP EQUIPMENT.
9. CONTOARE ULTRASONICE DUALE REPREZENTATE CA CORP UNIC CU SET DUAL DE TRANSMITATOARE./
   DUAL ULTRASONIC METERS SHOWN IN A SINGLE BODY WITH DUAL SETS OF TRANSMITTERS.

* DENUMIRE COMPLETA PROIECT / COMPLETE PROJECT NAME

NEPTUN DEEP INSTALARE CONDUCTA SI CABLU DE COMUNICATII, SUBTRAVERSARE PLAJA, FALEZA, DRUMURI SI CALE FERATA; REALIZARE TRECERE TEMPORARA LA NIVEL CU CALEA FERATA; CONSTRUIRE SRM, ENTRU DE CONTROL, IMPREJMUIRE, ILUMINAT, PARCARI, SPATII VERZI, PLATFORME SI DRUMURI INTERIOARE; ORGANIZARE DE SANTIER, ASIGURAREA SI RACORDAREA LA UTILITATI.
NEPTUN DEEP - PIPELINE AND COMMUNICATION CABLE INSTALLATION, UNDERCROSSING OF BEACH, SEA FRONT, ROADS AND RAILWAY;TEMPORARY ROAD RAILWAY CROSSING; CONSTRUCTION OF NGMS, CONTROL CENTER, FENCING, LIGHTING, PARKING, GREEN SPACE, PLATFORMS, INTERNAL ROADS; SITE WORKS, ORGANIZATION AND UTILITIES CONNECTIONS.

BUTNARIU IOAN ROMANIA INGINER NR. V181000171 CLASA VIS. INGINER VERIFICATOR PROIECTE

PROIECT NEPTUN DEEP*
NEPTUN DEEP PROJECT*

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
0-B	06.2020	EMIS PENTRU VERIFICARE / IFR	R.BALINT	C.ZARNESCU	M.NAE
0-A	02.2020	EMIS PENTRU VERIFICARE/ IFR	R.BALINT	C.ZARNESCU	M.NAE
VERIFICATOR CHECKER			I. BUTNARIU		ANRE
VERIFICATOR/EXPERT CHECKER/EXPERT	REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE		NUME NAME	SEMNATURA SIGNATURE	DOMENIU ENGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16 ,100149, PLOIESTI
J29/3071/2007, RO 22804820

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
0	05-OCT-17	IFD	GQ		RDF	AWM

ExxonMobil
Exploration and Production Romania Limited

SCHEMA FLUX TEHNOLOGIC SI SELECTIE MATERIALE
FACILITATE MASURARE GAZE PE USCAT
PROCESS FLOW AND MATERIAL SELECTION DIAGRAM
ONSHORE METERING FACILITY

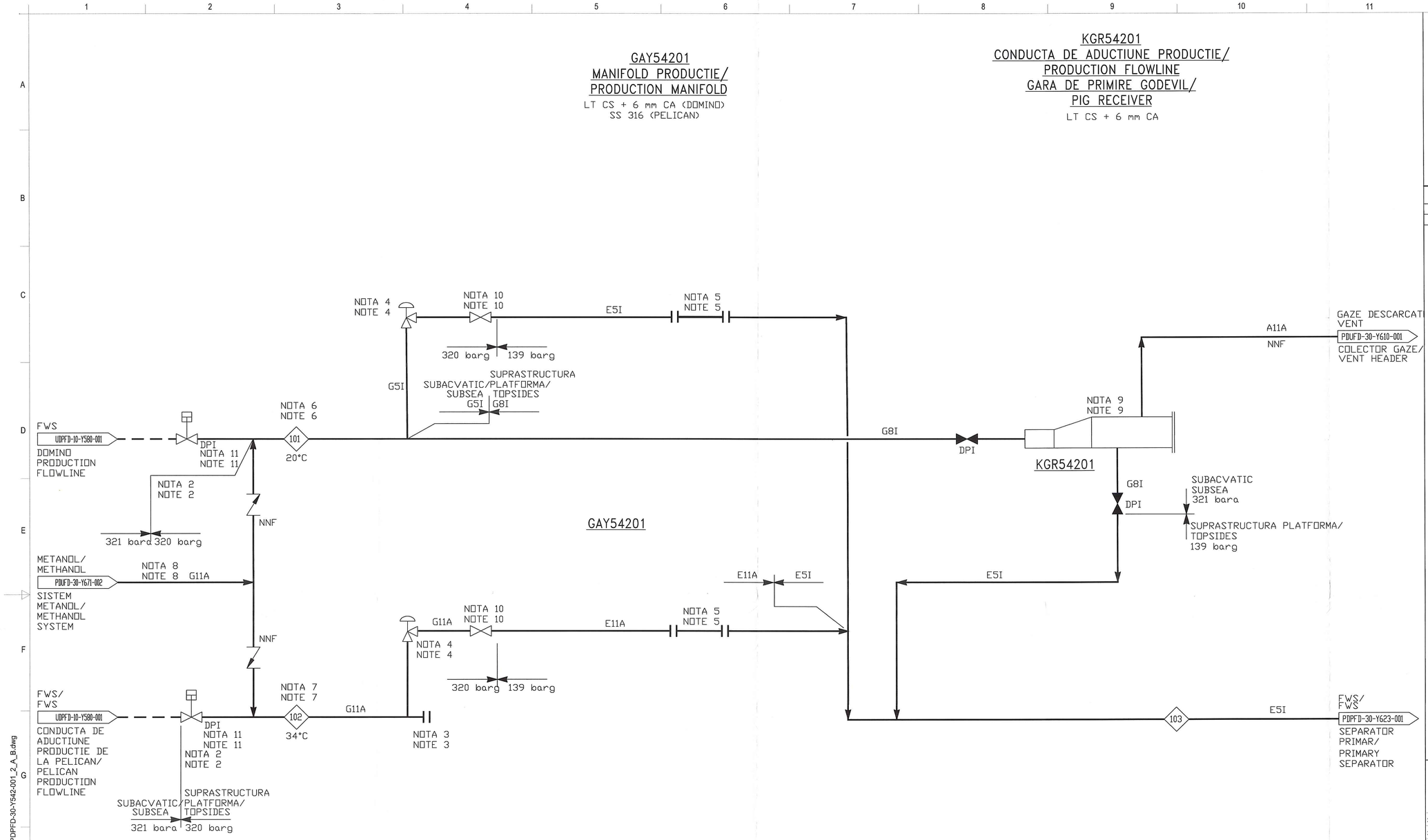
SCARA / SCALE	NR PLANSA / DWG. NO	FAZA / PHASE	REV / REV
	ROND-EW-PDPFD-25-Y797-001-B	DTAC	0-B

A1 841x594

I:\ROROPLOA\Projects\10304\4_DOC\42_OD\17.06.2020 Documente revizuite\Process\DWG\ROND-EW-PDPFD-25-Y797-001_0-B_B.dwg

Appendix D. Process flow diagrams

2 – Process flow and material selection diagram topsides inlet facilities



PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

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PLANSE DE REFERINTA / REFERENCE DRAWINGS:

NOTE/NOTES:

1. PENTRU NOTE GENERALE, SIMBOLURI SI DETALII LEGENDA, SE VOR CONSULTA PLANSELE ROND-EW-PDSYM-30-Y000-001 PANA LA ROND-EW-PDSYM-30-Y000-009. PENTRU PARAMETRII TEHNOLOGICI, SE VA CONSULTA BILANTUL TERMIC SI DE MATERIALE./
FOR GENERAL NOTES, SYMBOLS AND LEGEND DETAILS SEE DRAWINGS ROND-EW-PDSYM-30-Y000-001 THROUGH ROND-EW-PDSYM-30-Y000-009. REFER HEAT AND MATERIAL BALANCE FOR STREAM DATA.
2. TOATE CONDUCTELE FWS ALE SUPRASTRUCTURII PLATFORMEI VOR FI IN CONFORMITATE CU ASME B31.3./
ALL TOPSIDES FWS PIPING WILL BE PER ASME B31.3
3. PREVEDERE PENTRU CONEXIUNE TEMPORARA A GARII DE PRIMIRE GODEVIL./
PROVISION FOR TEMPORARY PIG RECEIVER TIE-IN.
4. IN OPERAREA NORMALA 100% DESCHIS, UTILIZAT PENTRU MANAGEMENTUL DOPURILOR DE LICHID./
NORMALLY OPERATED 100% OPEN, USED FOR SLUG MANAGEMENT ONLY.
5. MOSOR CONDUCTA DETASABIL PENTRU EVENTUALA INSTALARE VIITOARE DE DEBITMETRE./
DROP OUT SPOOL FOR POTENTIAL FUTURE INSTALLATION OF ALLOCATION METERS.
6. TEMPERATURA MINIMA LA INTRARE PESTE TEMPERATURA DE FORMARE A HIDRATILOR DE 15°C. TEMPERATURA MAXIMA LA INTRAREA DE LA DOMINO ESTE DE 30°C./
MINIMUM ARRIVAL TEMPERATURE ABOVE HYDRATE FORMATION TEMPERATURE OF 15°C. MAXIMUM ARRIVAL TEMPERATURE OF 30°C FOR DOMINO.
7. TEMPERATURA MINIMA LA INTRARE PESTE TEMPERATURA DE FORMARE A HIDRATILOR DE 15°C. TEMPERATURA MAXIMA LA INTRAREA DE LA PELICAN ESTE DE 45°C./
MINIMUM ARRIVAL TEMPERATURE ABOVE HYDRATE FORMATION TEMPERATURE OF 15°C. MAXIMUM ARRIVAL TEMPERATURE OF 45°C FOR PELICAN.
8. PENTRU INJECTIA DE INHIBITORI IN CONDUCTE IN CAZURILE DE LIPSA DEBIT / CONDITII DE FORMARE HIDRATI IN SISTEM/
FOR INHIBITION OF RISERS DURING NO FLOW / SHUT-IN HYDRATE CONDITION.
9. CONEXIUNE FIXA LA GARA DE PRIMIRE GODEVIL, PENTRU INJECTIA DE AZOT IN CAZUL NECESITATII DE PURJARE./
NITROGEN HARD PIPE CONNECTION TO RECEIVER FOR PURGING IS REQUIRED.
10. ROBINET NECESAR PENTRU HIDROTEST, TRANZITIE CONDUCTA DE LA CLASA ANSI 2500 LA CLASA ANSI 900./
VALVE REQUIRED FOR HYDROTEST ANSI 2500 CLASS TO ANSI 900 CLASS PIPE SPEC TRANSITION./
11. DPI (IZOLARE DUBLA POZITIVA) PENTRU CONDUCTA COLECTOARE LA INTRAREA IN INSTALATIE VA FI REALIZATA PRIN ACTIUNEA COMBINATA A ACESTUI SDV SI ROBINETULUI DE IZOLARE DIN AVAL.
DPI (DOUBLE POSITIVE ISOLATION) FOR RISER TO FACILITY ACHIEVED BY THE COMBINATION OF THIS SDV AND DOWNSTREAM BLOCK VALVE

ABREVIERI/ ABBREVIATIONS:

FWS=FLUX TOTAL SONDA/ FULL WELL STREAM
DPI=INDICATOR PRESIUNE DIFERENTIALA/ INDICATOR DIFFERENTIAL PRESSURE
SDV= ROBINET DE INCHIDERE/ SHUT DOWN VALVE

PROIECT NEPTUN DEEP
NEPTUN DEEP PROJECT

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
2-B	06.2020	EMIS PENTRU VERIFICARE/ IFR	R.BALINT	C.ZARNESCU	M.NAE
2-A	02.2020	EMIS PENTRU VERIFICARE/ IFR	R.BALINT	C.ZARNESCU	M.NAE
VERIFICATOR/ CHECKER			I. BUTNARIU		ANRE
ORD/ORDERPT (NEDENSEPRIT		REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16 ,100149, PLOIESTI

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
2	03-APR-18	RE-ISSUE FOR REVIEW	SD	RDFFN		

ExxonMobil
Exploration and Production
Romania Limited

SCHEMA FLUX TEHNOLOGIC SI SELECTIE MATERIALE
FACILITATI LA INTRAREA PE SUPRASTRUCTURA PLATFORMEI
PROCESS FLOW AND MATERIAL SELECTION DIAGRAM
TOPSIDES INLET FACILITIES

SCARA / SCALE	NR PLANSA / DWG. NO	FAZA / PHASE	REV / REV
	ROND-EW-PDPFD-30-Y542-001-B	DTAC	2-B

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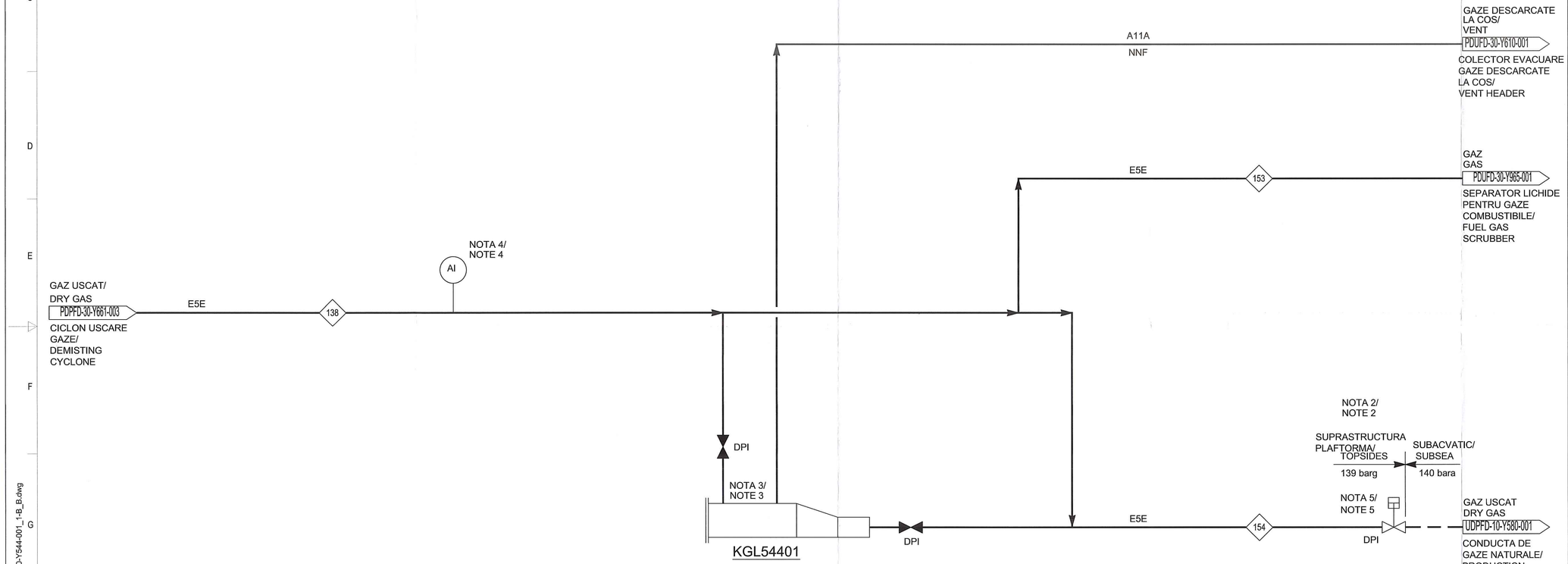
Appendix D. Process flow diagrams

3 – Process flow and material selection diagram production pipeline

KGL54401
CONDUCTA DE GAZE NATURALE/PRODUCTION PIPELINE
GARA DE LANSARE GODEVIL/PIG LAUNCHER

CS + 3MM CA



PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

PLANSE DE REFERINTA / REFERENCE DRAWINGS:

NOTE/NOTES:

1. PENTRU NOTE GENERALE, SIMBOLURI SI DETALII LEGENDA, SE VOR CONSULTA PLANSELE ROND-EW-PDSYM-30-Y000-001 PANA LA ROND-EW-PDSYM-30-Y000-009. PENTRU PARAMETRII TEHNOLOGICI, SE VA CONSULTA BILANTUL TERMIC SI DE MATERIALE/
   FOR GENERAL NOTES, SYMBOLS AND LEGEND DETAILS SEE DRAWINGS ROND-EW-PDSYM-30-Y000-001 THROUGH ROND-EW-PDSYM-30-Y000-009. REFER HEAT AND MATERIAL BALANCE FOR STREAM DATA.
2. TOATE CONDUCTELE SUPRASTRUCTURII PLATFORMEI VOR FI IN CONFORMITATE CU ASME B31.3./
   TOPSIDES PIPING WILL BE PER ASME B31.3.
3. CONEXIUNE FIXA LA GARA DE LANSARE GODEVIL, PENTRU INJECTIA DE AZOT LA PURJARE./
   NITROGEN HARD PIPE CONNECTION TO LAUNCHER FOR PURGING.
4. ANALIZOR PUNCT DE ROUA - DOAR PENTRU MONITORIZARE./
   WATER DEW POINT ANALYZER - FOR MONITORING ONLY.
5. PENTRU PORNIREA PLATFORMEI FARA ALIMENTARE CU GAZE DIN FLUXUL NORMAL, SE VA UTILIZA UN ROBINET DE BY-PASS PENTRU ALIMENTAREA CU GAZ COMBUSTIBIL DIN CONDUCTA DE TRANSPORT./
   FOR PLATFORM BLACK START, A BYPASS VALVE WILL BE USED TO FEED FUEL GAS FROM PIPELINE.

ABREVIERI/ ABBREVIATIONS:

DPI= INDICATOR DE PRESIUNE DIFERENTIALA/ DIFFERENTIAL PRESSURE INDICATOR

BUTNARIU IOAN ROMÂNIA A.N.R.E. Nr. V181000171 Vas. Vas. A B C D E F G INGINER VERIFICATOR PROIECTE

4 ILF CONSULTING ENGINEERS ROMANIA S.R.L. BUCUREȘTI, ROMÂNIA

PROIECT NEPTUN DEEP
NEPTUN DEEP PROJECT

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
1-B	06.2020	EMIS PENTRU VERIFICARE / IFR	R.BALINT	C.ZARNESCU	M.NAE
1-A	02.2020	EMIS PENTRU VERIFICARE/ IFR	R.BALINT	C.ZARNESCU	M.NAE
VERIFICATOR CHECKER			I. BUTNARIU		ANRE
VERIFICATOR/EXPERT DECIDEUR/EXPERT		REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR

ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16 ,100149, PLOIESTI
J29/3071/2007, RO 22804820

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	13NOV17	RE-IFD	EV		RDF	RJV

ExxonMobil
Exploration and Production Romania Limited

SCHEMA FLUX TEHNOLOGIC SI SELECTIE MATERIALE

CONDUCTA DE GAZE NATURALE

PROCESS FLOW AND MATERIAL SELECTION DIAGRAM

PRODUCTION PIPELINE

SCARA / SCALE	NR. PLANSA / DWG. NO	FAZA / PHASE	REV / REV
	ROND-EW-PDPFD-30-Y544-001-B	DTAC	1-B

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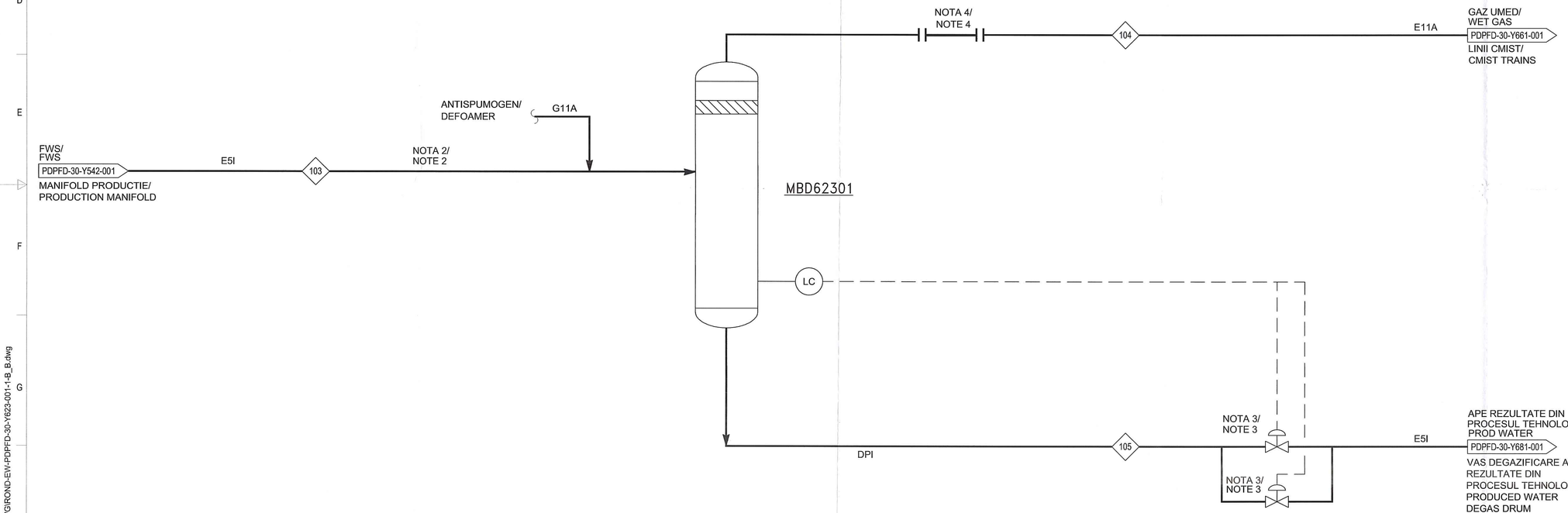
Appendix D. Process flow diagrams

4 – Process flow and material selection diagram primary separator

MBD62301
SEPARATOR PRIMAR/PRIMARY SEPARATOR

CS + 3MM CA W/316 SS CLADDING
316 SS ECHIPAMENTE INTERIOARE/ INTERNALS



PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

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PLANSE DE REFERINTA / REFERENCE DRAWINGS:

NOTE / NOTES:

1. PENTRU NOTE GENERALE, SIMBOLURI SI DETALII LEGENDA, SE VOR CONSULTA PLANSELE ROND-EW-PDSYM-30-Y000-001 PANA LA ROND-EW-PDSYM-30-Y000-009. PENTRU PARAMETRII TEHNOLOGICI, SE VA CONSULTA BILANTUL TERMIC SI DE MATERIALE./
   FOR GENERAL NOTES, SYMBOLS AND LEGEND DETAILS SEE DRAWINGS ROND-EW-PDSYM-30-Y000-001 THROUGH ROND-EW-PDSYM-30-Y000-009. REFER TO HEAT AND MATERIAL BALANCE FOR STREAM DATA.
2. FLUXUL DE GAZ DE LA PELICAN ESTE LIMITAT IN VEDEREA OBTINERII UNEI TEMPERATURI A GAZULUI LA INTRAREA IN CMIST SUB VALOAREA DE 35°C. PROCESAREA GAZULUI DOAR DE LA PELICAN, LA TEMPERATURI ALE GAZULUI LA INTRARE AFLATE IN LIMITELE SUPERIOARE, NECESITA O PRE-RACIRE A GAZULUI, IAR ACEST PROCES NU ESTE PREVAZUT PE PLATFORMA./
   PELICAN CONTRIBUTION IS LIMITED TO ENSURE A TEMPERATURE BELOW CMIST GAS INLET LIMIT OF 35°C. PROCESSING OF ONLY PELICAN GAS AT THE HIGHER RANGE OF ARRIVAL TEMPERATURES REQUIRES PRE-COOLING OF GAS AND IS NOT PROVIDED AT PLATFORM.
3. ROBINETE DE CONTROL NIVEL CU FUNCTIONARE IN PARALEL./
   PARALLEL LEVEL CONTROL VALVES.
   A. IN TIMPUL FUNCTIONARII NORMALE, ROBINETUL DE CONTROL CU DIAMETRUL MAI MIC VA FI UTILIZAT DATORITA DEBITULUI MAI MIC (9M³/H; MAX 60M³/H)/
      DURING NORMAL OPERATION SMALLER CONTROL VALVE SHALL BE LINED UP DUE TO REDUCED FLOW RATE (9M³/H; MAX 60M³/H)
   B. IN TIMPUL OPERATIUNILOR DE GODEVILARE, ROBINETUL DE CONTROL CU DIAMETRU MAI MARE VA FI UTILIZAT (830M³/H; 120KBD)/
      DURING PIGGING OPERATION LARGER LEVEL CONTROL VALVE SHALL BE LINED UP (830M³/H; 120 KBD)
4. MOSOR DE CONDUCTA DETASABIL PENTRU EVENTUALA INSTALARE VIITOARE DE RACITOR GAZE./
   DROPOUT SPOOL FOR POTENTIAL FUTURE INSTALLATION OF GAS COOLER.

ABREVIERI/ ABBREVIATIONS:

FWS= FLUX TOTAL SONDA/ FULL WELL STREAM

BUTNARIU IOAN ROMÂNIA NR. V181000171 INGINER VERIFICATOR PROIECTE

PROIECT NEPTUN DEEP/
NEPTUN DEEP PROJECT

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
1-B	06.2020	EMIS PENTRU VERIFICARE / IFR	R.BALINT	C.ZARNESCU	M.NAE
1-A	02.2020	EMIS PENTRU VERIFICARE/ IFR	R.BALINT	C.ZARNESCU	M.NAE
VERIFICATOR/ CHECKER			I. BUTNARIU		ANRE
VERIFICATOR/DPDT CHECKER/DPDT		REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCIES

SOCIETATEA COMERCIALA 4 ILF CONSULTING ENGINEERS ROMANIA S.R.L. PLOIESTI PRAHOVA

PROIECTANT / ENGINEERING CONTRACTOR

ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16 ,100149, PLOIESTI
J29/3071/2007, RO 22804820

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	13NOV17	RE-IFD	EV		RDF	RJY

ExxonMobil
Exploration and Production
Romania Limited

SCHEMA FLUX TEHNOLOGIC SI SELECTIE MATERIALE. SEPARATOR PRIMAR

PROCESS FLOW AND MATERIAL SELECTION DIAGRAM. PRIMARY SEPARATOR

SCARA / SCALE	NR PLANSA / DWG. NO	FAZA / PHASE	REV / REV
	ROND-EW-PDPFD-30-Y623-001-B	DTAC	1-B

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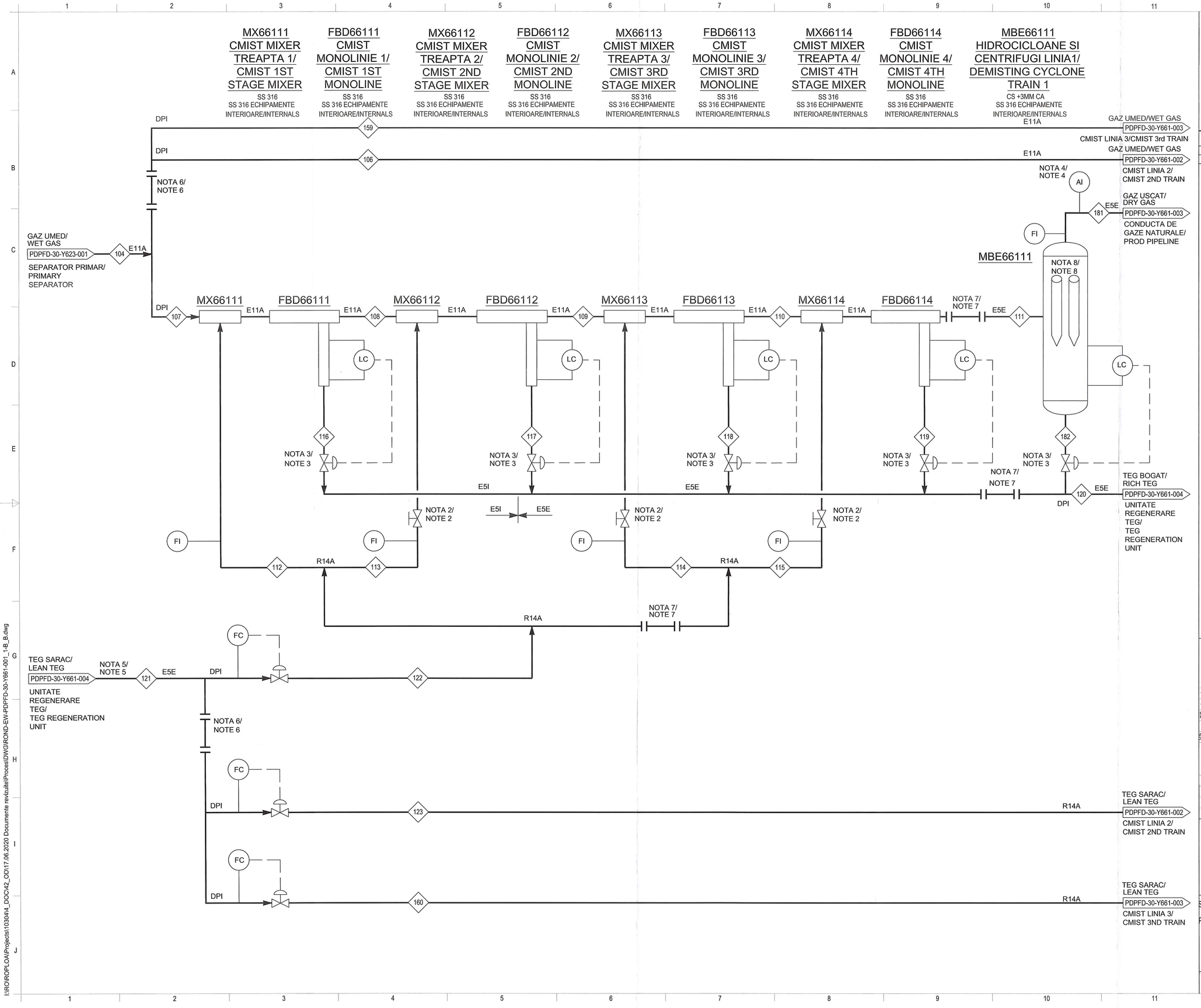
Appendix D. Process flow diagrams

5 – Process flow and material selection diagram cMIST train 1



PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

PLANSE DE REFERINTA / REFERENCE DRAWINGS:

NOTE/NOTES:

1. PENTRU NOTE GENERALE, SIMBOLURI SI DETALII LEGENDA, SE VOR CONSULTA PLANSELE ROND-EW-PDSYM-30-Y000-001 PANA LA ROND-EW-PDSYM-30-Y000-009. PENTRU PARAMETRII TEHNOLOGICI,SE VA CONSULTA BILANTUL TERMIC SI DE MATERIALE./
FOR GENERAL NOTES, SYMBOLS AND LEGEND DETAILS SEE DRAWINGS ROND-EW-PDSYM-30-Y000-001 THROUGH ROND-EW-PDSYM-30-Y000-009. REFER HEAT AND MATERIAL BALANCE FOR STREAM DATA.
2. PENTRU AJUSTAREA (MANUALA) A DEBITULUI DE TEG LA TREPTELE INDIVIDUALE CMIST./
FOR ADJUSTING (MANUAL)TEG FLOW TO INDIVIDUAL CMIST STAGES.
3. ROBINET DE CONTROL PROIECTAT PENTRU CADERE DE PRESIUNE REDUSA. IN VEDEREA BALANSARII UNEI CADERI DE PRESIUNE MAI MARI, ACEASTA VA FI REALIZATA DE ROBINETUL HV DIN AVAL./
CONTROL VALVE DESIGNED FOR LOW PRESSURE DROP. THE BALANCE HIGHER PRESSURE DROP WILL BE TAKEN BY DOWNSTREAM HV.
4. ANALIZOR PUNCT DE ROUA - DOAR PENTRU MONITORIZARE/ WATER DEW POINT ANALYZER - FOR MONITORING
5. TEMPERATURA GLICOLULUI VA FI MENTINUTA LA O VALOARE MINIMA DE 10°C PENTRU A ASIGURA O VASCOZITATE ADECVATA A TEG SI LA O VALOARE MAXIMA DE 40°C IN VEDEREA UNEI USCARI ADECVATE./
GLYCOL TEMPERATURE SHALL BE MAINTAINED A MINIMUM OF 10°C FOR PROPER TEG VISCOSITY AND MAXIMUM OF 40°C FOR PROPER DEHYDRATION.
6. MOSOR DE CONDUCTA DEMONTABIL PENTRU ADAUGAREA UNEI LINII ADITIONALE CMIST./
DROP SPOOL FOR CONTINGENCY ADDITION OF A CMIST TRAIN.
7. MOSOR DE CONDUCTA DEMONTABIL PENTRU ADAUGAREA UNEI TREPTE ADITIONALE CMIST (IN CADRUL FIECAREI LINII)./
DROP SPOOL FOR CONTINGENCY ADDITION OF A CMIST STAGE (WITHIN EACH TRAIN).
8. CICLON USCARE GAZE VA INDEPARTA PICATURI PANA LA 50 MICRONI./
DEMISTING CYCLONE SHALL REMOVE DROPLETS DOWN TO 50 MICRONS.

ABREVIATII/ ABBREVIATIONS:
TEG =TRIETILENGLICOL/ TRIETHYLENEGLYCOL
HV= ROBINET ACTIONAT MANUAL/ HAND VALVE

BUTNARIU I. IAN ROMANIA NR. V18100017 INGINER VERIFICATOR PROIECTE A B C D E

PROIECT NEPTUN DEEP/
NEPTUN DEEP PROJECT

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
1-B	06.2020	EMIS PENTRU VERIFICARE / IFR	R.BALINT	C.ZARNESCU	M.NAE
1-A	02.2020	EMIS PENTRU VERIFICARE/ IFR	R.BALINT	C.ZARNESCU	M.NAE
VERIFICATOR/ CHECKER			I. BUTNARIU		ANRE

VERIFICATOR/EXPERT CHECKER/EXPERT	REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16 ,100149, PLOIESTI
J29/3071/2007, RO 22804820

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	13NOV17	RE-IFD	EV		RFD	RJY

ExxonMobil
Exploration and Production Romania Limited

SCHEMA FLUX TEHNOLOGIC SI SELECTIE MATERIALE LINIA 1 CMIST
PROCESS FLOW AND MATERIAL SELECTION IAGRAM CMIST TRAIN 1

SCARA / SCALE	NR PLANSA / DWG. NO	FAZA / PHASE	REV / REV
	ROND-EW-PDPFD-30-Y661-001-B	DTAC	1-B

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Appendix D. Process flow diagrams

6 – Process flow and material selection diagram cMIST train 2

PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

PLANSE DE REFERINTA / REFERENCE DRAWINGS:

MX66121 CMIST MIXER TREAPTA1/ CMIST 1ST STAGE MIXER
SS 316
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

FBD66121 CMIST MONOLINIE 1/ CMIST 1ST MONOLINE
SS 316
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

MX66122 CMIST MIXER TREAPTA 2/ CMIST 2ND STAGE MIXER
SS 316
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

FBD66122 CMIST MONOLINIE 2/ CMIST 2ND MONOLINE
SS 316
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

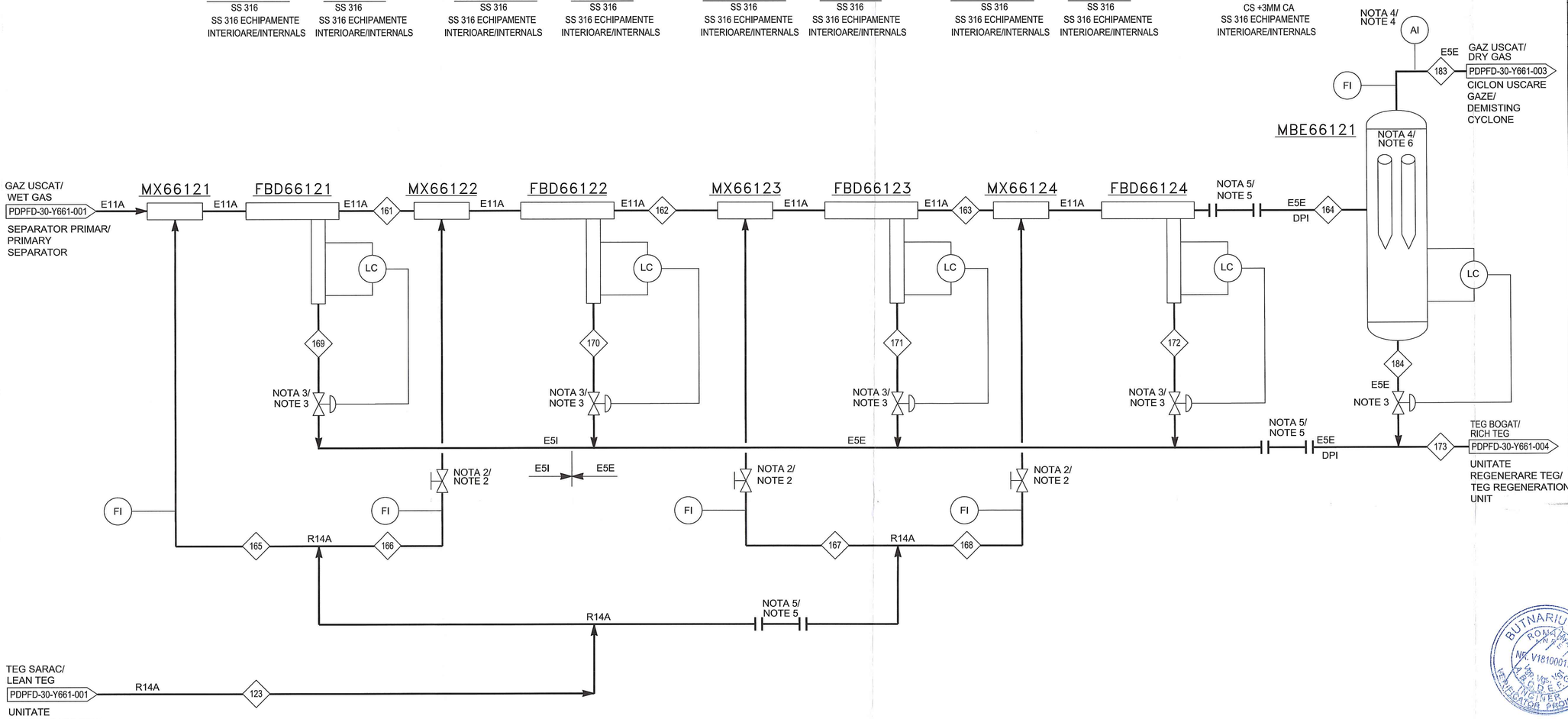
MX66123 CMIST MIXER TREAPTA 3/ CMIST 3RD STAGE MIXER
SS 316
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

FBD66123 CMIST MONOLINIE 3/ CMIST 3RD MONOLINE
SS 316
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

MX66124 CMIST MIXER TREAPTA 4/ CMIST 4TH STAGE MIXER
SS 316
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

FBD66124 CMIST MONOLINIE 4/ CMIST 4TH MONOLINE
SS 316
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

MBE66121 HIDROCICLOANE SI CENTRIFUGI LINIA 2 DEMISTING CYCLONE TRAIN 2
CS +3MM CA
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS



NOTE/NOTES:

1. PENTRU NOTE GENERALE, SIMBOLURI SI DETALII LEGENDA, SE VOR CONSULTA PLANSELE ROND-EW-PDSYM-30-Y000-001 PANA LA ROND-EW-PDSYM-30-Y000-009. PENTRU PARAMETRII TEHNOLOGICI, SE VA CONSULTA BILANTUL TERMIC SI DE MATERIALE./
   FOR GENERAL NOTES, SYMBOLS AND LEGEND DETAILS SEE DRAWINGS ROND-EW-PDSYM-30-Y000-001 THROUGH ROND-EW-PDSYM-30-Y000-009. REFER TO HEAT AND MATERIAL BALANCE FOR STREAM DATA.
2. PENTRU AJUSTAREA (MANUALA) A DEBITULUI DE TEG LA TREPTELE INDIVIDUALE CMIST./
   FOR ADJUSTING (MANUAL)TEG FLOW TO INDIVIDUAL CMIST STAGES.
3. ROBINET DE CONTROL PROIECTAT PENTRU CADERE DE PRESIUNE REDUSA. IN VEDEREA BALANSARII UNEI CADERI DE PRESIUNE MAI MARI, ACEASTA VA FI REALIZATA DE ROBINETUL HV DIN AVAL./
   CONTROL VALVE DESIGNED FOR LOW PRESSURE DROP. THE BALANCE HIGHER PRESSURE DROP WILL BE TAKEN BY DOWNSTREAM HV.
4. ANALIZOR PUNCT DE ROUA - DOAR PENTRU MONITORIZARE./
   WATER DEW POINT ANALYZER - FOR MONITORING ONLY.
5. MOSOR DE CONDUCTA DEMONTABIL PENTRU ADAUGAREA UNEI TREPTE ADITIONALE CMIST (IN CADRUL FIECAREI LINII)./
   DROP SPOOL FOR CONTINGENCY ADDITION OF A CMIST STAGE (WITHIN EACH TRAIN).
6. CICLON USCARE GAZE VA INDEPARTA PICATURI PANA LA 50 MICRONI./
   DEMISTING CYCLONE SHALL REMOVE DROPLETS DOWN TO 50 MICRONS.

ABREVIATII/ ABBREVIATIONS:
TEG =TRIETILENGLICOL/ TRIETHYLENEGLYCOL
HV= ROBINET ACTIONAT MANUAL/ HAND VALVE

BUTNARIU IOAN ROMANIA INGINER VERIFICATOR CERTIFICAT NR. V181000174 LABORATOR VERIFICARE ISC

PROIECT NEPTUN DEEP/ NEPTUN DEEP PROJECT

I.L.F. CONSULTING ENGINEERS ROMANIA S.R.L. PLOIESTI

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
1-C	07.2020	EMIS PENTRU VERIFICARE / IFR	R.BALINT	C.ZARNESCU	M.NAE
1-B	06.2020	EMIS PENTRU VERIFICARE / IFR	R.BALINT	C.ZARNESCU	M.NAE
1-A	02.2020	EMIS PENTRU VERIFICARE/ IFR	R.BALINT	C.ZARNESCU	M.NAE
VERIFICATOR/ CHECKER			I. BUTNARIU		ANRE
VERIFICATOR/EXPERT/ CHECKER/EXPERT		REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16 ,100149, PLOIESTI
J29/3071/2007, RO 22804820

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	13NOV17	RE-IFD	EV		RDF	RJY

ExxonMobil
Exploration and Production Romania Limited

SCHEMA PROCES TEHNOLOGIC SI SELECTIE MATERIALE LINIA 2 CMIST

PROCESS FLOW AND MATERIAL SELECTION DIAGRAM CMIST TRAIN2

SCARA / SCALE	NR PLANSA / DWG. NO	FAZA / PHASE	REV / REV
	ROND-EW-PDPFD-30-Y661-002-B	DTAC	1-C

A1 841x594

Appendix D. Process flow diagrams

7 – Process flow and material selection diagram cMIST train 3

MX66131 CMIST MIXER TREAPTA1/ CMIST 1ST STAGE MIXER
SS 316
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

FBD66131 CMIST MONOLINIE 1/ CMIST 1ST MONOLINE
SS 316
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

MX66132 CMIST MIXER TREAPTA 2/ CMIST 2ND STAGE MIXER
SS 316
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

FBD66132 CMIST MONOLINIE 2/ CMIST 2ND MONOLINE
SS 316
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

MX66133 CMIST MIXER TREAPTA 3/ CMIST 3RD STAGE MIXER
SS 316
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

FBD66133 CMIST MONOLINIE 3/ CMIST 3RD MONOLINE
SS 316
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

MX66134 CMIST MIXER TREAPTA 4/ CMIST 4TH STAGE MIXER
SS 316
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

FBD66134 CMIST MONOLINIE 4/ CMIST 4TH MONOLINE
SS 316
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

MBE66131 HIDROCICLOANE SI CENTRIFUGI LINIA 2 DEMISTING CYCLONE TRAIN 2
CS +3MM CA
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

GAZ UMED/ WET GAS
PDPFD-30-Y661-001
SEPARATOR PRIMAR/ PRIMARY SEPARATOR

MX66131 FBD66131 MX66132 FBD66132 MX66133 FBD66133 MX66134 FBD66134 MBE66131

E11A E5E E5I

124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 160 181 183 185 186

LC FI AI PC

NOTA 2/ NOTE 2
NOTA 3/ NOTE 3
NOTA 4/ NOTE 4
NOTA 5/ NOTE 5
NOTA 6/ NOTE 6
NOTA 7/ NOTE 7
NOTA 8/ NOTE 8

R14A

DPI

TEG BOGAT/ RICH TEG
PDPFD-30-Y661-004
UNITATE REGENERARE TEG/ TEG REGENERATION UNIT

TEG SARAC/ LEAN TEG
PDPFD-30-Y661-001
UNITATE REGENERARE TEG/ TEG REGENERATION UNIT

GAZ USCAT/ DRY GAS
PDPFD-30-Y544-001
COLECTOR CONDUCTA GAZE NATURALE/ PRODUCTION PIPELINE RISER

GAZ USCAT/ DRY GAS
PDPFD-30-Y661-002
CMIST LINIA 2/ CMIST 2ND TRAIN

GAZ USCAT/ DRY GAS
PDPFD-30-Y661-001
CMIST LINIA 1/ CMIST 1ST TRAIN

PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

PLANSE DE REFERINTA / REFERENCE DRAWINGS:

NOTE/NOTES:

1. PENTRU NOTE GENERALE, SIMBOLURI SI DETALII LEGENDA, SE VOR CONSULTA PLANSELE ROND-EW-PDSYM-30-Y000-001 PANA LA ROND-EW-PDSYM-30-Y000-009. PENTRU PARAMETRII TEHNOLOGICI, SE VA CONSULTA BILANTUL TERMIC SI DE MATERIALE./ FOR GENERAL NOTES, SYMBOLS AND LEGEND DETAILS SEE DRAWINGS ROND-EW-PDSYM-30-Y000-001 THROUGH ROND-EW-PDSYM-30-Y000-009. REFER TO HEAT AND MATERIAL BALANCE FOR STREAM DATA.
2. ROBINET DE CONTROL OPERAT MANUAL PENTRU BALANSAREA PRESIUNII INTRE LINIILE CMIST./ HAND CONTROL VALVE FOR PRESSURE BALANCES BETWEEN CMIST TRAINS.
3. PENTRU AJUSTAREA (MANUALA) A DEBITULUI DE TEG LA TREPTELE INDIVIDUALE CMIST./ FOR ADJUSTING (MANUAL)TEG FLOW TO INDIVIDUAL CMIST STAGES.
4. ROBINET DE CONTROL PROIECTAT PENTRU CADERE DE PRESIUNE REDUSA. IN VEDEREA BALANSARII UNEI CADERI DE PRESIUNE MAI MARI, ACEASTA VA FI REALIZATA DE ROBINETUL HV DIN AVAL./ CONTROL VALVE DESIGNED FOR LOW PRESSURE DROP. THE BALANCE HIGH PRESSURE DROP WILL BE TAKEN BY DOWN STREAM HV.
5. ANALIZOR PUNCT DE ROUA - DOAR PENTRU MONITORIZARE./ WATER DEW POINT ANALYZER - FOR MONITORING ONLY.
6. CICLON USCARE VA INDEPARTA PICATURI PANA LA 50 MICRONI./ DEMISTING CYCLONE SHALL REMOVE DROPLETS DOWN TO 50 MICRONS.
7. MOSOR DE CONDUCTA DEMONTABIL PENTRU ADAUGAREA UNEI LINII ADITIONALE CMIST./ DROP SPOOL FOR CONTINGENCY ADDITION OF ADDITIONAL CMIST TRAIN.
8. MOSOR DE CONDUCTA DEMONTABIL PENTRU ADAUGAREA UNEI TREPTE ADITIONALE CMIST (IN CADRUL FIECAREI LINII)./ DROP SPOOL FOR CONTINGENCY ADDITION OF A CMIST STAGE (WITHIN EACH TRAIN).

ABREVIATII/ ABBREVIATIONS:
TEG =TRIETILENGLICOL/ TRIETHYLENEGLYCOL
HV=ROBINET ACTIONAT MANUAL / HAND VALVE

BUTNARIU IOAN ROMANIA NR. V181000171 INGINER VERIFICATOR PROIECTE

PROIECT NEPTUN DEEP/ NEPTUN DEEP PROJECT

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
1-B	06.2020	EMIS PENTRU VERIFICARE / IFR	R.BALINT	C.ZARNESCU	M.NAE
1-A	02.2020	EMIS PENTRU VERIFICARE/ IFR	R.BALINT	C.ZARNESCU	M.NAE
VERIFICATOR/ CHECKER				I. BUTNARIU	ANRE
VERIFICATOR/EXPERT CHECKER/EXPERT		REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16 ,100149, PLOIESTI
J29/3071/2007, RO 22804820

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	13NOV17	RE-IFD	EV		RDF	RJY

ExxonMobil
Exploration and Production Romania Limited

SCHEMA PROCES TEHNOLOGIC SI SELECTIE MATERIALE LINIA 3 CMIST

PROCESS FLOW AND MATERIAL SELECTION DIAGRAM CMIST TRAIN3

SCARA / SCALE	NR PLANSA / DWG. NO	FAZA / PHASE	REV / REV
	ROND-EW-PDPFD-30-Y661-003-B	DTAC	1-B

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Appendix D. Process flow diagrams

8 – Process flow and material selection diagram TEG regeneration system

V66101
PACHET REGENERARE TEG/
TEG REGENERATION PACKAGE

MBD66101
VAS EVAPORARE TEG BOGAT/
RICH TEG FLASH DRUM
CS + 6MM CA
SS 316 ECHIPAMENTE INTERIOARE/ INTERNALS

MBD66103
VAS EGALIZARE TEG SARAC/
LEAN TEG SURGE DRUM
CS + 3MM CA
SS 316 ECHIPAMENTE INTERIOARE/ INTERNALS

MAJ66101/02
FILTRU TEG BOGAT/
RICH TEG FILTER
NOTA 5/ NOTE 5
CS + 6MM CA

MAF66102
COLOANA STAHL/
STAHL COLUMN
CS + 6MM CA
SS 316 ECHIPAMENTE INTERIOARE/ INTERNALS

HBG66102/03
SCHIMBATOR DE CALDURA TEG SARAC/GLICOL BOGAT
TEG LEAN/RICH GLYCOL CROSS EXCHANGER
CS + 3MM CA
CS TUBURI/ TUBES
NOTA 11/NOTE 11

PBA66101/02
POMPA ALIMENTARE TEG LA CMIST/
TEG CMIST FEED PUMP
NOTA 3/ NOTE 3
CS + 3MM CA
SS 316 ECHIPAMENTE INTERIOARE/ INTERNALS

HAP66101
SCHIMBATOR DE CALDURA/
REBOILER HEATER

HBG66101
CONDENSATOR REFLUX TEG/
TEG REFLUX CONDENSER
CS + 6MM CA
SS 316 ECHIPAMENTE INTERIOARE/ INTERNALS

MAF66101
COLOANA DE DISTILARE TEG/
TEG STILL COLUMN
CS + 6MM CA
SS 316 ECHIPAMENTE INTERIOARE/ INTERNALS

NBC66101
REFIERBATOR TEG/ TEG REBOILER
CS + 6MM CA
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

HFF66101
RACITOR CU AER TEG SARAC/
LEAN TEG AIR COOLER
CS + 3MM CA
SS 316 TUBURI/TUBES

HFF66102
RACITOR CU AER DESCARCARI REFIERBATOR/
REBOILER VENT AIR COOLER
22CR DSS

MBD66104
SEPARATOR PICATURI DESCARCARI REFIERBATOR/
REBOILER VENT KO DRUM
CS + 6MM CA
SS 316 ECHIPAMENTE INTERIOARE/INTERNALS

TEG BOGAT/RICH TEG
PDPFD-30-Y661-003 — 136 — E5E
CMIST LINIA 3/ CMIST 3RD TRAIN

TEG BOGAT/RICH TEG
PDPFD-30-Y661-002 — 173 — E5E
CMIST LINIA 2/ CMIST 2ND TRAIN

TEG BOGAT/RICH TEG
PDPFD-30-Y661-001 — 120 — E5E
CMIST LINIA 1/ CMIST 1ST TRAIN

NOTA 7/ NOTE 7

V66101

PC

B11A

NOTA 12/ NOTE 12

141

A11A

B18A

152

TC

E5E

E5E

HBG66101

NOTA 6/ NOTE 6

MAF66101

144

TC

GAZ COMBUSTIBIL JP/ LP FUEL GAS
PDUFD-30-Y965-002 — 310 — A1C
COLECTOR GAZ COMBUSTIBIL JP/ LP FUEL GAS HEADER

FC

174

142

151

LICHID/LIQUID
PDUFD-30-Y965-001 — 305 — B1E
EPURATOR GAZE FG/ FG SCRUBBER

175

B1I

145

B1I

NBC66101

HAP66101

MAF66102

APA DIN TEG/ TEG WATER
PDUFD-30-Y610-001 — B11A — NNF
POMPA SISTEM DESCARCARE SEPARATOR PICATURI/ VENT KNOCK OUT PUMP

A1C

NOTA 8/ NOTE 8

E5E

MBD66101

LC

B1E

146

NOTA 4/ NOTE 4

B1E

143

B1I

MAJ66101/02

HBG66102/03

NOTA 11/ NOTE 11

TEG SARAC/ LEAN TEG
PDPFD-30-Y679-001 — A1E — NNF
STOCARE TEG/ TEG STORAGE

B1E

147

MBD66103

NOTA 2, 3/ NOTE 2,3

14 barg

139 barg

B1E

E5E

PBA66101/02

NOTA 4/ NOTE 4

DPI

148

E5E

HFF66101

NOTA 10/ NOTE 10

TC

HFF66102

NOTA 10/ NOTE 10

176

A1I

177

NOTA 9, 13/ NOTE 9, 13

MBD66104

150

A11A

GAZE UMEDE DESCARCATE LA COS/ WET VENT GAS
PDUFD-30-Y610-001
COLECTOR FACLA LP/ LP FLARE HEADER

121

E5E

TEG SARAC/ LEAN TEG
PDPFD-30-Y661-001
UNITATE CMIST/ CMIST UNITS

A45A

178

APA/ WATER
PDPFD-30-Y681-001
CHESON EVACUARE PW/ PW DISPOSAL CAISSON

PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

PLANSE DE REFERINTA / REFERENCE DRAWINGS:

NOTE / NOTES:

1. PENTRU NOTE GENERALE, SIMBOLURI SI DETALII LEGENDA, SE VOR CONSULTA PLANSELE ROND-EW-PDSYM-30-Y000-001 PANA LA ROND-EW-PDSYM-30-Y000-009. PENTRU PARAMETRII TEHNOLOGICI, SE VA CONSULTA BILANTUL TERMIC SI DE MATERIALE./
   FOR GENERAL NOTES, SYMBOLS AND LEGEND DETAILS SEE DRAWINGS ROND-EW-PDSYM-30-Y000-001 THROUGH ROND-EW-PDSYM-30-Y000-009. REFER TO HEAT AND MATERIAL BALANCE FOR STREAM DATA.
2. VASUL DE EGALIZARE VA FI POZITIONAT ASTFEL INCAT SA PERMITA SCURGEREA GRAVITATIONALA A LICHIDULUI PRIN COLOANA STAHL DE LA REFIERBATOR./
   SURGE DRUM ARRANGED TO ALLOW GRAVITY DRAIN THROUGH STAHL COLUMN FROM REBOILER.
3. LINIA DE EGALIZARE DINTRE REFIERBATOR SI SCURGEREA VASULUI DE EGALIZARE NU ESTE REPREZENTATA./
   EQUALIZATION LINE BETWEEN REBOILER AND SURGE DRAIN NOT SHOWN.
4. ECHIPAMENT 2x100%./
   2x100% EQUIPMENT.
5. BANCA DE FILTRARE VA FI PREVAZUTA CU EXCES DE CAPACITATE ASTFEL INCAT SA RESPECTE INLOCUIREA ELEMENTELOR FILTRANTE CEL PUTIN O DATA PE LUNA./
   FILTER BANK SHALL PROVIDE EXCESS CAPACITY TO DEFER REPLACEMENT OF FILTER ELEMENTS TO AT LEAST MONTHLY.
6. SERPENTINA CONDENSATORULUI DIMENSIONATA PENTRU 139 barg IN TIMP CE RESTUL REGENERATORULUI ESTE PROIECTAT PENTRU 14 barg/.
   CONDENSER COIL RATED FOR 139 barg WHILE REMAINDER OF REGENERATOR RATED FOR 14 barg.
7. MOSOR DE CONDUCTA DEMONTABIL PENTRU ADAUGAREA UNEI LINII ADITIONALE CMIST./
   DROP SPOOL FOR CONTINGENCY ADDITION OF ADDITIONAL CMIST TRAIN.
8. CONDUCTE DE GLICOL CU TEMPERATURA DE OPERARE >66°C, SE VOR UTILIZA CEL PUTIN FLANSE CLASA ANSI 300./
   GLYCOL PIPING WITH OPERATING >66°C, USE ANSI CLASS 300 FLANGES AS A MINIMUM.
9. SEPARATORUL DE PICATURI PENTRU DESCARCARILE DE LA REFIERBATOR VA FI PREVAZUT IN AFARA SKIDULUI. NU ESTE IN SCOPUL FURNIZORULUI PACHETULUI DE REGENERARE TEG./
   REBOILER VENT KOD WILL BE LOCATED OFFSKID. NOT IN TEG REGEN PACKAGE VENDOR SCOPE.
10. RACITORUL CU AER PENTRU TEG SI RACITORUL CU AER PENTRU DESCARCARILE DE LA REFIERBATOR, VOR FI PREVAZUTE PREFERABIL CA O SINGURA UNITATE CU MAI MULTE COMPARTIMENTE (SE VOR CONSIDERA DOUA VENTILATOARE PE FIECARE UNITATE DE RACIRE)./
    TEG AIR COOLER AND VENT AIR COLLER, PRERABLY SINGLE UNIT MULTI-COMPARTMENT DESIGN (2 FANS PER COOLER CONSIDERED).
11. SCHIMBATOARE DE CALDURA CONFIGURATE IN SERIE (2x50%). ROBINET CADERE DE PRESIUNE MARE IN VEDEREA REDUCERI PRESIUNII DE LA CONDITIILE DE OPERARE LA IESIREA LV DIN CMIST LA PRESIUNEA DE OPERARE A REGENERARII TEG./
    HEAT EXCHANGERS IN SERIES CONFIGURATION (2x50%). HIGH PRESSURE DROP VALVE TO REDUCE PRESSURE FROM CMIST LV OUTLET OPERATING CONDITIONS TO TEG REGEN OPERATING PRESSURE.
12. ROBINET CADERE DE PRESIUNE MARE IN VEDEREA REDUCERI PRESIUNII DE LA CONDITIILE DE OPERARE DIN CMIST LA PRESIUNEA DE OPERARE A REGENERARII TEG./
    HIGH PRESSURE DROP VALVE TO REDUCE PRESSURE FROM CMIST OPERATING CONDITIONS TO TEG REGEN OPERATING PRESSURE.
13. NIVELUL DE LICHID DIN SEPARATORUL DE PICATURI PENTRU DESCARCARILE DIN REFIERBATOR VA FI CONTROLAT DE CATRE INCHIDEREA HIDRAULICA PREVAZUTA LA LINIA DE IESIRE. NU SE PREVEDE CONTROL AUTOMAT./
    REBOILER VENT KOD LEVEL CONTROLLED BY SEAL LEG IN OUTLET LINE. NO AUTOMATED CONTROL PROVIDED.

ABREVIERI/ ABBREVIATIONS:
LP=PRESIUNE JOASA/ LOW PRESSURE
TEG =TRIETILENGLICOL/ TRIETHYLENEGLYCOL

PROIECT NEPTUN DEEP/ NEPTUN DEEP PROJECT

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
1-C	07.2020	EMIS PENTRU VERIFICARE / IFR	R.BALINT	C.ZARNESCU	M.NAE
1-B	06.2020	EMIS PENTRU VERIFICARE / IFR	R.BALINT	C.ZARNESCU	M.NAE
1-A	02.2020	EMIS PENTRU VERIFICARE/ IFR	R.BALINT	C.ZARNESCU	M.NAE
VERIFICATOR CHECKER			I. BUTNARIU		ANRE
VERIFICATOR/EXPERT CHECKER/EXPERT		REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16 ,100149, PLOIESTI
J29/3071/2007, RO 22804820

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	13NOV17	RE-IFD	EV		RDF	RJY

ExxonMobil
Exploration and Production Romania Limited

SCHEMA PROCES TEHNOLOGIC SI SELECTIE MATERIALE
SISTEM REGENERARE TEG

PROCESS FLOW AND MATERIAL SELECTION DIAGRAM
TEG REGENERATION SYSTEM

SCARA / SCALE	NR.PLANSA / DWG. NO	FAZA / PHASE	REV / REV
	ROND-EW-PDPFD-30-Y661-004-B	DTAC	1-C

A1 841x594

Appendix D. Process flow diagrams

9 – Process flow and material selection lean TEG storage

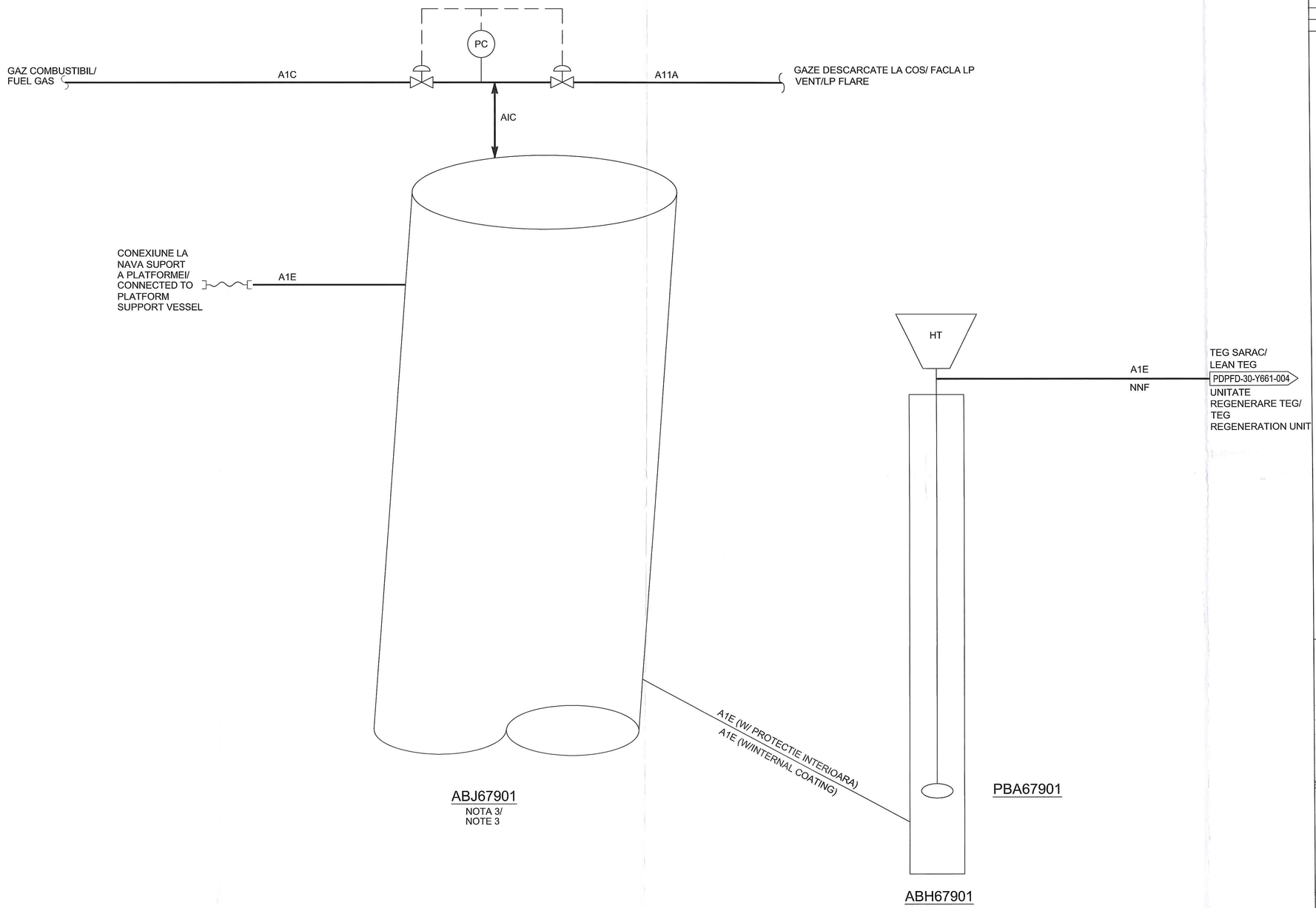
ABJ67901
REZERVOR STOCARE TEG SARAC/ LEAN TEG STORAGE TANK

CS PROTECTIE INTERIOARA OTEL CARBON/ INTERNALLY COATED
+ PROTECTIE CATODICA PE BAZA DE ANOD/ ANODE BASED CP

ABH67901
POMPA CHESON TEG SARAC/ LEAN TEG PUMP CAISSON

CS PROTECTIE INTERIOARA OTEL CARBON/ INTERNALLY COATED
+ PROTECTIE CATODICA PE BAZA DE ANOD/ ANODE BASED CP

PBA67901
POMPA STOCARE TEG SARAC/ LEAN TEG STORAGE PUMP
OTEL CARBON/ CS
ROTOR TIP CF8M/ CF8M IMPELLER



PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

PLANSE DE REFERINTA / REFERENCE DRAWINGS:

NOTE/NOTES:

1. PENTRU NOTE GENERALE, SIMBOLURI SI DETALII LEGENDA, SE VOR CONSULTA PLANSELE ROND-EW-PDSYM-30-Y000-001 PANA LA ROND-EW-PDSYM-30-Y000-009./
FOR GENERAL NOTES, SYMBOLS AND LEGEND DETAILS SEE DRAWINGS ROND-EW-PDSYM-30-Y000-001 THROUGH ROND-EW-PDSYM-30-Y000-009.
2. PENTRU BILANTURI UTILITATI SE VOR CONSULTA DOCUMENTELE NR. ROND-EW-PCHMB-30-0006 SI ROND-EW-PCHMB-30-0007./
FOR UTILITY BALANCES REFER TO DOCUMENT NO. ROND-EW-PCHMB-30-0006 AND ROND-EW-PCHMB-30-0007.
3. STOCAREA DE TEG SARAC SE REALIZEAZA IN PICIORUL SUPORTULUI STRUCTURAL AL PLATFORMEI/
LEAN TEG STORAGE IS WITHIN JACKET LEG OF PLATFORM.

ABREVIATII/ ABBREVIATIONS:

LP=PRESIUNE JOASA/ LOW PRESSURE
SS=OTEL INOXIDABIL/ STAINLESS STEEL
CS= OTEL CARBON/ CARBON STEEL
CP= PROTECTIE CATODICA/ CATHODIC PROTECTION
TEG =TRIETILENGLICOL/ TRIETHYLENEGLYCOL

BUTNARIU IOAN ROMÂNIA NR. V18100017 INGINER VERIFICATOR PROIECTE

SOCIETATEA COMERCIALA ILF CONSULTING ENGINEERS ROMANIA S.R.L.

PROIECT NEPTUN DEEP/
NEPTUN DEEP PROJECT

REV	DATA/ DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT/ PREPARED	PROIECTAT/ DESIGNED	SEF PROIECT/ APPROVED
1-C	07.2020	EMIS PENTRU VERIFICARE / IFR	R.BALINT	C.ZARNESCU	M.NAE
1-B	06.2020	EMIS PENTRU VERIFICARE / IFR	R.BALINT	C.ZARNESCU	M.NAE
1-A	02.2020	EMIS PENTRU VERIFICARE/ IFR	R.BALINT	C.ZARNESCU	M.NAE
VERIFICATOR/ CHECKER			I. BUTNARIU		ANRE
VERIFICATOR/EXPERT/ CHECKER/EXPERT		REFERAT NR. / EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE	NUME/ NAME	SEMNATURA/ SIGNATURE	DOMENIU/ EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16 ,100149, PLOIESTI
J29/3071/2007, RO 22804820

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	13NOV17	RE-IFD	EV		RDF	RJY

ExxonMobil
Exploration and Production Romania Limited

SCHEMA FLUX TEHNOLOGIC SI SELECTIE MATERIALE
STOCARE TEG SARAC
PROCESS FLOW AND MATERIAL SELECTION DIAGRAM
LEAN TEG STORAGE

SCARA / SCALE	NR PLANSA / DWG. NO	FAZA / PHASE	REV / REV
	ROND-EW-PDPFD-30-Y679-001-B	DTAC	1-C

A1 841x594

Appendix D. Process flow diagrams

10 – Process flow and material selection diagram produced water system

MAJ68101/02
FILTRU SUBSTANTE ULEIOASE/
FLOW-BACK OIL REMOVAL
FILTER

3316 SS
NOTA 3,4/
NOTE 3,4

MAZ68101
VAS EVACUARE GAZ DIN APA REZULTATA
DIN PROCESUL TEHNOLOGIC/
PRODUCED WATER DEGASSING DRUM

CS + 6MM CA (W PROTECTIE INTERIOARA/ W INTERNAL COATING)
SS 316 ECHIPAMENTE INTERIOARE/ INTERNALS

ABH68101
CHESON DEVERSARE APA REZULTATA DIN PROCESUL TEHNOLOGIC/
PRODUCED WATER
DISPOSAL CAISSON

OTEL CARBON/ CS

APA REZULTATA DIN
PROCESUL TEHNOLOGIC/
PRODUCED WATER
PDPFD-30-Y623-001
SEPARATOR PRIMAR/
PRIMARY SEPARATOR

E5I

139 barg

14 barg

MAZ68101
NOTA 6/
NOTE 6

LC

156

NOTA 3/
NOTE 3

A45A

NOTA 3, 4/
NOTE 3, 4

MAJ68101

MAJ68102

NOTA 3/
NOTE 3

A45A

NOTA 2/
NOTE 2

A45A

SP

NOTA 5/
NOTE 5

NOTA 5/
NOTE 5

PC

155

A1I

A11A

GAZE UMEDE
DESCARCATE
LA COS/
WET VENT GAS
PDUFD-30-Y610-001
COLECTOR FACLA LP/
LP FLARE HEADER

NOTA 8/
NOTE 8

0IW/
0IW

AI

SALINITATE/
SALINITY

AI

NOTA 7/
NOTE 7

A45A

NNF

SCURGERI APA/
DRAIN WATER
PDPFD-30-Y661-004
POMPA CANALIZARE
IN SISTEM DESCHIS/
OPEN DRAIN PUMP

178

A45A

APA/
WATER
PDPFD-30-Y661-004
DESCARCARI
SEPARATOR
PICATURI
REFIERBATOR/
REBOILER VENT
KO DRUM

ABH68101

PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

PLANSE DE REFERINTA / REFERENCE DRAWINGS:

NOTE/NOTES:

1. PENTRU NOTE GENERALE, SIMBOLURI SI DETALII LEGENDA, SE VOR CONSULTA PLANSELE ROND-EW-PDSYM-30-Y000-001 PANA LA ROND-EW-PDSYM-30-Y000-009. PENTRU PARAMETRII TEHNOLOGICI, SE VA CONSULTA BILANTUL TERMIC SI DE MATERIALE./
FOR GENERAL NOTES, SYMBOLS AND LEGEND DETAILS SEE DRAWINGS ROND-EW-PDSYM-30-Y000-001 THROUGH ROND-EW-PDSYM-30-Y000-009.REFER HEAT AND MATERIAL BALANCE FOR STREAM DATA.

2. DISPOZITIV AUTOMAT PRELEVARE PROBE./
AUTOMATIC SAMPLER.

3. FILTRELE PENTRU SUBSTANTE ULEIOASE SUNT DEDICATE DOAR PENTRU CURGEREA INVERSA DIN SONDA SI CURATARE./
OIL REMOVAL FILTERS ARE ONLY FOR WELL FLOW-BACK AND CLEAN-UP.

4. FILTRELE SUNT 2x100%./
FILTERS ARE 2x100%.

5. ROBINETI DE CONTROL NIVEL CU FUNCTIONARE IN PARALEL./
PARALLEL LEVEL CONTROL VALVES.

A. IN TIMPUL FUNCTIONARII NORMALE SE VA UTILIZA ROBINETUL DE CONTROL MAI MIC DATORITA DEBITULUI REDUS (9M3 Max 60M³/H)/
DURING NORMAL OPERATION SMALLER CONTROL VALVE SHALL BE LINED DUE TO REDUCED FLOW RATE (9M³ Max 60M³/H)

B. IN TIMPUL GODEVILARII SE VA UTILIZA ROBINETUL DE CONTROL MAI MARE (830M³/H; 120 KBD)/
DURING PIGGING OPERATION LARGER LEVEL CONTROL VALVE SHALL BE LINED UP (830M³/H;120 KBD

6. SUNT NECESARE DISPOZITIVE DE CURATARE CU JET DE NISIP./
SAND JETTING INTERNALS REQUIRED.

7. SCURGERI DE APA FARA CONTINUT DE SUBSTANTE ULEIOASE./
DRAIN WATER WITH NO OIL CONTENT.

8. DESCARCARI DE LA CHESON./
CAISSON VENT.

ABREVIATII/ ABBREVIATIONS:

PC=CONTROLAR PRESIUNE/ PRESSURE CONTROLLER
SP= VALOARE SETATA/ SET POINT
LP=PRESIUNE JOASA/ LOW PRESSURE
KO=SEPARATOR PICATURI/ KNOCK OUT
SS=OTEL INOXIDABIL/ STAINLESS STEEL
CS= OTEL CARBON/ CARBON STEEL

BUTNARIU IOAN ROMAN INGINER CONSILIER EXPERT VERIFICATOR PROIECTE NR. V131000171

PROIECT NEPTUN DEEP/
NEPTUN DEEP PROJECT

REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
1-B	06.2020	EMIS PENTRU VERIFICARE / IFR	R.BALINT	C.ZARNESCU	M.NAE
1-A	02.2020	EMIS PENTRU VERIFICARE/ IFR	R.BALINT	C.ZARNESCU	M.NAE
VERIFICATOR/ CHECKER			I. BUTNARIU		ANRE
VERIFICATOR/DIPLOMA CHECKER/EXPERT		REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16 ,100149, PLOIESTI
J29/3071/2007, RO 22804820

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	13NOV17	RE-IFD	EV		RDF	RJY

ExxonMobil
Exploration and Production
Romania Limited

SCHEMA FLUX TEHNOLOGIC SI SELECTIE MATERIALE
SISTEM APA REZULTATA DIN PROCESUL TEHNOLOGIC
PROCESS FLOW AND MATERIAL SELECTION DIAGRAM
PRODUCED WATER SYSTEM

SCARA / SCALE	NR PLANSA / DWG. NO	FAZA / PHASE	REV / REV
	ROND-EW-PDPFD-30-Y681-001-B	DTAC	1-B

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Appendix E. Process equipment layout plans

Appendix E. Process equipment layout plans

1 – Onshore mechanical equipment plot plan

NORD GEOGRAFIC /
GRID NORTH

CONTINUAREA DESENULUI IN PAGINA 2 DIN 2 /
CONTINUATION DRAWING ON SHEET 2 OF 2

PLATFORMA TEHNOLOGICA /
TECHNOLOGICAL PLATFORM

ADAPOST CROMATOGRAF GAZE /
GAS CHROMATOGRAPH SHELTER

ROBINET DE CONTROL DEBIT /
FLOW CONTROL VALVE

KAU79701
④ SKID MASURARE /
METERING SKID

KGR60301
GARA DE PRIMIRE GODEVIL /
PIPELINE PIG RECEIVER ②

MAK60301
FILTRU SEPARATOR / ①
FILTER SEPARATOR

HAP60301
INCALZITOR (1 SKID x 2 BUC.) / ⑤
HEATER (1 SKID x 2 PIECE)

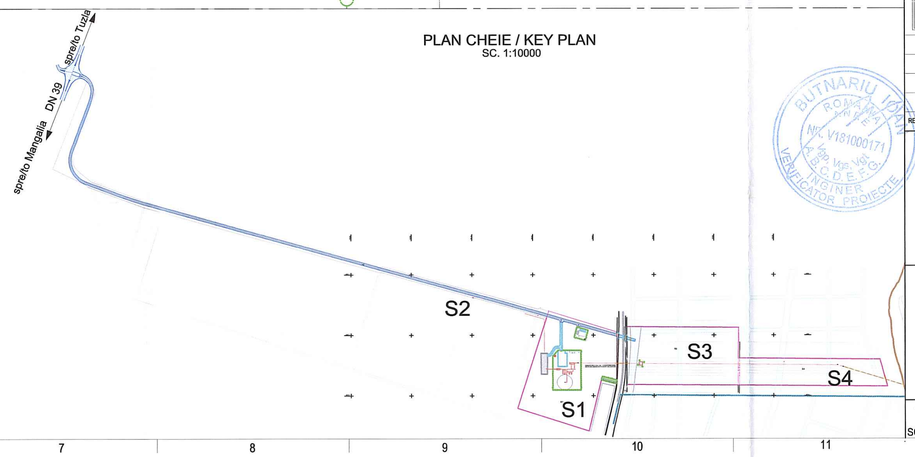
HAP60301
INCALZITOR (1 SKID x 2 BUC.) / ⑤
HEATER (1 SKID x 2 PIECE)

STK61602
COS DISPERSIE GAZE / ③
VENT STACK

POARTA IESIRE PERSONAL IN CAZ DE URGENTA /
PERSONNEL EMERGENCY EXIT GATE

SCARA: METRI / SCALE: METERS

PLAN CHEIE / KEY PLAN
SC. 1:10000



Nr. No	NUME ECHIPAMENT / EQUIPMENT NAME
1	FILTRU SEPARATOR / FILTER SEPARATOR
2	GARA DE PRIMIRE GODEVIL / PIPELINE PIG RECEIVER
3	COS DISPERSIE GAZE / VENT STACK
4	SKID MASURARE / METERING SKID
5	SKID INCALZITOARE (2 SKID-URI CU CATE 2BUC.) / HEATERS SKID (2 SKIDS WITH 2 HEATERS EACH)
6	BAZIN APA CURATA / FRESH WATER TANK
7	BAZIN COLECTARE APA PLUVIALA / RAIN WATER DRAINAGE TANK

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Conform regulilor din Romania virgula si punctul sunt folosite invers pentru definirea zecimalelor intr-un numar. Din acest motiv toate cifrele aflate dupa punct intr-un numar vor fi citite ca zecimale.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

NOTE / NOTES:

A. PLATEFORMELE ECHIPAMENTELOR INDICATE IN PREZENTRUL PLAN SUNT DOAR CA SI INFORMARE. PENTRU DETALII CU PRIVIRE LA CONSTRUCTIILE CIVILE, A SE VEDEA PLANURILE CORESPUNZATOARE. /
EQUIPMENT PLATFORMS INDICATED IN THE PRESENT PLAN, ARE FOR INFORMATION ONLY. FOR CIVIL INFORMATION DETAILS, PLEASE SEE THE CORESPONDING PLANS.

PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED
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2. DISTANTA MINIMA INTRE CONSTRUCTII SI CALEA FERATA VA FI DE 100m A MINIMUM OF 100m DISTANCE IS REQUIRED BETWEEN THE FACILITY AND THE RAILROAD EMBARKMENT.
3. COSUL DE DISPERSIE GAZE VA FI AMPLASAT LA O DISTANTA DE MINIM 25m FATA DE GARD SAU ALTE ECHIPAMENTE.
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GAS PIPELINE CONCRETE CASING THROUGHOUT THE TUNNEL RESULTS FROM TUNNELING PROCESS.
5. DESENUL ESTE ELABORAT IN SISTEMUL DE COORDONATE STEREO 70.
COORDINATES SYSTEM USED ON THE DRAWING IS STEREO 70.

LEGENDA / LEGEND:

AG: SUPRATERAN / ABOVE GROUND

UG: SUBTERANE / UNDER GROUND

GARD PROTECTIE / SECURITY FENCE

OBIECTIVE NOI / NEW OBJECTIVES

DRUMURI INTERIOARE / INTERNAL ROADS

DRUM DE ACCES DIN DN 39 (AUTORIZAT SEPARAT) / DN39 ACCES ROAD (SEPARATELY AUTHORIZED)

CONDUCTA DE GAZE NATURALE SUBTERANA / UNDER GROUND GAS PRODUCTION PIPELINE

CONDUCTA DE GAZE NATURALE IN STATIA DE MASURA / METERING STATION GAS PRODUCTION PIPELINE

* DENUMIRE COMPLETA PROIECT / COMPLETE PROJECT NAME

NEPTUN DEEP - INSTALARE CONDUCTA SI CABLU DE COMUNICATII, SUBTRAVERSARE PLAJA, FALEZA, DRUMURI SI CALE FERATA; REALIZARE TRECERE TEMPORARA LA NIVEL CU CALEA FERATA; CONSTRUIRE SRM, CENTRU DE CONTROL, IMPREJMUIRE, ILUMINAT, PARCARI, SPATII VERZI, PLATFORME SI DRUMURI INTERIOARE; ORGANIZARE DE SANTIER, ASIGURAREA SI RACORDAREA LA UTILITATI.
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PROIECT NEPTUN DEEP /
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PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16, 100149, PLOIESTI
J29/307/12007, RO 2280420

S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI NR.14A, PLOIESTI

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP

ExxonMobil
Exploration and Production
Romania Limited

PLAN AMPLASARE ECHIPAMENTE MECANICE PE USCAT /
ONSHORE MECHANICAL EQUIPMENT PLOT PLAN
PAG 1/2 / SHEET 1/2

1:200	ROND-IL-LDLAY-25-0001-B	DTAC	C
SCARA / SCALE	NR. PLANSA / DWG. NO	FAZA / PHASE	REV / REV

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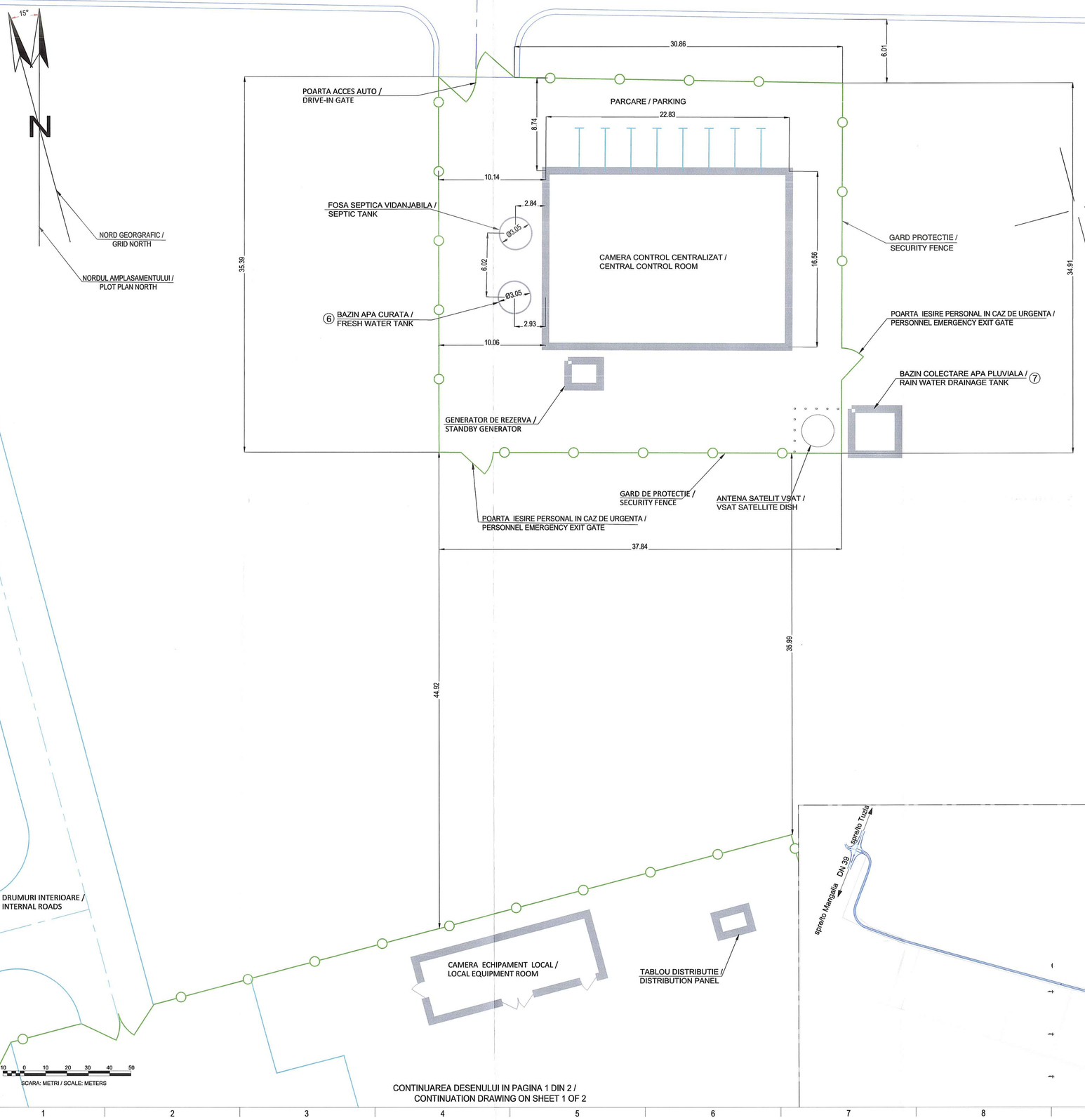

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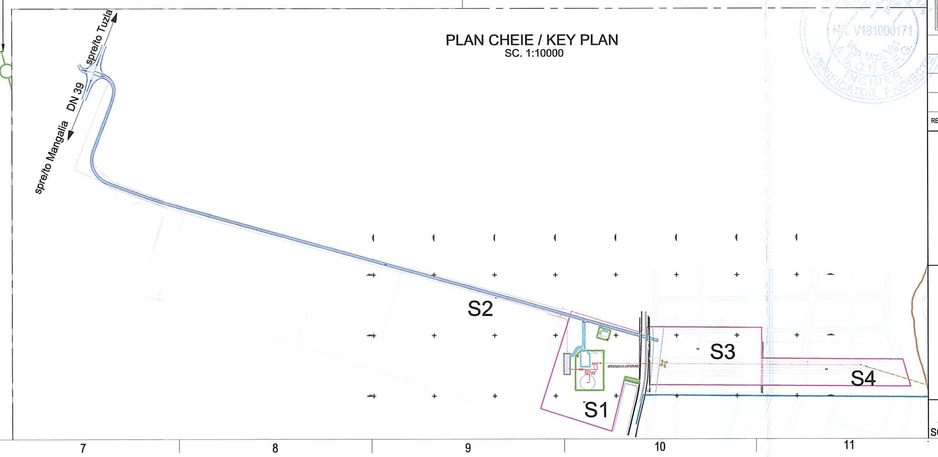

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT*

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J29/307/1/2007, RO 22804820
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REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP

ExxonMobil
Exploration and Production Romania Limited

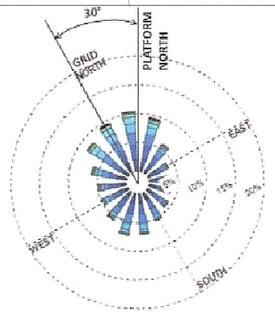
PLAN AMPLASARE ECHIPAMENTE MECANICE PE USCAT / ONSHORE MECHANICAL EQUIPMENT PLOT PLAN
PAG 2/2 / SHEET 2/2

1:200 SCARA / SCALE	ROND-IL-LDLAY-25-0001-B NR. PLANSA / DWG. NO	DTAC FAZA / PHASE	C REV / REV

A1 841x594

Appendix E. Process equipment layout plans

2 – Deck equipment plot plan upper deck



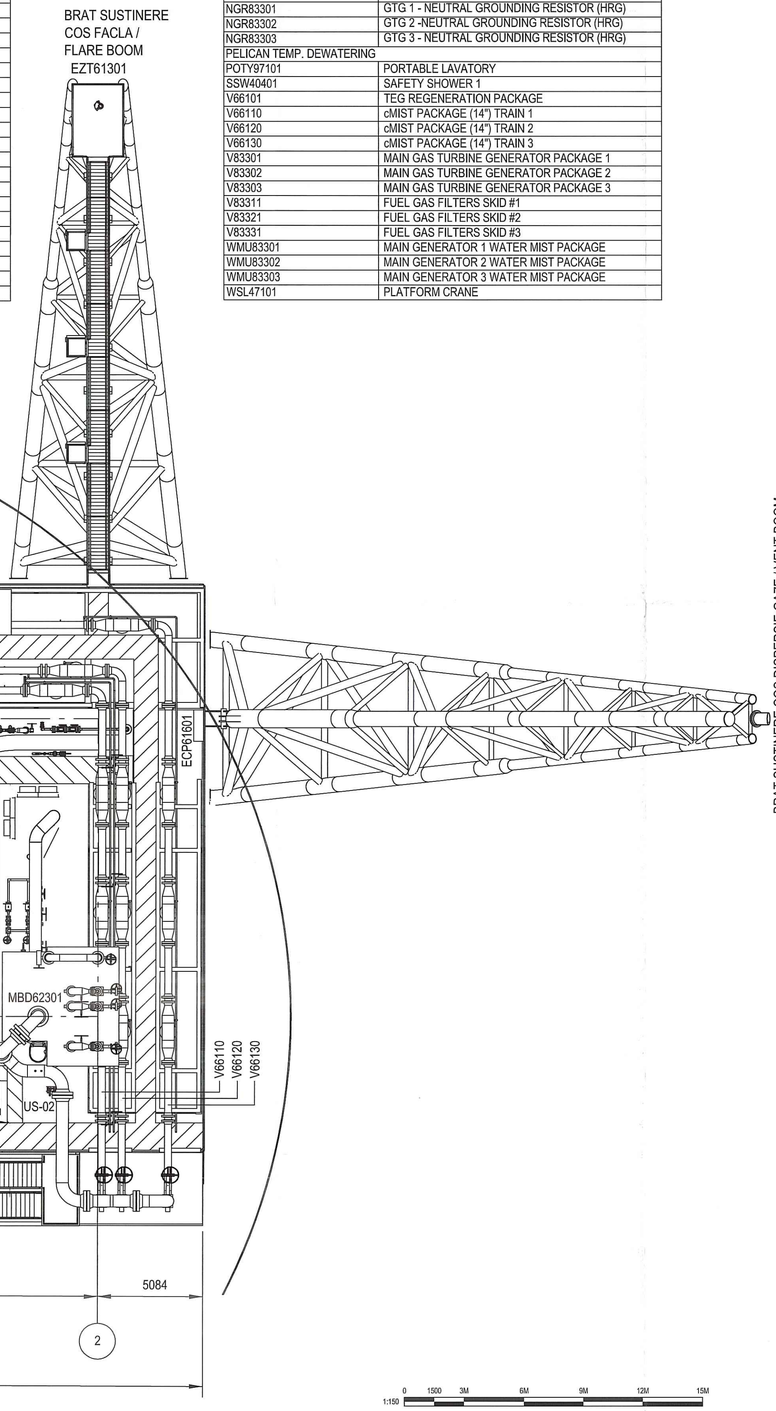


LISTA DE ECHIPAMENTE

ECP61601	PANOUL DE CONTROL AL ARZATORULUI FACLEI DE URGENTA
EZT61301	ARZATORUL FACLEI LP
HEG41401	SISTEM DE STINGERE CU SPUMA PENTRU HELIPORT
HLO83301	RACITOR DE ULEI GTG 1
HLO83302	RACITOR DE ULEI GTG 2
HLO83303	RACITOR DE ULEI GTG 3
KGL54401	GARA DE LANSARE GODEVIL PENTRU CONDUCTA DE GAZE NATURALE
KGR54201	GARA DE PRIMIRE GODEVIL PENTRU CONDUCTA DE GAZE NATURALE
MAK83307	SEPARATOR DE PICATURI PENTRU VENTILATIA SISTEMULUI DE UNGERE A GTG 1
MAK83308	SEPARATOR DE PICATURI PENTRU VENTILATIA SISTEMULUI DE UNGERE A GTG 2
MAK83309	SEPARATOR DE PICATURI PENTRU VENTILATIA SISTEMULUI DE UNGERE A GTG 3
MBD62301	SEPARATOR PRIMAR
MBE66111	SEPARATOR DE PICATURI TIP CICLON PACHET 1
MBE66121	SEPARATOR DE PICATURI TIP CICLON PACHET 2
MBE66131	SEPARATOR DE PICATURI TIP CICLON PACHET 3
NGR83301	REZISTENTA PENTRU TRATAREA NEUTRULUI (HRG) GTG 1
NGR83302	REZISTENTA PENTRU TRATAREA NEUTRULUI (HRG) GTG 2
NGR83303	REZISTENTA PENTRU TRATAREA NEUTRULUI (HRG) GTG 3
DEBUSARE IN ATMOSFERA USCARE CONDUCTE PELICAN	
POTY97101	SPALATOR / TOALETA PORTABILA
SSW40401	DUS DE SIGURANTA 1
V66101	PACHET REGENERARE TEG
V66110	ANSAMBLUL cMIST (14") GARNITURA 1
V66120	ANSAMBLUL cMIST (14") GARNITURA 2
V66130	ANSAMBLUL cMIST (14") GARNITURA 3
V83301	GENERATOR PRINCIPAL CU TURBINA CU GAZ 1
V83302	GENERATOR PRINCIPAL CU TURBINA CU GAZ 2
V83303	GENERATOR PRINCIPAL CU TURBINA CU GAZ 3
V83311	SKID FILTRE GAZ COMBUSTIBIL #1
V83321	SKID FILTRE GAZ COMBUSTIBIL #2
V83331	SKID FILTRE GAZ COMBUSTIBIL #3
WMU83301	GENERATOR PRINCIPAL-INSTALATIE PERDEA DE APA 1
WMU83302	GENERATOR PRINCIPAL-INSTALATIE PERDEA DE APA 2
WMU83303	GENERATOR PRINCIPAL-INSTALATIE PERDEA DE APA 3
WSL47101	MACARA PE PLATFORMA

EQUIPMENT LIST

ECP61601	EMERGENCY VENT TIP CONTROL PANEL
EZT61301	LP FLARE TIP
HEG41401	HELIDECK FOAM / FIREFIGHTING SYSTEM
HLO83301	GTG 1 LUBE OIL COOLER
HLO83302	GTG 2 LUBE OIL COOLER
HLO83303	GTG3 LUBE OIL COOLER
KGL54401	PRODUCTION PIPELINE PIG LAUNCHER
KGR54201	PRODUCTION FLOWLINE PIG RECEIVER
MAK83307	GTG 1 LUBE OIL VENT DEMISTER
MAK83308	GTG 2 LUBE OIL VENT DEMISTER
MAK83309	GTG 3 LUBE OIL VENT DEMISTER
MBD62301	PRIMARY SEPARATOR
MBE66111	DEMISTING CYCLONE TRAIN 1
MBE66121	DEMISTING CYCLONE TRAIN 2
MBE66131	DEMISTING CYCLONE TRAIN 3
NGR83301	GTG 1 - NEUTRAL GROUNDING RESISTOR (HRG)
NGR83302	GTG 2 -NEUTRAL GROUNDING RESISTOR (HRG)
NGR83303	GTG 3 - NEUTRAL GROUNDING RESISTOR (HRG)
PELICAN TEMP. DEWATERING	
POTY97101	PORTABLE LAVATORY
SSW40401	SAFETY SHOWER 1
V66101	TEG REGENERATION PACKAGE
V66110	cMIST PACKAGE (14") TRAIN 1
V66120	cMIST PACKAGE (14") TRAIN 2
V66130	cMIST PACKAGE (14") TRAIN 3
V83301	MAIN GAS TURBINE GENERATOR PACKAGE 1
V83302	MAIN GAS TURBINE GENERATOR PACKAGE 2
V83303	MAIN GAS TURBINE GENERATOR PACKAGE 3
V83311	FUEL GAS FILTERS SKID #1
V83321	FUEL GAS FILTERS SKID #2
V83331	FUEL GAS FILTERS SKID #3
WMU83301	MAIN GENERATOR 1 WATER MIST PACKAGE
WMU83302	MAIN GENERATOR 2 WATER MIST PACKAGE
WMU83303	MAIN GENERATOR 3 WATER MIST PACKAGE
WSL47101	PLATFORM CRANE



PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE / NOTES:

1. TOATE COTELE DE NIVEL SUNT IN MILIMETRI.
1. ALL ELEVATIONS ARE IN MILLIMETERS.

T.O.S. EL. : PARTEA SUPERIOARA A STRUCTURII - ELEVATIE.

T.O.S. EL. : TOP OF STRUCTURE - ELEVATION.

BUTNARIU IOAN ROMANIA NR. VI/1/2001/71 INGINER CONSTRUCTII VERIFICATOR PROIECTE

ILF CONSULTING ENGINEERS ROMANIA S.R.L. SOCIETATE COMERCIALA PROIECTARE

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
1-B	06.2020	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	A. NEAGU	F. VASILE	M. NAE
1-A	02.2020	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	A. NEAGU	F. VASILE	M. NAE
VERIFICATOR / CHECKER			I. BUTNARIU		ANRE
IDENTIFICATOR/EXPERT CHECKER/EXPERT		REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR

ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16, 100149, PLOIESTI
J29/3071/2007, RO 22804820

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	11/17/17	ISSUED FOR DESIGN	JC		EG	RJY
0	8/04/17	ISSUED FOR DESIGN	JC	0	EG	RJY
A	5/16/17	IDC	JC	A	EG	RJY

ExxonMobil
Exploration and Production Romania Limited

PLANUL DE ECHIPAMENTE AL PUNTII / DECK EQUIPMENT PLOT PLAN / PUNTEA SUPERIOARA / UPPER DECK

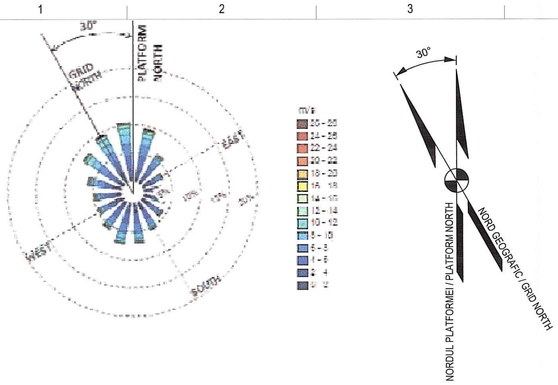
PLANSA 1 /1 / SHEET 1 / 1

1 : 150	ROND-EW-LDLAY-30-0001-B	DTAC	1-B
SCARA / SCALE	NR PLANSA / DWG. NO	FAZA / PHASE	REV / REV

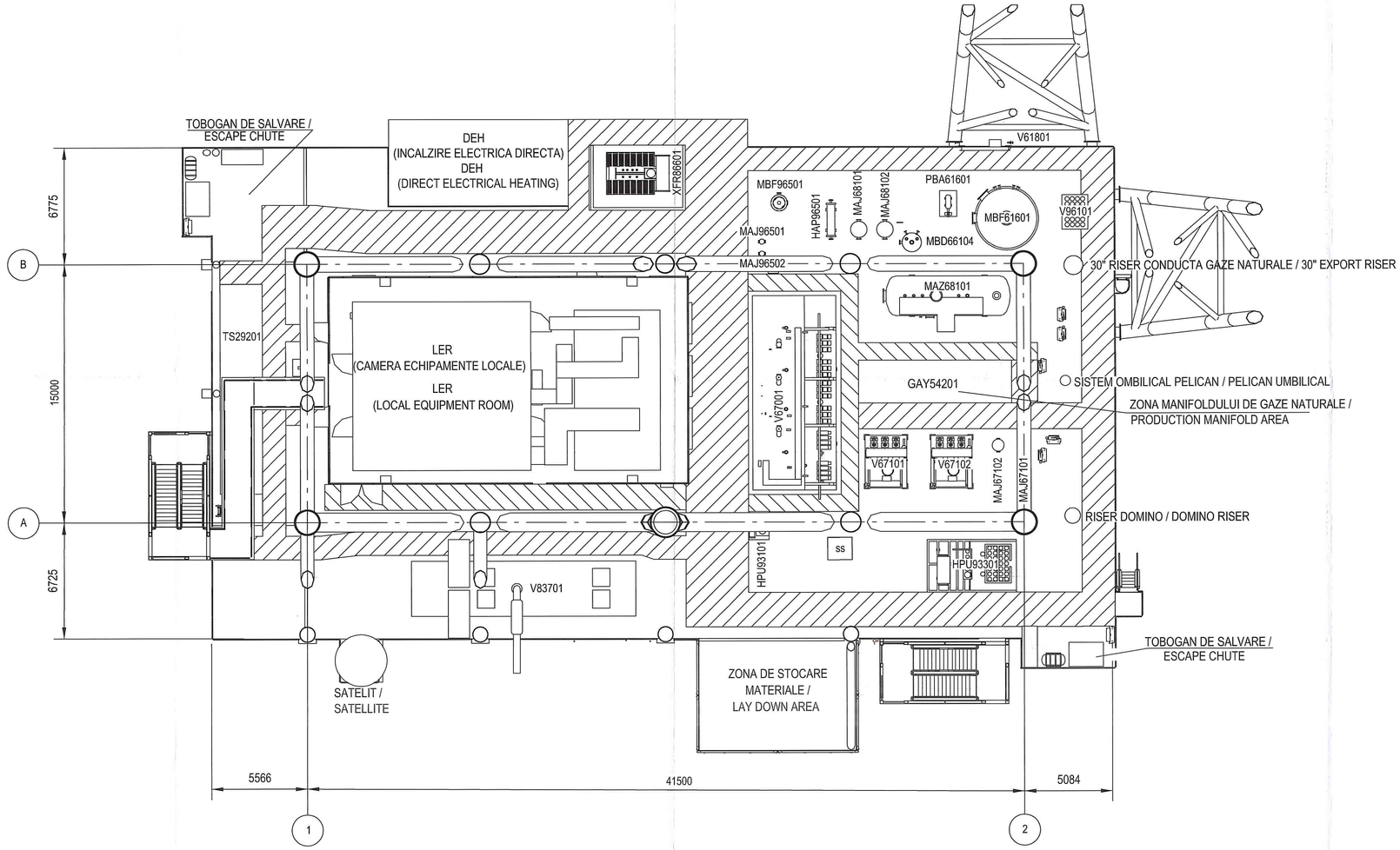
A1 841x594

Appendix E. Process equipment layout plans

3 – Deck equipment plot plan lower deck



LISTA DE ECHIPAMENTE		EQUIPMENT LIST	
HAP96501	SUPRAINCALZITOR GAZE COMBUSTIBILE	HAP96501	FUEL GAS SUPERHEATER
HPU93101	CHESON POMPA HPU	HPU93101	CAISSON PUMP HPU
HPU93301	SISTEM HIDRAULIC DE ACTIONARE (HPU)	HPU93301	HYDRAULIC POWER UNIT
MAJ67101	PREFILTRU METANOL	MAJ67101	METHANOL PREFILTER
MAJ67102	PREFILTRU METANOL	MAJ67102	METHANOL PREFILTER
MAJ68101	FILTRU SUBSTANTE ULEIOASEA 1	MAJ68101	FLOW-BACK OIL REMOVAL FILTER 1
MAJ68102	FILTRU SUBSTANTE ULEIOASE 2	MAJ68102	FLOW-BACK OIL REMOVAL FILTER 2
MAJ96501	FILTRU DE GAZ INSTRUMENTAL	MAJ96501	INSTRUMENT GAS FILTER
MAJ96502	FILTRU DE GAZ INSTRUMENTAL	MAJ96502	INSTRUMENT GAS FILTER
MAZ68101	DEGAZOR APE REZULTATE DIN PROCESUL TEHNOLOGIC	MAZ68101	PRODUCED WATER DEGASSING DRUM
MBD66104	SEPARATOR PICATURI DESCARCARI REFIERBATOR	MBD66104	REBOILER VENT K.O. DRUM
MBF61601	SEPARATOR LICHIDE DIN GAZELE DESCARCATE LA COS	MBF61601	VENT SCRUBBER
MBF96501	SEPARATOR LICHIDE DIN GAZE COMBUSTIBILE	MBF96501	FUEL GAS SCRUBBER
PBA61601	POMPA VAS SEPARATOR DE PICATURI	PBA61601	VENT KNOCK-OUT PUMP
TS29201	CONTAINER ADAPOST TEMPORAR (CAPACITATE 12 PERSOANE)	TS29201	SHELTER (12 - PERSON SLEEPER) CONTAINER
V61801	SISTEM DE APRINDERE AUTOMATA	V61801	FLAME FRONT GENERATOR PACKAGE
V67101	POMPA INJECTIE METANOL PACHET #1	V67101	METHANOL INJECTION PUMP PACKAGE #1
V67102	POMPA INJECTIE METANOL PACHET #2	V67102	METHANOL INJECTION PUMP PACKAGE #2
V83701	GENERATOR ALIMENTARE CONSUMATORI VITALI	V83701	ESSENTIAL GENERATOR PACKAGE
V96101	SISTEM BUTELII STOCARE AZOT	V96101	NITROGEN CYLINDER BANK
V67001	ANSAMBLU INJECTIE CHIMICALE	V67001	CHEMICAL INJECTION PACKAGE
XFR86601	TRANSFORMATOR	XFR86601	POWER TRANSFORMER



PUNTEA INFERIOARA / LOWER DECK

T.O.S EL +16000

1:150 0 1500 3M 6M 9M 12M 15M

PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

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NOTE / NOTES:

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T.O.S. EL. : TOP OF STRUCTURE - ELEVATION.

SISTEM OMBILICAL: ANSAMBLU DE CONDUCTORI ELECTRICI, FIBRA OPTICA, CONDUCTE HIDRAULICE, CONDUCTE INJECTIE CHIMICALE, ETC INTR-UN INVELIS METALIC COMUN.

UMBILICAL : ASSEMBLY OF ELECTRICAL CONDUCTORS, FIBER OPTIC CABLES, HYDRAULIC PIPES, CHEMICAL INJECTION PIPES, ETC., IN A JOINT METAL COATING.

RISER: CONDUCTA URCARE.

RISER : UP-GOING PIPE.

BUTNARIU IOAN ROMÂNIA NR. V181000171 VERIFICATOR PROIECTE

SOCIETATEA COMERCIALA 4 ILF CONSULTING ENGINEERS ROMANIA S.R.L. PLOIESTI - PRAHOVA

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

1-B	06.2020	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	A. NEAGU	F. VASILE	M. NAE
1-A	02.2020	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	A. NEAGU	F. VASILE	M. NAE
REV REV	DATA DATE	DENUMIRE, SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
VERIFICATOR CHECKER			I. BUTNARIU		ANRE
VERIFICATOR/EXPERT CHECKER/EXPERT		REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCES

PROIECTANT / ENGINEERING CONTRACTOR

ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16, 100149, PLOIESTI
J29/3071/2007, RO 22804820

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	9/21/17	ISSUED FOR DESIGN	JC		EG	RJY
0	8/04/17	ISSUED FOR DESIGN	JC	0	EG	RJY
A	5/16/17	IDC	JC	A	EG	RJY

ExxonMobil
Exploration and Production Romania Limited

PLANUL DE ECHIPAMENTE AL PUNTII / DECK EQUIPMENT PLOT PLAN / PUNTEA INFERIOARA / LOWER DECK

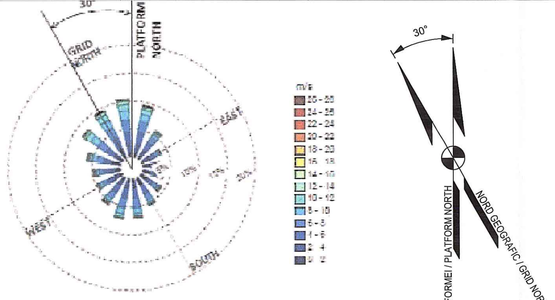
PLANSA 1 /1 / SHEET 1 / 1

1 : 150	ROND-EW-LDLAY-30-0002-B	DTAC	1-B
SCARA / SCALE	NR PLANSA / DWG. NO	FAZA / PHASE	REV / REV

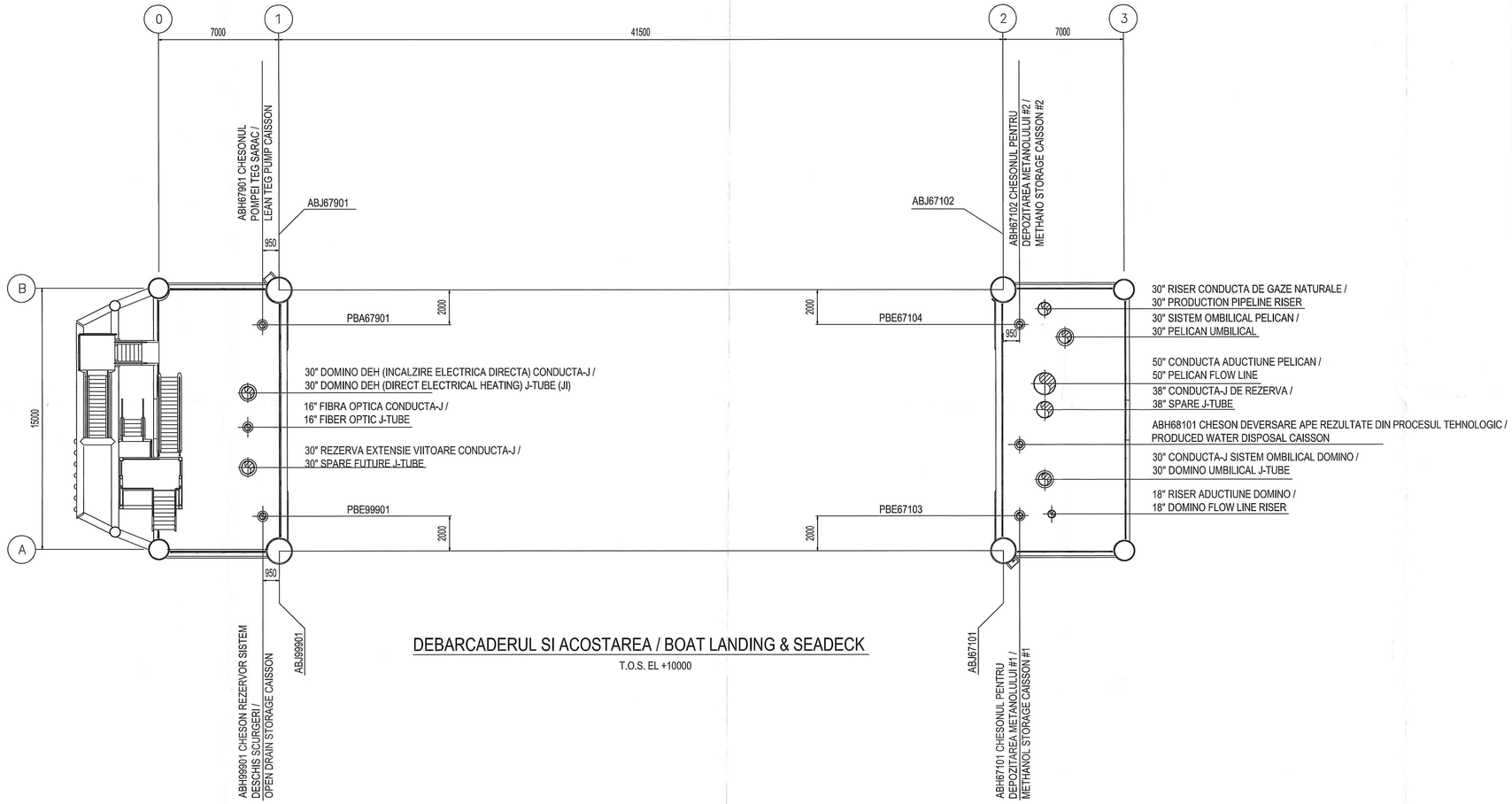
A1 841x594

Appendix E. Process equipment layout plans

4 – Deck equipment plot plan boat landing and sea deck



LISTA DE ECHIPAMENTE		EQUIPMENT LIST	
PBE67103	POMPA PENTRU METANOL # 1 (SUBMERSIBILA)	PBE67103	METHANOL STORAGE PUMP # 1 (SUBMERSIBLE)
PBE67104	POMPA PENTRU METANOL # 2 (SUBMERSIBILA)	PBE67104	METHANOL STORAGE PUMP # 2 (SUBMERSIBLE)
PBA67901	POMPA TEG SARAC (SUBMERSIBILA)	PBA67901	LEAN TEG STORAGE PUMP (SUBMERSIBLE)
PBE99901	POMPA SISTEM DESCHIS SCURGERI (SUBMERSIBILA)	PBE99901	OPEN DRAIN PUMP (SUBMERSIBLE)
ABH67101	CHESONUL PENTRU DEPOZITAREA METANOLULUI # 1	ABH67101	METHANOL STORAGE CAISSON # 1
ABH67102	CHESONUL PENTRU DEPOZITAREA METANOLULUI # 2	ABH67102	METHANOL STORAGE CAISSON # 2
ABH67901	CHESONUL POMPEI TEG SARAC	ABH67901	LEAN TEG PUMP CAISSON
ABH99901	CHESON REZERVOR SISTEM DESCHIS SCURGERI	ABH99901	OPEN DRAIN STORAGE CAISSON
ABJ67101	REZERVOR STOCARE METANOL # 1 (IN PICIORUL SUPORTULUI STRUCTURAL)	ABJ67101	METHANOL STORAGE TANK # 1 (IN JACKET LEG)
ABJ67102	REZERVOR STOCARE METANOL # 2 (IN PICIORUL SUPORTULUI STRUCTURAL)	ABJ67102	METHANOL STORAGE TANK # 2 (IN JACKET LEG)
ABJ67901	REZERVOR STOCARE TEG SARAC (IN PICIORUL SUPORTULUI STRUCTURAL)	ABJ67901	LEAN TEG STORAGE TANK (IN JACKET LEG)
ABJ99901	REZERVOR SISTEM DESCHIS SCURGERI (IN PICIORUL SUPORTULUI STRUCTURAL)	ABJ99901	OPEN DRAIN STORAGE TANK (IN JACKET LEG)



DEBARCADERUL SI ACOSTAREA / BOAT LANDING & SEADECK

T.O.S. EL +10000

1:150 0 1500 3M 6M 9M 12M 15M

PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

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T.O.S. EL. : TOP OF STRUCTURE - ELEVATION.

SISTEM OMBILICAL: ANSAMBLU DE CONDUCTORI ELECTRICI, FIBRA OPTICA, CONDUCTE HIDRAULICE, CONDUCTE INJECTIE CHIMICALE, ETC INTR-UN INVELIS METALIC COMUN.

UMBILICAL : ASSEMBLY OF ELECTRICAL CONDUCTORS, FIBER OPTIC CABLES, HYDRAULIC PIPES, CHEMICAL INJECTION PIPES, ETC., IN A JOINT METAL COATING.

RISER: CONDUCTA URCARE.

RISER : UP-GOING PIPE.

BUTNARIU IOAN ROMANIA INGINER V181000171 VERIFICATOR PROIECTE

SOCIETATEA CONSULTING 4. ILF CONSULTING ENGINEERS ROMANIA S.R.L. PROIECT pe HARTIE

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

1-B	06.2020	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	A. NEAGU	F. VASILE	M. NAE
1-A	02.2020	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	A. NEAGU	F. VASILE	M. NAE
REV / REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
VERIFICATOR / CHECKER			I. BUTNARIU		ANRE
VERIFICATOR/ CHECKER/EXPERT		REFERAT NR. / EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE	NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR

ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16, 100149, PLOIESTI
J29/3071/2007, RO 22804820

1	11/07/17	ISSUED FOR DESIGN	JC		EG	RJY
0	8/07/17	ISSUED FOR DESIGN	JC	0	EG	RJY
A	6/27/17	IDC	JC	A	EG	RJY
REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP

ExxonMobil
Exploration and Production Romania Limited

PLANUL DE ECHIPAMENTE AL PUNTII / DECK EQUIPMENT PLOT PLAN / DEBARCADERUL SI ACOSTAREA / BOAT LANDING AND SEA DECK

PLANSA 1 /1 / SHEET 1 / 1

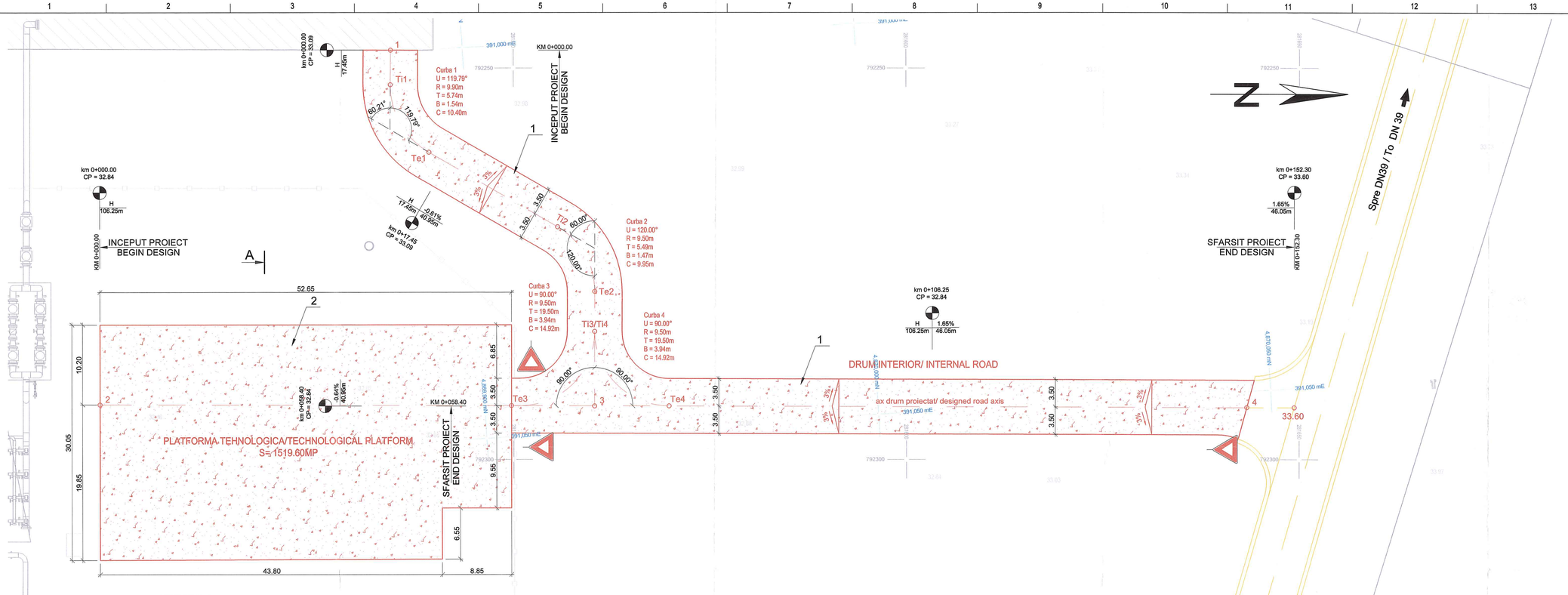
1:150	ROND-EW-LDLAY-30-0003-B	DTAC	1-B
SCARA / SCALE	NR PLANSA / DWG. NO	FAZA / PHASE	REV / REV

A1 841x594

Appendix F. Details for other onshore facilities

Appendix F. Details for other onshore facilities

1 – Permanent facilities - Layout plan of internal road, parking, and technological platform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H
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Ti1
Curba 1
U = 119.70°
R = 9.90m
T = 5.74m
B = 1.54m
C = 10.40m
60.21°
119.79°
Te1
KM 0+000.00
INCEPUT PROIECT
BEGIN DESIGN
3%
3.50
Ti2
60.00°
Curba 2
U = 120.00°
R = 9.50m
T = 5.49m
B = 1.47m
C = 9.95m
200.00m
Te2
Curba 3
U = 90.00°
R = 9.50m
T = 19.50m
B = 3.94m
C = 14.92m
Ti3/Ti4
Curba 4
U = 90.00°
R = 9.50m
T = 19.50m
B = 3.94m
C = 14.92m
90.00°
Te3
Te4
km 0+106.25
CP = 32.84
H
106.25m
1.65%
46.05m
DRUM INTERIOR/ INTERNAL ROAD
ax drum proiectat/ designed road axis
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4,870,050 mN
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SFARSIT PROIECT
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Spre DN39 / To DN 39
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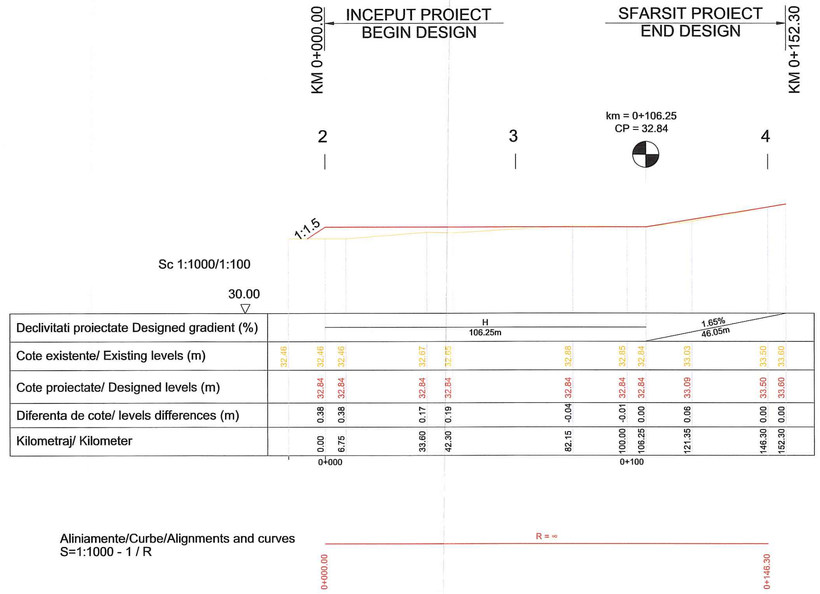
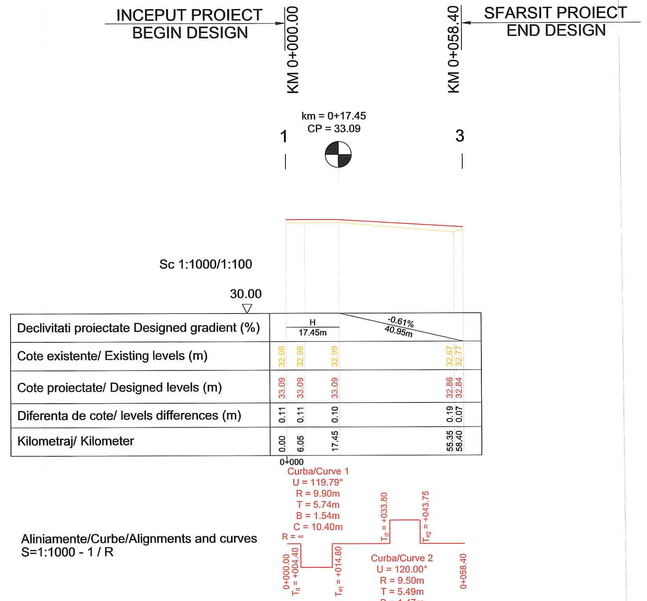
Appendix F. Details for other onshore facilities

2 – Permanent facilities - Longitudinal profiles of road and platforms. Cross sections

PROFILE LONGITUDINALE DRUMURI SI PLATFORMA TEHNOLOGICA / LONGITUDINAL PROFILES ROADS AND TECHNOLOGICAL PLATFORM

SCARA/SCALE 1:1000/100





Aliniamente/Curbe/Alignments and curves
S=1:1000 - 1 / R

Aliniamente/Curbe/Alignments and curves
S=1:1000 - 1 / R

PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

NOTE / NOTES

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.
Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Conform regulilor din Romania virgula si punctul sunt folosite invers pentru definirea zecimalelor intr-un numar. Din acest motiv toate cifrele aflate dupa punct intr-un numar vor fi citite ca zecimale.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

ACRONIME / ACRONYMS

U = unghi la centru / angle to the center (°)
R = raza / radius (m)
T = tangenta / tangent (m)
B = bisectoarea / bisecting line (m)
C = lungimea curbei de racordare / the length of the connection curve (m)
Ti = tangenta de intrare / entry tangent
Te = tangenta de iesire / exit tangent
CP = cota proiectata / designed level
km = kilometru / kilometer
H = palier / bearings

LEGENDA / LEGEND

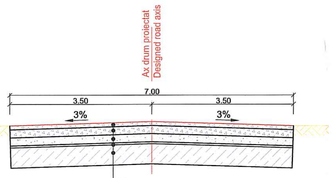
1. Linia rosie / red line
2. Linia terenului existent / Existing land line

* DENUMIRE COMPLETA PROIECT / COMPLETE PROJECT NAME

NEPTUN DEEP - INSTALARE CONDUCTA SI CABLU DE COMUNICATII, SUBTRAVERSARE PLAJA, FALEZA, DRUMURI SI CALE FERATA; REALIZARE TRECERE TEMPORARA LA NIVEL CU CALEA FERATA; CONSTRUIRE SRM, CENTRU DE CONTROL, IMPREJMUIRE, ILUMINAT, PARCARI, SPATII VERZI, PLATFORME SI DRUMURI INTERIOARE; ORGANIZARE DE SANTIER, ASIGURAREA SI RACORDAREA LA UTILITATI.
NEPTUN DEEP - PIPELINE AND COMMUNICATION CABLE INSTALLATION, UNDERCROSSING OF BEACH, SEA FRONT, ROADS AND RAILWAY; TEMPORARY ROAD RAILWAY CROSSING; CONSTRUCTION OF NGMS, CONTROL CENTER, FENCING, LIGHTING, PARKING, GREEN SPACE, PLATFORMS, INTERNAL ROADS; SITE WORKS, ORGANIZATION AND UTILITIES CONNECTIONS.

PROFIL TRANSVERSAL TIP DRUMURI / ROADS TYPICAL CROSS SECTION

SCARA/SCALE. 1:75



10 cm - macadam penetrat
10 cm - penetrated macadam

20 cm - piatra sparta, sort 0-63 conform SR EN 13242+A1, grad de compactare min. 98% PN
20 cm - crushed stone, sort 0-63 acc. SR EN 13242+A1 degree of compaction min. 98% PN

20 cm - balast amestec optimal sort 0-63mm conf. SR EN 13242+A1:2008, grad de compactare min. 98% PN
20 cm - optimal mixt ballast sort 0-63mm acc. SR EN 13242+A1:2008, degree of compaction min. 98% PN

Geotextil impermeabil
Waterproof geotextile

*Imbunatatire teren de fundare, grosime=0.50m, min. 98% PN
*Improvement ground foundation, thick=0.50m, min. 98% PN

SECTIUNE TRANSVERSALA A - A PLATFORMA TEHNOLOGICA / CROSS SECTION A - A TECHNOLOGICAL PLATFORM

SCARA/SCALE. 1:50



10 cm - macadam penetrat
10 cm - penetrated macadam

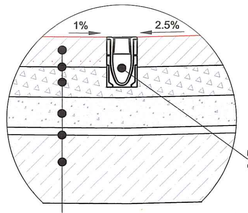
20 cm - piatra sparta, sort 0-63 conform SR EN 13242+A1, grad de compactare min. 98% PN
20 cm - crushed stone, sort 0-63 acc. SR EN 13242+A1 degree of compaction min. 98% PN

20 cm - balast amestec optimal sort 0-63mm conf. SR EN 13242+A1:2008, grad de compactare min. 98% PN
20 cm - optimal mixt ballast sort 0-63mm acc. SR EN 13242+A1:2008, degree of compaction min. 98% PN

Geotextil impermeabil
Waterproof geotextile

*Imbunatatire teren de fundare, grosime=0.50m, min. 98% PN
*Improvement ground foundation, thick=0.50m, min. 98% PN

DETALIU/ DETAIL "A"



rigola prefabricata din beton L = 1000mm, l = 160mm, h = 265mm
concrete prefabricated gutter

Beton rutier BcR 4.5, grosime 20cm/
Concrete road BcR 4.5, thickness 20cm

Hartie Kraft/Kraft paper

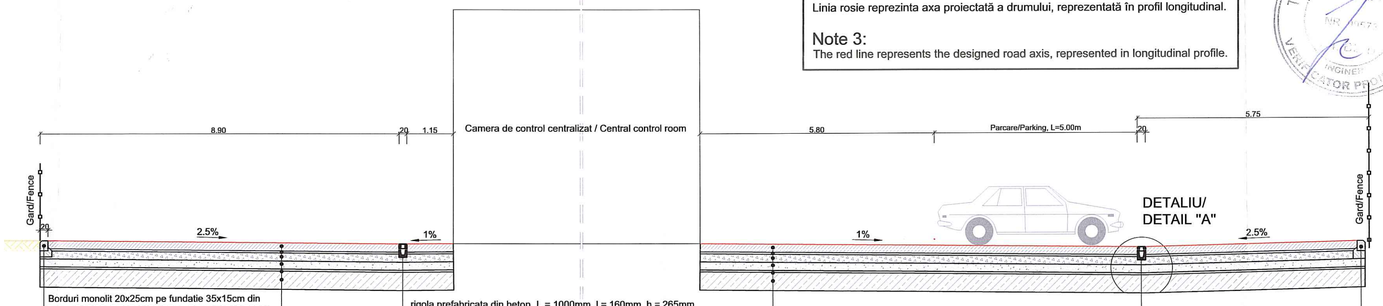
20 cm - piatra sparta, sort 0-63 conform SR EN 13242+A1, grad de compactare min. 98% PN
20 cm - crushed stone, sort 0-63 acc. SR EN 13242+A1 degree of compaction min. 98% PN
20 cm - balast amestec optimal sort 0-63mm conf. SR EN 13242+A1:2008, grad de compactare min. 98% PN
20 cm - optimal mixt ballast sort 0-63mm acc. SR EN 13242+A1:2008, degree of compaction min. 98% PN

Geotextil impermeabil
Waterproof geotextile

*Imbunatatire teren de fundare, grosime=0.50m, min. 98% PN
*Improvement ground foundation, thick=0.50m, min. 98% PN

SECTIUNE TRANSVERSALA/ CROSS SECTION B - B

SCARA/SCALE. 1:50



*Nota 1.
Imbunatatirea terenului de fundare prin desensibilizare la umezire si anume, consta in :
- indepartarea prin sapatura pe aprox. 50cm a stratului lossoid;
- realizarea asa - zisei "perna de loss " prin refolosirea materialului excavat cu repunerea in opera in straturi succesive de 15 - 20cm grosime dupa compactare;

*Note 1.
The improvement of the foundation ground by desensitization to wetting, namely, consists in:
- removal by digging on approx. 50cm of the lossoid layer;
- making the so - called "loss pillow" by reusing the material excavated with re-installation in successive layers of 15 - 20 cm thick after compaction;

Nota 2:
1. La realizarea lucrarilor se vor respecta cerintele de sanatate si securitate in munca conform normelor in vigoare.
2. Domeniul de verificare conform Legii 10/1995 - A4, B2, D.
3. Categoria de importanţă a lucrărilor: categoria de importanţă normală "C".

Note 2:
1.Construction work will respect all health and safety requirements according to applicable regulations.
2.Verifier domain is according to Law 10/1995 - A4, B2, D.
3.Category of importance is classified as category of normal importance "C".

Nota 3:
Linia rosie reprezinta axa proiectată a drumului, reprezentată în profil longitudinal.

Note 3:
The red line represents the designed road axis, represented in longitudinal profile.

PROIECT NEPTUN DEEP*
NEPTUN DEEP PROJECT

C	05/2021	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	C. PAUNESCU	C. PAUNESCU	M. NAE
B	03/2021	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	C. PAUNESCU	C. PAUNESCU	M. NAE
A	02/2021	EMIS PENTRU VERIFICARE ISSUED FOR REVIEW	C. PAUNESCU	C. PAUNESCU	M. NAE
REV	DATA DATE	DENUMIRE SCOPUL REVIZIEI ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
VERIFICATOR/ CHECKER			C. TODERASCU		
VERIFICATOR/EXPERT/ CHECKER/EXPERT		REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE	NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16, 100149, PLOIESTI
J29/907/12007, RO 22804620
S.C. MILO PROJECT CONSTRUCT S.R.L.
J40/2947/2013, RO 31284450

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP

ExxonMobil
Exploration and Production Romania Limited

PROFILE LONGITUDINALE DRUM SI PLATFORME. SECTIUNI TRANSVERSALE

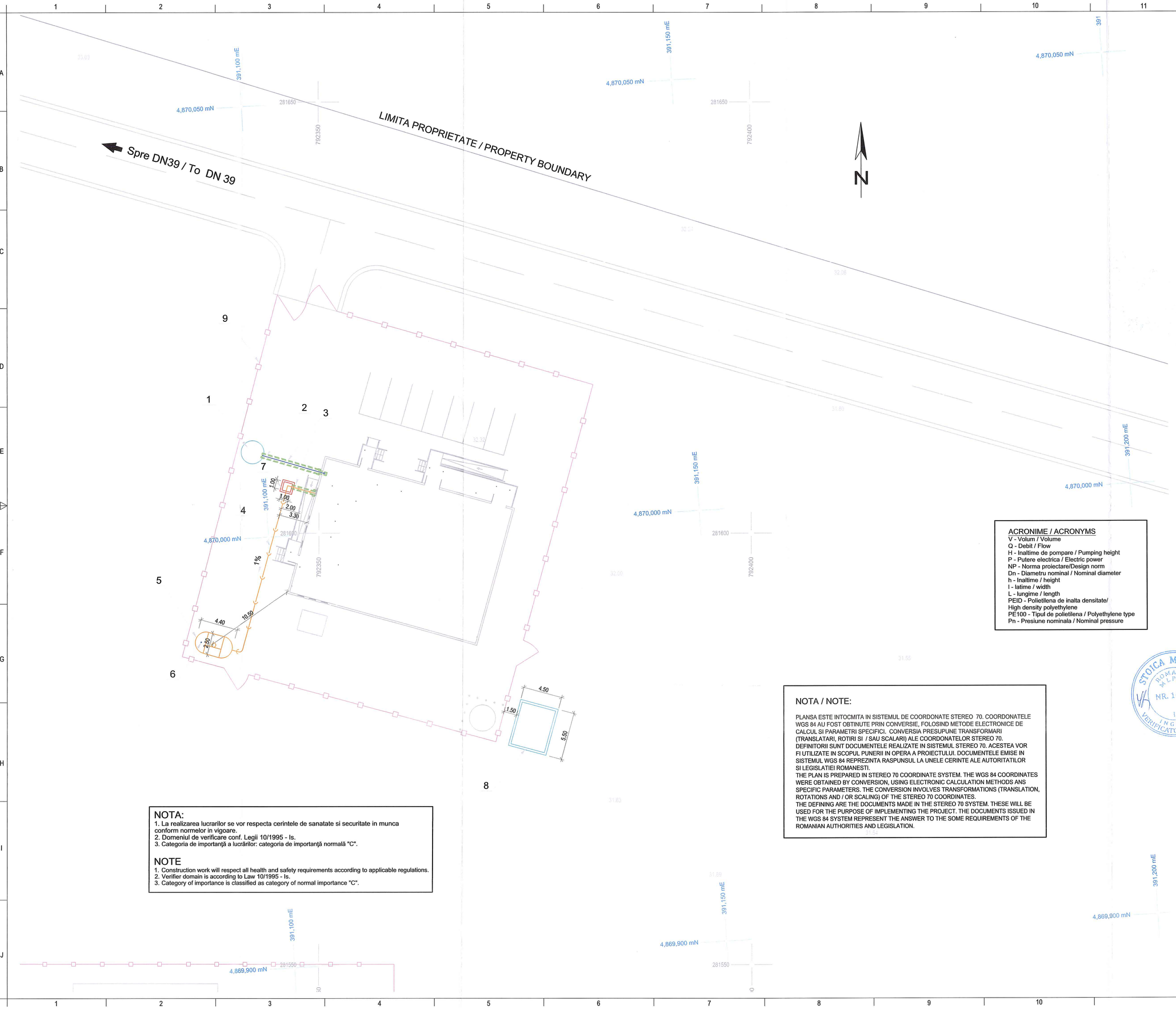
LONGITUDINAL PROFILES ROAD AND PLATFORMS. CROSS SECTIONS

1:1000/100;1:75; 1:20 SCARA / SCALE	ROND-IL-CDPAV-25-0001-B NR PLANSA / DWG. NO	DTAC FAZA / PHASE	C REV / REV

A1 841x594

Appendix F. Details for other onshore facilities

3 – Permanent facilities - Layout plan of water supply and sewerage



PLANSA SE SUPUNE PREVEDERILOR PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

NOTE / NOTES

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.
Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Conform regulilor din Romania virgula si punctul sunt folosite invers pentru definirea zecimalelor intr-un numar. Din acest motiv toate cifrele aflate dupa punct intr-un numar vor fi citite ca zecimale.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

LEGENDA / LEGEND

1. Rezervor metalic suprateran V=12mc dotat cu izolatie termica si rezistenta electrica impotriva inghetului dotat cu pompa submersibila de tip hidrofor electronic incorporat avand Q=50l/min, H=30mCA, P=1.1KW/Above ground metal tank V = 12mc equipped with thermal insulation and electrical resistance against frost equipped with submersible pump of electronic hydrophore type incorporated with Q = 50l / min, H = 30mCA, P = 1.1KW
2. Conducta de alimentare cu apa rece PEID PE 100 Pn 6 Dn32mm / Cold water supply pipe PEID PE 100 Pn 6 Dn32mm
3. Canale de protectie beton pentru terenuri sensibile la umezire conform NP 125/2010/Concrete protection channels for lands sensitive to moisture according to NP 125/2010
4. Conducta de canalizare / Sewerage
5. Bazin vidanjabil etans (fosa septica) ape uzate menajere V=20mc/ Sealed drainage basin (septic tank) for domestic wastewater V=20mc
6. Conducta de aerisire Dn100mm / Ventilation pipe
7. Camin de vizitare pentru canalizare menajera/Manhole for sewage
8. Bazin de colectare ape pluviale h = 3.20m, l = 4.50m, L = 5.50m / Rain water drainage tank
9. Imprejmuire/ Fence

31.89 — Cotele terenului existent / Existing land elevationss

391.977,73 / 4.869.841,4 — Coordonate WGS84 / WGS84 Coordinates

291495.4 / 793230.7 — Coordonate STEREO 70 / STEREO 70 Coordinates

* DENUMIRE COMPLETA PROIECT / COMPLETE PROJECT NAME

NEPTUN DEEP - INSTALARE CONDUCTA SI CABLU DE COMUNICATII, SUBTRAVERSARE PLAJA, FALEZA, DRUMURI SI CALE FERATA; REALIZARE TRECERE TEMPORARA LA NIVEL CU CALEA FERATA; CONSTRUIRE SRM, CENTRU DE CONTROL, IMPREJMUIRE, ILUMINAT, PARCARI, SPATII VERZI, PLATFORME SI DRUMURI INTERIOARE; ORGANIZARE DE SANTIER, ASIGURAREA SI RACORDAREA LA UTILITATI.
NEPTUN DEEP - PIPELINE AND COMMUNICATION CABLE INSTALLATION, UNDERCROSSING OF BEACH, SEA FRONT, ROADS AND RAILWAY; TEMPORARY ROAD RAILWAY CROSSING; CONSTRUCTION OF NGMS, CONTROL CENTER, FENCING, LIGHTING, PARKING, GREEN SPACE, PLATFORMS, INTERNAL ROADS; SITE WORKS, ORGANIZATION AND UTILITIES CONNECTIONS.

ACRONIME / ACRONYMS

V - Volum / Volume
Q - Debit / Flow
H - Inaltime de pompare / Pumping height
P - Putere electrica / Electric power
NP - Norma proiectare/Design norm
Dn - Diametru nominal / Nominal diameter
h - Inaltime / height
l - latime / width
L - lungime / length
PEID - Polietilena de inalta densitate/ High density polyethylene
PE100 - Tipul de polietilena / Polyethylene type
Pn - Presiune nominala / Nominal pressure

NOTA / NOTE:

PLANSA ESTE INTOCMITA IN SISTEMUL DE COORDONATE STEREO 70. COORDONATELE WGS 84 AU FOST OBTINUTE PRIN CONVERSIE, FOLOSIND METODE ELECTRONICE DE CALCUL SI PARAMETRI SPECIFICI. CONVERSIA PRESUPUNE TRANSFORMARI (TRANSLATARI, ROTIRI SI / SAU SCALARI) ALE COORDONATELOR STEREO 70. DEFINITORII SUNT DOCUMENTELE REALIZATE IN SISTEMUL STEREO 70. ACESTEA VOR FI UTILIZATE IN SCOPUL PUNERII IN OPERA A PROIECTULUI. DOCUMENTELE EMISE IN SISTEMUL WGS 84 REPREZINTA RASPUNSUL LA UNELE CERINTE ALE AUTORITATILOR SI LEGISLATIEI ROMANESTI.
THE PLAN IS PREPARED IN STEREO 70 COORDINATE SYSTEM. THE WGS 84 COORDINATES WERE OBTAINED BY CONVERSION, USING ELECTRONIC CALCULATION METHODS ANS SPECIFIC PARAMETERS. THE CONVERSION INVOLVES TRANSFORMATIONS (TRANSLATION, ROTATIONS AND / OR SCALING) OF THE STEREO 70 COORDINATES.
THE DEFINING ARE THE DOCUMENTS MADE IN THE STEREO 70 SYSTEM. THESE WILL BE USED FOR THE PURPOSE OF IMPLEMENTING THE PROJECT. THE DOCUMENTS ISSUED IN THE WGS 84 SYSTEM REPRESENT THE ANSWER TO THE SOME REQUIREMENTS OF THE ROMANIAN AUTHORITIES AND LEGISLATION.

NOTA:

1. La realizarea lucrarilor se vor respecta cerintele de sanatate si securitate in munca conform normelor in vigoare.
2. Domeniul de verificare conf. Legii 10/1995 - ls.
3. Categoria de importanţă a lucrărilor: categoria de importanţă normală "C".

NOTE

1. Construction work will respect all health and safety requirements according to applicable regulations.
2. Verifier domain is according to Law 10/1995 - ls.
3. Category of importance is classified as category of normal importance "C".

ILF CONSULTING ENGINEERS ROMANIA S.R.L. BUCUREŞTI

STOICA M. ANA ROMANIA MLPAT NR. 1665 ls INGINER VERIFICATOR

PROIECT NEPTUN DEEP*
NEPTUN DEEP PROJECT

REV	DATA/ DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT PREPARED	PROIECTAT DESIGNED	SEF PROIECT APPROVED
B	05/2021	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	V. DAIA	V. DAIA	M. NAE
A	02/2021	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	V. DAIA	V. DAIA	M. NAE
VERIFICATOR/ CHECKER			A. STOICA		ls
VERIFICATOR/EXPERT CHECKER/EXPERT	REFERAT NR. / EXPERTIZA NR. / DATA CHECKER REPORT / EXPERTISE NO. / DATE		NUME NAME	SEMNATURA SIGNATURE	DOMENIU EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16, 100149, PLOIESTI
J29/3017/2007, RO 22804820
S.C. MILO PROIECT CONSTRUCT S.R.L.
J40/2947/2013, RO 31284450

REV	REV DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP

ExxonMobil
Exploration and Production Romania Limited

PLAN DE SITUATIE
ALIMENTARE CU APA - CANALIZARE

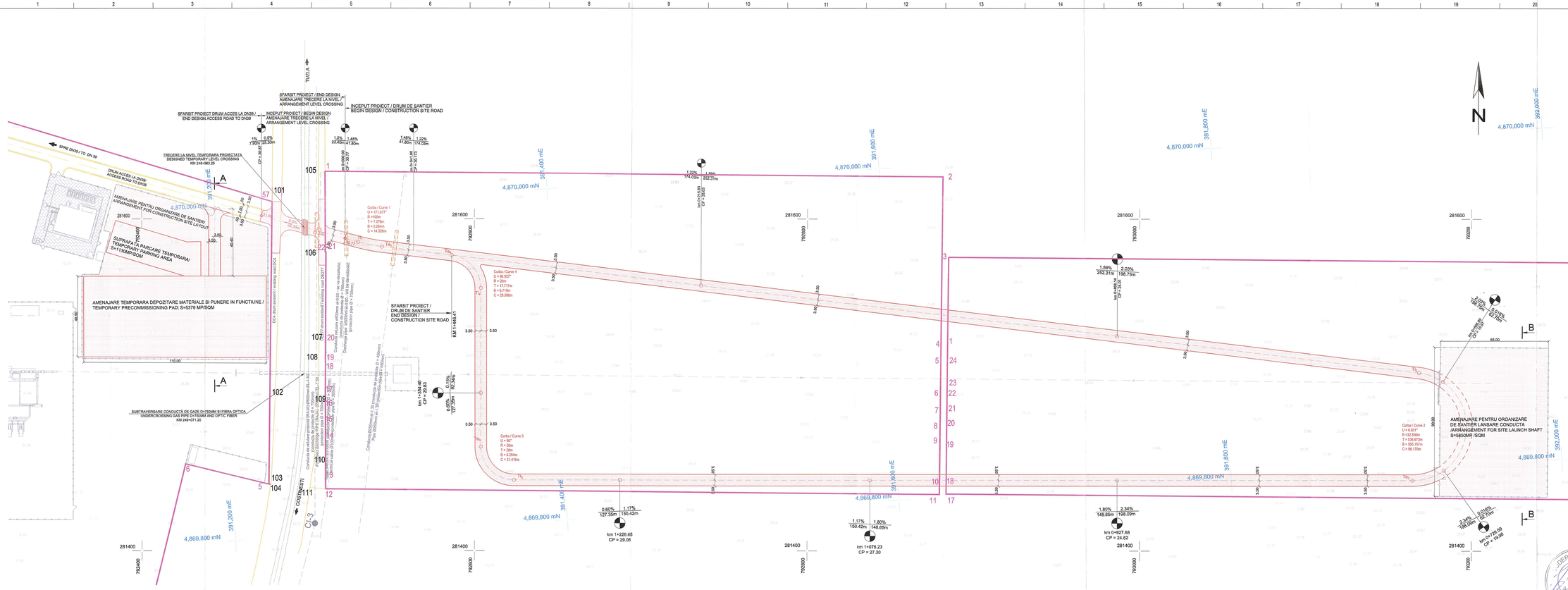
LAYOUT PLAN. WATER SUPPLY AND SEWERAGE

1:200	ROND-IL-CDDRN-25-0001-B	DTAC	B
SCARA / SCALE	NR PLANSA / DWG. NO	FAZA / PHASE	REV / REV

A1 841x594

Appendix F. Details for other onshore facilities

4 – Temporary facilities - Layout plan of construction road and platforms


SFARSIT PROIECT / END DESIGN
AMENAJARE TRECERE LA NIVEL / ARRANGEMENT LEVEL CROSSING
INCEPUT PROIECT / DRUM DE SANTIER
BEGIN DESIGN / CONSTRUCTION SITE ROAD
SFARSIT PROIECT DRUM ACCES LA DN39 / END DESIGN ACCESS ROAD TO DN39
INCEPUT PROIECT / BEGIN DESIGN
AMENAJARE TRECERE LA NIVEL / ARRANGEMENT LEVEL CROSSING
SPRE DN39 / TO DN 39
TRECERE LA NIVEL TEMPORARA PROIECTATA
DESIGNED TEMPORARY LEVEL CROSSING
KM 249+983.25
DRUM ACCES LA DN39
ACCESS ROAD TO DN39
AMENAJARE PENTRU ORGANIZARE DE SANTIER/
ARRANGEMENT FOR CONSTRUCTION SITE LAYOUT
SUPRAFATA PARCARE TEMPORARA/
TEMPORARY PARKING AREA
S=1130MP/SQM
AMENAJARE TEMPORARA DEPOZITARE MATERIALE SI PUNERE IN FUNCTIUNE /
TEMPORARY PRECOMMISSIONING PAD; S=6379 MP/SQM
SUBTRAVERSARE CONDUCTA DE GAZE D=700MM SI FIBRA OPTICA
UNDERCROSSING GAS PIPE D=700MM AND OPTIC FIBER
KM 249+071.20
DC4 drum existent / existing road DC4
DC3 drum existent / existing road DC3
CL3
COSTINESTI
Curba / Curve 1
U = 171.677°
R =100m
T = 7.278m
B = 0.264m
C = 14.539m
Curba / Curve 4
U = 96.927°
R = 20m
T = 17.717m
B = 6.719m
C = 28.598m
Curba / Curve 3
U = 90°
R = 20m
T = 20m
B = 8.284m
C = 31.416m
Curba / Curve 2
U = 6.031°
R =120.000m
T = 126.673m
B = 555.157m
C = 96.170m
SFARSIT PROIECT /
DRUM DE SANTIER
END DESIGN /
CONSTRUCTION SITE ROAD
AMENAJARE PENTRU ORGANIZARE
DE SANTIER LANSARE CONDUCTA
/ARRANGEMENT FOR SITE LAUNCH SHAFT.
S=5830MP /SQM
391,000 mE
391,200 mE
391,400 mE
391,600 mE
391,800 mE
392,000 mE
4,870,000 mN
4,869,800 mN
281600
281400
7924000
7926000
7928000
7930000
7932000
7934000
7936000
7938000
7940000
7942000
7944000
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7988000
7990000
7992000
7994000
7996000
7998000
8000000
8002000

Appendix F. Details for other onshore facilities

5 – Temporary facilities - Longitudinal profiles and cross sections of construction road and platforms

SFARSIT PROIECT/ END DESIGN
AMENAJARE TRECERE LA NIVEL/
ARRANGEMENT LEVEL CROSSING

INCEPUT PROIECT/ DRUM DE SANTIER
BEGIN DESIGN/CONSTRUCTION SITE ROAD

SFARSIT PROIECT/ END DESIGN
DRUM ACCES DN30/ ACCESS ROAD

INCEPUT PROIECT/ BEGIN DESIGN
AMENAJARE TRECERE LA NIVEL/
ARRANGEMENT LEVEL CROSSING
26.90 25.00

km = 0+000.00
CP = 30.77

km = 0+041.80
CP = 30.173

km = 0+215.83
CP = 28.03

km = 0+468.14
CP = 24.01

km = 0+666.89
CP = 19.97

km = 0+729.59
CP = 19.98

Conducte de protectie din otel conform STAS 9312/1987
Steel protection pipes according to STAS 9312/1987

Aq Aconi proiectat
Designed road axis

Aq Aconi terenpreluat la intersectia cu calea ferata Km 244 + 385,25/
Terrain axis taken at level crossing with Km 244 + 385,25

Scara orizontala/Horizontal scale 1:1000/
Scara verticala/Vertical scale 1:100

19.00

| | | |

Appendix G. Lists and quantities of estimated waste

Appendix G. List of estimated waste

1 – List and estimated quantities of waste generated during drilling phase

Appendix G. Lists and quantities of estimated waste generated during drilling phase

No.	Waste name	Waste Category	Waste Code	Hazardous/ Non-hazardous	Total estimated quantities generated during drilling (Mt)	Waste Form	Estimated quantities temporary stored on site (Mt) (10% during drilling)	Methods of storage	Methods of disposal/recovery
1	Fresh water based drilling fluid	Fresh water based drilling fluid and waste	01 05 04	Non-Hazardous	3935.38	Sludge	393.538	Cutting boxes	Thermal Treatment or/and bioremediation, if possible (onshore)
2	Non-aqueous based drill cuttings	Drilling waste and sludge containing oils	01 05 05*	Hazardous	18128.16	Sludge	1812.816	Cutting boxes	Thermal Treatment or/and bioremediation, if possible (onshore)
3	Salt water based drilling fluid (brine)	Drilling mud and chloride-containing wastes other than those specified in 01 05 05 and 01 05 06	01 05 08	Non-Hazardous	130.64	Liquid	13.064	Metallic drums	Licensed disposal facility (onshore)
4	Bulk Solids (Uncontaminated) - Barite	Other wastes not otherwise specified	01 05 99	Non-Hazardous	48.02	Solid	4.802	Bulk Covered	Landfill
5	Dried paint	Waste paints and varnishes containing organic solvents or other dangerous substances	08 01 11*	Hazardous	0.27	Solid	0.027	Metal container	Thermal treatment (onshore)
6	Tonners	Waste inks other than those mentioned in 08 03 12	08 03 18	Non-Hazardous	0.0028	Solid	0.000	Big bags	Licensed disposal facility (onshore)
7	Bulk Solids (Uncontaminated) - Cement waste	Other wastes containing dangerous substances	11 01 98*	Hazardous	61.90	Solid	6.190	Bulk Covered	Landfill
8	Machine gear and lubricating oils	Unchlorinated mineral oils for engine, transmission, and lubrication	13 02 05*	Hazardous	70.70	Liquid	7.070	Plastic container	Thermal treatment (onshore)/Recycle (when practicable)
9	Engine used oil	Other engine, transmission, and lubrication oils	13 02 08*	Hazardous	10.25	Liquid	1.025	Metallic drum	Thermal Treatment (onshore)
10	Bilge oil	Bilge oils from other types of navigation	13 04 03*	Hazardous	0.25	Liquid	0.025	Tote tank	Thermal Treatment (onshore)
11	Sludge from oil-water separators (waste containing oil)	Sludges from oil / water separators	13 05 02*	Hazardous	380.34	Sludge	38.034	Plastic container	Thermal treatment (onshore)
12	Other fuel including mixtures (Heli and diesel fuel)	Other fuels (including mixtures)	13 07 03*	Hazardous	9.45	Liquid	0.945	Metal container	Thermal treatment (onshore)/Recycle (when practicable)
13	Emulsions	Other emulsions	13 08 02*	Hazardous	0.22	Liquid	0.022	Metallic drum	Licensed disposal facility (onshore)
14	Waste paper and cardboard	Paper and cardboard packaging	15 01 01	Non-Hazardous	17.20	Solid	1.720	Plastic container	Recycle (if feasible)/Licensed disposal facility (onshore)
15	Plastic	Plastic packaging	15 01 02	Non-Hazardous	46.80	Solid	4.680	Plastic bags/ compacted in big bags	Recycle (if feasible)/Licensed disposal facility (onshore)
16	Waste wood	Wooden packaging	15 01 03	Non-Hazardous	243.09	Solid	24.309	Palletized – open skip	Recycle (if feasible)/Licensed disposal facility (onshore)
17	Drums contaminated with hazardous substances	Packaging containing residues or contaminated with dangerous substances	15 01 10*	Hazardous	26.38	Solid	2.638	Bulk Covered	Rinse - Landfill
18	Sack Waste (contaminated)	Packaging containing residues or contaminated with dangerous substances	15 01 10*	Hazardous	3.33	Solid	0.333	Plastic container	Thermal treatment (onshore)
19	Contaminated rags, absorbers	Absorbents, filter materials (including oil filters not otherwise specified), polishing materials, protective clothing contaminated with dangerous substances	15 02 02*	Hazardous	24.79	Solid	2.479	Plastic container	Thermal treatment (onshore)
20	Oily filters	Oil filters	16 01 07*	Hazardous	16.01	Solid	1.601	Plastic container	Thermal treatment (onshore)
21	Antigel Glycol	Antifreeze fluids, other than those specified in 16 01 14	16 01 15	Non-Hazardous	24.66	Liquid	2.466	Metal container	Thermal treatment (onshore)/Recycle (when practicable)
22	Hazardous components from electrical & electronic equipment (toners, cartridges)	Hazardous components removed from scrap equipment	16 02 15*	Hazardous	0.03	Solid	0.003	Bulk Covered	Send to approved/permitted facility

Appendix G. Lists and quantities of estimated waste generated during drilling phase

No.	Waste name	Waste Category	Waste Code	Hazardous/ Non-hazardous	Total estimated quantities generated during drilling (Mt)	Waste Form	Estimated quantities temporary stored on site (Mt) (10% during drilling)	Methods of storage	Methods of disposal/recovery
23	Electric and electronic equipment	Components removed from scrap equipment other than those mentioned in 16 02 15	16 02 16	Non-Hazardous	0.22	Solid	0.022	Bulk Covered	Send to approved/permitted facility
24	Methanol	Inorganic wastes containing dangerous substances	16 03 03*	Hazardous	62.92	Liquid	6.292	Metallic drums	Licensed disposal facility (onshore)
25	Acid batteries, dry cell batteries	Lead acid batteries	16 06 01*	Hazardous	0.72	Solid	0.072	Bulk Covered	Send to approved/permitted facility
26	Alkaline batteries	Alkaline batteries (except 16 06 03)	16 06 04	Non-Hazardous	0.67	Solid	0.067	Bulk Covered	Send to approved/permitted facility
27	Oily Waters - Slops containing used drilling fluids (NAF), cement spacer, chemical additives, wash water	Aqueous liquid wastes containing dangerous substances	16 10 01*	Hazardous	373.33	Liquid	37.333	Bulk Covered	Thermal treatment (onshore)
28	Oil contaminated completion fluids	Aqueous liquid wastes containing dangerous substances	16 10 01*	Hazardous	20.00	Liquid	2.000	Metal container	Thermal treatment (onshore)/Recycle (when practicable)
29	Oily sediments (soil mixed with oil)	Soil and gravel with hazardous substances content	17 05 03*	Hazardous	0.17	Solid	0.017	Plastic container	Thermal treatment (onshore)
30	Medical waste	Wastes whose collection and disposal are subject to special measures to prevent infection	18 01 03*	Hazardous	0.007	Solid	0.001	Metallic drums	Thermal treatment (onshore)
31	Recyclable domestic trash - Glass	Glass	20 01 02	Non-Hazardous	2.38	Solid	0.238	Plastic container	Recycle (if feasible)/Landfill
32	Cooking oil	Edible oils and fats	20 01 25	Non-Hazardous	0.73	Liquid	0.073	Metallic drums	Thermal Treatment (onshore)
33	Electric and electronic equipment	Scrap electrical and electronic equipment, other than specified on 20 01 21, 20 01 23 and 20 01 35	20 01 36	Non-Hazardous	0.83	Solid	0.083	Big bags	Licensed disposal facility (onshore)
34	Scrap metal	Metals	20 01 40	Non-Hazardous	143.69	Solid	14.369	Bulk Uncovered	Recycle (if feasible)/Landfill
35	Household Waste	Mixed municipal waste	20 03 01	Non-Hazardous	136.14	Solid	13.614	Plastic container	Landfill

Appendix G. List of estimated waste

2 – List and estimated quantities of waste generated during construction/installation phase

Appendix G. Lists and quantities of estimated waste generated during construction/installation phase

No.	Waste name	Waste Category	Waste Code	Hazardous/ Non-hazardous	Total quantities estimated to be generated during construction/ installation (Mt)	Waste Form	Estimated quantities temporary stored (10% during construction/installation) on site (Mt)	Methods of storage	Methods of disposal/recovery
1	Bulk Solids (Uncontaminated) - Barite	Other wastes not otherwise specified	01 05 99	Non-Hazardous	167.83	Solid	16.783	Bulk Covered	Landfill
2	Bulk Solids (Uncontaminated) - Cement	Other wastes containing dangerous substances	11 01 98*	Hazardous					
3	Bulk Solids (Uncontaminated) - Blast Media	Wastes from sandblasting materials other than those mentioned in 12 01 16	12 01 17	Non-Hazardous					
4	Bulk Solids (Uncontaminated) - Desiccant, Silica	Other wastes not otherwise specified	01 05 99	Non-Hazardous					
5	Potentially contaminated sediments from reservoirs	Sludges from tanks	05 01 03*	Hazardous	0.33	Solid	0.033	Metal container	Send to approved/permitted facility
6	Paint waste	Waste paints and varnishes containing organic solvents or other dangerous substances	08 01 11*	Hazardous	6.67	Liquid	0.667	Metal container	Thermal treatment (onshore)
7	Used lube oil/motor oil	Unchlorinated mineral oils for engine, transmission, and lubrication	13 02 05*	Hazardous	8.33	Liquid	0.833	Plastic container	Thermal treatment (onshore)/Recycle (when practicable)
8	Oil sludge/Tank bottom sludge	Sludges from oil / water separators	13 05 02*	Hazardous	38.33	Liquid	3.833	Plastic container	Thermal treatment (onshore)
9	Contaminated hydrocarbons (contaminated crude, diesel, etc.)	Other fuels (including mixtures)	13 07 03*	Hazardous	25.00	Liquid	2.500	Metal container	Thermal treatment (onshore)/Recycle (when practicable)
10	Waste paper and cardboard packaging	Paper and cardboard packaging	15 01 01	Non-Hazardous	39.17	Solid	3.917	Plastic container	Recycle (if feasible)/Landfill
11	Waste Wood	Wooden packaging	15 01 03	Non-Hazardous	186.00	Solid	18.600	Plastic container	Recycle (if feasible)/Landfill
12	Drums from caustic solutions, solvents; empty pipe dope containers, chemical sacks, cans of dried paint	Packaging containing residues or contaminated with dangerous substances	15 01 10*	Hazardous	1.17	Solid	0.117	Bulk Covered	Thermal treatment (onshore)
13	Contaminated drums, containers, packaging (metal)	Packaging containing residues or contaminated with dangerous substances	15 01 10*	Hazardous	10.00	Solid	1.000	Bulk Covered	Rinse - Recycle
14	Contaminated drums, containers, packaging (plastic)	Packaging containing residues or contaminated with dangerous substances	15 01 10*	Hazardous	85.00	Solid	8.500	Bulk Covered	Rinse - Landfill
15	Dry Filters	Absorbents, filter materials, polishes, and protective clothing, other than those specified in 15 02 02	15 02 03	Non-Hazardous	4.17	Solid	0.417	Plastic container	Recycle (if feasible)/Landfill
16	Recyclable domestic trash - Plastic	Plastic packaging	15 01 02	Non-Hazardous	22.17	Solid	2.217	Plastic container	Recycle (if feasible)/Landfill
17	Recyclable domestic trash - Glass	Glass	20 01 02	Non-Hazardous					
18	Recyclable domestic trash - Metal	Metal packaging	15 01 04	Non-Hazardous					
19	Oily Debris - Oil spill clean-up waste, chemical spill clean-up waste, and PPEs; rags, contaminated absorbers	Absorbents, filter materials (including oil filters not otherwise specified), polishing materials, protective clothing contaminated with dangerous substances	15 02 02*	Hazardous	51.67	Solid	5.167	Plastic container	Thermal treatment (onshore)
20	Oily Debris - Oily sediments (soil mixed with oil)	Soil and stones containing dangerous substances	17 05 03*	Hazardous					
21	Oily Debris - Oily filters	Oil filters	16 01 07*	Hazardous					
22	Glycol	Antifreeze fluids, other than those specified in 16 01 14	16 01 15	Non-Hazardous	4.17	Liquid	0.417	Metal container	Thermal treatment (onshore)/Recycle (when practicable)
23	Alkaline batteries	Alkaline batteries (except 16 06 03)	16 06 04	Non-Hazardous	15.00	Solid	1.500	Bulk Covered	Send to approved/permitted facility
24	Lead Acid batteries	Lead acid batteries	16 06 01*	Hazardous					
25	Mercury batteries	Mercury-containing batteries	16 06 03*	Hazardous					
26	Nickel-Cadmium batteries	Ni-Cd batteries	16 06 02*	Hazardous					
27	Hazardous components from electrical & electronic equipment	Hazardous components removed from scrap equipment	16 02 15*	Hazardous	1.67	Solid	0.167	Bulk Covered	Send to approved/permitted facility
28	Electrical/electronic waste	Components removed from scrap equipment other than those mentioned in 16 02 15	16 02 16	Non-Hazardous				Bulk Covered	

Appendix G. Lists and quantities of estimated waste generated during construction/installation phase

No.	Waste name	Waste Category	Waste Code	Hazardous/ Non-hazardous	Total quantities estimated to be generated during construction/ installation (Mt)	Waste Form	Estimated quantities temporary stored (10% during construction/installation) on site (Mt)	Methods of storage	Methods of disposal/recovery
29	Oily water	Aqueous liquid wastes containing dangerous substances	16 10 01*	Hazardous	13.33	Liquid	1.333	Metal container	Thermal treatment (onshore)/Recycle (when practicable)
30	Vessel Tank Cleanout	Aqueous liquid wastes containing dangerous substances	16 10 01*	Hazardous	3531.67	Liquid	353.167	Metal container	WTT / Thermal Treatment (onshore)
31	Wash water	Aqueous liquid wastes containing dangerous substances	16 10 01*	Hazardous	26.67	Liquid	2.667	Metal container	WTT / Thermal Treatment (onshore)
32	Medical waste	Wastes whose collection and disposal are subject to special measures to prevent infection	18 01 03*	Hazardous	0.83	Solid	0.083	Plastic container	Thermal treatment (onshore)
33	Unused or contaminated solvents/chemicals	Solvents	20 01 13*	Hazardous	20.83	Liquid	2.083	Plastic/metal container/ metal	WTT / Thermal Treatment (onshore)
34	Scrap metal	Metals	20 01 40	Non-Hazardous	164.50	Solid	16.450	Bulk Uncovered	Recycle (if feasible)/Landfill
35	Household Waste	Mixed municipal waste	20 03 01	Non-Hazardous	219.67	Solid	21.967	Plastic container	Landfill

Appendix G. List of estimated waste

3 – List and estimated quantities of waste generated during operation phase

Appendix G. Lists and quantities of estimated waste generated during operation phase

No.	Waste name	Waste Category	Waste Code	Hazardous/ Non-hazardous	Total estimated quantities generated during operation (Mt)	Waste Form	Estimated quantities temporary stored on site (Mt) (10% during operation)	Methods of storage	Methods of disposal/recovery
1	Bulk Solids (Uncontaminated) - Barite	Other wastes not otherwise specified	01 05 99	Non-Hazardous	4.87	Solid	0.487	Bulk Covered	Landfill
2	Bulk Solids (Uncontaminated) - Cement	Other wastes containing dangerous substances	11 01 98*	Hazardous					
3	Bulk Solids (Uncontaminated) - Blast Media	Wastes from sandblasting materials other than those mentioned in 12 01 16	12 01 17	Non-Hazardous					
4	Bulk Solids (Uncontaminated) - Desiccant, Silica	Other wastes not otherwise specified	01 05 99	Non-Hazardous					
5	Potentially Contaminated Reservoir Sediments	Sludges from tanks	05 01 03*	Hazardous	0.37	Solid	0.037	Metal container	Send to approved/permitted facility
6	Paint waste	Waste paints and varnishes containing organic solvents or other dangerous substances	08 01 11*	Hazardous	0.75	Liquid	0.075	Metal container	Thermal treatment (onshore)
7	Used lube oil/motor oil	Unchlorinated mineral oils for engine, transmission, and lubrication	13 02 05*	Hazardous	3.74	Liquid	0.374	Plastic container	Thermal treatment (onshore)/Recycle (when practicable)
8	Oil sludge/Tank bottom sludge	Sludges from oil / water separators	13 05 02*	Hazardous	7.49	Liquid	0.749	Plastic container	Thermal treatment (onshore)
9	Contaminated hydrocarbons (contaminated crude, diesel, etc.)	Other fuels (including mixtures)	13 07 03*	Hazardous	3.74	Liquid	0.374	Metal container	Thermal treatment (onshore)/Recycle (when practicable)
10	Waste paper and cardboard	Paper and cardboard packaging	15 01 01	Non-Hazardous	29.19	Solid	2.919	Bulk Uncovered	Recycle (if feasible)/Landfill
11	Waste Wood	Wooden packaging	15 01 03	Non-Hazardous	17.22	Solid	1.722	Plastic container	Recycle (if feasible)/Landfill
12	Drums from caustic solutions, solvents; empty pipe dope containers, chemical sacks, cans of dried paint	Packaging containing residues or contaminated with dangerous substances	15 01 10*	Hazardous	0.75	Solid	0.075	Bulk Covered	Thermal treatment (onshore)
13	Contaminated drums, containers, packaging (metal)	Packaging containing residues or contaminated with dangerous substances	15 01 10*	Hazardous	7.49	Solid	0.749	Bulk Covered	Rinse - Recycle
14	Contaminated drums, containers, packaging (plastic)	Packaging containing residues or contaminated with dangerous substances	15 01 10*	Hazardous	7.49	Solid	0.749	Bulk Covered	Rinse - Landfill
15	Dry Filters	Absorbents, filter materials, polishes, and protective clothing, other than those specified in 15 02 02	15 02 03	Non-Hazardous	9.73	Solid	0.973	Plastic container	Recycle (if feasible)/Landfill
16	Recyclable domestic trash - Plastic	Plastic packaging	15 01 02	Non-Hazardous	11.23	Solid	1.123	Plastic container	Recycle (if feasible)/Landfill
17	Recyclable domestic trash - Glass	Glass	20 01 02	Non-Hazardous					
18	Recyclable domestic trash - Metal	Metal packaging	15 01 04	Non-Hazardous					
19	Oily Debris - Oil spill clean-up waste, chemical spill clean-up waste, PPEs, rags, contaminated absorbers	Absorbents, filter materials (including oil filters not otherwise specified), polishing materials, protective clothing contaminated with dangerous substances	15 02 02*	Hazardous	26.20	Solid	2.620	Plastic container	Thermal treatment (onshore)
20	Oily Debris - Oily sediments (soil mixed with oil)	Soil and gravel with hazardous substances content	17 05 03*	Hazardous					
21	Oily Debris - Oily filters	Oil filters	16 01 07*	Hazardous					
22	Glycol	Antifreeze fluids, other than those specified in 16 01 14	16 01 15	Non-Hazardous	7.49	Liquid	0.749	Metal container	Thermal treatment (onshore)/Recycle (when practicable)
23	Alkaline batteries	Alkaline batteries (except 16 06 03)	16 06 04	Non-Hazardous	11.23	Solid	1.123	Bulk Covered	Send to approved/permitted facility
24	Lead Acid batteries	Lead acid batteries	16 06 01*	Hazardous					
25	Mercury batteries	Mercury-containing batteries	16 06 03*	Hazardous					
26	Nickel-Cadmium batteries	Ni-Cd batteries	16 06 02*	Hazardous					
27	Hazardous components from electrical & electronic equipment	Hazardous components removed from scrap equipment	16 02 15*	Hazardous	0.75	Solid	0.075	Bulk Covered	Send to approved/permitted facility
28	Electrical/electronic waste	Components removed from scrap equipment other than those mentioned in 16 02 15	16 02 16	Non-Hazardous					
29	Oily water	Aqueous liquid wastes containing dangerous substances	16 10 01*	Hazardous	7.49	Liquid	0.749	Metal container	Thermal treatment (onshore)/Recycle (when practicable)

Appendix G. Lists and quantities of estimated waste generated during operation phase

No.	Waste name	Waste Category	Waste Code	Hazardous/ Non-hazardous	Total estimated quantities generated during operation (Mt)	Waste Form	Estimated quantities temporary stored on site (Mt) (10% during operation)	Methods of storage	Methods of disposal/recovery
30	Vessel Tank Cleanout	Aqueous liquid wastes containing dangerous substances	16 10 01*	Hazardous	59.88	Liquid	5.988	Metal container	WWT / Thermal Treatment (onshore)
31	Wash water	Aqueous liquid wastes containing dangerous substances	16 10 01*	Hazardous	153.45	Liquid	15.345	Metal container	WWT / Thermal Treatment (onshore)
32	Medical waste	Wastes whose collection and disposal are subject to special measures to prevent infection	18 01 03*	Hazardous	0.37	Solid	0.037	Plastic container	Thermal treatment (onshore)
33	Unused or contaminated solvents/chemicals	Solvents	20 01 13*	Hazardous	33.68	Liquid	3.368	Plastic/metal container	WWT / Thermal Treatment (onshore)
34	Scram metal	Metals	20 01 40	Non-Hazardous	5.99	Solid	0.599	Bulk Uncovered	Recycle (if feasible)/Landfill
35	Household Waste	Mixed municipal waste	20 03 01	Non-Hazardous	119.77	Solid	11.977	Plastic container	Landfill

Appendix H. Lists of estimated chemicals

Appendix H. List of estimated chemicals

1 – List of estimated chemicals during drilling phase

Appendix H. Lists of estimated chemicals during drilling phase

No	Product name	Description	Usage	Measurement unit	Well Name										Risk and hazard phrase (H/R)	Precautionary and security phrase (P/S)
					Domino 1-1	Domino 1-2	Domino 1-3	Domino 2-1	Domino 2-2	Domino 2-3	Pelican South 1-1	Pelican South 1-2	Pelican South 1-3	Pelican South 1-4		
1	Ferrocid 8583	Biocide	Used to prevent the growth of bacteria in water-based drilling fluid	metric ton	0.55	0.55	0.55	0.60	0.60	0.60	0.59	0.59	0.59	0.59	H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H318 May cause serious eye damage / eye irritation H400 Very toxic to aquatic life H410 Toxic to aquatic life with long lasting effects. EUH071 Corrosive to the respiratory tract.	P261 Avoid inhaling mist / vapor / spray. P273 Avoid dispersal in the environment. P280 Wear protective gloves / protective clothing / eye protection / face protection / hearing protection P301 + P330 + P331 IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or take a shower]. P304 + P340 IF INHALED: Remove person to fresh air and keep in a comfortable position for breathing. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if necessary, and if this can be done easily. Keep rinsing. P310 Call a POISON CENTER / doctor immediately. P501 Dispose of contents / container in accordance with local / regional / national / international regulations.
2	AVADES 100	H2S Scavanger	Used for the decomposition of H2S molecules in water-based drilling fluid	metric ton	0.55	0.55	0.55	0.60	0.60	0.60	0.59	0.59	0.59	0.59	H302: Harmful if swallowed H 315: Causes skin irritation H317: May cause an allergic skin reaction. H319: Causes serious eye irritation H332: Harmful by inhalation R43: May cause sensitization by skin contact. R20 / 22: Harmful by inhalation and if swallowed. R36 / 38: Irritating to eyes and skin.	261: Avoid inhaling dust / smoke / gas / mist / vapor / spray. P270: Do not eat. drink or smoke while using the product P273: Avoid dispersal in the environment. P280: Wear protective gloves / protective clothing / eye protection / face protection. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if necessary, and do so easily. Keep rinsing. P501: Dispose of contents / container in accordance with local regulations. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36 / 37: Wear suitable protective equipment and gloves. S60: This product and its packaging (container) should be disposed of as hazardous waste.
3	AVAGEL	WBM Viscosifier - Bentonite	Used to increase the viscosity of water-based drilling fluid	metric ton	17.23	17.23	17.23	18.81	18.81	18.81	18.35	18.35	18.35	18.35	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) and amendments, GD 1408/2008, and GD 937/2010.	P501: Dispose of contents / container in accordance with local regulations. S22: Do not breathe dust. S24 / 25: Avoid contact with skin and eyes.
4	AVAGUM	Guar gum	Used to increase the viscosity of water-based drilling fluid	metric ton	6.45	6.45	6.45	7.04	7.04	7.04	6.87	6.87	6.87	6.87	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) and amendments, GD 1408/2008 and GD 937/2010 .	P260: Do not breathe dust / smoke / gas / mist / vapor / spray. P280: Wear protective gloves. P501: Dispose of contents / container in accordance with local regulations. S22: Do not breathe dust. S37 / 39: Wear suitable protective equipment and gloves.

Appendix H. Lists of estimated chemicals during drilling phase

No	Product name	Description	Usage	Measurement unit	Well Name										Risk and hazard phrase (H/R)	Precautionary and security phrase (P/S)
					Domino 1-1	Domino 1-2	Domino 1-3	Domino 2-1	Domino 2-2	Domino 2-3	Pelican South 1-1	Pelican South 1-2	Pelican South 1-3	Pelican South 1-4		
5	AVALIG NE	Fluid Loss Additive - Humalite	Used to reduce fluid loss from water-based drilling fluid	metric ton	0.55	0.55	0.55	0.60	0.60	0.60	0.59	0.59	0.59	0.59	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) and amendments, GD 1408/2008 and GD 937/2010 .	P501: Dispose of contents / container in accordance with local regulations. S22: Do not breathe dust.
6	AVASIL	Defoamer - Silicone Based	Used to prevent the formation of a foam while stirring the water-based drilling fluid	metric ton	1.75	1.75	1.75	1.91	1.91	1.91	1.86	1.86	1.86	1.86	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) and amendments, GD 1408/2008 and GD 937/2010 .	P260: Do not breathe dust / smoke / gas / mist / vapor / spray. P501: Dispose of contents / container in accordance with local regulations S22: Do not breathe dust.
7	AVAWASH WBM	Casing Cleaner	Used to remove drilling mud from the tubing column while cleaning the well of water-based drilling fluid	metric ton	3.69	3.69	3.69	4.02	4.02	4.02	3.93	3.93	3.93	3.93	H302 - Harmful if swallowed H318 - Causes serious eye damage R22: Harmful if swallowed. R41: Risk of serious damage to eyes.	P264: Wash thoroughly after use. P270: Do not eat, drink or smoke while using the product. P280: Wear protective gloves / protective clothing / eye protection / face protection. P310: Immediately call a POISON CENTER or doctor / physician. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if necessary, and do so easily. Keep rinsing. P501: Dispose of contents / container in accordance with local regulations. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S39: Wear face / eye protection S24 / 25: Avoid contact with skin and eyes. S36 / 37: Wear suitable protective equipment and gloves. S60 This product and its packaging must be disposed of as hazardous waste.
8	CAUSTIC SODA	Alkalinity Control	Used to increase the pH of water-based drilling fluid to prevent bentonite flocculation	metric ton	0.83	0.83	0.83	0.91	0.91	0.91	0.88	0.88	0.88	0.88	H 314: Causes severe skin burns and eye damage. R 35: Causes severe burns.	P260: Do not breathe dust / smoke / gas / mist / vapor / spray. P280: Wear protective gloves / protective clothing / eye protection / face protection. P363: Wash used clothing before reuse. P405: Store under lock and key. P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P301 + P330 + P331: IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water / take a shower. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if necessary, and do so easily. Keep rinsing. P501: Dispose of contents / container in accordance with local regulations. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 45: In case of accident or if symptoms occur, seek medical advice immediately. (If possible, he will be shown the label).

Appendix H. Lists of estimated chemicals during drilling phase

No	Product name	Description	Usage	Measurement unit	Well Name										Risk and hazard phrase (H/R)	Precautionary and security phrase (P/S)
					Domino 1-1	Domino 1-2	Domino 1-3	Domino 2-1	Domino 2-2	Domino 2-3	Pelican South 1-1	Pelican South 1-2	Pelican South 1-3	Pelican South 1-4		
																S 1/2: Keep locked and out of reach of children. S 37/39: Wear suitable protective equipment and gloves. S60: This product and its packaging (container) should be disposed of as hazardous waste.
9	STEARALL LQD	Defoamer	Used to prevent the formation of a foam while stirring the water-based drilling fluid	metric ton	0.37	0.37	0.37	0.40	0.40	0.40	0.39	0.39	0.39	0.39	H304: May be fatal if swallowed and enters airways. H360: May damage fertility or the unborn child H318: Causes serious eye damage H319: Causes serious eye irritation H400: Very toxic to aquatic life R65: Harmful: may cause lung damage if swallowed.	P202: Do not handle until all safety precautions have been read and understood. P280: Wear protective gloves / protective clothing / eye protection / face protection. P273: Avoid dispersal in the environment. P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician. P501: Dispose of contents / container in accordance with local regulations. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S62: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label. S60: This product and its packaging (container) should be disposed of as hazardous waste.
10	VISCO XC 84	Viscosifier - Xanthan Gum	Used to increase the viscosity of water-based drilling fluid	metric ton	1.75	1.75	1.75	1.91	1.91	1.91	1.86	1.86	1.86	1.86	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) and amendments, GD 1408/2008 and GD 937/2010 .	P260: Do not breathe dust / smoke / gas / mist / vapor / spray. P280: Wear protective gloves / protective clothing / eye protection / face protection. P302 + 352: IF ON SKIN: Wash with plenty of soap and water. P501: Dispose of contents / container in accordance with local regulations. S22: Do not breathe dust. S28: In case of skin contact: wash with plenty of soap and water.
11	AVAGEL PLUS	Viscosifier - Bentonite	Used to increase the viscosity of water-based drilling fluid	metric ton	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	It is not classified as dangerous according to Regulation (EU) No 1272/2008	P260: Do not breathe dust / smoke / gas / mist / vapor / spray. P280: Wear protective gloves / protective equipment / eye / face protection P302 + P352: In case of skin contact: wash with plenty of soap and water P501: Dispose of contents / container in accordance with local regulations.
12	BENTONITE API	Viscosifier - Bentonite	Used to increase the viscosity of water-based drilling fluid	metric ton	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	It is not classified as dangerous according to Regulation (EU) No 1272/2008	P501: Dispose of contents / container in accordance with local regulations.
13	DEOXY DEHA	Oxygen Scavenger	Used to capture oxygen molecules from water-based drilling fluids and brines to prevent corrosion of the tubing column	metric ton	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	H312: Harmful in contact with skin H332: Harmful by inhalation. H315: Causes skin irritation H319: Causes serious eye irritation H335: May cause respiratory irritation H412: Harmful to aquatic life with long lasting effects R20 / 21: Harmful by inhalation and in contact with skin.	P261: Do not breathe dust / smoke / gas / mist / vapor / spray. P280: Wear protective gloves / protective clothing / eye protection / face protection. P312: Call a POISON CENTER or doctor / physician if you feel unwell. P362: Remove contaminated clothing and wash before reuse. P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P332 + P313: In case of skin irritation, seek medical advice. P305 + P351 + P338: IF IN EYES: Rinse

Appendix H. Lists of estimated chemicals during drilling phase

No	Product name	Description	Usage	Measurement unit	Well Name										Risk and hazard phrase (H/R)	Precautionary and security phrase (P/S)
					Domino 1-1	Domino 1-2	Domino 1-3	Domino 2-1	Domino 2-2	Domino 2-3	Pelican South 1-1	Pelican South 1-2	Pelican South 1-3	Pelican South 1-4		
															R 36/37/38: Irritating to eyes, respiratory system and skin. R52 / 53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.	cautiously with water for several minutes. Remove contact lenses, if necessary, and do so easily. Keep rinsing. P501: Dispose of contents / container in accordance with local regulations. S23: Do not breathe gas / smoke / vapor / aerosol / (appropriate manufacturer's term (s)). S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S24 / 25: Avoid contact with skin and eyes. S36 / 37: Wear suitable protective equipment, gloves and eye / face protection. S60: This product and its packaging (container) should be disposed of as hazardous waste.
14	FLOWZAN	Viscosifier - Biopolymer	Used to increase the viscosity of water-based drilling fluid	metric ton	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP).	-
15	INCORR	Corrosion Inhibitor	Used for water-based drilling fluid - forms an amine film on the tubing column to prevent corrosion	metric ton	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	H315: Causes skin irritation H319: Causes serious eye irritation H412: Harmful to aquatic life with long lasting effects R36 Irritating to eyes	P280: Wear protective gloves / protective clothing / eye protection / face protection P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if necessary, and do so easily. Keep rinsing P501: Dispose of contents / container in accordance with local regulations. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36 / 37: Wear suitable gloves and clothing. S60: This material and its container must be disposed of as hazardous waste.
16	NATROSOL	Viscosifier - Hydroxy Ethyl Cellulose	Used to increase the viscosity of water-based drilling fluid	metric ton	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) and amendments, GD 1408/2008 and GD 937/2010 .	P260: Do not breathe dust / smoke / gas / mist / vapor / spray. P501: Dispose of contents / container in accordance with local regulations. S22: Do not breathe dust. S28: In case of skin contact: wash with plenty of soap and water.
17	SODIUM BICARBONATE	Calcium remover	Used to remove calcium ions from water-based drilling fluid	metric ton	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) and amendments, GD 1408/2008 and GD 937/2010 .	P501: Dispose of contents / container in accordance with local regulations. S22: Do not breathe dust.
18	BARITE	Weighting Agent	Used to increase the density of non-aqueous drilling fluids and water-based drilling fluids, as well as cementing	metric ton	1805.55	2221.03	2126.81	1499.74	2322.97	1668.09	2972.44	2754.66	2834.21	2940.78	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) and amendments, GD 1408/2008 and GD 937/2010 .	P260: Do not breathe dust / smoke / gas / mist / vapor / spray. P501: Dispose of contents / container in accordance with local regulations. S22: Do not breathe dust. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 24/25: Avoid contact with skin and eyes.

Appendix H. Lists of estimated chemicals during drilling phase

No	Product name	Description	Usage	Measurement unit	Well Name										Risk and hazard phrase (H/R)	Precautionary and security phrase (P/S)
					Domino 1-1	Domino 1-2	Domino 1-3	Domino 2-1	Domino 2-2	Domino 2-3	Pelican South 1-1	Pelican South 1-2	Pelican South 1-3	Pelican South 1-4		
19	AVABENTOIL HY	High Yield Viscosifer	Used to increase the viscosity of non-aqueous drilling fluid	metric ton	28.22	37.18	35.15	20.63	38.40	24.27	52.70	48.00	49.72	52.02	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) and amendments, GD 1408/2008 and GD 937/2010 .	P261: Avoid inhaling dust / smoke / gas / mist / vapor / spray P501: Dispose of contents / container in accordance with local regulations. S22: Do not breathe dust. S51: Use only in well-ventilated areas
20	AVABIOFIL HT	Filtrate Control	Used to reduce fluid loss from non-aqueous drilling fluid	metric ton	9.88	13.01	12.30	7.22	13.44	8.49	18.45	16.80	17.40	18.21	It is not classified as dangerous according to Regulation (EU) No 1272/2008	P260: Do not breathe dust / smoke / gas / mist / vapor / spray. P280: Wear protective gloves / protective equipment / eye / face protection P501: Dispose of contents / container in accordance with local regulations
21	AVAOIL DW	Flat Rheology Additive	Used to control the viscosity of non-aqueous drilling fluid	metric ton	7.05	9.30	8.79	5.16	9.60	6.07	13.18	12.00	12.43	13.00	H315: Causes skin irritation H319: Causes serious eye irritation EUH208: Contains diethylenetriamine. May cause an allergic reaction	P264 Wash face, hands and skin thoroughly after use P280: Wear protective gloves / protective clothing / eye protection / face protection P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if necessary, and do so easily. Keep rinsing. P501: Dispose of contents / container in accordance with local regulations.
22	AVAOIL FC	Fluid Loss Reducer	Used to reduce fluid loss in non-aqueous drilling fluid	metric ton	28.08	37.00	34.97	20.53	38.21	24.15	52.44	47.76	49.47	51.76	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) and amendments, GD 1408/2008 and GD 937/2010 .	P501: Dispose of contents / container in accordance with local regulations. S24 / 25: Avoid contact with skin and eyes.
23	AVAOIL PE-LT	Primary Emulsifier	Used for non-aqueous drilling fluid - causes a stable emulsion between base hydrocarbons and brine	metric ton	28.08	37.00	34.97	20.53	38.21	24.15	52.44	47.76	49.47	51.76	H304 - May be fatal if swallowed and enters airways H314: Causes severe skin burns and eye damage. H 317: May cause an allergic skin reaction. H 410: Very toxic to aquatic life with long lasting effects R 34: Causes burns. R65: Harmful: may cause lung damage if swallowed. R 43: May cause sensitization by skin contact R 50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment..	280: Wear protective gloves / protective clothing / eye protection / face protection. P310: Immediately call a POISON CENTER or doctor / physician. P301 + 310: IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician. P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water / take a shower. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if necessary, and do so easily. Keep rinsing. P501: Dispose of contents / container in accordance with local regulations S23: Do not breathe gas / smoke. Vapors (corresponding term (s) specified by manufacturer) S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S62: If swallowed, do not induce vomiting: seek medical advice and show packaging (container) or label. S24 / 25: Avoid contact with skin and eyes. S37 / 39: Wear suitable gloves and eye / face protection. S60: This product and its packaging (container) should be disposed of as hazardous waste.

Appendix H. Lists of estimated chemicals during drilling phase

No	Product name	Description	Usage	Measurement unit	Well Name										Risk and hazard phrase (H/R)	Precautionary and security phrase (P/S)
					Domino 1-1	Domino 1-2	Domino 1-3	Domino 2-1	Domino 2-2	Domino 2-3	Pelican South 1-1	Pelican South 1-2	Pelican South 1-3	Pelican South 1-4		
24	AVAOIL SE-LT	Secondary Emulsifier	Used for non-aqueous drilling fluid - causes a stable emulsion between base hydrocarbons and brine	metric ton	28.08	37.00	34.97	20.53	38.21	24.15	52.44	47.76	49.47	51.76	H304 - May be fatal if swallowed and enters airways H317 - May cause an allergic skin reaction R43 - May cause sensitization by skin contact. R65 - May cause lung damage if swallowed.	P261: Avoid inhaling dust / smoke / gas / mist / vapor / spray. P280: Wear protective gloves / protective clothing / eye protection / face protection P331: DO NOT induce vomiting. P363: Wash contaminated clothing before reuse. P301 + 310: IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician. P333 + P313: If skin irritation or rash occurs: Get medical advice / attention. P501: Dispose of contents / container in accordance with applicable regulations for hazardous substances / mixtures. S25: Avoid contact with skin. S28: After contact with skin, wash immediately with plenty of water. S37 / 39: Wear suitable gloves and eye / face protection. S60: This product and its packaging (container) should be disposed of as hazardous waste.
25	AVAOIL TN-LT	Rheology Thinner	Used to reduce the viscosity of non-aqueous drilling fluid	metric ton	14.11	18.59	17.58	10.32	19.20	12.13	26.35	24.00	24.86	26.01	H304 - May be fatal if swallowed and enters airways R65 - Harmful: may cause lung damage if swallowed.	P331: DO NOT induce vomiting. P301 + 310: IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician. P405: Store under lock and key P501: Dispose of contents / container in accordance with local regulations. S23: Do not breathe vapor or spray. S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S62: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label. S24 / 25: Avoid contact with skin and eyes. S36 / 37/39: Wear suitable protective equipment, gloves and eye / face protection. S60: This product and its packaging (container) should be disposed of as hazardous waste.
26	AVAOIL WA-LT	Wetting Agent	Used to increase the humidity of solids in non-aqueous drilling fluid	metric ton	0.42	0.56	0.53	0.31	0.58	0.36	0.79	0.72	0.75	0.78	H304 - May be fatal if swallowed and enters airways H317 - May cause an allergic skin reaction Repeated exposure may cause skin dryness or cracking R43: May cause sensitization by skin contact.	P262: Avoid contact with eyes, skin and clothing. P280: Wear protective gloves / protective clothing / eye protection / face protection. P501: Dispose of contents / container in accordance with applicable regulations for hazardous substances / mixtures. S24: Avoid contact with skin. S37: Wear protective gloves. S60: This product and its packaging (container) should be disposed of as hazardous waste.
27	AVAWASH OBM-LT	Low Toxicity Casing Cleaner	Used to remove drilling mud from the tubing column while cleaning the well from non-aqueous drilling fluid	metric ton	11.29	14.87	14.06	8.25	15.36	9.71	21.08	19.20	19.89	20.81	H302 - Harmful if swallowed H318 - Causes serious eye damage R22: Harmful if swallowed. R41: Risk of serious damage to eyes.	P264: Wash hands thoroughly after use. P270: Do not eat. drink or smoke while using the product P280: Wear protective gloves / protective clothing / eye protection / face protection. P310: Immediately call a POISON CENTER or doctor / physician. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes.

Appendix H. Lists of estimated chemicals during drilling phase

No	Product name	Description	Usage	Measurement unit	Well Name										Risk and hazard phrase (H/R)	Precautionary and security phrase (P/S)
					Domino 1-1	Domino 1-2	Domino 1-3	Domino 2-1	Domino 2-2	Domino 2-3	Pelican South 1-1	Pelican South 1-2	Pelican South 1-3	Pelican South 1-4		
																Remove contact lenses, if necessary, and do so easily. Keep rinsing. P501: Dispose of contents / container in accordance with local regulations S25: Avoid contact with eyes. S24 / 25: Avoid contact with skin and eyes. S36 / 37: Wear suitable protective equipment and gloves. S60: This product and its packaging (container) should be disposed of as hazardous waste.
28	SODIUM BROMIDE	Wellbore Stability Control	Used to increase the salinity of non-aqueous drilling fluid to reduce shale reactivity	metric ton	99.89	131.63	124.43	73.04	135.94	85.90	186.56	169.92	176.00	184.14	R36 Irritating to eyes	S25 Avoid contact with eyes.
29	ESCAID 110	Base oil	Used for the continuous phase of non-aqueous drilling fluid	metric ton	532.81	702.12	663.73	389.61	725.10	458.22	995.12	906.37	938.79	982.22	H304: May be fatal if swallowed and enters airways. EUH066: Repeated exposure may cause skin dryness or cracking. R65: Harmful: may cause lung damage if swallowed. R66: Repeated exposure may cause skin dryness or cracking.	P210: Keep away from flames and hot surfaces. -- Smoking prohibited. P280: Wear protective gloves and eye protection / face protection. P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician. P331: DO NOT induce vomiting. P370 + P378: In case of fire: Use water vapor, foam, dry chemical or carbon dioxide (CO2) to extinguish the fire. P403 + P235: Store in a well-ventilated place. Keep cool. P405: Store in a locked area. P501: Dispose of contents and container in accordance with local regulations.
30	INTAFLOW	Bridging Agent	Used to close pores in permeable formations to prevent loss of non-aqueous drilling fluid	metric ton	8.04	10.60	10.02	5.88	10.94	6.92	15.02	13.68	14.17	14.82	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) and amendments, GD 1408/2008 and GD 937/2010 .	P501: Dispose of contents / container in accordance with local regulations. S22: Do not breathe dust.
31	LIME	Alkalinity Controll	Used to stabilize the pH of non-aqueous drilling fluid	metric ton	28.08	37.00	34.97	20.53	38.21	24.15	52.44	47.76	49.47	51.76	H318: Provoacă leziuni oculare grave H315: Provoacă iritarea pielii H335: Poate provoca iritarea căilor respiratorii.	280: Wear protective gloves / protective clothing / eye protection / face protection P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if necessary, and do so easily. Keep rinsing P501: Dispose of contents / container in accordance with local regulations.
32	SAND SEAL F-C	Bridging Agent	Used to close pores in permeable formations to prevent loss of non-aqueous drilling fluid	metric ton	8.04	10.60	10.02	5.88	10.94	6.92	15.02	13.68	14.17	14.82	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) .	P260: Do not breathe dust / smoke / gas / mist / vapor / spray. P501: Dispose of contents / container in accordance with local regulations. S22: Do not breathe dust. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S24 / 25: Avoid contact with skin and eyes.
33	AVACARB	Loss Returns Material	Used to close pores in permeable formations to prevent loss of non-aqueous drilling fluid	metric ton	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) and	P501: Dispose of contents / container in accordance with local regulations. S22: Do not breathe dust.

Appendix H. Lists of estimated chemicals during drilling phase

No	Product name	Description	Usage	Measurement unit	Well Name										Risk and hazard phrase (H/R)	Precautionary and security phrase (P/S)
					Domino 1-1	Domino 1-2	Domino 1-3	Domino 2-1	Domino 2-2	Domino 2-3	Pelican South 1-1	Pelican South 1-2	Pelican South 1-3	Pelican South 1-4		
															amendments, GD 1408/2008 and GD 937/2010 .	
34	AVAMICA C-M-F	Loss Returns Material	Used to close microfractures in formations to prevent loss of non-aqueous drilling fluid	metric ton	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) and amendments, GD 1408/2008 and GD 937/2010 .	P501: Dispose of contents / container in accordance with local regulations. S22: Do not breathe dust.
35	AVAOIL VS-LT	Rheology Viscosifier	Used to increase the viscosity of non-aqueous drilling fluid	metric ton	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	H304 - May be fatal if swallowed and enters airways H314: Causes severe skin burns and eye damage. H 317: May cause an allergic skin reaction. H 410: Very toxic to aquatic life with long lasting effects. R65 - Harmful: may cause lung damage if swallowed. R36 / 38 - Irritating to eyes and skin	P261: Avoid inhaling dust / smoke / gas / mist / vapor / spray. P280: Wear protective gloves / protective clothing / eye protection / face protection. P301 + 310: IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician. P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water / take a shower. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if necessary, and do so easily. Keep rinsing. P501: Dispose of contents / container in accordance with applicable regulations for hazardous substances / mixtures. S23: Do not breathe gas / smoke. S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28: After contact with skin, wash immediately with plenty of water with the appropriate product specified by the manufacturer. S36 / 37/39: Wear suitable protective equipment, gloves and eye / face protection. S60: This product and its packaging (container) should be disposed of as hazardous waste.
36	CALCIUM CHLORIDE LQD	Wellbore Stability Control	Used to increase the salinity of non-aqueous drilling fluid to reduce shale reactivity	metric ton	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	H319: Causes severe eye irritation R36: Irritating to eyes.	P264: Wash hands thoroughly after use. P280: Wear protective gloves / protective clothing / eye protection / face protection. P337 + P313: If eye irritation persists: Get medical advice / attention. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if necessary, and do so easily. Keep rinsing. P501: Dispose of contents / container in accordance with local regulations. S22: Do not breathe dust. S24: Avoid contact with skin. S60: This product and its packaging (container) should be disposed of as hazardous waste.
37	GRANULAR F-M-C	Loss Returns Material	Used to close pores in permeable formations to prevent loss of non-aqueous drilling fluid	metric ton	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) and amendments, GD 1408/2008 and GD 937/2010 .	P501: Dispose of contents / container in accordance with local regulations. S22: Do not breathe dust.
38	INTASOL F-M-C	Loss Returns Material	Used to close pores in permeable	metric ton	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	Not classified as dangerous according to Regulation (EU)	P260: Do not breathe dust / smoke / gas / mist / vapor / spray.

Appendix H. Lists of estimated chemicals during drilling phase

No	Product name	Description	Usage	Measurement unit	Well Name										Risk and hazard phrase (H/R)	Precautionary and security phrase (P/S)
					Domino 1-1	Domino 1-2	Domino 1-3	Domino 2-1	Domino 2-2	Domino 2-3	Pelican South 1-1	Pelican South 1-2	Pelican South 1-3	Pelican South 1-4		
			formations to prevent loss of non-aqueous drilling fluid												No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) and amendments, GD 1408/2008 and GD 937/2010 .	P501: Dispose of contents / container in accordance with local regulations. S22: Do not breathe dust.
39	SOLTEX	Fluid loss controll	Used to close pores in permeable formations to prevent loss of non-aqueous drilling fluid	metric ton	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP).	-
40	D080A	Fluid loss control	Used for cementing - reduces the loss of free water from the cement	cubic meter	0.12	0.15	0.14	0.10	0.16	0.11	0.20	0.19	0.19	0.20	The product is not dangerous according to Directive 1999/45 / EC.	Take proper care and maintain cleanliness
41	D177	Retarder	Used in cementation - increases the curing time of cement	cubic meter	0.63	0.77	0.74	0.52	0.81	0.58	1.03	0.96	0.99	1.02	Xi - Irritant. R36 / 38 - Irritating to eyes and skin.	S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
42	D182	Polymer / Viscosifier	Used in cementation- increases the viscosity of cement	metric ton	1.48	1.82	1.74	1.23	1.90	1.36	2.43	2.25	2.32	2.41	The product is not dangerous according to Directive 1999/45 / EC.	Take proper care and maintain cleanliness
43	D185	Dispersion agent	Used in cementation - causes the dispersion of cement particles in water	cubic meter	1.10	1.35	1.29	0.91	1.41	1.01	1.80	1.67	1.72	1.78	The product is not dangerous according to Directive 1999/45 / EC.	Take proper care and maintain cleanliness
44	D186	Accelerant	Used for cementing - decreases the curing time of the cement	cubic meter	8.97	11.03	10.57	7.45	11.54	8.29	14.77	13.69	14.08	14.61	Xi - Irritant. R41 - Risk of serious damage to eyes.	S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S39 - Wear eye / face protection.
45	D206	Antifoam	Used in cementation - prevents foaming of the cement during mechanical agitation	cubic meter	0.94	1.15	1.10	0.78	1.20	0.86	1.54	1.43	1.47	1.52	The product is not dangerous according to Directive 1999/45 / EC.	Take proper care and maintain cleanliness
46	D2130 (DeepCrete Blend)	Blended cement	Used for cementing - supports the tubing column in the well and prevents the migration of fluids between the column and the wellbore.	metric ton	399.92	491.95	471.08	332.18	514.53	369.47	658.38	610.14	627.76	651.37	H315 - Causes skin irritation H318 - Causes serious eye damage H335 - May cause respiratory irritation Xn - Harmful. Xi - Irritant. R41 - Risk of serious damage to eyes. R43 - May cause sensitization by skin contact. R37 / 38 - Irritating to respiratory system and skin. R48 / 20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation.	P260 - Do not breathe dust P262 - Avoid contact with eyes, skin and clothing P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if necessary, and do so easily. Keep rinsing P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P302 + P350 - IF ON SKIN: Wash lightly with plenty of soap and water. P264 - After handling, wash face, hands and any exposed skin P271 - Use only outdoors or in well-ventilated areas P332 + P313 - In case of skin irritation: seek medical advice P362 - Remove contaminated clothing and wash before reuse P403 + P233 - Store in a well-ventilated place. Keep container tightly closed P501 - Dispose of contents / container to an authorized skin disposal station. SKIN: Wash gently with plenty of soap and water. P315 - Consult a doctor immediately

Appendix H. Lists of estimated chemicals during drilling phase

No	Product name	Description	Usage	Measurement unit	Well Name										Risk and hazard phrase (H/R)	Precautionary and security phrase (P/S)
					Domino 1-1	Domino 1-2	Domino 1-3	Domino 2-1	Domino 2-2	Domino 2-3	Pelican South 1-1	Pelican South 1-2	Pelican South 1-3	Pelican South 1-4		
47	D500	Gas block	Low density cement Used for cementing - prevents gaseous hydrocarbons from entering the cement as the cement hardens	cubic meter	7.46	9.17	8.78	6.19	9.59	6.89	12.28	11.38	11.71	12.15	Xi - Irritant. R43 - May cause sensitization by skin contact. R22 - Harmful if swallowed.	S24 - Avoid contact with skin. S37 - Wear suitable gloves.
48	D907	Class G cement	Used for cementing - supports the tube column in the well and prevents the migration of fluids between the column and the well hole	metric ton	61.53	75.68	72.47	51.11	79.16	56.84	101.29	93.87	96.58	100.21	Xi - Irritant. R41 - Risk of serious damage to eyes. R37 / 38 - Irritating to respiratory system and skin. R43 - May cause sensitization by skin contact.	S22 - Do not breathe dust. S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S46 - If swallowed, seek medical advice immediately and show this container or label. S24 / 25 - Avoid contact with skin and eyes. S36 / 37/39 - Wear suitable protective equipment, gloves and eye / face protection
49	AQUALINEAR	Gelling Agent	Used for completion fluid - suspends the sand from the gravel package while being pumped into the well	cubic meter	48.07	48.89	61.11	22.52	14.30	20.07	14.67	11.56	43.41	20.52	H319 - Causes serious eye irritation Xi - Irritant. R36 Irritating to eyes.	P264 - Thoroughly wash face, hands and any exposed skin after handling P280 - Wear eye protection / face protection P305 + P351 + P338 - IN EYE CONTACT: Rinse cautiously with water for several minutes. Remove contact lenses, if present, and easy to do. Continue rinsing P337 + P313 - If eye irritation persists: Get medical attention / care
50	AVAPOLY PGL	Hydrate Inhibition	Used for completion fluid - prevents the formation of hydrate in the well	cubic meter	25.96	26.40	33.00	12.16	7.72	10.84	7.92	6.24	23.44	11.08	Not classified as dangerous according to Regulation (EU) No 1272/2008, Directive 67/548 / EEC (DPP), Directive 1999/45 / EC (DSP) and amendments, GD 1408/2008 and GD 937/2010 .	P261: Avoid inhaling dust / smoke / gas / mist / vapor / spray. P501: Dispose of contents / container in accordance with local regulations S23: Do not breathe dust / smoke / gas / mist / vapor / spray / steam. S24 / 25: Avoid contact with skin and eyes.
51	FR-66	Friction Reducer	Used for completion fluid - reduces friction between drilling or tubing column and tubing column	cubic meter	0.58	0.59	0.73	0.27	0.17	0.24	0.18	0.14	0.52	0.25	Xn - Harmful. Xi - Irritant. R36 Irritating to eyes. R65 Harmful: may cause lung damage if swallowed.	S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S24 / 25 Avoid contact with skin and eyes.
52	HAI-303	Corrosion Inhibitor	Used for completion fluid - prevents corrosion of the tonnage column and tubing caused by hydrochloric acid	cubic meter	0.14	0.15	0.18	0.07	0.04	0.06	0.04	0.03	0.13	0.06	R20 / 21/22 Harmful by inhalation, in contact with skin and if swallowed. R39 / 23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. R36 / 37/38 Irritating to eyes, respiratory system and skin.	S7 Keep container tightly closed. S16 Keep away from sources of ignition - No smoking. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S45 In case of accident or if you feel unwell, seek medical advice immediately. S36 / 37 Wear suitable protective clothing and gloves.
53	HCL 15%	Acid	Used for completion fluid	cubic meter	19.23	19.56	24.44	9.01	5.72	8.03	5.87	4.62	17.36	8.21	Xi - Irritant. R36 / 37/38 Irritating to eyes, respiratory system and skin. C - Corrosive. R34 Causes burns. R37 Irritating to respiratory system. H314 - Causes severe skin burns and eye damage. H335 - May cause respiratory irritation.	S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S45 In case of accident or if you feel unwell, seek medical advice immediately. S1 / 2 Keep locked away from children. S36 / 37/39 Wear suitable protective clothing, gloves and eye / face protection.
54	METHANOL	Hydrate Inhibition	Used for completion fluid - dissolves hydrates in the fluid	cubic meter	12.11	12.32	15.40	5.67	3.60	5.06	3.70	2.91	10.94	5.17	H225 Highly flammable liquid and vapour. H331 Toxic if inhaled.	P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P260 Do not breathe

Appendix H. Lists of estimated chemicals during drilling phase

No	Product name	Description	Usage	Measurement unit	Well Name										Risk and hazard phrase (H/R)	Precautionary and security phrase (P/S)
					Domino 1-1	Domino 1-2	Domino 1-3	Domino 2-1	Domino 2-2	Domino 2-3	Pelican South 1-1	Pelican South 1-2	Pelican South 1-3	Pelican South 1-4		
															H311 Toxic in contact with skin. H301 Toxic if swallowed. H370 Causes damage to organs. EUH031 Contact with acids liberates toxic gas	dust/fume/gas/mist/vapours/spray. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P405 Store locked up.
55	SODA ASH	pH Control	Used for completion fluid - neutralizes hydrochloric acid	metric ton	2.88	2.93	3.67	1.35	0.86	1.20	0.88	0.69	2.60	1.23	H 319: Causes serious eye irritation. Xi - Irritant. R 36: Irritating to eyes.	P264: Wash comes after use. P280: Wear protective gloves / protective clothing / protective equipment eye / face protection. P337 + P313: If eye irritation persists: Get medical advice / attention. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if necessary, and do so easily. Keep rinsing. P501: Dispose of contents / container in accordance with local regulations. S 25: Avoid contact with eyes. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S60: This product and its packaging (container) should be disposed of as hazardous waste.
56	AF340	Defoamer	Used for probe filling fluid - prevents foaming during mechanical brine agitation	cubic meter	0.31	0.31	0.39	0.14	0.09	0.13	0.09	0.07	0.28	0.13	H304: May be fatal if swallowed and enters airways. R65: Harmful: may cause lung damage if swallowed.	P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician. P331: DO NOT induce vomiting. P405: Store under lock and key. P501: Dispose of contents / container to an approved waste disposal facility.
57	EB 8796	Demulsifier	Used for completion fluid - decomposes emulsions in the formation close to the well	cubic meter	0.31	0.31	0.39	0.14	0.09	0.13	0.09	0.07	0.28	0.13	R36 Irritating to eyes. R40 Possible carcinogenic effect, insufficient evidence. R51 / 53 Toxic to aquatic organisms, may cause long-term adverse effects long on the aquatic environment. R65 Harmful: may cause lung damage if swallowed. R66 Repeated exposure may cause skin dryness or cracking. R67 Inhalation of vapors may cause drowsiness and dizziness.	S25 Avoid contact with eyes. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36 / 37 Wear suitable protective equipment and gloves. S57 Use suitable packaging (container) to avoid contamination of the environment. S60 Dispose of product and packaging (container) as hazardous waste. S61 Avoid dispersal in the environment. Refer to special instructions / safety data sheet. S62 If swallowed, do not induce vomiting; consult a doctor immediately and show the package (container) or label.
58	DFS-XFL	Low residue crosslinkable polymer	Used for completion fluid - temporary control of fluid loss	cubic meter	0.31	0.31	0.39	0.14	0.09	0.13	0.09	0.07	0.28	0.13	H319 - Causes serious eye irritation	P264 - Wash face, hands and any exposed skin thoroughly after handling P280 - Wear protective gloves / protective clothing / eye protection / face protection P305 + P351 + P338 - IN EYE CONTACT: Rinse cautiously with water for several minutes. Remove contact lenses, if any, and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention / care

Appendix H. Lists of estimated chemicals during drilling phase

No	Product name	Description	Usage	Measurement unit	Well Name										Risk and hazard phrase (H/R)	Precautionary and security phrase (P/S)
					Domino 1-1	Domino 1-2	Domino 1-3	Domino 2-1	Domino 2-2	Domino 2-3	Pelican South 1-1	Pelican South 1-2	Pelican South 1-3	Pelican South 1-4		
59	LO58	Iron Stabiilizer	Used for completion fluid - for temporary iron control	cubic meter	0.96	0.98	1.23	0.45	0.29	0.40	0.29	0.23	0.87	0.41	May cause mechanical eye irritation. Inhalation of dust may cause difficulty breathing, tightness of the chest, sore throat and cough. Shaking may generate dust. Suspended dust may present an explosion hazard	Avoid dust formation
60	U066	Mutual Solvent	Used for completion fluid to the gravel package for cleaning lines	cubic meter	7.28	7.40	9.25	3.41	2.16	3.04	2.22	1.75	6.57	3.11	Fuel liquid. Irritating to eyes and skin. Toxic by inhalation and in contact with skin. Toxic if swallowed. (Based on laboratory animal tests). Inhalation of high concentrations of vapors may cause depression and anesthesia. Danger of aspiration. Aspiration can cause pulmonary edema and pneumonitis.	Keep away from heat, sparks and open flame. Keep container tightly closed. Avoid contact with skin and eyes. Do not breathe vapor or dust.
61	J589	Rheology Modifier	Used for completion fluid to change the rheology of gravel pack completion fluids	cubic meter	3.64	3.70	4.63	1.70	1.08	1.52	1.11	0.87	3.29	1.55	H319 - Causes serious eye irritation H336 - May cause drowsiness or dizziness H226 - Flammable liquid and vapor	P210 - Keep away from heat, hot surfaces, sparks, open flames and other sources of ignition. Smoking prohibited P261 - Avoid breathing dust / smoke / gas / mist / vapors / spray P303 + P361 + P353 - IF ON SKIN (or hair): Remove / Remove all contaminated clothing immediately. Rinse skin with water / shower P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present, and easy to remove. Keep rinsing P312 - Call a POISON CENTER or doctor / physician if you feel unwell P501 - Dispose of contents / container in accordance with local, regional, national and international regulations, as appropriate. P233 - Keep container tightly closed P240 - Ground storage container P241 - Use electrical equipment / fans / lighting / explosion protection P242 - Use instruments that do not cause sparks P243 - Take precautions against static discharge P264 - Wash face, hands and any exposed skin thoroughly after handling P271 - Use only outdoors or in a well-ventilated area P280 - Wear protective gloves / protective clothing and eye / face protection P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P337 + P313 - If eye irritation persists: Get medical advice / attention P378 - Use powder to extinguish fires P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Appendix H. Lists of estimated chemicals during drilling phase

No	Product name	Description	Usage	Measurement unit	Well Name										Risk and hazard phrase (H/R)	Precautionary and security phrase (P/S)
					Domino 1-1	Domino 1-2	Domino 1-3	Domino 2-1	Domino 2-2	Domino 2-3	Pelican South 1-1	Pelican South 1-2	Pelican South 1-3	Pelican South 1-4		
																P403 + P235 - Store in a well-ventilated place. Keep refrigerated
62	STACK MAGIC ECO F	Blow Out Preventer (BOP) control and anti-freeze protection	Used for eruption preventer - transmits pressure to close and open eruption preventer guillotines and taps	cubic meter	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	R43 - May cause sensitization by skin contact. R36 / 38 Irritating to eyes and skin. R20 / 22 Harmful by inhalation and if swallowed.	S24 - Avoid contact with skin. S37 - Wear suitable gloves.
63	Naval Diesel	Diesel fuel with low sulphur content	Fuel used for the drilling rig	cubic meter	2400.00	2400.00	2400.00	2400.00	2400.00	2400.00	2400.00	2400.00	2400.00	2400.00	H332 Harmful if inhaled H350 May cause cancer H361D Suspected of damaging fertility or the unborn child. H373 May cause damage to organs through repeated or prolonged exposure H410 Toxic to aquatic life with long lasting effects. EUH 066 Repeated exposure may cause skin dryness or cracking. Restricted to professional use due to carcinogenic classification, category 1B, except for use as fuel.	P201 Get special instructions before use. P260: Do not breathe dust / smoke / gas / mist / vapor / spray. P273: Avoid release to the environment. P280: Wear protective gloves / protective clothing / eye protection / face protection. P308 + 313 In case of exposure or concern: Seek medical advice / attention P501: Dispose of contents and container in accordance with local regulations.
64	EXXONMOBIL JET A-1	Helicopter fuel	Fuel used to power helicopters on the drilling rig	cubic meter	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	H226: Flammable liquid and vapor. H304: May be fatal if swallowed and enters airways. H315: Causes skin irritation. H336: May cause drowsiness or dizziness.	P210: Keep away from heat / sparks / open flames / hot surfaces. -- Smoking prohibited. P233: Keep container tightly closed. P240: Container / grounded receiving equipment. P241: Use electrical, ventilation and explosion-proof lighting equipment. P242: Use only instruments that do not produce sparks. P243: Take precautions against static discharge. P261: Avoid breathing mist / vapor. P264: Wash skin thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves and eye / face protection. P301 + P310: IF SWALLOWED: Call a POISON CENTER or doctor / physician immediately. P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P304 + P340: IF INHALED: Remove to fresh air and keep comfortable for breathing. P312: Call a POISON CENTER or doctor / physician if you feel unwell. P331: DO NOT induce vomiting. P332 + P313: If skin irritation occurs: Get medical attention. P362 + P364: Remove contaminated clothing and wash before reuse. P370 + P378: In case of fire: Use curtain of water, foam, dry chemical or carbon dioxide (CO2) to extinguish. P391: Collect leaks. P403 + P235: Store in a well-ventilated place. Keep refrigerated.

Appendix H. Lists of estimated chemicals during drilling phase

No	Product name	Description	Usage	Measurement unit	Well Name										Risk and hazard phrase (H/R)	Precautionary and security phrase (P/S)
					Domino 1-1	Domino 1-2	Domino 1-3	Domino 2-1	Domino 2-2	Domino 2-3	Pelican South 1-1	Pelican South 1-2	Pelican South 1-3	Pelican South 1-4		
																P405: Store closed P501: Dispose of contents and container in accordance with local regulations.
65	NEA-96M	Surfactant - for gravel pack brine	Used in the brine of the gravel pack	m^4	3.59	3.66	4.54	1.69	1.08	1.51	1.11	0.88	3.24	1.54	H226 - Flammable liquid and vapor H315 - Causes skin irritation H318 - Causes serious eye damage H410 - Very toxic to aquatic life with long lasting effects	P210 - Keep away from heat, hot surfaces, sparks, open flames and other sources of ignition. Smoking prohibited P273 - Avoid release to the environment P280 - Wear protective gloves / protective clothing / eye protection / face protection. P302 + P352 - IF ON SKIN: Wash with plenty of water. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present, and easy to do. Keep rinsing P310 - Call a POISON CENTER or doctor immediately
66	FE-1A	Acidizing Composition - for gravel pack brine	Used in the brine of the gravel pack	cubic meter	0.45	0.46	0.57	0.21	0.14	0.19	0.14	0.11	0.4	0.19	H226 - Flammable liquid and vapor H314 - Causes severe skin burns and eye damage H302 - Harmful if swallowed H331 - Toxic by inhalation H335 - May cause respiratory irritation	P210 - Keep away from heat, hot surfaces, sparks, open flames and other sources of ignition. Smoking prohibited P280 - Wear protective gloves / protective clothing / eye protection / face protection. P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do not induce vomiting P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water / shower P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present, and easy to do. Keep rinsing
67	15% FE Acid	Pickle surface line- for gravel pack brine	Used in the brine of the gravel pack	cubic meter	6.56	6.69	8.3	3.11	1.99	2.78	2.05	1.62	5.93	2.83	H290 - May be corrosive to metals H314 - Causes severe skin burns and eye damage H318 - Causes serious eye damage	P234 - Keep only in the original package. P260 - Do not breathe dust / smoke / gas / mist / vapor / spray. P264 - Wash face, hands and any exposed skin thoroughly after handling P280 - Wear protective gloves / protective clothing / eye protection / face protection. \ P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do not induce vomiting P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. P304 + P340 - IF INHALED: Remove to fresh air and keep comfortable for breathing. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present, and easy to do. Keep rinsing P310 - Call a POISON CENTER or doctor / physician immediately P363 - Wash contaminated clothing before reuse P390 - Absorb spillage to prevent damage to materials P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P405 - Store locked

Appendix H. Lists of estimated chemicals during drilling phase

No	Product name	Description	Usage	Measurement unit	Well Name										Risk and hazard phrase (H/R)	Precautionary and security phrase (P/S)
					Domino 1-1	Domino 1-2	Domino 1-3	Domino 2-1	Domino 2-2	Domino 2-3	Pelican South 1-1	Pelican South 1-2	Pelican South 1-3	Pelican South 1-4		
																P406 - Store in a corrosion-resistant container with a strong inner lining. P501 - Dispose of contents / container in accordance with local / regional / national / international regulations
68	SODIUM BROMIDE	Gravel Pack Brine	Used in the brine of the gravel package	cubic meter	131.25	133.87	166.08	62.2	39.86	55.56	41.07	32.41	118.57	56.57	R36 Irritating to eyes	S25 Avoid contact with eyes.
69	DEOXY DEHA	Oxygen Scavenger	Used to capture oxygen molecules from the brine of the gravel pack	cubic meter	1.31	1.34	1.66	0.62	0.4	0.56	0.41	0.32	1.19	0.57	H312: Harmful in contact with skin H332: Harmful by inhalation. H315: Causes skin irritation H319: Causes serious eye irritation H335: May cause respiratory irritation H412: Harmful to aquatic life with long lasting effects R20 / 21: Harmful by inhalation and in contact with skin. R 36/37/38: Irritating to eyes, respiratory system and skin. R52 / 53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.	P261: Do not breathe dust / smoke / gas / mist / vapor / spray. P280: Wear protective gloves / protective clothing / eye protection / face protection. P312: Call a POISON CENTER or doctor / physician if you feel unwell. P362: Remove contaminated clothing and wash before reuse. P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P332 + P313: In case of skin irritation, seek medical advice. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if necessary, and do so easily. Keep rinsing. P501: Dispose of contents / container in accordance with local regulations. S23: Do not breathe gas / smoke / vapor / aerosol / (appropriate manufacturer's term (s)). S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S24 / 25: Avoid contact with skin and eyes. S36 / 37: Wear suitable protective equipment, gloves and eye / face protection. S60: This product and its packaging (container) should be disposed of as hazardous waste.
70	Ferrocid 8583	Biocide	Used to prevent the growth of bacteria in the brine of the gravel pack	cubic meter	1.31	1.34	1.66	0.62	0.4	0.56	0.41	0.32	1.19	0.57	H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H318 May cause serious eye damage / eye irritation H400 Very toxic to aquatic life H410 Toxic to aquatic life with long lasting effects. EUH071 Corrosive to the respiratory tract.	P261 Avoid inhaling mist / vapor / spray. P273 Avoid dispersal in the environment. P280 Wear protective gloves / protective clothing / eye protection / face protection / hearing protection P301 + P330 + P331 IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or take a shower]. P304 + P340 IF INHALED: Remove person to fresh air and keep in a comfortable position for breathing. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if necessary, and if this can be done easily. Keep rinsing. P310 Call a POISON CENTER / doctor immediately. P501 Dispose of contents / container in accordance with local / regional / national / international regulations.

Appendix H. Lists of estimated chemicals during drilling phase

No	Product name	Description	Usage	Measurement unit	Well Name										Risk and hazard phrase (H/R)	Precautionary and security phrase (P/S)
					Domino 1-1	Domino 1-2	Domino 1-3	Domino 2-1	Domino 2-2	Domino 2-3	Pelican South 1-1	Pelican South 1-2	Pelican South 1-3	Pelican South 1-4		
71	SODIUM BROMIDE	Completions brine	Used to increase the salinity of the completion fluid	cubic meter	554.46	593.24	572.59	543.94	630.1	562.4	493.08	475.58	451.79	484.44	R36 Irritating to eyes	S25 Avoid contact with eyes.
72	STEA06348A	Scale Inhibitor	Used for completion fluid	cubic meter	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	H315 Causes skin irritation. H319 Causes serious eye irritation. H373 May cause damage to organs through prolonged or repeated exposure	P260 Do not breathe dust / smoke / gas / mist / vapor / spray. P280 Wear protective gloves / eye protection / face protection. P302 + P352 IF ON SKIN: Wash with plenty of water. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present, and easy to do. Keep rinsing. P314 Seek medical advice if you feel unwell. P332 + P313 If skin irritation occurs: Get medical attention.

Appendix H. List of estimated chemicals

2 – List of estimated chemicals during construction/installation phase

Appendix H. List of estimated chemicals during construction/installation phase

No.	Product name	Description	Usage	Measurement unit	Quantity	Risk and hazard phrase (H/R)	Precautionary and security (P/S)
1	Ferrocid 8583	Biocide	Used to prevent the growth of bacteria in the well completion fluid	cubic meter	1	H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H318 May cause serious eye damage / eye irritation H400 Very toxic to aquatic life H410 Toxic to aquatic life with long lasting effects. EUH071 Corrosive to the respiratory tract.	P261 Avoid inhaling mist / vapor / spray. P273 Avoid dispersal in the environment. P280 Wear protective gloves / protective clothing / eye protection / face protection / hearing protection P301 + P330 + P331 IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or take a shower]. P304 + P340 IF INHALED: Remove person to fresh air and keep in a comfortable position for breathing. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if necessary, and if this can be done easily. Keep rinsing. P310 Call a POISON CENTER / doctor immediately. P501 Dispose of contents / container in accordance with local / regional / national / international regulations.
2	Hydrosure™ HD-5000	Hydrotest chemical	Used for hydrotesting pipeline and flowlines	cubic meter	57	H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H318 May cause serious eye damage / eye irritation H373 May cause damage to organs through prolonged or repeated exposure. H400 Very toxic to aquatic life. EUH031 Contact with acids liberates toxic gas	P260 Do not breathe dust/fume/gas/mist/vapors/spray. P273 Avoid release to the environment. P280 Wear protective gloves/ protective clothing/eye protection/ face protection. P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth. P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
3	MULTITREAT 9379	Oxygen Scavenger	Used to capture oxygen molecules from the well completion fluid to prevent corrosion of the tubing column e	cubic meter	0.2	H315 Causes skin irritation. H319 Causes serious eye irritation H335 May cause respiratory irritation	P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. P280 Wear eye protection/ face protection. P280 Wear protective gloves. P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. P337 + P313 If eye irritation persists: Get medical advice/ attention. P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
4	PETROSWEET HSW85790	H2S Scavenger	Used for the decomposition of H2S molecules into well completion fluid	cubic meter	0.1	H315 Causes serious eye irritation. H319 Causes skin irritation. H317 May cause an allergic skin reaction. H341 Suspected of causing genetic defects. H335 May cause respiratory irritation.	P201, P280, P304 + P340 + P312, P405, P501 Obtain special instructions before use. Wear protective gloves: > 8 hours (breakthrough time): nitrile Gloves. Wear eye or face protection: Recommended: Safety glasses. Wear protective clothing. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
5	Multi-use product aerosol (WD40)	Lubricant, Penetrant	Used for equipment installation	cubic meter	0.01	Aspiration Toxicity Category 1 Flammable Liquid Category 3 Aspiration Toxicity Category 1 Specific Target Organ Toxicity Single Exposure Category 3 (nervous system effects) Simple Asphyxiant Gas Under Pressure, Compressed Gas	Keep away from heat, sparks, open flames, hot surfaces. – No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Avoid breathing vapors or mists. Use only outdoors or in a well-ventilated area. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store in a well-ventilated place. Dispose of contents and container in accordance with local and national regulations.

6	Diesel Fuel	Diesel Fuel Low Sulphur	Fuel to supply thr vehicles and electric generators used for the execution of construction work onshore	cubic meter	3745	H226 Harmful liquid and vapors H304 May be deadly if swolled or enters airways H315 Causes skin irritation. H332 Harmful if inhaled H351 May cause cancer H373 Can cause organ damage in case of repeated or prolonged exposure H411: Toxic to aquatic life with long lasting effects.	P210: Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. P260: Avoid breathing mist / vapors. P264: Wash skin thoroughly after handling. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P331: Do NOT induce vomiting. P501: Dispose of contents and container in accordance with local regulations.
7	Naval Diesel Fuel	Naval Diesel Fuel Low Sulphur	Fuel for support vessels for construction / installation work offshore	cubic meter	31657	H332 Harmful if inhaled H350 May cause cancer H361D Suspected of damaging fertility or the unborn child. H373 Can cause organ damage in case of repeated or prolonged exposure H410 Toxic to aquatic life with long lasting effects. EUH 066 Repeated exposure may cause skin dryness or cracking. Restricted to professional use due to carcinogenic classification, category 1B, except for use as fuel.	P201 Obtain special instructions before use. P260: Avoid breathing mist / vapors. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. P308+313 IF exposed or concerned: Get medical advice/attention P501: Dispose of contents and container in accordance with local regulations.
8	CARBOTHANE 134 HG PART A	Component of multicomponent industrial coatings	Used to paint and coat equipment and pipes	cubic meter	0.02	H225 Highly flammable liquid and vapour. H315 Causes skin irritation. H319 Causes serious eye irritation. H350-1A May cause cancer. H361 Suspected of damaging fertility or the unborn child. H372 Causes damage to organs through prolonged or repeated exposure.	P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking. P235 Keep cool. P260 Do not breathe dust/fume/gas/mist/vapors/spray. P264 Wash hands thoroughly after handling. P280 Wear protective gloves/protective clothing/eye protection/ face protection. P284 Wear respiratory protection. P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. P308+313 IF exposed or concerned: Get medical advice/attention P314 Get medical advice/attention if you feel unwell. P332+313 If skin irritation occurs: Get medical advice/attention. P403+233 Store in a well-ventilated place. Keep container tightly closed.

9	Carboline Urethane Converter 811	PAINT RELATED MATERIAL	Used to paint and coat equipment and pipes	cubic meter	0.02	H226 Flammable liquid and vapour. H317 May cause an allergic skin reaction. H332 Harmful if inhaled. H335 May cause respiratory irritation. H412 Harmful to aquatic life with long lasting effects. R10 Flammable. R20 Harmful by inhalation. R37 Irritating to respiratory system. R43 May cause sensitization by skin contact. R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment	P210 Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. P240 Ground/bond container and receiving equipment. P241 Use explosion-proof electrical equipment. P242 Use only non-sparking tools. P243 Take precautionary measures against static discharge. P261 Avoid breathing vapour/spray. P271 Use only outdoors or in a well-ventilated area. P272 Contaminated work clothing should not be allowed out of the workplace. P273 Avoid release to the environment. P280 Wear protective gloves/protective clothing/eye protection/face protection. P302+P352 IF ON SKIN: Wash with plenty of water. P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P312 Call a POISON CENTER/doctor if you feel unwell. P321 Specific treatment (see medical advice on this label). P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P362+P364 Take off contaminated clothing and wash it before reuse. P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish. P403+P233 Store in a well-ventilated place. Keep container tightly closed. P403+P235 Store in a well-ventilated place. Keep cool. P405 Store locked up. P501 Dispose of contents/container in accordance with national regulations.
10	AMERLOCK 400C 400GF CURE	Coating paint	Used to paint and coat equipment and pipes	cubic meter	0.03	Flammable liquid and vapor. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Harmful if inhaled. May cause respiratory irritation. Suspected of causing cancer. Suspected of damaging fertility or the unborn child	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.
11	AMERLOCK 2/400 Pearl Gray RESIN	Coating paint	Used to paint and coat equipment and pipes	cubic meter	0.03	Flammable liquid and vapor. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause respiratory irritation. Suspected of causing cancer.	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

12	AMERLOCK 2/400 Light Tint RESIN	Coating paint	Used to paint and coat equipment and pipes	cubic meter	0.03	Flammable liquid and vapor. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause respiratory irritation. Suspected of causing cancer.	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.
13	AMERCOAT 450H CURE	Coating paint	Used to paint and coat equipment and pipes	cubic meter	0.02	Flammable liquid and vapor. May cause an allergic skin reaction. Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause drowsiness or dizziness.	Wear protective gloves, protective clothing and eye or face protection. Wear respiratory protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Contaminated work clothing must not be allowed out of the workplace.
14	Acrylic LACQUER THINNER	Painting-related material	Used to paint and coat equipment and pipes	cubic meter	0.04	Highly flammable liquid and vapor. Harmful if swallowed. Causes serious eye irritation. Causes skin irritation. Suspected of damaging the unborn child. Suspected of causing cancer. May cause respiratory irritation. May cause drowsiness and dizziness. May cause damage to organs through prolonged or repeated exposure. (central nervous system (CNS), hearing organs, kidneys, liver)	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.
15	THINNER 21-25	Paint THINNER	Used to paint and coat equipment and pipes	cubic meter	0.01	Flammable liquid and vapor. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. Harmful if inhaled. Suspected of causing cancer. Causes damage to organs through prolonged or repeated exposure. (central nervous system (CNS))	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink, or smoke when using this product. Wash thoroughly after handling.
16	Super Mud Dry	Viscosifier	Used to increase the viscosity of the well completion fluid	cubic meter	0.01	Product not classified as hazardous according to US / EU regulations.	May cause slight skin irritation, especially with prolonged or repeated exposure. May cause irritation to the eyes that should cease on removal of the product. Inhalation of dust may cause irritation to the respiratory system. Very slippery underfoot when wet. If handled roughly dust may be created - as with many organic powders airborne dust clouds may cause a dust explosion hazard. Use personal protective equipment suitable for the task in hand. Respiratory protection may be required if dust is created during cleanup operations. Avoid formation of airborne dust clouds. The products become very slippery underfoot when wet.

17	MOBILGREASE 28	Multi-Vehicle Multi-Purpose Grease	Used for construction vehicles onshore	cubic meter	As needed up to 0.01	High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation. Secondary amines or materials containing secondary amines should not be added to this product due to the risk of forming nitrosamines, some of which have been shown to be carcinogenic in lab animals.	Prevent small spills and leakage to avoid slip hazard. Contains Sodium nitrite. Do not add amines which may form cancer causing nitrosamines.
18	PPG THINNER 2	Thinner for industrial coatings	Used to paint and coat equipment and pipes	cubic meter	0.04	H225 Highly flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H319 Causes serious eye irritation. H336 May cause drowsiness or dizziness. H361 Suspected of damaging fertility or the unborn child. H373 May cause damage to organs through prolonged or repeated exposure.	P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking. P235 Keep cool. P260 Do not breathe dust/fume/gas/mist/vapors/spray. P280 Wear protective gloves/protective clothing/eye protection/ face protection. P284 Wear respiratory protection. P301+310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. P308+313 IF exposed or concerned: Get medical advice/attention P314 Get medical advice/attention if you feel unwell. P331 Do NOT induce vomiting. P332+313 If skin irritation occurs: Get medical advice/attention. P403+233 Store in a well-ventilated place. Keep container tightly closed.
19	PPG THINNER 215	Thinner for industrial coatings	Used to paint and coat equipment and pipes	cubic meter	0.03	H226 Flammable liquid and vapour.	P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking. P403+233 Store in a well-ventilated place. Keep container tightly closed.
20	Loctite® Clear Silicone Sealant	Silicone Sealant	Used for equipment installation	cubic meter	As needed up to 0.01	SKIN IRRITATION 2 EYE IRRITATION 2A SKIN SENSITIZATION 1	Avoid breathing vapors, mist, or spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear eye and face protection. Wear protective gloves. IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present, and easy to remove. Continue rinsing. If irritation or rash occurs: Get medical attention. If eye irritation persists: Get medical attention. Remove contaminated clothing. Dispose of contents and / or container in accordance with federal, state / provincial, and local government regulations.

21	Locite PL Premium Max Construction Adhesive	Adhesive	Used for equipment installation	cubic meter	0.008	ACUTE TOXICITY INHALATION 4 SKIN IRRITATION 2 SERIOUS EYE DAMAGE 1 RESPIRATORY SENSITIZATION 1 SKIN SENSITIZATION 1 CARCINOGENICITY 1A REPEATED EXPOSURE 1	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust or fumes. Wash affected area thoroughly after handling. Do not eat, drink, or smoke when using this product. Use only outdoors or in a well ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves, clothing, eye, and face protection. In case of inadequate ventilation wear respiratory protection. IF ON SKIN: Wash with plenty of water. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor / doctor if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present, and easy to do. Continue rinsing. IF you are exposed or worried: Get medical attention. If irritation or rash occurs: Get medical attention. Remove contaminated clothing. Store locked. Dispose of contents and / or container in accordance with governmental, regional, and local regulations.
22	BARA-KADE® BENTONITE	Bentonite	Used to increase the viscosity of the well completion fluid	metric ton	875	H350 - May cause cancer by inhalation H372 - Causes damage to organs through prolonged or repeated exposure if inhaled	P201 - Obtain special instructions before use P202 - Do not handle until all safety precautions have been read and understood P260 - Do not breathe dust/fume/gas/mist/vapors/spray P264 - Wash face, hands, and any exposed skin thoroughly after handling P270 - Do not eat, drink, or smoke when using this product P280 - Wear protective gloves/eye protection/face protection
23	MOBIL 1 5W-30	Lubricant Oil	Used for construction vehicles onshore	cubic meter	As needed up to 0.01	High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.	Avoid contact with the product used. Prevent small spills and leaks to avoid the danger of slipping. The material may accumulate static charges that may cause an electrical spark (ignition source). When the material is handled in bulk, an electric spark can ignite any flammable vapors from liquids or residues that may be present. Use proper grounding procedures.

Appendix H. List of estimated chemicals

3 – List of estimated chemicals during operation phase

Appendix H. List of estimated chemical during operation phase

No	Product name	Description	Usage	Measurement unit	Quantity/year	Risk and hazard phrase (H/R)	Precautionary and security (P/S)
1	Triethylene Glycol	Lean TEG	Used for gas dehydration system.	m^3	288	H302 Harmful if swallowed H316 Causes mild skin irritation. H320 Causes eye irritation. H335 May cause respiratory irritation. H373 May cause damage to organs through prolonged or repeated exposure.	P261 Avoid breathing dust/fumes/gas/mist/vapors. P264 Wash thoroughly after handling. P270 Do not eat drink or smoke when using this product. P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor / physician if you feel unwell. P330 Rinse mouth. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. P314 Get medical advice/attention if you feel unwell.
2	MULTITREAT 15439	Corrosion Inhibitor	Used for flow assurance (injected into wellhead)	m^3	112.4	H290 May be corrosive to metals. H302 Harmful if swallowed. H318 Causes serious eye damage. H373 May cause damage to organs through prolonged or repeated exposure. H412 Harmful to aquatic life with long lasting effects.	P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. P273 Avoid release to the environment. P280 Wear eye protection/ face protection. P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. P314 Get medical advice/ attention if you feel unwell. P390 Absorb spillage to prevent material damage. P501 Dispose of contents/ container to an approved waste disposal plant.
3	Nitrogen	Nitrogen	Used for the nitrogen system.	kg	543.2	Contains gas under pressure; may explode if heated. May displace oxygen and cause rapid suffocation.	Protect from sunlight. Store in a well-ventilated place
4	STEA06348A	Scale Inhibitor	Used for flow assurance (injected into wellhead)	m^3	121.6	H315 Causes skin irritation. H319 Causes serious eye irritation. H373 May cause damage to organs through prolonged or repeated exposure	P260 Do not breathe dust/fume/gas/mist/vapors/spray. P280 Wear protective gloves/ eye protection/ face protection. P302 + P352 IF ON SKIN: Wash with plenty of water. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P314 Get medical advice/ attention if you feel unwell. P332+P313 If skin irritation occurs: Get medical advice/attention.
5	DFW43013 Defoamer	Defoamer	Used for flow assurance (injected into wellhead)	m^3	103.6	H319 Causes serious eye irritation.	P280, P264, P305 + P351 + P338
6	Methanol	Methanol	Used for flow assurance (injected into wellhead)	m^3	1728.4	H225 Highly flammable liquid and vapour. H331 Toxic if inhaled. H311 Toxic in contact with skin. H301 Toxic if swallowed. H370 Causes damage to organs. EUH031 Contact with acids liberates toxic gas	P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P260 Do not breathe dust/fume/gas/mist/vapors/spray. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P405 Store locked up.
7	Diesel fuel	Diesel fuel	Used to power the backup generator installed on the project's onshore site.	m^3	As needed up to 0.5	H226 – Flammable liquid and vapor. H315 – Causes Skin irritation. H304 – May be fatal if swallowed and enters airways. H332 - Harmful if inhaled H336 – May cause drowsiness or dizziness. H350 – May cause cancer. H411 – Toxic to aquatic life with long lasting effects. H319 – May cause eye damage/irritation. H373 May cause damage to organs through prolonged or repeated exposure.	P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P260 - Do not breathe dust/fume/gas/mist/vapors/spray. P273 – Avoid release to the environment. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P301+310 - If swallowed: Immediately call a poison center/doctor/… P331 - Do NOT induce vomiting. P501 – Dispose of contents/container in accordance with local/regional/national/international regulation.
8	Ferrocid 8583	Biocide	Used to clean the open drainage system on the marine platform.	m^3	As needed up to 1	H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H318 May cause serious eye damage / eye irritation H400 Very toxic to aquatic life H410 Toxic to aquatic life with long lasting effects. EUH071 Corrosive to the respiratory tract.	P261 Avoid inhaling mist / vapor / spray. P273 Avoid dispersal in the environment. P280 Wear protective gloves / protective clothing / eye protection / face protection / hearing protection P301 + P330 + P331 IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or take a shower].

Appendix H. List of estimated chemical during operation phase

No	Product name	Description	Usage	Measurement unit	Quantity/year	Risk and hazard phrase (H/R)	Precautionary and security (P/S)
							P304 + P340 IF INHALED: Remove person to fresh air and keep in a comfortable position for breathing. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if necessary, and if this can be done easily. Keep rinsing. P310 Call a POISON CENTER / doctor immediately. P501 Dispose of contents / container in accordance with local / regional / national / international regulations.
9	Transaqua HT2	Hydraulic Fluid - Aqueous motive fluid	Used for hydraulic power units for subsea valves	m^3	1.29	H302 Harmful if swallowed. H373 May cause damage to organs through prolonged or repeated exposure	P260 - Do not breathe vapor. P264 Wash thoroughly after handling. P270 Do not drink or smoke when using this product. P314 Seek medical advice if you feel unwell. P301 + P312, P330 IF SWALLOWED: Call a physician if you feel unwell. Rinse mouth. P501 Dispose of contents / container in accordance with local / regional / national / international regulations.
10	MOBIL EAL 224H	Hydraulic Fluid - Mineral oil	Used for hydraulic power units for caisson pumps	m^3	2	Pressure injection under the skin can cause serious injury. Slightly irritating to the skin. May be irritating to eyes, nose, throat, and lungs.	IF INHALED - Remove from additional exposure. For those who provide assistance, avoid exposing yourself or others. Use appropriate respiratory protection. If you experience respiratory irritation, dizziness, nausea, or unconsciousness, seek medical attention immediately. If breathing has stopped, help with ventilation with a mechanical device or use mouth-to-mouth resuscitation. IF ON SKIN - Wash areas with soap and water. Remove contaminated clothing. Wash contaminated clothing before reuse. If the product is injected into or under the skin or any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a surgical emergency physician. Even if the initial symptoms of high blood pressure injection may be minimal or absent, surgical treatment in the first few hours can significantly reduce the final degree of injury. IF IN EYES - Rinse well with water. If irritation occurs, seek medical attention. IF SWALLOWED - First aid is not normally required. Seek medical attention if discomfort occurs.

Appendix I. Chemicals safety data sheets

Appendix I. Chemicals Safety Data Sheets

1 – Safety Data Sheets of chemicals used during drilling phase

Fișa cu date de securitate

în conformitate cu Regulamentul (CE) nr. 1907/2006 (REACH)

Ferrocid 8583

număr articol: 48202

Numărul versiunii: Vers. 8.0
Înlocuiește versiunea din: 21.01.2021 (Vers. 7)

Revizuire: 31.03.2021

SECȚIUNEA 1: Identificarea substanței/amestecului și a societății/întreprinderii

1.1 Element de identificare a produsului

Denumirea comercială **Ferrocid 8583**

Număr articol **48202**

Identificatori (Uniunea Europeană)

Numărul de înregistrare (REACH) nerelevante (amestec)

1.2 Utilizări relevante identificate ale substanței sau amestecului și utilizări contraindicate

Utilizări relevante identificate

Biocid
Produse chimice de tratare a apei
Agent de condiționare

1.3 Detalii privind furnizorul fișei cu date de securitate

Kurita Europe GmbH
Theodor-Heuss-Anlage 2
DE-68165 Mannheim
Germania

Telefon: + 49 621 1218-3000
e-mail: KEG_PS@kurita-water.com
Website: www.kurita.eu

Producător

Furnizor a produsului						
Țara	*Denumirea*	*Strada*	*Codul poștal/ localitatea*	*Telefon*	*Telefax*	*Website*
România	ACC Waterchem SRL	Bd. Decabal 10	RO 030967 Bucharest	Cristian Cojocaru +40 741 23 59 68		www.kurita.eu

1.4 Număr de telefon care poate fi apelat în caz de urgență

Numar telefon urgenta: 021.318.36.06 (Disponibil in intervalul orar 8.00 – 16.00), Birou RSI si Informare Toxicologica din cadrul INSP, Str. D.Leonte Nr.1-3,Bucuresti, Romania
National Environmental Protection Agency (NEPA): +40 (0) 213118620
Emergency CONTACT (24-Hour-Number):
Europe: GBK GmbH +49 (0)6132-84463
International: GBK/Infotrac ID 108808: (001) 352 323 3500
Assistance in mother tongue.

SECȚIUNEA 2: Identificarea pericolelor

2.1 Clasificarea substanței sau a amestecului

Clasificare conform Regulamentului (CE) nr. 1272/2008 (CLP)

Clasa de pericol	*Clasa și categoria de pericol*	*Categorie*	*Fraza de pericol*
corodarea/iritarea pielii	Skin Corr. 1C	1C	H314
lezarea gravă a ochilor/iritarea ochilor	Eye Dam. 1	1	H318
sensibilizarea pielii	Skin Sens. 1A	1A	H317
periculos pentru mediul acvatic - pericol acut	Aquatic Acute 1	1	H400
periculos pentru mediul acvatic - pericol cronic	Aquatic Chronic 1	1	H410

Pentru textul complet al abrevierilor: a se vedea SECŢIUNEA 16.

Cele mai importante efecte adverse fizico-chimice, asupra sănătății umane și asupra mediului

Corodarea pielii produce leziunea ireversibilă a pielii; anume, necroza vizibilă trecând de epidermă şi ajungând până la dermă. Vărsarea și apa de stingere a incendiului pot cauza poluarea cursurilor de apă.

2.2 Elemente pentru etichetă

Etichetarea în conformitate cu Regulamentul (CE) nr. 1272/2008 (CLP)

Cuvânt de avertizare pericol

Pictograme

GHS05, GHS07, GHS09



Frazele de pericol

H314	Provoacă arsuri grave ale pielii şi lezarea ochilor.
H317	Poate provoca o reacţie alergică a pielii.
H410	Foarte toxic pentru mediul acvatic cu efecte pe termen lung.

Frazele de precauţie

P261	Evitaţi să inspiraţi ceaţa/vaporii/spray-ul.
P273	Evitaţi dispersarea în mediu.
P280	A se purta mănuși de protecție/îmbrăcăminte de protecție/echipament de protecție a ochilor/echipament de protecție a feței/protecție a auzului/....
P301+P330+P331	ÎN CAZ DE ÎNGHIŢIRE: clătiţi gura. NU provocaţi voma.
P303+P361+P353	ÎN CAZ DE CONTACT CU PIELEA (sau cu părul): Scoateţi imediat toată îmbrăcămintea contaminată. Clătiţi pielea cu apă [sau faceţi duş].
P304+P340	ÎN CAZ DE INHALARE: transportaţi persoana la aer liber și menţineţi-o într-o poziţie confortabilă pentru respiraţie.
P305+P351+P338	ÎN CAZ DE CONTACT CU OCHII: Clătiţi cu atenţie cu apă timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul și dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
P310	Sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ/un medic.
P501	Aruncaţi conţinutul/recipientul în conformitate cu reglementările locale/regionale/naţionale/internaţionale.

Informații suplimentare privind pericolele

EUH071	Corosiv pentru căile respiratorii.

Ingrediente periculoase pentru etichetare masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)

2.3 Alte pericole

Rezultatele evaluării PBT și vPvB

Acest amestec nu conţine nicio substanţă evaluată a fi PBT sau vPvB.

SECȚIUNEA 3: Compoziție/informații privind componenții

3.2 Amestecuri

Ingrediente periculoase

Denumirea substanței	*Element de identificare*	*% Masă*	*Clasificare conf. 1272/2008/CE*	*Limite de conc. specifice*	*Factori M*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	Nr. CAS 55965-84-9 Nr. index 613-167-00-5	1 – < 3	Acute Tox. 3 / H301 Acute Tox. 2 / H310 Acute Tox. 2 / H330 Skin Corr. 1C / H314 Eye Dam. 1 / H318 Skin Sens. 1A / H317 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410 EUH071	Skin Corr. 1C; H314: C ≥ 0,6 % Skin Irrit. 2; H315: 0,06 % ≤ C < 0,6 % Eye Dam. 1; H318: C ≥ 0,6 % Eye Irrit. 2; H319: 0,06 % ≤ C < 0,6 % Skin Sens. 1A; H317: C ≥ 0,0015 %	factor M (acut) = 100.0 factor M (cronic) = 100.0
copper dinitrate	Nr. CAS 3251-23-8 Nr. CE 221-838-5 Nr. Înreg. REACH 01-2119969290-34-xxxx	< 1	Ox. Sol. 2 / H272 Skin Corr. 1B / H314 Eye Dam. 1 / H318 Aquatic Acute 1 / H400 Aquatic Chronic 2 / H411		factor M (acut) = 10.0

Pentru textul complet al abrevierilor: a se vedea SECŢIUNEA 16.

SECȚIUNEA 4: Măsuri de prim ajutor

4.1 Descrierea măsurilor de prim ajutor

Observaţii generale

Nu lăsați persoana afectată nesupravegheată. Evacuați victima din zona de pericol. Mențineți persoana afectată la căldură, nemișcată și acoperită. Scoateţi imediat toată îmbrăcămintea contaminată. În caz de pierdere a cunoștinței, așezați persoana în poziție laterală stabilă. Nu-i administrați niciodată ceva pe gură.

După inhalare

În caz de iritare a tractului respirator, consultați un medic.

După contactul cu pielea

Scoateți îmbrăcămintea contaminată. După contactul cu pielea, scoateţi imediat toată îmbrăcămintea contaminată şi spălaţi imediat cu multă apa. Sunați imediat la un medic.

După contactul cu ochii

Clătiți din abundență cu apă proaspătă și curată, timp de cel puțin 10 minute, ținând pleoapele depărtate. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi. Sunați un medic imediat.

După ingerare

Se clătește gura cu apă (numai dacă persoana este conștientă). NU provocaţi voma. Sunați imediat la un medic.

4.2 Cele mai importante simptome și efecte, atât acute, cât și întârziate

Provoacă arsuri grave ale pielii şi lezarea ochilor. Ingestion causes pain, burns, abdominal pain, possible general impact (shock).

4.3 Indicații privind orice fel de asistență medicală imediată și tratamentele speciale necesare

No specific antidot is known. Treatment of the symptoms.

SECȚIUNEA 5: Măsuri de combatere a incendiilor

5.1 Mijloace de stingere a incendiilor

Mijloace de stingere corespunzătoare

Pulverizare de apă, Spumă rezistentă la alcool, Praf de extinctor, Dioxid de carbon (CO2)

Mijloace de stingere necorespunzătoare

Jet continuu de apă

5.2 Pericole speciale cauzate de substanța sau amestecul în cauză

Produși de combustie periculoși

Oxizi de azot (NOx), Monoxid de carbon (CO), Dioxid de carbon (CO2), Oxizi de sulf (SOx)

5.3 Recomandări destinate pompierilor

Mențineți containerele reci prin pulverizarea de apă. A nu se inspira fumul în caz de incendiu şi/sau explozie. Nu lăsați apa folosită la stingerea incendiului să pătrundă încanalizări sau în cursurile de apă. Colectați separat apa contaminată folosită la stingerea incendiilor. Stingeţi incendiul de la o distanţă rezonabilă, luând măsuri normale de precauţie.

Echipamentul de protecție special destinat pompierilor

Echipament de protecţie chimică, Folosiți aparate de protecție respiratorie adecvate

SECȚIUNEA 6: Măsuri de luat în caz de dispersie accidentală

6.1 Precauții personale, echipament de protecție și proceduri de urgență

Pentru personalul care nu este implicat în situații de urgență

Evacuați persoana într-un loc sigur.

Pentru personalul care intervine în situații de urgență

Purtați aparat de respirat dacă sunteți expus la vapori/praf/spray/gaze. Utilizaţi echipamentul de protecţie individuală conform cerinţelor.

6.2 Precauții pentru mediul înconjurător

Păstrați la distanță față de canalele de scurgere și apele de suprafață sau subterane. Rețineți apa de spălare contaminată și eliminați-o. Chemicals generally shouldn't reach surface water.

6.3 Metode și material pentru izolarea incendiilor și pentru curățenie

Sfaturi privind modul de izolare a unei cantități vărsate

Acoperirea canalelor de evacuare

Sfaturi privind modul de curățare a unei cantități vărsate

Ștergeți cu material absorbant (de ex. cârpă, fleece). Colectaţi scurgerile de produs: Material absorbant (de exemplu, nisip, diatomit, liant acid, liant universal, rumeguș etc.)

Tehnica adecvată de izolare

Utilizarea materialelor absorbante.

Alte informații referitoare la vărsări și dispersii

Puneți în containere adecvate pentru eliminare. Ventilați zona afectată.

6.4 Trimitere la alte secțiuni

Secțiunea 7: Manipularea și depozitarea. A se vedea și secțiunile 8 și 13 din fișa cu date de securitate.

SECȚIUNEA 7: Manipularea și depozitarea

7.1 Precauții pentru manipularea în condiții de securitate

Recomandări

Măsurile de prevenire a incendiilor, precum și a generării de aerosoli și praf

Nu sunt necesare masuri speciale.

Sfaturi privind igiena generală la locul de muncă

Spălați mâinile după utilizare. Nu mâncați, beți sau fumați în zonele de lucru. Îndepărtați îmbrăcămintea contaminată și echipamentul de protecție înainte de a pătrunde în zonele în care se ia masa. Nu țineți niciodată mâncarea sau băutura în apropiere de produsele chimice. Nu puneți niciodată produsele chimice în recipiente care sunt folosite în mod obișnuit pentru mâncare sau băutură. A se păstra departe de hrană, băuturi şi hrană pentru animale.

7.2 Condiții de depozitare în condiții de securitate, inclusiv eventuale incompatibilități

Proiectarea specială a spațiilor de depozitare sau a rezervoarelor

Păstraţi ambalajul închis ermetic şi într-un loc bine ventilat.

Temperatura de depozitare

Temperatura de depozitare recomandată: <40 °C.

Compatibilitățile privind ambalarea

Păstraţi numai în recipientul original. Pot fi utilizate exclusiv ambalajele omologate (de ex. conf. ADR).

7.3 Utilizare finală specifică (utilizări finale specifice)

Biocid. Produse chimice de tratare a apei. Agent de condiționare.

SECȚIUNEA 8: Controale ale expunerii/protecția personală

8.1 Parametri de control

Valorile limită naționale

Valori limită de expunere profesională (Limite de expunere la locul de muncă)

nu este relevant

8.2 Controale ale expunerii

Controale tehnice corespunzătoare

Ventilaţie generală.

Măsuri de protecție individuală (echipamentul de protecție personală)

Trebuie sa existe garantii, ca instalatiile de clatire a ochilor si dusurile de siguranta se afla aproape de locul de munca.

Protecția ochilor/feței

A se purta mască de protecţie a ochilor/feţei.

Protecția pielii

Chemical resistant protective clothing.

Protecția mâinilor

A se purta mănuși corespunzătoare. Mănușile de protecție chimică adecvate sunt testate conform EN 374. Verificați etanșeitatea/impermeabilitatea înainte de utilizare. În scopuri speciale, se recomandă să verificați rezistența la produse chimice a mănușilor de protecție menționate mai sus, împreună cu furnizorul acestor mănuși. In case of spray contact at least protection index 2 recommended, according to more than 30 min. penetration time (EN 374).
Layer thickness of gloves at least: 0.4 mm
In case of prolonged and intensive contact protection index 6 recommended, according to more than 480 min. penetration time (EN 374).
Layer thickness of gloves at least: 0.7 mm.

Tipul de material

PVC: policlorură de vinil, PE: polietilenă, CR: cauciuc cloroprenic (clorobutadienic), NBR: cauciuc acrilonitrilbutadienic, IIR: cauciuc izobuten-izoprenic (butilcauciuc), FKM: elastomer cu fluor

Timpul de perforare a materialului din care sunt fabricate mănușile

Momentul de cedare si insusirile de origine ale materialului trebuie luate in consideratie

Alte măsuri de protecție

Spălaţi-vă maini bine după utilizare.

Protecția respirației

În cazul în care ventilarea este insuficientă, purtaţi echipament de protecţie respiratorie.

Controlul expunerii mediului

Considerații privind eliminarea: a se vedea secțiunea 13.

SECȚIUNEA 9: Proprietățile fizice și chimice

9.1 Informații privind proprietățile fizice și chimice de bază

Aspect

Starea fizică	lichid
Culoarea	galben - verde - albastru deschis

Miros	fara miros
Pragul de acceptare a mirosului	nu este aplicabilă

Alți parametri de securitate

pH (valoare)	ca. 4 – 6 (in aqueous solution: 10 $^{g}/_{l}$)
Punctul de topire/punctul de înghețare	ca. -5 °C
Punctul inițial de fierbere și intervalul de fierbere	ca. 102 °C
Punctul de aprindere	>101 °C
Viteza de evaporare	nedeterminat
Inflamabilitatea (solid, gaz)	nu este relevant (fluid)
Limita superioară/inferioară de inflamabilitate sau de explozie	nedeterminat
Presiunea de vapori	nedeterminat
Densitatea vaporilor	aceste informații nu sunt disponibile
Densitatea	ca. 1,04 $^{g}/_{cm^3}$ la 20 °C

Solubilitatea (solubilitățile)

Solubilitatea în apă	miscibil în orice proporție

Coeficientul de partiție

- n-octanol/apă (log KOW)	aceste informații nu sunt disponibile

Temperatura de autoaprindere	>600 °C
Temperatura de descompunere	nu există date disponibile

Vâscozitatea

Vâscozitatea cinematică	4,5 $^{mm^2}/_{s}$
Vâscozitatea dinamică	4,6 mPa s la 20 °C

Proprietăți explozive	nici una/nici unul
Proprietăți oxidante	nici una/nici unul

9.2 Alte informații

Nu există informații suplimentare.

SECȚIUNEA 10: Stabilitate și reactivitate

10.1 Reactivitate

Acest material nu este reactiv în condiții normale de mediu ambiant.

10.2 Stabilitate chimică

Materialul este stabil în condiții ambientale normale, precum și în condițiile de temperatură și presiune în care se anticipează că vor avea loc depozitarea și manipularea.

10.3 Posibilitatea de reacții periculoase

Nu se cunosc reacţii periculoase.

10.4 Condiții de evitat

Nu există condiții specifice cunoscute care trebuie evitate.

10.5 Materiale incompatibile

Nu există informații suplimentare.

10.6 Produși de descompunere periculoși

Produșii de descompunere periculoși anticipați în mod rezonabil care sunt produși în urma utilizării, depozitării, vărsării și încălzirii nu sunt cunoscuți. Produși de combustie periculoși: a se vedea secțiunea 5.

SECȚIUNEA 11: Informații toxicologice

11.1 Informații privind efectele toxicologice

Nu sunt disponibile date de testare pentru întregul amestec.

Procedura de clasificare

Metoda pentru clasificarea amestecului se bazează pe ingredientele amestecului (formula de aditivitate).

Toxicitate acută

Nu se clasifică ca fiind toxic(ă) acut(ă).

Product ATEmix oral : >2000 mg/kg
Product ATEmix dermal : >2000 mg/kg

Toxicitatea acută a componenților amestecului

Denumirea substanței	*Nr. CAS*	*Calea de expunere*	*Efect*	*Valoare*	*Specii*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	orală	LD50	64 $^{mg}/_{kg}$	șobolan
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	prin inhalare: praf/ceață	LC50	0,33 $^{mg}/_{l}$/4h	șobolan
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	dermică	LD50	87,12 $^{mg}/_{kg}$	iepure

Corodarea/iritarea pielii

Provoacă arsuri grave ale pielii şi lezarea ochilor.

Lezarea gravă a ochilor/iritarea ochilor

Provoacă leziuni oculare grave.

Sensibilizarea căilor respiratorii sau a pielii

Poate provoca o reacţie alergică a pielii.

Mutagenicitatea celulelor embrionare

Nu sunt disponibile date de testare pentru întregul amestec.

Cancerigenitate

Nu sunt disponibile date de testare pentru întregul amestec.

Toxicitatea pentru reproducere

Nu sunt disponibile date de testare pentru întregul amestec.

Toxicitate asupra unui organ ţintă specific - o singură expunere

Nu sunt disponibile date de testare pentru întregul amestec.

Toxicitate asupra unui organ ţintă specific - expunere repetată

Nu sunt disponibile date de testare pentru întregul amestec.

Pericol prin aspirare

Nu se clasifică ca prezentând pericol prin aspirare.

Alte informaţii

Corosiv pentru căile respiratorii.

SECŢIUNEA 12: Informaţii ecologice

12.1 Toxicitatea

Foarte toxic pentru mediul acvatic cu efecte pe termen lung.

Toxicitate acvatică (acută) a componenţilor amestecului

Denumirea substanţei	*Nr. CAS*	*Efect*	*Durata de expunere*	*Valoare*	*Specii*
masă de reacţie compusă din 5-cloro-2-metil-2H-izotiazol-3-onă şi 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	LC50	96 h	0,19 $^{mg}/_{l}$	peşte
masă de reacţie compusă din 5-cloro-2-metil-2H-izotiazol-3-onă şi 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	EC50	48 h	0,16 $^{mg}/_{l}$	nevertebrate acvatice
masă de reacţie compusă din 5-cloro-2-metil-2H-izotiazol-3-onă şi 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	ErC50	72 h	19,9 $^{µg}/_{l}$	alge

Toxicitate acvatică (cronică) a componenților amestecului					
Denumirea substanței	*Nr. CAS*	*Efect*	*Valoare*	*Specii*	*Durata de expunere*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	LC50	0,07 $^{mg}/_{l}$	pește	14 d
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	EC50	>0,18 $^{mg}/_{l}$	nevertebrate acvatice	21 d
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	ErC50	45,6 $^{µg}/_{l}$	alge	120 h

12.2 Persistența și degradabilitatea

Nu este ușor biodegradabil(ă).

Degradabilitatea componenților amestecului					
Denumirea substanței	*Nr. CAS*	*Proces*	*Rata de degradare*	*Timp*	*Metoda*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	generare de dioxid de carbon	>60 %	29 d	

12.3 Potențialul de bioacumulare

A worth-mentioning accumulation in organisms is not expected.

Potențial de bioacumulare a componenților amestecului				
Denumirea substanței	*Nr. CAS*	*BCF*	*Log KOW*	*BOD5/COD*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	54	≥-0,34 – ≤0,63 (pH valoare: 7, 10 °C)	

12.4 Mobilitatea în sol

Nu sunt disponibile date.

12.5 Rezultatele evaluării PBT și vPvB

Nu este aplicabilă.

12.6 Alte efecte adverse

Potențialul de a afecta sistemul endocrin

Niciun ingredient nu figurează pe listă.

Observații

A nu se arunca în rețeaua de canalizare sau în apa de suprafață.

SECȚIUNEA 13: Considerații privind eliminarea

13.1 Metode de tratare a deșeurilor

Acest produs şi ambalajul său se vor depozita ca un deşeu periculos. Alocarea de numere de identificare/marcaje pentru reziduuri trebuie sa se efectueze corespunzator OID, specifc procesului si bransei. Eliminarea deseurilor de produs se va face conform legii 211/2011 privind regimul deseurilor.¶Eliminarea deseurilor de ambalaje se face cf. HG 621/2005 privind gestionarea ambalajelor si deseurilor de ambalaje; HG 856/2002- evidenta gestiunii deseurilor si aprobarea listei deseurilor. Legea 249/2015 privind modalitatea de gestionare a ambalajelor si a deseurilor de ambalaje.

Informaţii relevante pentru tratarea deşeurilor

Este un deșeru periculos; pot fi utilizate exclusiv ambalajele omologate (de ex. conf. ADR). Ambalajele golite complet pot fi reciclate. Manipulați ambalajele contaminate în același mod ca și substanța respectivă.

Observații

Vă rugăm să luați în considerare dispozițiile naționale sau regionale relevante. Deșeurile vor fi selectate pe categorii care pot fi tratate separat de către facilitățile de gestionare a deșeurilor de la nivel local sau național. A nu se arunca în rețeaua de canalizare sau în apa de suprafață. Evitaţi dispersarea în mediu.

SECȚIUNEA 14: Informații referitoare la transport

14.1 Numărul ONU	3265
14.2 Denumirea corectă ONU pentru expediție	LICHID ORGANIC COROSIV, ACID, N.S.A.
Denumire tehnică (ingrediente periculoase)	(isothiazolinones)
14.3 Clasa (clasele) de pericol pentru transport	
Clasa	8
14.4 Grupul de ambalare	III
14.5 Pericole pentru mediul înconjurător	periculos pentru mediul acvatic
Substanţă periculoasă pentru mediu (mediul acvatic)	isothiazolinones

14.6 Precauții speciale pentru utilizatori

Nu există informații suplimentare.

14.7 Transport în vrac, în conformitate cu anexa II la MARPOL și Codul IBC

Încărcătura nu este destinată să fie transportată în vrac.

Informații pentru fiecare Regulament-tip ONU

Transportul rutier, feroviar şi pe căi navigabile interioare al mărfurilor periculoase (ADR/RID/ADN)

Numărul ONU	3265
Denumirea oficială de transport	LICHID ORGANIC COROSIV, ACID, N.S.A., (isothiazolinones)
Clasa	8
Grupul de ambalare	III
Etichetă(e) de pericol	8, peşte şi copac



Pericole pentru mediul înconjurător	da
Cod restricţie tunel (CRT)	E

Codul maritim internaţional pentru mărfuri periculoase (IMDG)

Numărul ONU	3265
Denumirea oficială de transport	LICHID ORGANIC COROSIV, ACID, N.S.A., (isothiazolinones)
Clasa	8
Poluează mediul acvatic marin	da
Grupul de ambalare	III
Etichetă(e) de pericol	8, peşte şi copac



EmS	F-A, S-B
Grupă de segregare	1 - Acizi
Coduri de segregare	SG36, SG49

Organizaţia Internaţională de Aviaţie Civilă (OACI-IATA/DGR)

Numărul ONU	3265
Denumirea oficială de transport	Lichid organic corosiv, acid, n.s.a., (isothiazolinones)
Clasa	8
Pericole pentru mediul înconjurător	da
Grupul de ambalare	III
Etichetă(e) de pericol	8



SECȚIUNEA 15: Informații de reglementare

15.1 Regulamente/legislație în domeniul securității, al sănătății și al mediului specifice (specifică) pentru substanța sau amestecul în cauză

Dispozițiile relevante ale Uniunii Europene (UE)

Restricții în conformitate cu REACH, Anexa XVII

Substanțe periculoase cu restricții (REACH, Anexa XVII)			
Denumirea substanței	*Denumirea conf. inventarului*	*Nr. CAS*	*Restricție*
Ferrocid 8583	acest produs îndeplineşte criteriile de clasificare în conformitate cu Regulamentul nr. 1272/2008/CE		R3

Legendă

R3 1. Nu se utilizează în:
- articole decorative destinate producerii unor efecte de lumină sau de culoare prin intermediul unor faze diferite, de exemplu, în lămpi decorative și în scrumiere;
- obiecte destinate producerii de farse și capcane;
- jocuri pentru unul sau mai mulți participanți sau orice alt articol destinat unei folosințe similare, chiar și cu aspecte decorative.
2. Este interzisă introducerea pe piață a articolelor care nu se conformează punctului 1.
3. Nu se introduc pe piață dacă conțin colorant, cu excepția cazului în care este necesar din motive fiscale, sau parfum ori ambele, dacă:
- pot fi utilizate drept combustibili în lămpi decorative cu ulei pentru a fi furnizate publicului larg; și
- prezintă un pericol în caz de inhalare și sunt etichetate cu R65 sau H304.
4. Lămpile decorative cu ulei destinate publicului larg nu sunt introduse pe piață decât dacă sunt conforme standardului european privind lămpile decorative cu ulei (EN 14059), adoptat de Comitetul European de Standardizare (CEN).
5. Fără a aduce atingere punerii în aplicare a altor dispoziții comunitare referitoare la clasificarea, ambalarea și etichetarea substanțelor și a amestecurilor periculoase, furnizorii se asigură, înainte de introducerea pe piață, că sunt respectate următoarele cerințe:
(a) uleiurile lampante, etichetate cu R65 sau H304, destinate publicului larg, sunt marcate vizibil, lizibil și de neșters după cum urmează: „A nu se lăsa la îndemâna copiilor lămpi umplute cu acest lichid" și, începând cu 1 decembrie 2010, „Doar o înghițitură de ulei lampant – sau chiar suptul fitilului lămpilor – poate cauza leziuni pulmonare care constituie o amenințare la adresa vieții";
(b) lichidele de aprins focul pentru barbecue, etichetate cu R65 sau H304, destinate publicului larg, sunt marcate, începând cu 1 decembrie 2010, lizibil și de neșters, după cum urmează: „O singură înghițitură din acest lichid poate cauza leziuni pulmonare care constituie o amenințare la adresa vieții";
(c) uleiurile lampante și lichidele de aprins focul pentru barbecue, etichetate cu R65 sau H304, destinate publicului larg, sunt îmbuteliate, începând cu 1 decembrie 2010, în recipiente negre opace care nu depășesc 1 litru.
6. Până la 1 iunie 2014 cel târziu, Comisia solicită Agenției Europene pentru Produse Chimice să pregătească un dosar, în conformitate cu articolul 69 din prezentul regulament, în scopul de a interzice, dacă este cazul, lichidele de aprins focul pentru barbecue și combustibilii pentru lămpile decorative, etichetați R65 sau H304, destinați publicului larg.
7. Persoanele fizice sau juridice care introduc pe piață pentru prima oară uleiuri lampante și lichide de aprins focul pentru barbecue, etichetate cu R65 sau H304, furnizează autorității competente din statul membru în cauză, până la 1 decembrie 2011 și apoi anual, date privind soluții alternative pentru uleiul lampant și lichidele de aprins focul pentru barbecue etichetate R65 sau H304. Statele membre pun datele respective la dispoziția Comisiei.

Lista substanțelor care fac obiectul autorizării (REACH, Anexa XIV) / SVHC - lista substanțelor candidate

niciun ingredient nu figurează pe listă

Directiva Seveso

2012/18/UE (Seveso III)				
Nr.	*Substanță periculoasă/categorii de pericol*	*Cantități relevante (tone) ale substanțelor pentru încadrarea amplasamentelor de nivel inferior și de nivel superior*		*Note*
E1	pericole pentru mediu (periculoase pentru mediul acvatic, cat. 1)	100	200	56)

Observație

56) periculoase pentru mediul acvatic în categoria acut 1 sau cronic 1

Directiva 2011/65/UE privind restricțiile de utilizare a anumitor substanțe periculoase în echipamentele electrice și electronice (RoHS) - Anexa II

niciun ingredient nu figurează pe listă

Regulamentul 166/2006/CE privind înfiinţarea Registrului European al Poluanţilor Emişi şi Transferaţi (PRTR)

niciun ingredient nu figurează pe listă

Directiva-cadru privind apa (DCA)

Lista poluanților (DCA)

Denumirea substanței	*Nr. CAS*	*Enumerată în*	*Observații*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)		A)	
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)		A)	

Legendă
A) Lista orientativă a principalilor poluanți

Regulamentul (UE) 2019/1148 al Parlamentului European și al Consiliului din 20 iunie 2019 privind comercializarea și utilizarea precursorilor de explozivi, de modificare a Regulamentului (CE) nr. 1907/2006 și de abrogare a Regulamentului (UE) nr. 98/2013

niciun ingredient nu figurează pe listă

Regulamentul 111/2005/CE de stabilire a normelor de monitorizare a comerțului cu precursori de droguri între Comunitate și țările terțe

niciun ingredient nu figurează pe listă

Restricţii privind ocupaţia

Respectati restrictiile ocupationale conform Legii pentru protectia muncii juvenile (94/33/UE). Legea nr. 319/2006- legea securitatii si sanatatii in munca. HG 1218/2006 privind stabilirea cerinţelor minime de securitate si sănătate in munca pentru asigurarea protecției lucrătorilor împotriva riscurilor legate de prezenta agenților chimici.

Regulamentul 528/2012/UE privind introducerea pe piață și utilizarea produselor biocide

Utilizați în siguranță produsele biocide. Citiți întotdeauna eticheta și informațiile despre produs înainte de utilizare.

15.2 Evaluarea securității chimice

Evaluarea securității chimice: Nu.

SECŢIUNEA 16: Alte informaţii

Indicație a modificărilor (fișă cu date de securitate revizuită)

Secțiunea	*Introducere anterioară (text/valoare)*	*Introducere actuală (text/valoare)*
1.3	Detalii privind furnizorul fișei cu date de securitate: Kurita Europe GmbH Giulinistrasse 2 DE-67065 Ludwigshafen Germania Telefon: + 49 621 1218-3000	Detalii privind furnizorul fișei cu date de securitate: Kurita Europe GmbH Theodor-Heuss-Anlage 2 DE-68165 Mannheim Germania Telefon: + 49 621 1218-3000

Secţiunea	*Introducere anterioară (text/valoare)*	*Introducere actuală (text/valoare)*
	e-mail: MSDS@kurita.eu Website: www.kurita.eu	e-mail: KEG_PS@kurita-water.com Website: www.kurita.eu
1.3		Furnizor a produsului: modificare în listă (tabel)
12.2		Degradabilitatea componenţilor amestecului: modificare în listă (tabel)

Abrevieri si acronime

Abr.	*Descrieri ale abrevierilor utilizate*
Acute Tox.	Toxicitate acută
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (Acordul european privind transportul internaţional al mărfurilor periculoase pe căile navigabile interioare)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (Acordul european referitor la transportul rutier internaţional al mărfurilor periculoase)
Aquatic Acute	Periculos pentru mediul acvatic - pericol acut
Aquatic Chronic	Periculos pentru mediul acvatic - pericol cronic
BCF	Bioconcentration factor (factor de bioconcentrare)
BOD	Consumul biochimic de oxigen
CAS	Chemical Abstracts Service (departament care deţine cea mai cuprinzătoare listă a substanţelor chimice)
CLP	Regulamentul (CE) Nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
COD	Consumul chimic de oxigen
DGR	Reglementări privind Mărfurile Periculoase (a se vedea IATA/DGR)
EC50	Concentraţia Efectivă 50%. CE50 corespunde concentraţiei unei substanţe testate care produce schimbări de 50% în efect (de ex., asupra creşterii) într-un interval de timp specificat
EINECS	European Inventory of Existing Commercial Chemical Substances (Inventarul european al substanţelor chimice existente introduse pe piaţă)
ELINCS	European List of Notified Chemical Substances (Lista europeană a substanţelor chimice notificate)
EmS	Emergency Schedule (Plan de urgenţă)
ErC50	≡ CE50: în această metodă, acea concentraţie a substanţei de testat care determină o reducere cu 50 % fie a creşterii (CEb50), fie a vitezei de creştere (CEr50) în comparaţie cu testul martor
Eye Dam.	Lezare gravă a ochiului
Eye Irrit.	Iritant pentru ochi
factor M	Înseamnă un factor de multiplicare. Acesta se aplică concentraţiei unei substanţe clasificate ca fiind periculoasă pentru mediul acvatic, toxicitate acută categoria 1 sau toxicitate cronică categoria 1, şi care se utilizează pentru determinarea, prin metoda însumării, a clasificării unui amestec, în care este prezentă substanţa
IATA	International Air Transport Association (Asociaţia Internaţională de Transport Aerian)
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA) (Reglementări privind Mărfurile Periculoase pentru transportul aerian)

Abr.	*Descrieri ale abrevierilor utilizate*
IMDG	International Maritime Dangerous Goods Code (Codul maritim internaţional pentru mărfuri periculoase)
LC50	Lethal Concentration 50 % (concentrație letală 50 %): LC50 corespunde concentrației unei substanțe testate care produce o letalitate de 50 % într-un interval de timp specificat
LD50	Lethal Dose 50 % (doză letală 50 %): DLx corespunde dozei unei substanțe testate care produce o letalitate de 50 % într-un interval de timp specificat
log KOW	n-Octanol/apă
MARPOL	Convenția internațională pentru prevenirea poluării de către nave (abr. de la „Marine Pollutant")
NLP	No-Longer Polymer (ex-polimer)
Nr. CE	Inventarul CE (EINECS, ELINCS și NLP-list) este sursa numărului CE, format din șapte cifre, un identificator al substanțelor disponibile pe piață în UE (Uniunea Europeană)
Nr. index	Numărul index reprezintă codul de identificare alocat substanței în partea 3 din anexa VI la Regulamentul (CE) nr. 1272/2008
OACI	International Civil Aviation Organization (Organizația Internațională de Aviație Civilă)
Ox. Sol.	Solid oxidant
PBT	Persistent, bioacumulativ și toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice)
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulamentul privind transportul internațional feroviar al mărfurilor periculoase)
Skin Corr.	Corosiv pentru piele
Skin Irrit.	Iritant pentru piele
Skin Sens.	Sensibilizarea pielii
SVHC	Substance of Very High Concern (substanță care prezintă motive de îngrijorare deosebită)
vPvB	Very Persistent and very Bioaccumulative (foarte persistent și foarte bioacumulativ)

Trimiteri către literatura de specialitate şi către sursele de date

Regulamentul (CE) Nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor. Regulamentul (CE) nr. 1907/2006 (REACH), modificat prin 2015/830/UE. ECHA: Agenția Europeană pentru Produse Chimice, http://echa.europa.eu/.

Transportul rutier, feroviar și pe căi navigabile interioare al mărfurilor periculoase (ADR/RID/ADN). Codul maritim internaţional pentru mărfuri periculoase (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA) (Reglementări privind Mărfurile Periculoase pentru transportul aerian).

Procedura de clasificare

Proprietățile fizice și chimice: Clasificarea este bazată pe amestecul testat.
Pericolele pentru sănătate, Pericole pentru mediul înconjurător: Metoda pentru clasificarea amestecului se bazează pe ingredientele amestecului (formula de aditivitate).

Lista frazelor relevante (codul şi textul întreg aşa cum figurează în capitolul 2 şi 3)

Cod	*Text*
H272	Poate agrava un incendiu; oxidant.
H301	Toxic în caz de înghiţire.
H310	Mortal în contact cu pielea.
H314	Provoacă arsuri grave ale pielii şi lezarea ochilor.
H317	Poate provoca o reacţie alergică a pielii.
H318	Provoacă leziuni oculare grave.
H330	Mortal în caz de inhalare.
H400	Foarte toxic pentru mediul acvatic.
H410	Foarte toxic pentru mediul acvatic cu efecte pe termen lung.
H411	Toxic pentru mediul acvatic cu efecte pe termen lung.

Clauză de exonerare de răspundere

Aceste informaţii se bazează pe nivelul actual de cunoştinţe pe care le deţinem. Prezenta FDS a fost redactată şi este destinată exclusiv pentru acest produs.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVADES 100

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVADES 100**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Inhibitor de coroziune pentru fluide de foraj**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om și mediul înconjurător:

SUBSTANŢA / AMESTECUL ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)		
	**GHS07**	**Toxicitate acută 4** **H302 -** Nociv în caz de înghiţire
		Iritant cutanat 2 **H315:** Provoacă iritarea pielii.
		Sensib. Cutanat 1 **H317:** Poate provoca o reacţie alergică a pielii.
		Iritant ocular 2 **H319:** Provoacă o iritare gravă a ochilor.
		Toxicitate acută inhalatorie 4 **H332:** Nociv în caz de inhalare.
Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
	**Xn - nociv**	**R43:** Poate provoca sensibilizare în contact cu pielea.
		R20/22: Nociv în caz de inhalare şi înghiţire
	**Xi - iritant**	**R36/38:** Iritant pentru ochi şi pentru piele.

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)		
Identificarea pericolelor:	 **GHS07**	**Toxicitate acută 4** **H302 -** Nociv în caz de înghiţire
		Iritant cutanat 2 **H315:** Provoacă iritarea pielii.
		Sensib. Cutanat 1 **H317:** Poate provoca o reacţie alergică a pielii.
		Iritant ocular 2 **H319:** Provoacă o iritare gravă a ochilor.
		Toxicitate acută inhalatorie 4 **H332:** Nociv în caz de inhalare.
Fraze de precauție:	**P261:** Evitaţi să inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul. **P270:** A nu mânca. bea sau fuma în timpul utilizării produsului **P273:** Evitaţi dispersarea în mediu. **P280:** Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei. **P305 + P351 + P338:** ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	
Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
Identificarea pericolelor:		**Xn – Nociv** **R43:** Poate provoca sensibilizare în contact cu pielea
		R20/22: Nociv în caz de inhalare şi înghiţire
		Xi - Iritant **R36/38:** Iritant pentru ochi şi pentru piele.
Sfaturi de siguranță::	**S26:** În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul. **S36/37:** Purtaţi echipament de protecţie şi mănuşi corespunzătoare.	
Eliminarea:	**S60:** Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.	

2.3. Alte pericole
- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul de mai jos
Formula moleculară:	- - -
Număr ID	- - -
Număr EC	- - -
Număr CAS	- - -
Număr REACH	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Alfa, alfa ','' alfa-trimetil-1,3,5-triazin-1, 3,5 (2H, 4H, 6H)-tri-etanol	25254-50-6	246-764-0	50% - 60%	**Toxicitate acută Inhal. 4**	 **GHS07**	**H302**
				Toxicitate acută Orala 4		**H332**
				Irit. oc. 2:		**H319**
				Irit. piele 2		**H 315**
				Sens. piele 1		**H 317**

Name	CAS No.	EC No.	Quantity	Classification	Symbols	Hazard Statements
Alfa, alfa ','' alfa-trimetil-1,3,5-triazin-1, 3,5 (2H, 4H, 6H)-tri-etanol	25254-50-6	246-764-0	50% - 60%	**Xn - nociv**		**R43**
						R 20/22
				Xi - iritant		**R36/38**

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistență medicală. Arătaţi medicului această Fișă cu Date de Securitate.
După inhalare:	Dacă respiraţia este neregulată sau a încetat, faceţi respiraţie artificială. În caz de inhalare, adresaţi-vă imediat unui medic și arătați-i ambalajul sau eticheta.
După contactul cu pielea:	Scoateţi imediat toate hainele contaminate. Zone ale corpului care au venit în contact sau sunt doar suspectate de a fi venit în contact cu produsul, trebuie clătite imediat cu multă apă și, eventual, cu săpun. Spălaţi bine corpul.
După contactul cu ochii:	După contactul cu ochii, clătiti cu apă, cu pleoapele deschise pentru o perioadă suficientă de timp, apoi adresaţi-vă imediat unui medic oftalmolog. Protejaţi ochiul care nu este afectat.
După înghiţire:	Cereți sfatul medical imediat.
Alte informaţii:	N.a.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	Nu sunt disponibile.

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultaţi imediat un medic şi arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenţie:	- - -

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauţie în caz de incendiu:	În caz de incendiu respectaţi, urmaţi instrucţiunile.
Mijloace de stingere corespunzătoare:	Apă, pulbere uscată, spumă, dioxid de carbon (CO2)
Mijloace de stingere necorespunzătoare:	Niciunul în mod special.
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Nu sunt disponibile.
Echipamente speciale de stingere a incendiilor	Colectati separat apa contaminata utilizata pentru a stinge focul. Nu permiteti deversarea în sistemul de canalizare. Dacă posibil în ceea ce priveşte siguranţa, indepartati imediat containerele intacte din zona de pericol imediat

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecţie şi proceduri de urgenţă

Echipament de protecţie:	Purtaţi echipament individual de protecţie. Purtaţi aparat respirator adecvat dacă este necesar.
Proceduri de urgenţă:	Îndepărtaţi persoanele care nu poartă echipament corespunzător. Furnizaţi şi asiguraţi o ventilaţie adecvată

6.2. Precauţii pentru mediul înconjurător

Medii de izolare:	Utilizaţi material absorbant, organic, nisip.
Metode de limitare a poluarii	Nu permiteţi infiltrarea în sol / subsol. Nu permiteţi infiltrarea în apele de suprafaţă sau în sistemul de canalizare. După colectare, spălaţi zona cu apă
Informatii suplimentare:	Colectaţi separat apa contaminată şi se va elimina în conformitate cu reglementările în vigoare.

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate

Precauţii pentru manipulare în condiţii de securitate:	Evitaţi contactul cu pielea şi ochii, evitaţi inhalarea de vapori. Utilizaţi sistemul de ventilaţie localizat.

7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi

Condiţii de depozitare:	Depozitaţi în locuri răcoroase şi bine ventilate, la distanţă de surse de căldură, scântei şi alte surse de aprindere.
Specificaţiile zonei de depozitare:	Zone bine ventilate
Specificaţiile recipienţilor:	Folosiţi containere / canistre din metal sau PVC.
Incompatibilităţi:	Acizi

7.3. Utilizare finală specifică:

Utilizări finale specifice:	**Inhibitor de coroziune pentru fluide de foraj**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control

Amestec	
TLV_{Celing}:	- - -
TLV_{TWA}:	- - -

TLV_{STEL}:		- - -
Limita biologică:		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Asiguraţi ventilaţie adecvată
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Spaţiu ventilat
Protecţia individuală	Respiratorie:	Echipament adecvat de protecție respiratorie.
	Ochi	Ochelari de protecţie
	Maini	Mănuși de protecție - PVC, neopren sau cauciuc
	Corp	Echipament de protecţie
8.3. Controlul expunerii mediului		
Variante de expunere		- - -

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale	
Forma:	Lichid
Aspect:	Lichid limpede de la incolor la galben deschis
Culoare:	De la incolor la galben deschis
Miros:	Inodor
Prag olfactiv:	N.a.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH (10 g/l) la 20 °C:	10-11
Punct de topire:	N.a.
Punct de fierbere:	>100°C
Punct de aprindere:	N.a.
Inflamabilitate (solid, gaz):	> 100 °C
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C:	N.a.
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	De la 1,09 la 1,11 gr/cm^3
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	Solubil
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate

Condiții care trebuie evitate:	Stabil în condiții normale de utilizare
10.2. Stabilitate chimică	
Materiale incompatibile:	N.a.
Posibilitatea de reacții periculoase:	Reacţii cu acizii
10.3. Produși de descompunere periculoși	
Alte informaţii:	N.a.

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Toxicitatea substanéi	***Alfa, alfa ','' alfa-trimetil-1,3,5-triazin-1, 3,5 (2H, 4H, 6H)-tri-etanol CAS No. 25254-50-6***
Toxicitate orală acută:	DL50 (Şobolan): 803 – 1151 mg/kg
Toxicitate inhalatorie acută:	DL50 (Şobolan) 4h: 2 mg/l
Toxicitate cutanată acută:	DL50 (Şobolan): > 2000 mg/kg
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate	
Substanţa	***Alfa, alfa ','' alfa-trimetil-1,3,5-triazin-1, 3,5 (2H, 4H, 6H)-tri-etanol CAS No. 25254-50-6***
Toxicitate în apă:	LC50 (Peşti) 96 h: > 100 mg/l EC50 (Dafnii) 48 h: 29 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	N.a.
12.3. Potența Bioacumulativ	
Alte informații:	N.a.
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	Recuperaţi produsul, dacă este posibil. Produs periculos: a se elimina în conformitate cu reglementările în vigoare.
Cod de deşeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Ambalajele contaminate trebuie să fie clasificate ca deşeuri periculoase. Recuperaţi ambalajele, dacă este posibil. Deşeuri periculoase: a se elimina în conformitate cu reglementările în vigoare.
Alte recomandări:	N.a.

14. INFORMAŢII REFERITOARE LA TRANSPORT	
14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Norme de transport ONU	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) şi Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.

Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.

REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor

HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și științific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:
Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie

informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose **-** doză letală medie

NOEC: no observable effect concentration – concentraţia fără efect observat

PNEC: predicted no-effect concentration - concentrația fără efect prevăzut

PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice

vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative

TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore

TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt

TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol si de risc utilizate în secţiunile anterioare

H302 - Nociv în caz de înghiţire
H315: Provoacă iritarea pielii.
H317: Poate provoca o reacţie alergică a pielii.
H319: Provoacă o iritare gravă a ochilor.
H332: Nociv în caz de inhalare.

R43: Poate provoca sensibilizare în contact cu pielea.
R20/22: Nociv în caz de inhalare şi înghiţire
R36/38: Iritant pentru ochi şi pentru piele.

Fraze de precauţie si de siguranta utilizate în secţiunile anterioare

P261: Evitaţi să inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.
P270: A nu mânca. bea sau fuma în timpul utilizării produsului
P273: Evitaţi dispersarea în mediu.
P280: Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei.
P305 + P351 + P338: ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

S26: În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul.
S36/37: Purtaţi echipament de protecţie şi mănuşi corespunzătoare.
S60: Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVAGEL

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVAGEL**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Viscozifiant și agent de suspensie pentru fluidele de foraj**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare	
Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă		
+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile	
E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator	
Nume:	S.C. AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă		
	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile	
E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică	
Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om și mediul înconjurător:

SUBSTANŢA / AMESTECUL NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)		
---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)		
Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Fraze de precauţie:		
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	
Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Sfaturi de siguranţă::	**S22:** A nu se inspira praful. **S24/25:** Evitaţi contactul cu pielea şi ochii.	
Eliminarea:	- - -	

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	In conformitate cu urmatorul tabel:
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Bentonita (Smectite)	1302-78-9	215-108-5	100 %	- - -	- - -	- - -

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Nu sunt necesare măsuri speciale
După contactul cu pielea:	Nu sunt necesare măsuri speciale
După contactul cu ochii:	Spalati bine cu apa. Dacă iritaţia persistă, adresaţi-vă unui medic.
După înghiţire:	Nu sunt necesare măsuri speciale
Alte informaţii:	- - -

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	N.a.
4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.	
Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultaţi imediat un medic şi arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenţie:	- - -

5. MĂSURI DE COMBATERE A INCENDIILOR	
5.1. Mijloace de stingere a incendiilor	
Măsuri de precauţie în caz de incendiu:	În caz de incendiu, respectaţi urmatoarele instrucţiuni.
Mijloace de stingere corespunzătoare:	Nu este inflamabil şi nici exploziv. Produsul nu este combustibil. Utilizati: apă, spumă, pulbere sau CO2.
Mijloace de stingere necorespunzătoare:	Niciunul
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Nu este considerat a prezenta un pericol de explozie
Echipamente speciale de stingere a incendiilor	Purtaţi echipament de protectie PPE adecvat şi aparat respirator daca este necesar.
Recomandări destinate pompierilor:	N.a.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ	
6.1. Precauţii personale, echipament de protecţie şi proceduri de urgenţă	
Echipament de protecţie:	În caz de expunere prelungită sau nivel ridicat de praf suspendat purtati o protecţie respiratorie, în conformitate cu legislaţia naţională
Proceduri de urgenţă:	N.a.
6.2. Precauţii pentru mediul înconjurător	
Medii de izolare:	Orice masuri speciale sunt necesare
Metode de limitare a poluarii	Evitati a matura uscat, pulverizati apa sau folositi un sistem vidat pentru a preveni formarea de praf. Reţineţi că bentonita poate fi alunecoasa în conditii de umeditate
Informatii suplimentare:	N.a.

7. MANIPULARE ŞI DEPOZITARE	
7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitati generarea de praf. Asigurati ventilatie adecvata. In caz de ventilatie insuficienta, purtati echipament de protectie respiratorie adecvat.
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Orice masuri speciale sunt necesare .Asigurati ventilatie adecvata si depozitati prevenind deteriorarea accidentală. A se feri de umiditate
Specificaţiile zonei de depozitare:	Depozitaţi într-un loc răcoros, uscat si bine ventilat
Specificaţiile recipienţilor:	Pastrati containerele bine inchise.
Incompatibilităţi:	N.a.
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Viscozifiant şi agent de suspensie pentru fluidele de fora**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ		
8.1. Parametri de control (Limite de expunere)		
Substanţa		
TLV$_{Celing}$:		- - -
TLV$_{TWA}$:		Praf (inhalabil): 3,0 mg / m³ Praf (respirabil): 10 mg / m³
TLV$_{STEL}$:		- - -
Limita biologica		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Asigurați ventilație și filtrare adecvată la locurile de muncă unde poate fi generat praf. Spălați-vă mâinile înainte de pauze și la sfârșitul zilei de lucru. Scoateti și spălati îmbrăcămintea contaminată,
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Venţilaţie generala recomandata.
Protecţia individuală	Respiratorie:	În caz de expunere prelungită la praf purtați echipament de protecție respiratorie individual în conformitate cu legislația națională
	Ochi	Ochelari de protecţie recomandati – in mod normal nu sunt necesari.
	Maini	Purtati mănuși de protecţie – in mod normal nu sunt necesare
	Corp	Purtati imbrăcăminte de protecție PPE adecvata
8.3. Controlul expunerii mediului		
Variante de expunere		- - -

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Forma:	Raw, pudră, granule, pelete, suspendate
Aspect:	Raw, pudră, granule, pelete, suspendate
Culoare:	Variabila de la alb la gri, verde, galben, roșu, maro
Miros:	Inodor
Prag olfactiv:	Niciunul
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH (10 g/l) la 20 °C:	N.a.
Punct de topire:	> 450°C
Punct de fierbere:	Nu se aplica
Punct de aprindere:	Nu este inflamabil
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C:	2,6 g/cm$_3$ la 20°C
Densitatea aparentă (20°C):	0,9 – 1,4 g/ml
Densitatea relativă:	N.a.
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.

Solubilitate în apă (20°C):	< 0,9 mg/l la 20 °C
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Chimic stabil
10.2. Stabilitate chimică	
Materiale incompatibile:	Fara incompatibilitati speciale
Posibilitatea de reacții periculoase:	N.a.
10.3. Produși de descompunere periculoși	
Alte informaţii:	Nu sunt produse de descompunere periculoase

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Substanta	*Bentonite CAS No.1302-78-9*
Toxicitate orală acută:	LD50 (Sobolan): > 2000 mg/kg
Toxicitate inhalatorie acută:	LC50 (Sobolan): > 5,27 mg/l
Toxicitate cutanată acută:	N.a.
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	Nu este iritant pentru piele
Ochi:	Nu este iritant pentru ochi
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	Nu este sensibilizant pentru piele
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate	
Toxicitate în apă:	LC50 (Pesti) 96h: 2800-3200 mg /l EC50 (Daphnia magna) 48h:> 100 mg /l EC50 (Alge) 72h:> 100 mg /l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	Nu se aplică pentru substanțele anorganice
12.3. Potențial de Bioacumulare	
Alte informații:	Nu se aplică pentru substanțele anorganice
12.4. Mobilitate în sol	
Alte informații:	Bentonita este aproape insolubila și, prin urmare, are o mobilitate scăzută în sol
12.5. Resultatele evaluării PBT și vPvB	

PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	Nici un alt efecte advers nu a fost identificat. Conform criteriilor din Sistemul european de clasificare și etichetare a substanțelor, nu este nevoie a fi clasificat ca fiind periculos pentru mediu

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	Poate fi depozitate în conformitate cu reglementările locale. Materialul trebuie să fie îngropat pentru a preveni eliberarea de praf respirabil. Reciclarea ar trebui să fie preferată in locul eliminarii.
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Niciunul în mod special. În orice caz, trebuie evitată formarea de reziduuri de praf din ambalaj și sa se asigure protecția adecvată garantata lucrătorilor. Reciclarea și eliminarea ambalajelor trebuie să fie făcută de o companie certificata pentru managementul adecvat al deseurilor.
Alte recomandări:	N.a.

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Normele de transport ONU:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic și științific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și științific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:

Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:

Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societății Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose - doză letală medie

NOEC: no observable effect concentration – concentraţia fără efect observat

PNEC: predicted no-effect concentration - concentrația fără efect prevăzut

PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice

vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative

TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore

TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt

TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de precauţie/siguranta utilizate în secţiunile anterioare

P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.
S22: A nu se inspira praful.
S24/25: Evitaţi contactul cu pielea şi ochii.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVAGUM

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVAGUM**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Viscozifiant pentru fluidele de foraj**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare	
Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă		
+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile	
E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator	
Nume:	S.C. AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă		
	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile	
E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică	
Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om și mediul înconjurător:

SUBSTANŢA / AMESTECUL NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)		
---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)		
Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Fraze de precauţie:	**P260:** Nu inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul. **P280:** Purtaţi mănuşi de protecţie.	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	
Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Sfaturi de siguranță::	**S22:** A nu se inspira praful. **S37/39:** Purtați echipament de protectie și mănuși corespunzatoare.	
Eliminarea:		

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul următor
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Polizaharid natural	9000-30-0	232-536-8	- - -	- - -	- - -	- - -

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistență medicală. Arătaţi medicului această Fișă cu Date de Securitate.
După inhalare:	Scoateţi imediat persoana afectată afară / la aer curat. Obţineţi asistență medicală.
După contactul cu pielea:	Îndepărtați îmbrăcămintea contaminată. Clătiți cu apă. Dacă persistă iritarea pielii, solicitați asistență medicală
După contactul cu ochii:	Irigați ușor cu apă curată. Dacă iritația persistă, solicitați asistență medicală
După înghiţire:	Se va clăti imediat și în mod repetat gura cu apă. Dacă este necesar solicitați asistență medicală

Alte informaţii:	N.a.
4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.	
Simptome	N.a.
4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.	
Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	N.a.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor	
Măsuri de precauție în caz de incendiu:	În caz de incendiu urmați următoarele reguli
Mijloace de stingere corespunzătoare:	Apă, spumă, pulbere, CO2
Mijloace de stingere necorespunzătoare:	Niciunul
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Se pot elibera vapori nocivi
Echipamente speciale de stingere a incendiilor	În caz de incendiu, purtati aparat de respirat si imbracaminte de protectie
Altele	N.a.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență	
Echipament de protecţie:	Nu respirați praful
Proceduri de urgență:	N.a.
6.2. Precauţii pentru mediul înconjurător	
Medii de izolare:	Păstrați ventilația în mediul de lucru
Metode de limitare a poluarii	Îndepărtați cu o mătură, făraș sau sistem de aspirare vidată. Produsul umed va forma suprafețe alunecoase.
Informatii suplimentare:	N.a.

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitați generarea de praf
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Depozitați într-un loc răcoros și uscat
Specificaţiile zonei de depozitare:	Depozitaţi în zone bine ventilate
Specificaţiile recipienţilor:	N.a.
Incompatibilități:	N.a.
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Viscozifiant pentru fluidele de foraj**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control (Limite de expunere)	
Amestec	
TLV_{Celing}:	- - -
TLV_{TWA}:	- - -
TLV_{STEL}:	- - -

Limita biologica:		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Ventilaţie generală
8.2.2. Măsuri de protecţie individuală, precum echipamentul de protecţie personală.		Asiguraţi ventilaţie adecvată
Protecţia individuală	Respiratorie:	Mască pentru praf
	Ochi	Ochelari de protecţie
	Maini	Mănuși de protecție şi îmbrăcăminte de protecţie recomandate
	Corp	Îmbracăminte de protecţie
8.3. Controlul expunerii mediului		
Variante de expunere		N.a.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Forma:	Pulbere
Aspect:	Pulbere fină
Culoare:	Alb ivoriu
Miros:	Inodor
Prag olfactiv:	N.a.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH în soluţie 1%:	7.0 – 7.5
Punct de topire:	N.a.
Punct de fierbere:	N.a.
Punct de aprindere:	N.a.
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	>280°C
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C	N.a.
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	N.a.
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	N.a.
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	1500 – 3000 cps
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE	
10.1. Reactivitate	
Condiţii care trebuie evitate:	Niciuna
10.2. Stabilitate chimică	
Materiale incompatibile:	Niciunul
Posibilitatea de reacţii periculoase:	N.a.
10.3. Produşi de descompunere periculoşi	
Alte informaţii:	N.a.

11. INFORMAŢII TOXICOLOGICE	
11.1. Toxicitate Acută	
Toxicitatea amestecului	
Toxicitate orală acută:	N.a.
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	N.a.
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	Nu există efecte nocive
Inhalare:	Nu există efecte nocive
11.5. Sensibilitate	
Piele:	Nici un efect advers aşteptat
Ochi:	Nici un efect advers aşteptat

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Toxicitate în apă:	N.a.
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	N.a.
12.3. Potențial de Bioacumulare	
Alte informații:	N.a.
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	Manipulati in conformitate cu reglementarile locale si nationale
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	N.a.
Alte recomandari:	Manipulati in conformitate cu reglementarile locale si nationale

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Normele de transport ONU:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.

Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.

REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor și a amestecurilor

HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;

HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;

REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea

substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:
Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societății Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose **-** doză letală medie

NOEC: no observable effect concentration – concentraţia fără efect observat

PNEC: predicted no-effect concentration - concentrația fără efect prevăzut

PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice

vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative

TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore

TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt

TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de precautie/siguranta utilizate în secţiunile anterioare

P260: Nu inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.
P280: Purtaţi mănuşi de protecţie.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

S22: A nu se inspira praful.
S37/39: Purtați echipament de protectie și mănuși corespunzatoare.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVALIG NE

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVALIG NE**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Reducator de filtrat pentru fluidele de foraj pe baza de apa**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C. AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om și mediul înconjurător:

SUBSTANŢA / AMESTECUL NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)		
---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)		
Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Fraze de precauţie:		
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	
Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Sfaturi de siguranţă::	**S22:** A nu se inspira praful.	
Eliminarea:		

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	In conformitate cu tabelul următor
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Şist humic (Leonardite)	129521-66-0	- - -	- - -	**- - -**	**- - -**	**- - -**
Siliciu cristalin	14808-60-7	238-878-4	- - -	**STOT RE 1**	 **GHS08**	**H372**
	Notă: Acest produs conţine o cantitate mai mica de 1% de quart respirabil. Cuarţul respirabil este clasificat STOT RE 1					

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Scoateţi imediat persoana afectată afară / la aer curat. Solicitati asistenta medicala
După contactul cu pielea:	Scoateţi hainele contaminate. Spălaţi partea/partile contaminate cu apă din

	abundenta.
După contactul cu ochii:	Clătiti bine cu apă. Dacă iritatia persista, adresați-vă unui medic.
După înghiţire:	Clătiti imediat gura bine cu apă si de mai multe ori. Este necesar sa solicitati asistenta medicala
Alte informaţii:	N.a.
4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.	
Simptome	N.a.
4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.	
Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	N.a.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor	
Măsuri de precauție în caz de incendiu:	În caz de incendiu, respectaţi urmatoarele instrucțiuni.
Mijloace de stingere corespunzătoare:	N.a.
Mijloace de stingere necorespunzătoare:	Niciunul
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	N.a.
Echipamente speciale de stingere a incendiilor	În caz de incendiu, utilizati masca de praf și haine de protecție
Recomandări destinate pompierilor:	N.a.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență	
Echipament de protecţie:	Purtați echipament protecție corespunzator, PPE.
Proceduri de urgență:	Nu respirati praful
6.2. Precauţii pentru mediul înconjurător	
Medii de izolare:	N.a.
Metode de limitare a poluarii	Îndepărtați dacă este posibil, cu un sistem de vidare pentru a preveni generarea de praf
Informatii suplimentare:	N.a.

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitati generarea de praf. Nu respirati praful.
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Depozitati in zone racoroase si uscate.
Specificaţiile zonei de depozitare:	N.a.
Specificaţiile recipienţilor:	N.a.
Incompatibilităţi:	N.a.
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Reducator de filtrat pentru fluidele de foraj pe baza de apa**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control (Limite de expunere)

Amestec	***Siliciu cristalin CAS No. 14808-60-7***
TLV_{Celing}:	- - -
TLV_{TWA}:	- - -
TLV_{STEL}:	Dioxid de siliciu cristalin (fracțiune respirabila) TLV-TWA = 0,025 mg / m³ Potential carcinogen uman A2: silicoza, fibroză, și cancer pulmonar. Substanță cu o expunere comunitara limitată la locul de muncă

8.2. Controale ale expunerii profesionale

8.2.1. Controale tehnice corespunzătoare		Staţie de spălare ochi in apropiere.
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Ventilatie fortata.
Protecţia individuală	Respiratorie:	Masca de praf
	Ochi	Ochelari de protecție
	Maini	Mănuși și haine de protecție recomandate
	Corp	Imbrăcăminte de protecție.

8.3. Controlul expunerii mediului

Variante de expunere	N.a.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale

Forma:	Solid
Aspect:	Negricios / maro
Culoare:	Incolor
Miros:	Inodor
Prag olfactiv:	N.a.

9.2. Informaţii pentru sănătate, siguranţă şi mediu

pH (10 g/l) la 20 °C:	3.5 - 4.0
Punct de topire:	N.a.
Punct de fierbere:	N.a.
Punct de aprindere:	N.a.
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C:	790 Kg/m3
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	N.a.
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	N.a.
Coeficientul de distribuție (n-octanol):	N.a.

Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Produsul este stabil in conditiile mediului inconjurator
10.2. Stabilitate chimică	
Materiale incompatibile:	Non-reactive
Posibilitatea de reacții periculoase:	Niciunul
10.3. Produși de descompunere periculoși	
Alte informaţii:	N.a.

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Toxicitatea amestecului	
Toxicitate orală acută:	Nu sunt date disponibile
Toxicitate inhalatorie acută:	Nu sunt date disponibile
Toxicitate cutanată acută:	Nu sunt date disponibile
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	Nici un efect advers așteptat
Ochi:	Nici un efect advers așteptat

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate	
Toxicitate în apă:	N.a.
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	N.a.
12.3. Potențial de Bioacumulare	
Alte informații:	N.a.
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Consultati un centru de colectare autorizat pentru eliminare în conformitate cu reglementările locale.
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	N.a.
Alte recomandări:	Manipulati în conformitate cu reglementările locale și naționale

14. INFORMAŢII REFERITOARE LA TRANSPORT	
14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Normele de transport ONU:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.

Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.

REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor

HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;

HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;

REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:
Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate
GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice
EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente
CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H372: Poate provoca afectari ale organelor in caz de expunere repetata sau prelungita.

Fraze de precauție/siguranta utilizate în secţiunile anterioare

P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare

S22: A nu se inspira praful.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVASIL

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVASIL**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Antispumant pentru fluide de foraj/saramura**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C. AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

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2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Fraze de precauţie:	**P260:** Nu inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	

Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Sfaturi de siguranţă:	**S22:** A nu se inspira praful.	
Eliminarea:		

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul următor
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Amestec de uleiuri siliconice	63148-62-9	- - -	1-3%	- - -	- - -	- - -

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistență medicală. Arătaţi medicului această Fișă cu Date de Securitate.
După inhalare:	Scoateţi imediat persoana afectată afară / la aer curat și țineţi-o la căldură și în stare de repaus. Consultați medicul dumneavoastră dacă nu vă simțiți bine
După contactul cu pielea:	Clătiți cu apă și săpun
După contactul cu ochii:	Irigați cu apă curată din abundenţă şi consultăţi medicul
După înghiţire:	Nu induceti voma. Solicitați imediat medicul
Alte informaţii:	- - -

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	N.a.

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	- - -

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	În caz de incendiu urmați următoarele instrucţiuni
Mijloace de stingere corespunzătoare:	Apă, CO2
Mijloace de stingere necorespunzătoare:	Niciunul
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Nu inhalați gazele de explozie și de ardere
Echipamente speciale de stingere a incendiilor	Utilizaţi aparat de respirație și îmbrăcăminte de protecție. Colectaţi separat apa contaminată folosită pentru a stinge focul. Nu evacuaţi în sistemul de canalizare. Dacă este posibil în ceea ce privește siguranța, mutaţi ambalajele nedeteriorate din zona de pericol imediat
Altele	- - -

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență

Echipament de protecţie:	Purtați echipament de protecție (mănuși, ochelari de protecție și îmbrăcăminte)
Proceduri de urgență:	Eliminaţi persoanele neprotejate. Asiguraţi o ventilație adecvată

6.2. Precauţii pentru mediul înconjurător

Medii de izolare:	Material adecvat pentru colectare: materiale absorbante, organice, nisip
Metode de limitare a poluarii	Spălați cu apă din abundență
Informatii suplimentare:	Nu permiteţi infiltrarea în sol / subsol. Preveniţi scurgerea în apele de suprafață sau în sistemul de canalizare. Colectaţi apa de spălare contaminată și eliminaţi-o. In cazul accesului în cursurile de apă, sol sau în sistemul de canalizare, informaţi autoritățile responsabile

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate

Precauţii pentru manipulare în condiţii de securitate:	Evitați contactul cu pielea și ochii, inhalarea de vapori și aburi. Când lucraţi cu acest produs, nu mâncaţi sau beţi

7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi

Condiţii de depozitare:	Depozitați în spatii racoroase si bine ventilate.
Specificaţiile zonei de depozitare:	Zone bine ventilate
Specificaţiile recipienţilor:	Pastrati recipientele/containerele închise ermetic
Incompatibilităţi:	N.a.
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Antispumant pentru fluide de foraj/saramura**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control (Limite de expunere)		
Amestec		
TLV_{Celing}:		- - -
TLV_{TWA}:		- - -
TLV_{STEL}:		- - -
Limita biologică		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Ventilaţie generală
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Recomandată ventilaţie
Protecţia individuală	Respiratorie:	Nu este necesar în condiţii de utilizare normală
	Ochi	Ochelari de protecție recomandaţi
	Maini	Mănuși de protecție
	Corp	Aceasta nu este necesar să se adopte măsuri speciale de precauție în caz de utilizare normală
8.3. Controlul expunerii mediului		
Variante de expunere		Niciuna

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale	
Forma:	Lichid alb lăptos
Aspect:	Lichid alb lăptos
Culoare:	Alba
Miros:	Caracteristic
Prag olfactiv:	N.a.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH (10 g/l) la 20 °C:	5,5 +/- 1
Punct de topire:	N.a.
Punct de fierbere:	N.a.
Punct de aprindere:	N.a.
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C	N.a.

Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	0,99+/- 0,03 gr/cm^3
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	N.a.
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Stabil în condiţii normale
10.2. Stabilitate chimică	
Materiale incompatibile:	Niciunul
Posibilitatea de reacții periculoase:	Niciuna
10.3. Produși de descompunere periculoși	
Alte informaţii:	Niciuna

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Substanţa	***Amestec de uleiuri siliconice CAS No.63148-62-9***
Toxicitate orală acută:	LD50 (Şobolan): 5000 mg/kg
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	N.a.
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate	
Toxicitate în apă:	N.a.
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	N.a.
12.3. Potențial de Bioacumulare	
Alte informații:	N.a.

12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	Utilizaţi în conformitate cu bunele practici de lucru, evitând eliminarea în mediul înconjurător

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	Recuperaţi, dacă este posibil. Manipulaţi în conformitate cu reglementările la nivel local și național
Cod de deșeu:	N.a.
13.1. Metode de eliminare a produsului	
Sfaturi:	N.a.
Alte recomandări:	Manipulaţi în conformitate cu reglementările la nivel local și național

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Normele de transport ONU:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)
Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:
Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și științific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:
Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date

de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societății Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securității Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose - doză letală medie

NOEC: no observable effect concentration – concentraţia fără efect observat

PNEC: predicted no-effect concentration - concentrația fără efect prevăzut

PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice

vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative

TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore

TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt

TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

P260: Nu inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.

P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

Fraze de siguranţă utilizate în secţiunile anterioare

S22: A nu se inspira praful.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVAWASH WBM

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVAWASH WBM**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Agent de curăţare pentru fluide de foraj pe bază de apă (WBM)**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

	**GHS07**	**Toxicitate orală acută 4** **H302** - Nociv în caz de înghiţire
	**GHS05**	**Afectare oculară 1** **H318** – Provoacă leziuni oculare grave.

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

	**Xn - nociv**	**R22:** Nociv în caz de înghiţire
	Xi - iritant	**R41:** Risc de leziuni oculare grave

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	  **GHS07** **GHS05**
	Toxicitate acută orală 4 **H302** - Nociv în caz de înghiţire
	Afectare oculară 1 **H318** – Provoacă leziuni oculare grave.
Fraze de precauţie:	**P264:** Spălaţi-vă cu atenţie după utilizare. **P270:** A nu se mânca, bea sau fuma în timpul utilizării produslui. **P280**: Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei. **P310:** Sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic. **P305 + P351 + P338**: ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

Identificarea pericolelor:		**Xn –** Nociv **R22**: Nociv în caz de înghiţire
		Xi – Iritant **R41**: Risc de leziuni oculare grave.
Sfaturi de siguranţă::		**S26:** În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul. **S39**:Purtati protectie a fetei/ochilor **S24/25:** Evitaţi contactul cu pielea şi ochii. **S36/37:** Purtaţi echipament de protecţie şi mănuşi corespunzătoare.
Eliminarea:		**S60** Acest produs şi ambalajul (recipientul) său se vor elimina ca un deşeu periculos.

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul de mai jos
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul REACH:	- - -
Numărul ONU:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Oxiran, 2-metil, polimer cu oxiran, eter mono (2-propileptil) REACH no. 02-2119630747-33-XXXX	166736-08-9	605-450-7	20% - 25%	**Toxicitate acută orală 4**	 **GHS07**	**H302**
				Afectare oculară 1	 **GHS05**	**H318**
Alcool C11-C13-ramificat, etoxilat (> 5 EO 20)	68439-54-3	931-985-3	7% - 10%	**Toxicitate acută orală 4**	 **GHS07**	**H302**
				Afectare oculară 1	 **GHS05**	**H318**
Alcool, C9-11-iso, C10-etoxilat îmbogăţit (> 2.5-5 EO)	78330-20-8	- - -	5% - 7%	**Afectare oculară 1**	 **GHS05**	**H318**

Name	CAS No.	EC No.	Quantity	Classification	Symbols	Hazard Statements
Oxiran, 2-metil, polimer cu oxiran, eter mono (2-propileptil)	166736-08-9	605-450-7	20% - 25%	**Xn - nociv**		**R22**
				Xi - iritant		**R41**
Alcool C11-C13-ramificat, etoxilat (> 5 EO 20)	68439-54-3	931-985-3	7% - 10%	**Xn - nociv**		**R22**
				Xi - iritant		**R41**
Alcool, C9-11-iso, C10-etoxilat îmbogăţit (> 2.5-5 EO)	78330-20-8	- - -	5% - 7%	**Xi - iritant**		**R41**

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistență medicală. Arătaţi medicului această Fișă cu Date de Securitate.
După inhalare:	Scoateţi imediat persoana afectată afară / la aer curat. În caz de inhalare, adresaţi-vă unui medic imediat şi arătaţi-i ambalajul sau eticheta.
După contactul cu pielea:	Scoateţi imediat toate hainele contaminate. Spălați-vă imediat cu apă și săpun și clătiți temeinic părtile expuse. Duceţi imediat persoana la spital. Adresați-vă unui medic.
După contactul cu ochii:	După contactul cu ochii, clătiti cu apă, cu pleoapele deschise pentru o perioadă suficientă de timp, apoi adresaţi-vă imediat unui medic oftalmolog. Protejaţi ochiul care nu este afectat.
După înghiţire:	Beţi multă apă și respiraţi aer curat. NU provocați voma. Nu administrați nimic la persoane inconștiente. Solicitaţi imediat sfatul unui medic.
Alte informaţii:	N.a.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	Cauzează arsuri grave. Risc de orbire.

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fișă cu Date de Securitate.
Mijloace speciale de intervenție:	N.a.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	În caz de incendiu respectaţi, urmați instrucțiunile.
Mijloace de stingere corespunzătoare:	Utilizati: Apă, CO_2
Mijloace de stingere necorespunzătoare:	Niciuna
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Nu inhalați gaze de explozie și de ardere.
Echipamente speciale de stingere a incendiilor	Purtați aparatul respirator și echipamentul de protecţie completă a corpului (combinezon).
Recomandări destinate pompierilor:	Folosiţi aparatul respirator adecvat. Colectaţi separat apa contaminată, folosită pentru a stinge focul. Nu se va evacua în sistemul de canalizare. Dacă este posibil, în ceea ce privește siguranța, îndepărtați de la pericolul imediat ambalajele nedeteriorate.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecţie și proceduri de urgență

Echipament de protecţie:	Purtați echipament individual de protecție (mănuși, ochelari și combinezonul)
Proceduri de urgență:	Persoanele care nu sunt echipate vor fi ţinute la distanţă. Furnizaţi și asiguraţi o ventilație adecvată

6.2. Precauţii pentru mediul înconjurător

Medii de izolare:	Reţineţi apa contaminată în urma spălării și eliminați-o. În caz de scurgeri de gaze sau de patrundere în cursurile de apă, sol sau în sistemul de canalizare, informaţi autoritățile responsabile. Material adecvat pentru absorbtie: materiale absorbante, organice, nisip
Metode de limitare a poluarii	Spălați-vă cu apă din abundență

Informatii suplimentare:	Nu permiteţi infiltrarea în sol / subsol. Preveniți scurgerea în apele de suprafață sau în sistemul de canalizare.

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate

Precauţii pentru manipulare în condiţii de securitate:	Evitați contactul cu pielea și ochii, inhalarea de vapori și aburi. A nu se folosi recipientul gol înainte de a fi curățat. Înainte de operațiunile de transfer, să vă asigurați că recipientele nu conţin reziduuri materiale incompatibile. Hainele contaminate trebuie să fie schimbate înainte de a intra în locurile unde se serveşte masa. nu se vor consuma alimente şi / sau băuturi in timpul manipularii

7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi

Condiţii de depozitare:	Păstrați ambalajul închis ermetic. A se păstra la distanţă de alimente, băuturi și hrană pentru animale.
Specificaţiile zonei de depozitare:	Zone bine ventilate
Specificaţiile recipienţilor:	Material adecvat de ambalare: oțel inox, polietilen (PE). Utilizați saci multistrat cu partea internă din PE. Material de ambalare neadecvate: aliaje de aluminiu şi zinc .
Incompatibilităţi:	Niciuna

7.3. Utilizare finală specifică:

Utilizări finale specifice:	**Agent de curăţare pentru fluide de foraj pe bază de apă (WBM)**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control

Amestec	
TLV_{Celing}:	- - -
TLV_{STEL}:	- - -
TLV_{TWA}:	- - -
Limita biologică:	- - -

8.2. Controale ale expunerii profesionale

8.2.1. Controale tehnice corespunzătoare		Ventilatie generala
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Purtați echipament individual de protecție (mănuși, ochelari și salopetă), dacă este necesar .
Protecţia individuală	Respiratorie:	În mod normal, nu este necesară
	Ochi	Folosiți ochelari de protecție. Nu utilizați lentile de contact.
	Maini	Purtați mănuși de protecție, care oferă protecție completă, de exemplu: din cauciuc, PVC sau neopren.
	Corp	Folosiți îmbrăcăminte care asigură protecție completă la nivelul pielii, de exemplu. bumbac, cauciuc, PVC sau viton.

8.3. Controlul expunerii mediului

Variante de expunere	N.a.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale

Forma:	Lichid
Aspect:	Lichid clar
Culoare:	Incolor
Miros:	Caracteristic
Prag olfactiv:	N.a.

9.2. Informaţii pentru sănătate, siguranţă şi mediu

pH:	5 - 7
Punct de topire:	N.a.
Punct de fierbere:	N.a.
Punct de aprindere:	N.a.
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	Nu este exploziv
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C:	N.a.
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	0,99 la 1,05 gr/cm^3
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	N.a.
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Stabil în condiții normale de utilizare
10.2. Stabilitate chimică	
Materiale incompatibile:	Niciuna in mod particular
Posibilitatea de reacții periculoase:	Niciuna
10.3. Produși de descompunere periculoși	
Alte informaţii:	Stabil în condiții normale de utilizare

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută

Substance	**Oxiran, 2-metil, polimer cu oxiran, eter mono**
Toxicitate orală acută:	LC50 (Şobolan): > 300-2000 mg/kg
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	N.a.
Substance	**Alcool C11-C13-ramificat, etoxilat (> 5 EO 20) *CAS No. 68439-54-3***
Toxicitate orală acută:	LC50 (Şobolan): 300-2000 mg/kg
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	LD50 (Iepure): > 2000 mg/kg
Substance	**Alcool, C9-11-iso, C10- etoxilat îmbogăţit (> 2.5-5 EO) *CAS No. 78330-20-8***
Toxicitate orală acută:	LD50 (Şobolan): > 2000 mg/kg
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	LD50 (Iepure): > 2000 mg/kg

11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.
11.6. Other Adverse Effects	
Alte informaţii:	N.a.

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate

Substance	***Oxirane, 2-methyl, polymer with oxirane, mono (2-propileptil) ether***
Toxicitate în apă:	LC50 (Peşti) 96h: 10-100mg/l EC50 (Dafnii) 48h: 10-100mg/l EC50 (Alge) 72h: 10-100mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
Substance	***Alcohol C11-C13-ramificati, ethoxylated (>5 20 EO) CAS No. 68439-54-3***
Toxicitate în apă:	LC50 (Peşti) 96h: 1-10mg/l EC50 (Dafnii) 48h: 1-10mg/l EC50 (Alge) 72h: 1-10mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
Substance	***Alcohols , C9-11-iso-, C10-rich, ethoxylated (>2.5 - 5 EO) CAS No. 78330-20-8***
Toxicitate în apă:	LC50 (Peşti) 96h: 1-10 mg/l EC50 (Dafnii) 48h: 1-10 mg/l EC50 (Alge) 72h: 1-10 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informaţii:	Ușor biodegradabil
12.3. Potenţial de bioacumulare	
Alte informaţii:	N.a.
12.4. Mobilitate în sol	
Alte informaţii:	N.a.
12.5. Rezultatele evaluării PBT şi vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informaţii:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului

Sfaturi:	Recuperaţi produsul, dacă este posibil. Eliminați produsul în conformitate cu reglementările în vigoare.
Cod de deșeu:	N.a.

13.2. Metode de eliminare a ambalajului

Sfaturi:	Recuperaţi ambalajul, dacă este posibil. Este clasificat ca şi produs periculos, eliminați ambalajul în conformitate cu reglementările în vigoare.
Alte recomandări:	N.a.

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)

Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Norme de transport ONU:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Denumirea oficială a transportului	N.a.
Cod de restricţie la acces în tunele	N.a.

14.2. Transport Maritim (IMDG)

Număr ONU:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Număr EMS:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Poluant marin:	N.a.
Denumirea oficială a transportului	N.a.

14.3. Transport Aerian (ICAO-TI si IATA-DGR)

Număr ONU:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Clasa ICAO/IATA	N.a.
Etichetă	N.a.
Grupul de ambalare:	N.a.
Denumirea oficială a transportului	N.a.

14.4. Transport în vrac

Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului

(CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor și a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:

Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:

Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fișa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societății Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securității Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose - doză letală medie

NOEC: no observable effect concentration – concentraţia fără efect observat

PNEC: predicted no-effect concentration - concentrația fără efect prevăzut

PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice

vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative

TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore

TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt

TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H302: Nociv în caz de înghiţire
H318: Provoacă leziuni oculare grave

R22: Nociv în caz de înghiţire
R41: Risc de leziuni oculare grave

Fraze de precauţie utilizate în secţiunile anterioare

P264: Spălaţi-vă cu atenţie după utilizare.
P270: A nu se mânca, bea sau fuma în timpul utilizării produslui.
P280: Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei.
P310: Sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic.
P305 + P351 + P338: ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

S26: În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul.
S39:Purtati protectie a fetei/ochilor
S24/25: Evitaţi contactul cu pielea şi ochii.
S36/37: Purtaţi echipament de protecţie şi mănuşi corespunzătoare.
S60: Acest produs şi ambalajul (recipientul) său se vor elimina ca un deşeu periculos.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

CAUSTIC SODA

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**CAUSTIC SODA**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Agent de control al PH-ului pentru fluide de foraj pe baza de apa**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

	**GHS05**	**Cor piele 1A** **H 314:** Provoacă arsuri grave ale pielii şi lezarea ochilor.

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

	**C - Coroziv**	**R 35:** Provoacă arsuri grave

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	 **GHS05**	**Cor piele 1A** **H 314:** Provoacă arsuri grave ale pielii şi lezarea ochilor.
Fraze de precauţie:	**P260:** Nu respiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul. **P280:** Purtaţi mănuşi de protecţie / îmbrăcăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei. **P363:** Spălaţi îmbracămintea utilizată înainte de reutilizare. **P405:** A se depozita sub cheie. **P304 + P340**: ÎN CAZ DE INHALARE: transportaţi victima la aer liber şi ţineţi-o în stare de repaus, într-o poziţie confortabilă pentru respiraţie. **P301 + P330 + P331**: ÎN CAZ DE ÎNGHIŢIRE: clătiţi gura. NU provocaţi voma. **P303 + P361 + P353:** ÎN CAZ DE CONTACT CU PIELEA (sau părul): scoateţi imediat toată îmbrăcămintea contaminată. Clătiţi pielea cu apă/faceţi duş. **P305 + P351 + P338:** ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	

Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

Identificarea pericolelor:		**C - Coroziv** **R35:** Provoaca arsuri grave
Sfaturi de siguranţă::	**S26:** În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul. **S 45:** In caz de accident sau simptome de boala, consultati imediat medical. (Daca este posibil, I se va arata eticheta). **S 1/2:** Pastrati incuiat si nu lasati la indemana copiilor. **S 37/39:** Purtati echipament de protectie si manausi corespunzatoare.	
Eliminarea:	**S60:** Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.	

2.3. Alte pericole

Produce reacţii exotermice puternice în contact cu apa şi acizi

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Substanţa
Conţinut:	În conformitate cu tabelul de mai jos
Formula moleculară:	- - -
Number ONU	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Hidroxid de sodiu REACH No. 05-2114101567-55-XXXX	1310-73-2	215-185-5	>98%	**Skin Corr. 1A**	 **GHS05**	**H314**
Nume	**Nr. CAS**	**Nr. EC**	**Cantitate**	**Clasificare**	**Simbol**	**Fraze de pericol**
Hidroxid de sodiu	1310-73-2	215-185-5	>98%	**C - coroziv**		**R35**

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fișă cu Date de Securitate.
După inhalare:	Scoateti persoana afectata la aer curat. Cereți sfatul medicului dupa expunere semnificativa.
După contactul cu pielea:	Se vor scoate imediat toate hainele contaminate. Spălați-vă imediat cu apă și săpun și clătiți temeinic părţile expuse.
După contactul cu ochii:	După contactul cu ochii, clătiti cu apă, cu pleoapele deschise pentru o perioadă suficientă de timp, apoi adresaţi-vă imediat unui medic oftalmolog. Protejaţi ochiul care nu este afectat.
După înghiţire:	Beţi multă apă și respirati aer curat. Nu provocați voma. Cereți sfatul medicului imediat.
Alte informaţii:	N.a.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	Cauzeaza arsuri grave. Risc de orbire

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fișă cu Date de Securitate.
Mijloace speciale de intervenție:	N.a.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	În caz de incendiu respectați, urmați instrucțiunile.
Mijloace de stingere corespunzătoare:	CO2, nisip, pulbere pentru stingerea incendiilor
Mijloace de stingere necorespunzătoare:	Nu utilizati:apă.
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Prin ardere se pot elibera vapori periculoşi
Echipamente speciale de stingere a incendiilor	Purtați aparatul respirator și echipamentul de protecție completă a corpului (combinezon).

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență

Echipament de protecţie:	Purtați echipament individual de protecție (mănuși, ochelari și combinezon)
Proceduri de urgență:	Îndepărtaţi persoanele care nu sunt echipate corespunzator. Furnizati și asigurati o ventilație adecvată

6.2. Precauţii pentru mediul înconjurător

Medii de izolare:	Folosiți media absorbant, organic, nisip
Metode de limitare a poluarii	Nu permiteti infiltrarea în sol / subsol. Nu permiteti infiltrarea în apele de suprafață sau in sistemul de canalizare. După colectare, spălați zona cu apă. Utilizați un agent de neutralizare.
Informatii suplimentare:	Se creaza suprafete alunecoase cu apă. Colectati apa de spălare contaminata și eliminați-o conform regulamentelor. Aplicati etichete dedicate, corespunzatorare pe containere.

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate

Precauţii pentru manipulare în condiţii de securitate:	Nu mâncati și nu beţi în timpul lucrului. Evitați contactul cu pielea și ochii, inhalarea de vapori și praf. Utilizați sistemul de ventilație localizata

7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi

Condiţii de depozitare:	Depozitați în zone reci, uscate si bine ventilate, la distanţă de surse de caldura. Etaje special concepute anticoroziune.
Specificaţiile zonei de depozitare:	Zone bine ventilate. Nu se va depozita împreună cu agenți reducatori, compuși ai metalelor grele, acizi si baze
Specificaţiile recipienţilor:	Material adecvat de ambalare: oțel inox, polietilenă. Utilizați saci multistrat cu partea internă din PPE. Materiale de ambalare neadecvate: aluminiu și aliaje de zinc
Incompatibilităţi:	Acizi

7.3. Utilizare finală specifică:

Utilizări finale specifice:	**Agent de control al PH-ului pentru fluide de foraj pe baza de apa**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control

Substanta	
TLV_{Celing}:	2 mg/m^3
TLV_{TWA}:	- - -
TLV_{STEL}:	- - -
Limita biologică:	- - -

8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Ventilaţie generală este recomandată
8.2.2. Măsuri de protecţie individuală, precum echipamentul de protecţie personală.		Ventilaţie forţată. Staţie de spălare ochi.
Protecţia individuală	Respiratorie:	Utilizaţi echipament adecvat de protecţie respiratorie.
	Ochi	Ochelari de protecţie - Nu utilizaţi lentile de contact - Ochelari de protecţie bine închişi
	Maini	Mănuşi de protecţie totala
	Corp	Imbrăcăminte de protectie a intregului corp.
8.3. Controlul expunerii mediului		
Variante de expunere		N.a.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Forma:	Solid
Aspect:	Solid
Culoare:	Alb
Miros:	Inodor
Prag olfactiv:	Nu s-a determinat
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH:	13,5 (soluţie 1%)
Punct de topire:	318 °C
Punct de fierbere:	1388 °C
Punct de aprindere:	Nu se aplică
Inflamabilitate (solid, gaz):	Produsul nu este inflamabil.
Temperatura de autoaprindere:	Nu se aplică
Temperatura de descompunere:	Nu se aplică
Pericol de explozie:	Produsul nu prezinta risc de explozie.
Limita de inflamabilitate superioară:	Nu se aplică
Limita inferioară de inflamabilitate:	Nu se aplică
Presiunea de vapori:	3,5 hPa
Densitatea la 20 °C:	2,13 g/cm^3
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	N.a.
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	420 g/l
Coeficientul de distribuţie (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE	
10.1. Reactivitate	
Condiţii care trebuie evitate:	Evitaţi crearea de praf. Evitati încălzirea și umiditatea. Evitați contactul cu acizi
10.2. Stabilitate chimică	
Materiale incompatibile:	Acizi tari, alcalii, baze, oxid de metal, metale și agenți de oxidare
Posibilitatea de reacţii periculoase:	Reacţii puternic exoterme cu: acizi, apa, diferite metale
10.3. Produși de descompunere periculoși	
Alte informaţii:	Vapori corozivi. În caz de contact cu unele metale, elibereaza hidrogen

11. INFORMAŢII TOXICOLOGICE	
11.1. Toxicitate Acută	
Toxicitatea Substanţei	*Sodium hydroxide CAS No. 1310-73-2*
Toxicitate orală acută:	DL50 (Şobolani): 2000 mg/kg
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	N.a.
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	Puternic caustic/coroziv foarte puternic asupra pielii și mucoaselor
Ochi:	Puternic coroziv. Poate duce la orbire.
11.4. Nocivitate	
Ingestie:	În caz de înghițire, se produce o coroziune puternică a cavității bucale și a faringelui, cu riscul de preforare al esofagului și a stomacului
Inhalare:	Materialul este extrem de distructiv pentru mucoasa si aparatul respirator superior
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Toxicitate în apă:	EC50 (Dafnii) 48h: > 40,4 mg/l LC50 (Peşti) 96h: > 35 – 189 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	N.a.
12.3. Potența Bioacumulativ	
Alte informații:	Nu exista bioacumulare
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	Substanța nu este considerată persistenta, bioacumulabila sau toxica sau foarte persistenta și puternic toxica.
12.6. Alte efecte adverse	
Alte informații:	Pericol pentru apă clasa 1 (D) (Clasificarea conform listelor): puţin periculos.

	Efecte localizate: se poate modifica pH-ul mediului înconjurător cu riscuri pentru speciile de apă. Eliberarea de cantitati mari în ape sau în sistemul de canalizare, poate produce o creștere a pH-ului. Un pH ridicat este dăunător pentru speciile de apă. Diluarea va reduce valoarea pH-ului. Nu evacuați în apă și sistemul de canalizare produsul care nu este diluat sau neutralizat. A se utiliza in conformitate cu bunele practici, nu eliberați în mediul înconjurător.

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	Colectati produsul/scurgerile în cazul în care este posibil. Eliminați în conformitate cu reglementările in vigoare.
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Recuperati produsul, în cazul în care este posibil. Clasificati produsul ca fiind periculos: eliminați în conformitate cu reglementările in vigoare.
Alte recomandări:	N.a.

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	1823
Norme de transport ONU	80
Clasa (clasele) de pericol pentru transport	8 (substanta coroziva)
Grupul de ambalare:	II
Denumirea oficiala a transportului	1823 SODIUM HYDROXIDE, SOLID
Cod de restrictie in galerie/tunel	E
14.2. Transport Maritim (IMDG)	
Număr ONU	1823
Numarul EMS	F-A, S-B
Clasa (clasele) de pericol pentru transport	8 (substanţă corozivă)
Grupul de ambalare:	II
Poluant marin:	NU
Denumirea oficiala a transportului	1823 SODIUM HYDROXIDE, SOLID
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Număr ONU	1823
Clasa IACO/ATA	8 (substanta coroziva)
Eticheta	8 (substanta coroziva)
Grupul de ambalare:	II
Denumirea oficiala a transportului	1823 SODIUM HYDROXIDE, SOLID
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	N.a.
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) şi Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:

Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose - doză letală medie

NOEC: no observable effect concentration – concentraţia fără efect observat

PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H314: Provoaca arsuri grave ale pielii si lezarea ochilor.

R 35: Provoacă arsuri grave

Fraze de precauție utilizate în secţiunile anterioare

P260: Nu respiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.
P280: Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei.
P363: Spălaţi îmbracămintea utilizată înainte de reutilizare.
P405: A se depozita sub cheie.
P304 + P340: ÎN CAZ DE INHALARE: transportaţi victima la aer liber şi ţineţi-o în stare de repaus, într-o poziţie confortabilă pentru respiraţie.
P301 + P330 + P331: ÎN CAZ DE ÎNGHIŢIRE: clătiţi gura. NU provocaţi voma.
P303 + P361 + P353: ÎN CAZ DE CONTACT CU PIELEA (sau părul): scoateţi imediat toată îmbrăcămintea contaminată. Clătiţi pielea cu apă/faceţi duş.
P305 + P351 + P338: ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

S26: În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul.
S 45: In caz de accident sau simptome de boala, consultati imediat medical, (Daca este posibil, I se va arata eticheta).
S 1/2: Pastrati incuiat si nu lasati la indemana copiilor.
S 37/39: Purtati echipament de protectie si manausi corespunzatoare.
S60: Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

STEARALL LQD

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**STEARALL LQD**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Agent antispumant pentru fluidele de workover si completion**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om și mediul înconjurător:

SUBSTANŢA / AMESTECUL ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)		
	**GHS08**	**Tox. Asp. 1** **H304:** Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii.
		Repr. 1B **H360:** Poate dăuna fertilităţii sau fătului.
	**GHS05**	**Lez. Oc. 1** **H318:** Provoacă leziuni oculare grave
	**GHS07**	**Irit. Oc. 2** **H319:** Provoacă o iritare gravă a ochilor
	**GHS09**	**Acvatic acut 1** **H400:** Foarte toxic pentru mediul acvatic
Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
	**Xn - nociv**	**R65:** Nociv: poate provoca afecţiuni pulmonare în caz de înghiţire.

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)	
Identificarea pericolelor:	    **GHS08** **GHS05** **GHS07** **GHS09**
Identificarea pericolelor:	**Tox. Asp. 1** **H304:** Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii.
	Repr. 1B **H360:** Poate dăuna fertilităţii sau fătului
	Lez. Oc. 1 **H318:** Provoacă leziuni oculare grave
	Irit. Oc. 2 **H319:** Provoacă o iritare gravă a ochilor
	Acvatic acut 1 **H400:** Foarte toxic pentru mediul acvatic
Fraze de precauţie:	**P202:** A un se manipula decât după ce au fost citite şi înţelese tóate măsurile de securitate. **P280:** Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei. **P273:** Evitaţi dispersarea în mediu. **P301+P310:** IN CAZ DE ÎNHIŢIRE: sunaţi imediat la un CENTRU de INFORMARE TOXICOLOGICA sau un medic.
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.
Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.	
Identificarea pericolelor:	 **Xn - nociv** **R65:** Nociv: poate provoca afecţiuni pulmonare în caz de înghiţire.
Sfaturi de siguranţă::	**S26:** În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul. **S62:** În caz de înghiţire, a nu se provoca voma: a se consulta imediat un medic şi a i se arăta ambalajul (recipientul) sau eticheta.
Eliminarea:	**S60:** Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul următor
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU	- - -
Număr Index	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Alchene, C11-C12 [Alkenes,C11-C12] REACH No. 01-2119561658-26-XXXX	- - -	932-235-8	20-30%	**Tox. Asp. 1**	 **GHS08**	**H304**
				Irit. Oc. 2	 **GHS07**	**H319**
				Acvatic acut 1	 **GHS09**	**H400**
Izobutil ftalat [Isobutyl phthalate] REACH No. 01-2119561658-26-XXXX	84-69-5	201-553-2	<5%	**Repr. 1B**	 **GHS08**	**H360**
Etoxilat de alcool gras [Fatty alcohol ethoxylate]	- - -	- - -	<5%	**Lez. Oc. 1**	 **GHS05**	**H318**

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Alchene, C11-C12 [Alkenes,C11-C12]	- - -	932-235-8	20-30%	**Xn - nociv**		**R36**
				Xi - iritant		**R50**
				N – nociv pentru mediul inconjurator		**R65**
Izobutil ftalat [Isobutyl phthalate]	84-69-5	201-553-2	<5%	**Repr. Cat. 2,3**		**R61**
						R62
Etoxilat de alcool gras [Fatty alcohol ethoxylate]	- - -	- - -	<5%	**Xi - iritant**		**R41**

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor	
Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fișă cu Date de Securitate.
După inhalare:	Scoateți pacientul la aer curat. Tratați simptomatic
După contactul cu pielea:	Scoateți îmbrăcămintea contaminată. Spălați zona afectată cu apă din abundență
După contactul cu ochii:	Irigati ușor cu apă curată. Dacă iritația persistă, solicitați îngrijire medicală
După înghiţire:	Se va clăti imediat și în mod repetat gura cu apă. Dacă este necesar solicitati asistență medicală
Alte informaţii:	- - -
4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.	
Simptome	N.a.
4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.	
Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fișă cu Date de Securitate.
Mijloace speciale de intervenție:	- - -

5. MĂSURI DE COMBATERE A INCENDIILOR	
5.1. Mijloace de stingere a incendiilor	
Măsuri de precauție în caz de incendiu:	În caz de incendiu respectaţi, urmați instrucțiunile.
Mijloace de stingere corespunzătoare:	În caz de in cendiu, utilizați apă, CO2
Mijloace de stingere necorespunzătoare:	Niciuna
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Nu inhalați gazele de explozie și de ardere.
Echipamente speciale de stingere a incendiilor	În caz de incendiu, folosiți un aparat de respirație adecvați echipament de protecție corespunzător.
Altele:	- - -

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ	
6.1. Precauţii personale, echipament de protecție și proceduri de urgență	
Echipament de protecţie:	Evitati contactul cu ochii. Se va folosi echipament de protecție individual. Scoateți îmbrăcămintea contaminată
Proceduri de urgență:	N.a.
6.2. Precauţii pentru mediul înconjurător	
Medii de izolare:	Colectati cu material absorbant, organic, nisip
Metode de limitare a poluarii	Spalti cu apa din abundenta
Informatii suplimentare:	Nu permiteți să intre în sol / subsol. Preveniti scurgerile în apele de suprafață sau în sistemul de canalizare

7. MANIPULARE ŞI DEPOZITARE	
7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitați contactul cu ochii și pielea, nu inhalati vapori sau ceață
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Spatii cu temperatură adecvata și protejati de îngheț
Specificaţiile zonei de depozitare:	Spații ventilate în mod adecvat.
Specificaţiile recipienţilor:	Recipeinte metalice.
Incompatibilităţi:	Niciuna
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Agent antispumant pentru fluidele de workover si completion**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ		
8.1. Parametri de control		
Amestec		
TLV_{Celing}:		- - -
TLV_{TWA}:		- - -
TLV_{STEL}:		- - -
Limita biologică:		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Ventilație generală recomandată
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Stație de spălare ochi în apropiere.
Protecţia individuală	Respiratorie:	Mască de praf FFP1 necesară în caz de ventilație insuficientă sau expunere prelungită
	Ochi	Ochelari de protecție
	Maini	Mănuși
	Corp	Îmbracăminte de protecție
8.3. Controlul expunerii mediuluiâ		
Variante de expunere		- -

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Forma:	Lichid
Aspect:	Lichid
Culoare:	N.a.
Miros:	Caracteristic
Prag olfactiv:	N.a.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH (10 g/l) la 20 °C:	N.a.
Punct de topire:	N.a.
Punct de fierbere:	>200°C
Punct de aprindere:	N.a.
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	N.a.

Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C:	N.a.
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	0,87-0,89 g/cm3
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	Miscibil
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Stabil în condiții normale
10.2. Stabilitate chimică	
Materiale incompatibile:	Acizi și baze, agenți oxidanti puternici și derivați.
Posibilitatea de reacții periculoase:	Niciuna
10.3. Produși de descompunere periculoși	
Alte informaţii:	Niciuna

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Toxicitatea Amestecului	
Toxicitate orală acută:	LD50 (Șobolan) <2000 mg/kg
Toxicitate inhalatorie acută:	
Toxicitate cutanată acută:	
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	Poate provoca ușoară iritație.
Ochi:	Poate provoca ușoară iritație.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Toxicitate în apă:	N.a.
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	Produsul este slab biodegradabil 40-60%
12.3. Potența Bioacumulativ	
N.a.	N.a.
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Consultați o firmă autorizată pentru eliminarea deșeurilor în conformitate cu reglementările locale. Nu deversați în sistemul de canalizare sau în mediul înconjurător, eliminați la un punct autorizat de colectare a deșeurilor.
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	N.a.
Alte recomandări:	Eliminati în conformitate cu reglementările locale și naționale

14. INFORMAŢII REFERITOARE LA TRANSPORT	
14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Norme de transport ONU	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu:	N.a.
14.2. Transport Maritim (IMDG)	
IMDG Class:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Poluant marin	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa IACO	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) şi Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:

Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate
GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice
EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente
CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societății Americane de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose - doză letală medie
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut

PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H304: Poate fi mortal în caz de înghițire și de pătrundere în căile respiratorii.
H318: Provoacă leziuni oculare grave
H319: Provoacă o iritare gravă a ochilor
H360: Poate dăuna fertilității sau fătului.
H402: Nociv pentru mediul acvatic cu efecte pe termen lung

R65: Nociv: poate provoca afecțiuni pulmonare în caz de înghițire..

Fraze de precauție / siguranta utilizate în secţiunile anterioare

P202: A un se manipula decât după ce au fost vitite și înțelese tóate măsurile de securitate.
P280: Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei.
P273: Evitați dispersarea în mediu.
P301+P310: IN CAZ DE ÎNHIȚIRE: sunați imediat la un CENTRU de INFORMARE TOXICOLOGICA sau un medic.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare
Sfaturi de siguranță în diferitele secțiuni, mai pe larg.

Fraze de siguranță utilizate în secţiunile anterioare

S26: În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul.
S62: În caz de înghițire, a nu se provoca voma: a se consulta imediat un medic și a i se arăta ambalajul (recipientul) sau eticheta.
S60: Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

VISCO XC 84

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**VISCO XC 84**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Viscozifiant pentru fluide de foraj**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C. AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

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2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Fraze de precauţie:	**P260:** Nu inspirati praful/fumul/gazul/ceata/vaporii/spray-ul. **P280:** Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei. **P302+352:** ÎN CAZ DE CONTACT CU PIELEA: spălaţi cu multă apă şi săpun.	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	

Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Sfaturi de siguranţă::	**S22:** A nu se inspira praful. **S28:** În caz de contact cu pielea: spălaţi cu multă apă şi săpun	
Eliminarea:		

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	In conformitate cu tabelul urmator
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Gumă xantan **Xanthan Gum**	11138-66-2	- - -	- - -	- - -	- - -	- - -

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistență medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Scoateţi imediat persoana afectată afară / la aer curat. Solicitați asistență medicală.
După contactul cu pielea:	Spălați cu săpun și multă apă.
După contactul cu ochii:	Clătiți ochii cu apă ca o măsură de precauție.
După înghiţire:	Nu administrați nimic pe cale orală unei persoane în stare de inconștiență. Clătiți gura cu apă
Alte informaţii:	N.a.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	N.a.

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	N.a.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	În caz de incendiu, respectaţi instrucţiunile.
Mijloace de stingere corespunzătoare:	Se vor folosi metode de stingere a incendiului care sunt adecvate condițiilor locale și mediului înconjurător
Mijloace de stingere necorespunzătoare:	Niciunul
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	N.a.
Echipamente speciale de stingere a incendiilor	În caz de incendiu purtați mască pentru praf și îmbrăcăminte de protecție
Altele	N.a.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență

Echipament de protecţie:	Evitați formarea de praf.
Proceduri de urgență:	N.a.

6.2. Precauţii pentru mediul înconjurător

Medii de izolare:	Păstra în containere adecvate, închise pentru eliminarea reziduurilor
Metode de limitare a poluarii	Eliminați cu mătura și lopata. Îndepărtați dacă este posibil cu un sistem de vid pentru a preveni generarea de praf.
Informatii suplimentare:	N.a.

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate

Precauţii pentru manipulare în condiţii de securitate:	Asigurați o ventilație corespunzătoare în locurile unde se formează praf

7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi

Condiţii de depozitare:	Depozitați într-un loc răcoros, bine ventilat. Păstrați recipientul închis ermetic.
Specificaţiile zonei de depozitare:	Depozitați într-un loc răcoros, bine ventilat.
Specificaţiile recipienţilor:	Păstrați recipientul închis ermetic.
Incompatibilităţi:	N.a.

7.3. Utilizare finală specifică:

Utilizări finale specifice:	**Viscozifiant pentru fluide de foraj**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control (Limite de expunere)

Amestec	
TLV_{Celing}:	- - -
TLV_{TWA}:	- - -
TLV_{STEL}:	- - -
Limita biologica	- - -

8.2. Controale ale expunerii profesionale

8.2.1. Controale tehnice corespunzătoare		Se recomandă ventilație adecvată
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Asigurati ventilatie adecvata. Stație de spălare ochi în apropiere.
Protecţia individuală	Respiratorie:	În mod normal, nu este necesar.
	Ochi	Ochelari de protecție
	Maini	Manusi de protectie
	Corp	Îmbracăminte de protecție standard

8.3. Controlul expunerii mediului

Variante de expunere	N.a.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale

Forma:	Solid
Aspect:	Pulbere
Culoare:	Crem pana la usor galbui
Miros:	Usor
Prag olfactiv:	N.a.

9.2. Informaţii pentru sănătate, siguranţă şi mediu

pH :	5.5-8.5
Punct de topire:	N.a.
Punct de fierbere:	N.a.
Punct de aprindere:	N.a.
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.

Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C	1,4-1,6
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	N.a.
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	Complet Solubil
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Stabil in conditii normale de utilizare
10.2. Stabilitate chimică	
Materiale incompatibile:	N.a.
Posibilitatea de reacții periculoase:	Stabil in conditii normale de utilizare
10.3. Produși de descompunere periculoși	
Alte informaţii:	Stabil in conditii normale de utilizare

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Toxicitatea amestecului	
Toxicitate orală acută:	N.a.
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	N.a.
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	Nu provoaca iritarea pielii
Ochi:	Nu provoaca iritarea ochilor
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Toxicitate în apă:	N.a.
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	N.a.
12.3. Potențial de Bioacumulare	
Alte informații:	N.a.
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Consultați un contractor autorizat pentru eliminare în conformitate cu reglementările locale. Nu deversați în sistemul de canalizare sau în mediul înconjurător, eliminați la un punct autorizat de colectare a deșeurilor
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	N.a.
Alte recomandări:	Manipulati în conformitate cu reglementările locale și naționale.

14. INFORMAŢII REFERITOARE LA TRANSPORT	
14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Normele de transport ONU:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) şi Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:

Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fișa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose - doză letală medie

NOEC: no observable effect concentration – concentraţia fără efect observat

PNEC: predicted no-effect concentration - concentrația fără efect prevăzut

PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice

vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

P260: Nu inspirati praful/fumul/gazul/ceata/vaporii/spray-ul.
P280: Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei.
P302+352: ÎN CAZ DE CONTACT CU PIELEA: spălaţi cu multă apă şi săpun.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare

Fraze de siguranţă utilizate în secţiunile anterioare

S22: A nu se inspira praful.
S28: În caz de contact cu pielea: spălaţi cu multă apă şi săpun

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010

AVAGEL PLUS (WYOMING)

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVAGEL PLUS (WYOMING)**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Agent de îngroşare (vâscozifiant) şi de suspensie pentru fluide de foraj**

Contraindicaţii: Nu sunt date disponibile

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om și mediul înconjurător:

ACEST AMESTEC NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI:

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

-	-	-

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)		
Identificarea pericolelor:	- - -	***Nu este clasificat ca fiind periculos în conformitate cu Regulamentul(UE) nr. 1272/2008***
Fraze de precauţie:	**P260:** Nu respiraţi praf/fum/gaz/ceaţă/vapori/spray. **P280**: Purtaţi mănuşi protectoare/ echipament de protecţie/ protejaţi ochii/faţa **P302+P352:** În caz de contact cu pielea: spălaţi cu multă apă şi săpun	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	
2.3. Alte pericole		
- - -		

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul de mai jos
Formula moleculară:	- - -
Numărul EC:	- - -
Number ONU	- - -
Numărul CAS:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
bentonită	1302-78-9	215-108-5	- - -	- - -	- - -	- - -

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Scoateți persoana la aer curat. Trataţi simptoamele. Consultaţi un medic.
După contactul cu pielea:	Scoateți îmbrăcămintea contaminată. Spălaţi zona afectată cu apă din abundenţă.
După contactul cu ochii:	Clătiţi uşor cu multă apă curată. Dacă persistă iritarea, solicitați asistență medicală.
După înghiţire:	Clătiţi-vă gura imediat şi repetitiv cu apă. Dacă este necesar, consultaţi un medic.
Alte informaţii:	Nu sunt date disponibile.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si întârziate.

Simptome	Nu sunt date disponibile

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultaţi imediat un medic şi arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenţie:	Nu sunt date disponibile.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauţie în caz de	Acest produs nu este considerat combustibil. În caz de incendiu respectaţi

incendiu:	următoarele instrucţiuni:
Mijloace de stingere corespunzătoare:	Nu este considerat combustibil. Utilizaţi: coloane uscate, pulbere, spumă sau CO_2.
Mijloace de stingere necorespunzătoare:	Nici unul în special
Pericole care derivă din ardere (produşi de descompunere termică periculoşi):	Nu există compuşi periculoşi în urma descompunerii termice.
Echipamente speciale de stingere a incendiilor	În caz de incendiu, purtați mască de praf şi îmbrăcăminte de protecţie.
Altele	Nu sunt date disponibile

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență	
Echipament de protecţie:	Purtați echipament individual de protecție (mănuşi, ochelari şi haine)
Proceduri de urgență:	Îndepărtaţi personalul neprotejat. Nu respiraţi praf. Furnizaţi ventilare adecvata.
6.2. Precauţii pentru mediul înconjurător	
Mijloace de limitare:	Îndepărtați dacă este posibil cu un sistem cu vid pentru a preveni generarea prafului.
Metode de limitare a poluării	Îndepărtați dacă este posibil cu un sistem cu vid pentru a preveni generarea prafului. Evitaţi adăugarea de apă: poate genera zone alunecoase pe podea.
Informații suplimentare:	Nu sunt date disponibile.
6.3 Metode şi material pentru izolarea incendiilor şi pentru curăţenie	
	Nu sunt date disponibile.
6.4 Trimiteri către alte secţiuni) (trimiteri către secțiunile 8 și 13).	
	A se vedea şi declaraţiile de la secţiunile 8 şi 13.

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitaţi formarea prafului. Nu respiraţi praf. Utilizaţi o mască de protecţie contra prafului.
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Păstraţi în zone reci şi uscate.
Specificaţiile zonei de depozitare:	Nu sunt date disponibile.
Specificaţiile recipienţilor:	Nu sunt date disponibile.
Incompatibilități:	Nu sunt date disponibile.
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Agent de îngroşare (vâscozifiant) şi de suspensie pentru fluide de foraj**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control	
TLV_{Celing}:	- - -
TLV_{TWA}:	- - -
TLV_{STEL}:	- - -
Limita biologică:	- - -
8.2. Controale ale expunerii profesionale	
Controale tehnice corespunzătoare :	Spălătoare pentru ochi în apropiere,

Protecţie colectivă:		Ventilaţie forţată
Protecţia individuală	Respiratorie:	mască de protecţie pentru praf
	Ochi	Ochelari de protecţie
	Mâini	Se recomandă mănuși şi îmbrăcăminte de protecţie
	Corp	Îmbrăcăminte de protecție
8.3. Controlul expunerii mediului		
Scenarii de expunere		Nu sunt date disponibile.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Aspect:	solid
Starea fizica:	Solid în diverse forme
Culoare:	Alb, gris deschis
Miros:	inodor
Prag olfactiv:	Nu sunt date disponibile.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH (10 gr/l) la 20 °C:	9 – 10,5
Punct de topire:	Mai mare de 450 °C
Punct de fierbere:	N/a
Punct de aprindere:	N/a
Inflamabilitate (solid, gaz):	N/a
Temperatura de autoaprindere:	N/a
Temperatura de descompunere:	N/a
Pericol de explozie:	N/a
Limita de inflamabilitate superioară:	N/a
Limita inferioară de inflamabilitate:	N/a
Presiunea de vapori:	10-41 mm/hg
Greutatea moleculară	84,12
Densitatea la 20 °C:	2.6 g/cm^3
Densitatea aparentă (20°C)	Nu sunt date disponibile.
Densitatea în vrac (Bulk)	1-1.4 kg/m^3
Densitatea relativă (20°C):	Nu sunt date disponibile.
Densitatea de vapori:	Nu sunt date disponibile.
Rata de evaporare:	Nu sunt date disponibile.
Solubilitate în apă (20°C):	< 0.0009 g/l
Coeficientul de distribuție (n-octanol):	Nu sunt date disponibile.
Vâscozitatea (40°C):	N/a
9.3. Alte informaţii	
Alte informaţii:	Nu sunt date disponibile.

10. STABILITATE ŞI REACTIVITATE	
10.1. Reactivitate	
Condiții care trebuie evitate:	Inert, ne reactiv
10.2. Stabilitate chimică	

Materiale incompatibile:	A nu fi depozitaţi împreună cu materiale care pot fi afectaţi de praf.
Posibilitatea de reacţii periculoase:	Nu sunt cunoscute reacţii periculoase

10.3. Posibilitatea de reacţii periculoase
Nu sunt cunoscuţi produşi de decompoziţie periculoşi

10.4. Condiţii de evitat
Nu sunt date disponibile.

10.5. Materiale incompatibile
Nu sunt date disponibile.

10.6. Produși de descompunere periculoși
Nu sunt date disponibile.

11. INFORMAŢII TOXICOLOGICE

11.1. Informaţii privind efectele toxicologice

Toxicitatea amestecului:	
Toxicitate Acută	
Toxicitate orală acută:	LD50 (şobolan): >2000 mg/kg
Toxicitate inhalatorie acută:	LD50 (şobolan): >5.27 mg/l
Toxicitate cutanată acută:	Nu sunt date disponibile.

11.2. Corozivitate

Piele:	Nu sunt date disponibile.
Ochi:	Nu sunt date disponibile.

11.3. Iritaţie

Piele:	Poate cauza iritaţia pielii la contactul prelungit
Ochi:	Poate cauza iritaţia ochiului la contactul prelungit

11.4. Toxicitate la doze repetate

Ingestie:	Nu sunt date disponibile.
Inhalare:	Nu sunt date disponibile

11.5. Sensibilitate

Piele:	Nu sunt date disponibile. Nu se aşteaptă efecte averse.
Ochi:	Nu sunt date disponibile. Nu se aşteaptă efecte averse.

11.6 Cancerogenitate

	Nu sunt date disponibile.
11.7 Mutagenitate	
	Nu sunt date disponibile.
11.8 Toxicitate pentru reproducere	
	Nu sunt date disponibile.

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate

Toxicitate în apă:	EC50 (Daphnia Magna) 48h: > 100 mg/l EC50 (Alge de apă dulce) 72h: > 100 mg/l LC50 (biban american) 24h: 2800-3200 mg/l LC50 (pastrav) 96h: 16000 mg/l
Toxicitate în aer:	Nu sunt date disponibile.
Toxicitate în sol:	Nu sunt date disponibile.

12.2. Persistenţă şi degradabilitate

Alte informaţii:	N/A. Produs mineral

12.3. Potențial de Bioacumulare	
Alte informații:	Nu se aşteaptă efecte averse
12.4. Mobilitate în sol	
Alte informații:	Nu sunt date disponibile.
12.5. Rezultatele evaluării PBT și vPvB	
PBT:	Nu sunt date disponibile.
vPvB:	Nu sunt date disponibile.
12.6. Alte efecte adverse	
Alte informații:	Nu sunt date disponibile.

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Consultaţi un punct de colectare autorizat pentru a elimina conform reglementărilor în vigoare.
Cod de deşeu:	Nu sunt date disponibile.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Nu sunt date disponibile.
Alte recomandări:	Consultaţi un punct de colectare autorizat pentru a elimina conform reglementărilor în vigoare.
	Legislaţia privind eliminarea deşeurilor: (trece la 13) **Legea 211/2011** privind regimul deşeurilor. **HG 427/2010** pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor. **HG 1061/2008** privind transportul deşeurilor periculoase şi nepericuloase pe teritoriul României. **HG 268/2005** pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor. **HG 349/2005** privind depozitarea deşeurilor; **OMAPM nr.756/2004** pentru aprobarea Normativului tehnic privind incinerarea deşeurilor; **HG 856/ 2002** privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase. **HG 128/2002** privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.
	Legislaţia pentru deşeuri de ambalaj: **Ordinul 794/2012** privind procedura de raportare a datelor referitoare la ambalaje si deşeuri de ambalaje. **HG 247/2011** pentru modificarea si completarea Hotărârii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deşeurilor de ambalaje. **HG 1872/2006** pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor ş deşeurilor de ambalaje. **HG 621/2005** privind gestionarea ambalajelor şi deşeurilor de ambalaje.

14. INFORMAŢII REFERITOARE LA TRANSPORT	
14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Norme de transport ONU	Nu sunt date disponibile.
Clasa (clasele) de pericol pentru transport	Nu sunt date disponibile.
Grupul de ambalare:	Nu sunt date disponibile.
Pericol pentru mediu	Nu sunt date disponibile.
Precauţii pentru utilizatori	
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Poluant marin:	Nu sunt date disponibile.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport

Clasa IATA	Nu sunt date disponibile.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Codul IBC:	Nu sunt date disponibile.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Reglementări naţionale:

Legea 319/2006 – legea referitoare la sănătatea şi securitatea în muncă
HG 1425/2006 consolidată – Norme de aplicare ale Legii 301/2006
HG 1218/2006 privind Stabilirea cerinţelor minime de securitate şi sănătate în muncă pentru asigurarea protecţiei lucrătorilor împotriva riscurilor legate de prezenţa agenţilor chimici
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.

15.2 Evaluarea securităţii chimice	Nu a fost efectuată o evaluare a securităţii chimice**.**

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Reţeaua de Informaţii şi Date despre Substanţele Chimice utilizate în Mediul Înconjurator creată de Joint Research Centre, Commission of the European Communities - Centrul European Comun de Cercetare al Comisiei Comunităţilor Europene

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche-/ Institutul Superior de sănătate – Inventarul Naţional al Substanţelor (Italia)

ACGIH - Threshold Limit Values - 2009 edition/ ACGIH – Valorile limită de prag - ediţia 2009

Ghid de redactare a fișelor cu date de securitate, versiunea 2, Decembrie 2013, ECHA

16.2. Lista frazelor de pericol şi de precauţie utilizate Alte informaţii –

Fraze de pericol utilizate în secţiunile anterioare

P260: Nu respiraţi praf/fum/gaz/ceaţă/vapori/spray.
P280: Purtaţi mănuşi protectoare/ echipament de protecţie/ protejaţi ochii/faţa
P302+P352: În caz de contact cu pielea: spălaţi cu multă apă şi săpun

Fraze de precauție utilizate în secţiunile anterioare

P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare

16.3. Abrevieri și acronime utilizate:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate
GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice
ECHA – Agenţia Europeană pentru Substanţe Chimice
EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente
CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința Americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
N/A: neaplicabil
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut

PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
FSD: Fişa de Date de securitate
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii –

16.4.1 Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul EU 453/2010/. Această fișă anulează și înlocuiește orice ediție precedentă. Modificările intervenite între două ediţii ale unei FDS sunt ţinute sub control la producător.

16.4.2 Clauze de exonerare de răspundere

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document. Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere conform celor indicate în fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă pentru utilizarea intenţionată declarată. Este reponsabilitatea utilizatorului să se asigure că este în posesia ultimei ediţii a fişei de securitate.

16.4.3 Răspundere

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate cu excepţia acelor informaţii din secţiunile 1, 13, 15 şi 16 care au fost armonizate cu legislaţia română în vigoare. De asemenea, structura fişei de securitate a fost armonizată cu structura din Anexa II B a Regulamentului UE 1907/2008.

Răspunderea pentru conţinutul versiunii în limba engleză al acestei FDS aparţine Ava S.p.A.
Răspunderea pentru traducerea în limba română a reviziei 3 a acestei FDS şi armonizarea cu cerinţele legislaţiei române la secţiunile mai sus indicate , aparţine AVA EASTERN EUROPE D.F & S srl prin Compartimentul QSHE şi Isabela NIŢĂ, inginer chimist.

Sfârșitul fişei de securitate

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010

BENTONITA API

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**BENTONITA API**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Agent de modificare a vâscozității și de suspendare pentru fluide de foraj**

Contraindicaţii: Nu sunt date disponibile

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om și mediul înconjurător:

ACEST AMESTEC NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI:

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

-	-	-

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)		
Identificarea pericolelor:	- - -	***Nu este clasificat ca fiind periculos în conformitate cu Regulamentul(UE) nr. 1272/2008***
Fraze de precauţie:	- - -	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	
2.3. Alte pericole		
- - -		

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Substanţă
Conţinut:	În conformitate cu tabelul de mai jos:
Formula moleculară:	- - -
Numărul EC:	- - -
Number ONU	- - -
Numărul CAS:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Bentonită	1302-78-9	215-108-5		- - -	- - -	- - -

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Nu sunt măsuri speciale
După contactul cu pielea:	Nu sunt măsuri speciale
După contactul cu ochii:	Nu sunt măsuri speciale. Clătiţi imediat cu multă apă
După înghiţire:	Nu sunt măsuri speciale
Alte informaţii:	Nu sunt date disponibile.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si întârziate.

Simptome	Nu sunt date disponibile.

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultaţi imediat un medic şi arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenţie:	Nu sunt date disponibile.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauţie în caz de incendiu:	În caz de incendiu respectaţi următoarele instrucţiuni:

Mijloace de stingere corespunzătoare:	Utilizaţi: apă, pulberi, spumă, dioxid de carbon.
Mijloace de stingere necorespunzătoare:	Nici unul specificat
Pericole care derivă din ardere (produşi de descompunere termică periculoşi):	Nu este inflamabil, nu este exploziv. Nu este nici un pericol în caz de incendiu.
Echipamente speciale de stingere a incendiilor	În caz de incendiu, purtaţi un aparat pentru respiraţie presurizat şi îmbrăcăminte de protecţie.
Altele	Nu sunt date disponibile

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecţie şi proceduri de urgenţă	
Echipament de protecţie:	În cazul unor expuneri prelungite sau la un nivel mare de praf în suspensie, purtaţi o protecţie respiratorie în conformitate cu legislaţia naţională.
Proceduri de urgenţă:	Nu sunt necesare precauţii specifice.
6.2. Precauţii pentru mediul înconjurător	
Mijloace de limitare:	Evitaţi măturarea prafului uscat , stropiţi cu apă sau folosiţi un sistem de aspirare pentru a preveni praful. Luaţi în considerare că bentonita umedă devine alunecoasă.
Metode de limitare a poluării	Evitaţi măturarea prafului uscat , stropiţi cu apă sau folosiţi un sistem de aspirare pentru a preveni praful. Luaţi în considerare că bentonita umedă devine alunecoasă.
Informaţii suplimentare:	Nu sunt date disponibile.
6.3 Metode şi material pentru izolarea incendiilor şi pentru curăţenie	
	Nu sunt date disponibile.
6.4 Trimiteri către alte secţiuni) (trimiteri către secțiunile 8 și 13).	
	A se vedea şi declaraţiile de la secţiunile 8 şi 13.

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitaţi generarea de praf.
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Este necesară ventilarea generală. Păstraţi în zone uscate şi reci.
Specificaţiile zonei de depozitare:	Zone bine ventilate.
Specificaţiile recipienţilor:	Nu sunt date disponibile
Incompatibilităţi:	Nu sunt date disponibile
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Agent de modificare a vâscozităţii şi de suspendare pentru fluide de foraj**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control	
TLV_{Celing}:	Dust exposure limits: Fracţia Inhalabilă: 3 mg/m^3 Fracţia respirabilă: 10 mg/m^3
TLV_{TWA}:	- - -
TLV_{STEL}:	- - -

Limita biologică:		- - -
8.2. Controale ale expunerii profesionale		
Controale tehnice corespunzătoare :		Se recomandă ventilaţia adecvată
Protecţie colectivă:		Se recomandă ventilaţie adecvată şi filtrarea la locurile de muncă, acolo unde poate fi generat praf. Spălaţi-vă pe mâini înainte de pauze şi la sfârşitul zilei de muncă. Îndepărtaţi şi spălaţi îmbrăcămintea contaminată.
Protecţia individuală	Respiratorie:	În cazul în care există o expunere prelungită la praf, se utilizează o protecţie respiratorie în conformitate cu legislaţia naţională.
	Ochi	Nu sunt necesare măsuri speciale
	Mâini	Nu sunt necesare măsuri speciale
	Corp	Nu sunt necesare măsuri speciale
8.3. Controlul expunerii mediului		
Scenarii de expunere		Nu sunt date disponibile.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Aspect:	Solid sub forma de pulbere, granule, peleţi
Starea fizica:	Solid sub forma de pulbere, granule, peleţi
Culoare:	De la alb la maro
Miros:	Inodor
Prag olfactiv:	N/A
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH:	Nu sunt date disponibile
Punct de topire:	> 450°C
Punct de fierbere:	N/A
Punct de aprindere:	Produsul nu este inflamabil
Inflamabilitate (solid, gaz):	Produsul nu este inflamabil
Temperatura de autoaprindere:	N/A
Temperatura de descompunere:	Nu sunt date disponibile.
Pericol de explozie:	Nu este exploziv cf. Reg. 1272/2008, anexa 6.
Limita de inflamabilitate superioară:	N/A
Limita inferioară de inflamabilitate:	N/A
Presiunea de vapori:	N/A
Densitatea (20°C):	Nu sunt date disponibile
Densitatea aparentă (20°C)	0,9 – 1,4 g/ml
Densitatea relativă (20°C):	2,6 g/cm^3
Densitatea de vapori:	N/A.
Rata de evaporare:	N/A
Solubilitate în apă (20°C):	< 0,9 mg/l
Coeficientul de distribuție (n-octanol):	Nu sunt date disponibile.
Vâscozitatea (40°C):	N/A
9.3. Alte informaţii	
Alte informaţii:	Nu sunt date disponibile.

10. STABILITATE ŞI REACTIVITATE	
10.1. Reactivitate	
Condiţii care trebuie evitate:	Stabil chimic, nu este incompatibil, nu rezultă compuşi periculoşi în urma descompunerii.
10.2. Stabilitate chimică	
Materiale incompatibile:	Nu sunt date disponibile
Posibilitatea de reacţii periculoase:	Nu se descompune dacă este folosit în conformitate cu instrucţiunile.
10.3. Posibilitatea de reacţii periculoase	
Nu sunt date disponibile	
10.4. Condiţii de evitat	
Nu sunt date disponibile.	
10.5. Materiale incompatibile	
Nu sunt date disponibile.	
10.6. Produşi de descompunere periculoşi	
Nu sunt date disponibile.	

11. INFORMAŢII TOXICOLOGICE	
11.1. Informaţii privind efectele toxicologice	
Toxicitate Acută	
Toxicitate orală acută:	LD50 (şobolan): >2000 mg/kg
Toxicitate inhalatorie acută:	LD50 (şobolan): > 5,27 mg/kg
Toxicitate cutanată acută:	Nu sunt date disponibile.
11.2. Corozivitate	
Piele:	Nu este corosiv pentru piele
Ochi:	Nu este corosiv pentru ochi.
11.3. Iritaţie	
Piele:	Nu sunt date disponibile.
Ochi:	Nu sunt date disponibile.
11.4. Toxicitate la doze repetate	
Ingestie:	Nu sunt date disponibile.
Inhalare:	Nu sunt date disponibile
11.5. Sensibilitate	
Piele:	Nu este sensibilizant pentru piele.
Ochi:	Nu sunt date disponibile.
11.6 Cancerogenitate	
	Nu sunt date disponibile.
11.7 Mutagenitate	
	Nu sunt date disponibile.
11.8 Toxicitate pentru reproducere	

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Toxicitate în apă:	LC50 (peşti de apă dulce) 96h: 16000 mg/l LC50 (peşte oceanic) 24h: 2800-3200 mg/l EC50 (nevertebrate de apă dulce - crab Dungeness) 96h: 81,6 mg/l EC50 (nevertebrate de apă dulce- crevete Dock) 96h: 24,8 mg/l

	EC50 (Alga) 72h: >100 mg/l EC50 (Daphnia magna) 48h: > 100 mg/l
Toxicitate în aer:	Nu sunt date disponibile.
Toxicitate în sol:	Nu sunt date disponibile.
12.2. Persistență și degradabilitate	
Alte informaţii	Nu este relevantă pentru substanţe anorganice.
12.3. Potențial de Bioacumulare	
Alte informații:	Nu este relevantă pentru substanţe anorganice
12.4. Mobilitate în sol	
Alte informații:	Este aproape insolubilă şi de aceea are o mobilitate scăzută în sol.
12.5. Rezultatele evaluării PBT și vPvB	
PBT:	Nu îndeplineşte criteriile de clasificare ca PBT şi vPvB
vPvB:	Nu îndeplineşte criteriile de clasificare ca PBT şi vPvB
12.6. Alte efecte adverse	
Alte informații:	Nu sunt date disponibile.

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Poate fi depozitată conform reglementărilor locale. Materialul ar trebui să fie îngropat pentru a preveni emisii le de praf. Ar trebui preferată reciclarea în locul eliminării.
Cod de deşeu:	Nu sunt date disponibile.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Nu sunt date disponibile.
Alte recomandări:	Nu sunt prevederi specifice. Ambalajele golite ar trebui duse la un punct de colectare autorizat pentru reciclare sau eliminare.
	Legislaţia privind eliminarea deşeurilor: (trece la 13) **Legea 211/2011** privind regimul deşeurilor. **HG 427/2010** pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor. **HG 1061/2008** privind transportul deşeurilor periculoase şi nepericuloase pe teritoriul României. **HG 268/2005** pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor. **HG 349/2005** privind depozitarea deşeurilor; **OMAPM nr.756/2004** pentru aprobarea Normativului tehnic privind incinerarea deşeurilor; **HG 856/ 2002** privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase. **HG 128/2002** privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.
	Legislaţia pentru deşeuri de ambalaj: **Ordinul 794/2012** privind procedura de raportare a datelor referitoare la ambalaje si deşeuri de ambalaje. **HG 247/2011** pentru modificarea si completarea Hotărârii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deşeurilor de ambalaje. **HG 1872/2006** pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor ş deşeurilor de ambalaje. **HG 621/2005** privind gestionarea ambalajelor şi deşeurilor de ambalaje.

14. INFORMAŢII REFERITOARE LA TRANSPORT	
14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Norme de transport ONU	Nu sunt date disponibile.
Clasa (clasele) de pericol pentru transport	Nu sunt date disponibile.
Grupul de ambalare:	Nu sunt date disponibile.

Pericol pentru mediu	Nu sunt date disponibile.
Precauţii pentru utilizatori	
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Poluant marin:	Nu sunt date disponibile.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Clasa IATA	Nu sunt date disponibile.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Codul IBC:	Nu sunt date disponibile.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Reglementări naţionale:

Legea 319/2006 – legea referitoare la sănătatea şi securitatea în muncă
HG 1425/2006 consolidată – Norme de aplicare ale Legii 301/2006
HG 1218/2006 privind Stabilirea cerinţelor minime de securitate şi sănătate în muncă pentru asigurarea protecţiei lucrătorilor împotriva riscurilor legate de prezenţa agenţilor chimici
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.

15.2 Evaluarea securităţii chimice	Nu a fost efectuată o evaluare a securităţii chimice**.**

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Reţeaua de Informaţii şi Date despre Substanţele Chimice utilizate în Mediul Înconjurător creată de Joint Research Centre, Commission of the European Communities - Centrul European Comun de Cercetare al Comisiei Comunităţilor Europene

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche-/ Institutul Superior de Sănătate – Inventarul Naţional al Substanţelor (Italia)

ACGIH - Threshold Limit Values - 2009 edition/ ACGIH – Valorile limită de prag - ediţia 2009

Ghid de redactare a fişelor cu date de securitate, versiunea 2, Decembrie 2013, ECHA

16.2. Lista frazelor de pericol şi de precauţie utilizate Alte informaţii –

Fraze de pericol utilizate în secţiunile anterioare

- -

Fraze de precauţie utilizate în secţiunile anterioare

P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare

16.3. Abrevieri și acronime utilizate:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate
GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice
ECHA – Agenţia Europeană pentru Substanţe Chimice
EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente
CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința Americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
N/A: neaplicabil
NOEC: no observable effect concentration – concentraţia fără efect observat
P.E: Polietilenă
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
FSD: Fişa de Date de securitate
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii –

16.4.1 Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul EU 453/2010/. Această fișă anulează și înlocuiește orice ediție precedentă. Modificările intervenite între două ediţii ale unei FDS sunt ţinute sub control la producător.

16.4.2 Clauze de exonerare de răspundere

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document. Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere conform celor indicate în fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă pentru utilizarea intenţionată declarată. Este reponsabilitatea utilizatorului să se asigure că este în posesia ultimei ediţii a fişei de securitate.

16.4.3 Răspundere

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate cu excepţia acelor informaţii din secţiunile 1, 13, 15 şi 16 care au fost armonizate cu legislaţia română în vigoare. De asemenea, structura fişei de securitate a fost armonizată cu structura din Anexa II B a Regulamentului UE 1907/2008.

Răspunderea pentru conţinutul versiunii în limba engleză al acestei FDS aparţine Ava S.p.A.
Răspunderea pentru traducerea în limba română a reviziei 3 a acestei FDS şi armonizarea cu cerinţele legislaţiei române la secţiunile mai sus indicate , aparţine AVA EASTERN EUROPE D.F & S srl prin Compartimentul QSHE şi Isabela NIŢĂ, inginer chimist.

Sfârșitul fișei de securitate

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

DEOXY DEHA

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**DEOXY DEHA**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Inhibitor de coroziune pentru fluide de foraj**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

	**GHS07**	**Tox. Ac. 4** **H312:** Nociv în contact cu pielea **H332:** Nociv în caz de inhalare. **Irit. Piele 2** **H315:** Provoacă iritarea pielii **Irit. Oc. 2** **H319:** Provoacă o iritare gravă a ochilor **STOT SE 3** **H335:** Poate provoca iritarea căilor respiratorii
Fără pictograma	**Fara cuvant de atentionare**	**Acvatic cronic 3** **H412:** Nociv pentru mediul acvatic cu efecte pe termen lung

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

	**Xn - nociv**	**R20/21:** Nociv prin inhalare şi în contact cu pielea.
	Xi - iritant	**R 36/37/38:** Iritant pentru ochi, sistem respirator şi pentru piele
	**N – Periculos pentru mediu**	**R52/53:** Nociv pentru organismele acvatice, poate provoca efecte adverse pe termen lung asupra mediului acvatic.

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	 **GHS07**	**Tox. Ac. 4** **H312:** Nociv în contact cu pielea **H332:** Nociv în caz de inhalare
		Irit. Piele 2 **H315:** Provoacă iritarea pielii
		Irit. Oc. 2 **H319:** Provoacă o iritare gravă a ochilor.
		STOT SE 3 **H335:** Poate provoca iritarea căilor respiratorii
	Fără pictograma	**Acvatic cronic 3** **H412:** Nociv pentru mediul acvatic cu efecte pe termen lung
Fraze de precauţie:	**P261:** Nu respiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul. **P280:** Purtaţi mănuşi de protecţie / îmbrăcăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei.	

	P312: Sunați la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic, dacă nu vă simțiți bine. **P362:** Scoateți îmbracămintea contaminată și spălați-o înainte de reutilizare. **P304 + P340:** ÎN CAZ DE INHALARE: transportați victima la aer liber și mențineți-o în stare de repaus, într-o poziție comfortabilă pentru respirație. **P332 + P313**: În caz de iritare a pielii, consultați medical. **P305 + P351 + P338:** ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) și amendamentele, HG 1408/2008, HG 937/2010.

Identificarea pericolelor:		**Xn - nociv** **R20/21:** Nociv prin inhalare și în contact cu pielea.
		Xi - iritant **R 36/37/38:** Iritant pentru ochi, sistem respirator și pentru piele
		**N – Periculos pentru mediu** **R52/53:** Nociv pentru organismele acvatice, poate provoca efecte adverse pe termen lung asupra mediului acvatic.
Sfaturi de siguranță::	**S23:** A nu se inspira gazul/fumul/vaporii/aerosolii/ (termenul(ii) corespunzător(i) se specific de producător). **S26:** În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul. **S24/25:** Evitați contactul cu pielea și ochii. **S36/37:** Purtați echipament de protecție corespunzător, mănuși și mască de protecție pentru ochi/față.	
Eliminarea:	**S60:** Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.	

2.3. Alte pericole

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3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul următor
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
N, N-Dietil-hidroxilamina 85% REACH No. 01-2119962470-39-XXXX	3710-84-7	223-055-4	10-12,5%	**Lich. Infl. 3**	 **GHS02**	**H226**
				Tox. Ac. 4	 **GHS07**	**H312**
				Irit. Cut. 2		**H332**
				Irit. Oc. 2		**H315**
				STOT SE 3		**H319**
				Acvatic cronic 2	 **GHS09**	**H411**
Nume	**Nr. CAS**	**Nr. EC**	**Cantitate**	**Clasificare**	**Simbol**	**Fraze de pericol**
N, N-Dietil-hidroxilamina 85%	3710-84-7	223-055-4	10-12,5%	**F - Inflamabil**		**R10**
				Xn - nociv		**R20/21**
				Xi - iritant		**R36/37/38**
				N – Periculos pentru medi		**R52/53**

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistență medicală. Arătaţi medicului această Fișă cu Date de Securitate.
După inhalare:	Dacă respiratia este neregulată sau a încetat, administrați respirație artificială. Consultați imediat un medic și arătați-i ambalajul sau eticheta
După contactul cu pielea:	Scoateți imediat toate hainele contaminate. Spălați imediat cu apă curentă din abundență și, eventual, cu săpun, zone ale corpului care a venit în contact cu produsul, chiar dacă este doar o suspiciune
După contactul cu ochii:	În caz de contact cu ochii, clătiti cu apă pentru o durată suficientă de timp și cu pleoapele deschise, apoi consultați imediat un medic oftalmolog. Proteja ochiul intact
După înghiţire:	Nu mâncați, nu beți și nu fumați în timpul utilizării. Dacă în caz de înghițire nu vă simțiți bine, contactați de urgență un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic.
Alte informaţii:	- - -

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	Nu sunt disponibile.

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fișă cu Date de Securitate.
Mijloace speciale de intervenție:	- - -

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	În caz de incendiu respectaţi, urmați instrucțiunile.
Mijloace de stingere corespunzătoare:	Utilizați spumă, pulbere uscată sau CO2
Mijloace de stingere necorespunzătoare:	Niciuna in mod particular
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Nu inhalați gazele de explozie și de ardere. Arderea produce un fum greu.
Echipamente speciale de stingere a incendiilor	Folosiți un aparat de respirație adecvat
Altele:	Colectați separat apa contaminată folosită pentru a stinge focul. Nu va fi evacuată în sistemul de canalizare. Dacă este posibil în ceea ce privește siguranța, scoateți ambalaje nedeteriorate din zona de pericol imediat

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecţie și proceduri de urgență

Echipament de protecţie:	Evitați contactul cu ochii și pielea. Scoateți toate hainele contaminate
Proceduri de urgență:	Nu respirați vaporii / ceața / gaz. Feriți-vă de acumularile de vapori care formeaza concentratii explosive. Vaporii se pot acumula in zonele joase. Scoateți persoane în zone de siguranță

6.2. Precauţii pentru mediul înconjurător

Medii de izolare:	Folosiți media absorbant, organic, nisip
Metode de limitare a poluarii	Nu permiteți infiltrarea în sol / subsol. Nu permiteli infiltrarea în apele de suprafață sau în sistemul de canalizare. In cazul accesului în cursurile de apă, sol sau in canalizare, informați autoritățile responsabile

Informatii suplimentare:	Reţineti apa de spălare contaminată şi eliminaţi-o conform regulamentelor

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate

Precauţii pentru manipulare în condiţii de securitate:	Evitați contactul cu ochii și pielea, inhalarea de vapori și aburi. A nu se folosi recipientul gol înainte de a fi curățat. Înainte de operațiunile de transfer să vă asigurați că în recipiente nu există reziduuri materiale incompatibile. Hainele contaminate ar trebui să fie schimbate înainte de a intra la locurile de servit masa

7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi

Condiţii de depozitare:	Păstrați ambalajul închis ermetic. A se păstra la distanță de alimente, băuturi și hrană pentru animale
Specificaţiile zonei de depozitare:	Spații suficient ventilatet, la distanță de materiale incompatibile
Specificaţiile recipienţilor:	Păstrați întotdeauna containerele ermetic închise
Incompatibilităţi:	Niciuna

7.3. Utilizare finală specifică:

Utilizări finale specifice:	**Inhibitor de coroziune pentru fluide de foraj**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control

Amestec	***N, N-Dietil-hidroxilamina 85% CAS No. 3710-84-7***
Valori limită de expunere DNEL	**Consumator:** 00:13 mg / kg - Expunere: orala umana - efecte sistemice pe termen scurt **Lucrător industrial:** 8.76 mg/m3 - Expunere: Inhalarea umană - efecte sistemice pe termen lung **Consumator:** 0,65 mg/m3 - Expunere: Inhalare umană - efecte sistemice pe termen scurt **Lucrător industrial:** 45,6 mg/m3 - Expunere: Inhalarea umană - efecte locale pe termen lung, **Lucrător industrial**: 4,7 mg / kg - Expunere: Dermic umana- efecte sistemice pe termen lung
Valori limită de expunere PNEC	**Target:** apă proaspătă - Valoare: 8,2 mg / l **Target:** apa de mare - Valoare: 0,82 mg / l **Țintă:** sedimente de apă dulce - Valoare: 0.0652 mg / kg **Target:** sedimente apa de mare - Valoare: 0.00652 mg / kg
Limita biologică:	- - -

8.2. Controale ale expunerii profesionale

8.2.1. Controale tehnice corespunzătoare		Ventilație generală
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Stație de spălare ochi în apropiere.
Protecţia individuală	Respiratorie:	Utilizați aparat de respirație
	Ochi	Ochelari de protecție
	Maini	Mănuși de protecție totală
	Corp	Salopetă protectoare pentru intregul corp

8.3. Controlul expunerii mediuluiâ

Variante de expunere	- -

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Forma:	Lichid
Aspect:	Lichid
Culoare:	De la incolor la galben pai
Miros:	Nu este relevant
Prag olfactiv:	N.a.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH:	> 10
Punct de topire:	N.a.
Punct de fierbere:	100 °C
Punct de aprindere:	N.a.
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C:	N.a.
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	1,00 gr/cm3
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	N.a.
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea (40°C):	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE	
10.1. Reactivitate	
Condiții care trebuie evitate:	Stabil în condiții normale
10.2. Stabilitate chimică	
Materiale incompatibile:	Niciunul
Posibilitatea de reacții periculoase:	Stabil în condiții normale
10.3. Produși de descompunere periculoși	
Alte informaţii:	Stabil în condiții normale.

11. INFORMAŢII TOXICOLOGICE	
11.1. Toxicitate Acută	
Substanța	***N, N-Dietil-hidroxilamina 85% CAS No. 3710-84-7***
Toxicitate orală acută:	LD50 (Șobolan): 2190 mg/kg
Toxicitate inhalatorie acută:	LC50 (Șobolan) 4 h: 3140 ppm
Toxicitate cutanată acută:	LD50 (Iepure): 1300 mg/kg

11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate	
Substanța	***N, N-Dietil-hidroxilamina 85% CAS No. 3710-84-7***
Toxicitate în apă:	LC50 (Pești): 134 mg/l EC50 (Alge) 48h: 8.9 mg/l EC50 (Crustacee) 96h:> 101 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	Nu este ușor biodegradabil
12.3. Potența Bioacumulativ	
N.a.	N.a.
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	Niciunul
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	Colectați daca este posibil. Eliminați în conformitate cu reglementările locale.
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	N.a.
Alte recomandări:	Eliminați în conformitate cu reglementările locale și naționale

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)

Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Norme de transport ONU	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Denumirea oficiala a transportului	
Cod de restrictie in galerie/tunel	N.a.

14.2. Transport Maritim (IMDG)

Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Numarul EMS	
Clasa (clasele) de pericol pentru transport	
Grupul de ambalare:	
Poluant marin:	
Denumirea oficiala a transportului	N.a.

14.3. Transport Aerian (ICAO-TI si IATA-DGR)

Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Clasa IACO/ATA	
Eticheta	
Grupul de ambalare:	
Denumirea oficiala a transportului	N.a.

14.4. Transport în vrac

Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.

Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.

REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor

HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;

HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;

REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:
Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose **-** doză letală medie

NOEC: no observable effect concentration – concentraţia fără efect observat

PNEC: predicted no-effect concentration - concentrația fără efect prevăzut

PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice

vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative

TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore

TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt

TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H226: Lichid și vapori inflamabili
H312: Nociv în contact cu pielea
H332: Nociv în caz de inhalare
H315: Provoacă iritarea pielii
H319: Provoacă o iritare gravă a ochilor
H335: Poate provoca iritarea căilor respiratorii
H411: Toxic pentru mediul acvatic cu efecte pe termen lung
H412: Nociv pentru mediul acvatic cu efecte pe termen lung

R10: Inflamabil
R20/21: Nociv prin inhalare și în contact cu pielea.
R36/37/38: Iritant pentru ochi, sistem respirator și pentru piele
R52/53: Nociv pentru organismele acvatice, poate provoca efecte adverse pe termen lung asupra mediului acvatic.

Fraze de precauție /siguranta utilizate în secţiunile anterioare

P261: Nu respiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.
P280: Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei.
P312: Sunați la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic, dacă nu vă simțiți bine.
P362: Scoateți îmbracămintea contaminată și spălați-o înainte de reutilizare.
P304 + P340: ÎN CAZ DE INHALARE: transportați victima la aer liber și mențineți-o în stare de repaus, într-o poziție comfortabilă pentru respirație.
P332 + P313: În caz de iritare a pielii, consultați medical.
P305 + P351 + P338: ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

S23: A nu se inspira gazul/fumul/vaporii/aerosolii/ (termenul(ii) corespunzător(i) se specific de producător).
S26: În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul.
S24/25: Evitați contactul cu pielea și ochii.
S36/37: Purtați echipament de protecție corespunzător, mănuși și mască de protecție pentru ochi/față.
S60: Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos

FIŞĂ CU DATE DE SECURITATE

Flowzan® Biopolymer

Versiunea 1.9 Revizie Data 2014-05-

SECŢIUNEA 1: IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

Product information

Denumire produs: **Flowzan® Biopolymer**
Material: 1016765, 1016826, 1017888, 1017889, 1016827

Utilizare: **Aditiv pentru fluide foraj**

Companie: Chevron Phillips Chemical Company LP
Drilling Specialties Company LLC
10001 Six Pines Drive
The Woodlands, TX 77380

Reprezentant Local: Chevron Phillips Chemicals International N.V.
Brusselsesteenweg 355
B-3090 Overijse
Belgium

MSDS Requests: (800) 852-5530
Technical Information: (832) 813-4862
Responsible Party: Product Safety Group
Email:msds@cpchem.com

Telefon de urgenţă:

Health:
866.442.9628 (North America)
1.832.813.4984 (International)
Transport:
North America: CHEMTREC 800.424.9300 or 703.527.3887
Asia: +800 CHEMCALL (+800 2436 2255)
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Departament responsabil: Siguranţa produsului și Toxicologie
E-mail: MSDS@CPChem.com
Website : www.CPChem.com

SECŢIUNEA 2: IDENTIFICAREA PERICOLELOR

Clasificarea substanţei sau a amestecului
REGULAMENTUL (EC) Nr. 1272/2008

Substanţa / amestecul nu este clasificat ca fiind periculos în conformitate cu Regulamentul (EC) Nr. 1272/2008.

Clasificarea (67/548/EEC, 1999/45/EC)

Substanţa / amestecul nu este clasificat ca fiind periculos în conformitate cu Directivele EC 67/548/EEC sau 1999/45/EC.

Elemente pentru etichetă

Etichetare (REGULAMENTUL (EC) Nr.1272/2008)

Substanţa / amestecul nu este clasificat ca fiind periculos în conformitate cu Regulamentul (EC) Nr. 1272/2008.

SECŢIUNEA 3: COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

Sinonime: Niciunul

Formula moleculară: Amestec

Nu conţine ingrediente periculoase conform GHS:

Observaţii: Nu conține ingrediente periculoase conform GHS.

SECŢIUNEA 4: MĂSURI DE PRIM AJUTOR

Informaţii generale: Nu lăsați victima nesupravegheată.

După inhalare:: Păstraţi tractul respirator curat. Dacă simptomele persistă adresaţi-vă unui medic.

După contactul cu pielea:: Spălaţi cu apă și săpun.

După contactul cu ochii:: Scoateți lentilele de contact. Protejaţi ochiul intact. Dacă iritatia ochilor persistă, consultati un specialist.

După înghiţire:: Păstraţi tractul respirator curat. Nu administrați nimic pe cale orală unei persoane în stare de inconștiență. Dacă simptomele persistă adresaţi-vă unui medic.

SECŢIUNEA 5: MĂSURI DE COMBATERE A INCENDIILOR

Punct de aprindere: N u se aplică

Temperatura de autoaprindere: Nu există date disponibile.

Echipamente speciale de protecţie pentru pompieri: Purtaţi un aparat respirator autonom în caz de incendiu, dacă este necesar.

Informaţii suplimentare: Procedura standard pentru incendiu de origine chimică. Utilizați măsuri care sunt adecvate condițiilor locale și mediului înconjurător.

Protecţie contra incendiului sau exploziei: Asigurați o ventilație corespunzătoare în locurile unde se formează praf.

Produşi de descompunere periculoşi: Nu există date disponibile.

SECŢIUNEA 6: MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

Precauţii personale: Evitați formarea de praf.

Precauţii pentru mediul înconjurător: Dacă produsul contaminează râurile, lacurile sau sistemul de canalizare informați autoritățile corespunzătoare

Metode de curatare: Colectaţi si eliminaţi fără a crea praf. Utilizaţi mătura și lopata. Păstraţi în containere adecvate, închise ermetic pentru eliminare.

SECŢIUNEA 7: MANIPULARE ŞI DEPOZITARE

Manipulare

Sfaturi pentru manipulare în condiții de siguranță:. Pentru protecția personal, a se vedea punctul 8 Fumatul, mâncatul și băutul sunt interzise în spațiul de utilizare.

Măsuri de protecţie contra incendiilor și exploziilor: Asigurați o ventilație corespunzătoare în locurile unde este format praful

Depozitare

Cerințe pentru zonele de depozitare și containere: Instalații electrice / materiale de lucru trebuie să corespundă cu standardele de siguranță tehnologice.

Informaţii privind depozitarea în comun: Nu sunt materiale menționate în mod special.

SECŢIUNEA 8: CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

Ingrediente cu parametri de control la locul de muncă

SE

Beståndsdelar	Grundval	Värde	Kontrollparametrar	Anmärkning
Saturated monocarboxylic acid, calcium salt	SE AFS	NGV	5 mg/m3	43, 44, II.c, Total
	SE AFS	NGV	5 mg/m3	2, 43, 44, Total

2 Med respirabelt damm menas den dammfraktion som definieras i svensk standard SS-EN 481, Arbetsplatsluft. - Partikelstorleksfraktioner för mätning av luftburna partiklar, Utgåva 1, 1993, punkt 2.11 och som har en provtagningskaraktäristik enligt punkt 5.3. Med inhalerbart damm menas den dammfraktion som definieras i svensk standard SS-EN 481, Arbetsplatsluft - Partikelstorleksfraktioner för mätning av luftburna partiklar, Utgåva 1, 1993, punkt 2.3 och som har en provtagningskaraktäristik enligt punkt 5.1. Med respirabelt damm menas den dammfraktion som definieras i svensk standard SS-EN 481, Arbetsplatsluft - Partikelstorleksfraktioner för mätning av luftburna partiklar, Utgåva 1, 1993, punkt 2.11 och som har en provtagningskaraktäristik enligt punkt 5.3. Med totaldamm menas de partiklar (aerosoler) som fastnar på ett filter i den provtagare som beskrivs i Metodserien, Provtagning av totaldamm och respirabelt damm, Metod nr 1010, Arbetarskyddsstyrelsen, numera Arbetsmiljöverket. Filterdiametern är normalt 37 mm, men kan även vara 25 mm. Trots sitt namn provtas inte den totala mängden luftburna partiklar med denna metod.

43 Här innefattas stearater som salter och estrar, bl.a. Aluminiummonostearat [7047-84-9], Aluminiumdistearat [300-92-5], Aluminiumtristearat [637-12-7], Ammoniumstearat [1002-89-7], N-butylstearat [123-95-5], Dietylenglykolmonostearat [106-11-6], Etylenglykolmonostearat [111-60-4], Glycerolmonostearat [31566-31-1], Kalciumstearat [1592-23-0], Kaliumstearat [593-29-3], Litiumstearat [4485-12-5], Magnesiumstearat [557-04-0], Natriumstearat [822-16-2], Zinkstearat [557-05-1]

44 Gränsvärdet gäller inte sådana metallstearater som innehåller toxiska metaller, t.ex. bly. I detta fall ska gränsvärdet för bly användas

II.c Se sidan 57 anmärking II: Med totaldamm menas de partiklar (aerosoler) som fastnar på ett filter i den provtagare som beskrivs i
Metodserien, Provtagning av totaldamm och respirabelt damm, Metod nr 1010, arbetarskyddsstyrelsen, numera Arbetslivsinstitutet,
1979. Filterdiametern är normalt 37 mm, men kan även vara 25 mm.

PT

Componentes	Bases	Valor	Parâmetros de	Nota

			controlo	
Saturated monocarboxylic acid, calcium salt	PT OEL	VLE-MP	10 mg/m3	(J), A4,

(J) Não inclui estearatos de metais tóxicos
A4 Agente não classificável como carcinogénico no Homem.

LT

Komponentai	Pagrindas, bazė	Vertė	Kontrolės parametrai	Pastaba
Saturated monocarboxylic acid, calcium salt	LT OEL	IPRD	5 mg/m3	

IE

Ingredients	Basis	Value	Control parameters	Note
Saturated monocarboxylic acid, calcium salt	IE OEL	OELV - 8 hrs (TWA)	10 mg/m3	

ES

Componentes	Base	Valor	Parámetros de control	Nota
Saturated monocarboxylic acid, calcium salt	ES VLA	VLA-ED	10 mg/m3	

BE

Bestanddelen	Basis	Waarde	Controleparameters	Opmerking
Saturated monocarboxylic acid, calcium salt	BE OEL	TGG 8 hr	10 mg/m3	

Măsuri tehnice

Ventilație adecvată pentru a controla concentraţiile în aer sub limitele de expunere / conform ghidurilor. Luați în considerare pericolele potențiale ale acestui material (a se vedea secțiunea 2), limitele de expunere aplicabile, activităţi corespunzătoare locului de muncă, și alte substanțe la locul de muncă, atunci când se proiectează controlul tehnic și selectarea echipamentului individual de protecție. În cazul în care controalele tehnice sau practicile de lucru nu sunt adecvate pentru a preveni expunerea la niveluri nocive ale acestui material, este recomandată utilizarea echipamentului individual de protecție enumerat mai jos. Utilizatorul trebuie să citească și să înțeleagă toate instrucțiunile și limitările furnizate cu echipamentul de protecție, deoarece este furnizat de obicei pentru o perioadă limitată de timp sau în anumite condiții.

Echipament individual de protecție

Protecţia respiratorie: Purtați un aparat respirator certificat NIOSH alimentat cu aer, cu excepția cazului când ventilația sau alte controale tehnice sunt adecvate pentru a menține un conținut minim de oxigen de 19,5% în volum în condiţii de presiune atmosferică normală.

Protecţia mâinilor: Dacă mănuşile sunt adecvate pentru un anumit loc de muncă, acest lucru ar trebui să fie discutat cu producătorii de mănuși de protecție. Vă rugăm să respectați instrucțiunile referitoare la permeabilitatea și timpul de străpungere, care sunt furnizate de către fabricantul de mănuși. De asemenea, luaţi în considerare condițiile locale specifice în care produsul este folosit, cum ar fi pericolul de tăiere, erodare, precum și timpul de contact. Mănușile trebuie să fie scoase și înlocuite dacă există vreun semn de degradare sau pătrundere chimică.

Protecţia ochilor: Ochelari de protecție. Sticla pentru spălare ochi cu apă pură.
Protecţia pielii și a corpului: Alegeţi modul de protecție a corpului în funcție de tipul expunerii, de concentrația și cantitatea de substanțe periculoase, precum și de specificul locului de muncă. Utilizaţi, după caz:. Îmbrăcăminte de protecție ușoară. Încălțăminte de protecție.
Măsuri de igienă: Practici generale de igienă industrială.

SECŢIUNEA 9: PROPRIETĂŢI FIZICE ŞI CHIMICE

Informaţii privind proprietăţile fizice și chimice de bază

Descriere

Stare fizică: Solid
Culoare: Crem / bej până la galben deschis
Miros: Ușor

Date de securitate
Punct de aprindere: Nu se aplică
Limita inferioară de explozie: Nu există date
Limită superioară de explozie: Nu sunt date disponibile

Proprietăți oxidante: Nu

Temperatura de autoaprindere: Nu există date disponibile

Formula moleculară: Amestec

Greutate moleculară: Nu este cazul

pH: 5,5 - 8,5

Punct de curgere: Nu sunt disponibile date

Punct de fierbere / Interval de fierbere: Nu este cazul

Presiune de vapori: Nu este cazul

Densitatea relativă: 1,4 - 1,6

Solubilitate în apă: Complet solubil

Coeficientul de partiție: n- octanol / apă: Nu sunt disponibile date

Vâscozitate cinematică: Nu există date

Densitatea de vapori relativă: Nu se aplică:

Viteza de evaporare: Nu există date disponibile

SECŢIUNEA 10: STABILITATE ŞI REACTIVITATE

Stabilitate chimică: Acest material este considerat stabil în condiții normale și condițiile de depozitare și manipulare anticipate de temperatură și presiune.

Posibilitatea de reacții periculoase

Condiții de evitat: Nu există date disponibile.

Alte date: Produsul nu se descompune dacă este depozitat și folosit conform normelor recomandate.

SECŢIUNEA 11: INFORMAŢII TOXICOLOGICE

Flowzan® Biopolymer
Toxicitate orală acută LC50: nu este cunoscută

Flowzan® Biopolymer
Toxicitate inhalatorie acută LC50: nu este cunoscută

Flowzan® Biopolymer
Toxicitate cutanată acută LC50: nu este cunoscută

Flowzan® Biopolymer
Iritant cutanat Nu irită pielea

Flowzan® Biopolymer
Iritant ocular Nu irită ochii

Flowzan® Biopolymer
Toxicitate prin aspirare: Nu determină aspirație clasificată ca fiind toxică.

Flowzan® Biopolymer
Informații suplimentare: Nu există date disponibile.

SECŢIUNEA 12: INFORMAŢII ECOLOGICE

Informaţii despre eliminare (persistenţă si degradare)

Biodegradare: Nu este cazul

Evaluarea ecotoxicologie

Informații ecologice suplimentare: Nu sunt date disponibile

SECŢIUNEA 13: CONSIDERAŢII PRIVIND ELIMINAREA

Informațiile din această FDS se referă numai la produsul expediat.

Folosiți materialul pentru scopul căruia i se adresează sau reciclaţi, dacă este posibil. Acest material, în cazul în care acesta trebuie să fie eliminat, poate corespunde criteriilor unui deșeu periculos după cum este definit de către US EPA sub RCRA (40 CFR 261) sau a altor reglementări naţionale și locale. Măsurarea anumitor proprietăți fizice și analiza componentelor reglementate poate fi necesară, pentru a se realiza o determinare corectă. În cazul în care acest material este clasificat ca fiind un deșeu periculos, legea prevede eliminarea la un punct de eliminare certificat în domeniul eliminării deșeurilor periculoase.

Ambalaje contaminate: Containerele goale ar trebui să fie colectate la un centru certificate pentru manipularea deșeurilor pentru reciclare sau eliminare.

SECŢIUNEA 14: INFORMAŢII REFERITOARE LA TRANSPORT

Descrierile de transport prezentate aici sunt doar pentru transporturile în vrac, și nu se pot aplica transporturilor în pachete non-vrac (a se vedea definiția conform legislatiei).

Consultați modul specific adecvat intern sau internațional și cantitatea specifică conform Reglementărilor pentru Marfuri Periculoase, în cazul descrierii cerințelor suplimentare de transport (de exemplu, denumire tehnică sau nume),

etc.). Prin urmare, informaţiile prezentate aici, pot să nu fie în acord cu scrisoarea de însoţire cu descrierea transportului pentru materialul respectiv. Informaţiile pentru materialul respectiv pot varia ușor între fisa cu date de securitate și scrisoarea de însoţire.

US DOT (STATELE UNITE DEPARTAMENTUL DE TRANSPORT)
Nu sunt reglementate ca şi mărfuri periculoase, în conformitate cu reglementările de transport ale acestei agenţii.

IMO / IMDG (TRANSPORT MARITIM INTERNAŢIONAL PENTRU MĂRFURI PERICULOASE)
Nu sunt reglementate ca şi mărfuri periculoase, în conformitate cu reglementările de transport ale acestei agenţii.

IATA (ASOCIATIA de TRANSPORT AERIAN INTERNAŢIONAL)
Nu sunt reglementate ca şi mărfuri periculoase, în conformitate cu reglementările de transport ale acestei agenţii.

ADR (ACORDUL PRIVIND RUTIER DE MĂRFURI PERICULOASE (EUROPE))
Nu sunt reglementate ca şi mărfuri periculoase, în conformitate cu reglementările de transport ale acestei agenţii.

RID (REGULAMENTUL PRIVIND TRANSPORTUL INTERNATIONAL DE MARFURI PERICULOASE (EUROPE))
Nu sunt reglementate ca şi mărfuri periculoase, în conformitate cu reglementările de transport ale acestei agenţii.

ADN (ACORDUL EUROPEAN REFERITOR LA TRANSPORTUL INTERNAȚIONAL DE MĂRFURI PERICULOASE PE CĂILE NAVIGABILE INTERIOARE)
Nu sunt reglementate ca şi mărfuri periculoase, în conformitate cu reglementările de transport ale acestei agenţii.

Transport în vrac, în conformitate cu anexa II la MARPOL 73/78 și Codul IBC

SECŢIUNEA 15: INFORMAŢII DE REGLEMENTARE

Legislația națională

Legislația pentru Riscul de accident major: 96/82/EC Actualizat: 2003
Directiva 96/82/CE nu se aplică

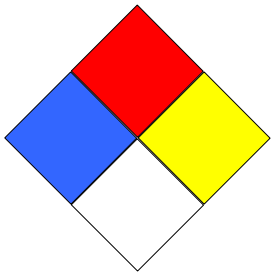
Alte reglementări:

Regulamentul Danez număr PR: Număr de înregistrare 1764847

Statutul de notificare

Europa REACH:	Pe inventar, sau în conformitate cu inventarul
Statele Unite ale Americii TSCA:	Pe inventar, sau în conformitate cu inventarul
Canada DSL:	Pe inventar, sau în conformitate cu inventarul
Australia AICS:	Pe inventar, sau în conformitate cu inventarul
Noua Zeelandă NZIoC:	Pe inventar, sau în conformitate cu inventarul
Japonia ENCS:	Pe inventar, sau în conformitate cu inventarul
Coreea KECI:	Pe inventar, sau în conformitate cu inventarul
Filipine PICCS:	Pe inventar, sau în conformitate cu inventarul
China IECSC:	Pe inventar, sau în conformitate cu inventarul

SECŢIUNEA 16: ALTE INFORMAŢII



Clasificare NFPA Pericol pentru sănătate: 0
Pericol de incendiu: 1
Pericol de reactivitate: 0

Informaţii suplimentare

Legacy Numărul de MSDS: 463650

Schimbări semnificative de la ultima versiune sunt subliniate pe margine. Această versiune înlocuieşte toate versiunile anterioare.

Informaţiile din această FDS se referă numai la produsul expediat.

Informaţiile furnizate în această Fişă cu Date de Securitate sunt corecte conform cunoştinţelor noastre, a informaţiilor şi presupunerilor noastre la data publicării sale. Aceste informaţii sunt date cu scop informativ pentru a permite manipularea, utilizarea, procesarea, depozitarea, transportul, indepărtarea si eliminarea şi nu pentru a fi considerat un certificat de calitate. Informaţiile se referă numai la produsul specificat şi nu pot fi valabile pentru un astfel de material este folosit în combinaţie cu orice alte materiale sau în orice proces, dacă acest lucru nu se specifică în text.

Legenda tuturor abrevierilor şi a acronimelor utilizate în fişa cu date de securitate

ACGIH	American Conference of Government Industrial Hygienists	**LD50**	Lethal Dose 50% (Doza letală 50%)
AICS	Australia, Inventory of Chemical Substances	**LOAEL**	Lowest Observed Adverse Effect Level (Nivelul minim de efecte adverse)
DSL	Canada, Domestic Substances List	**NFPA**	National Fire Protection Agency
NDSL	Canada, Non-Domestic List	**NIOSH**	National Institute for Occupational Safety & Health (Agenţia Naţională pentru Protecţia împotriva Incendiilor))
CNS	Central Nervous System (Sistem nervos central)	**NTP**	National Toxicology Program (Programul Naţional de Toxicologie)
CAS	Chemical Abstract Service	**NZIoC**	New Zealand Inventory of Chemicals (Registrul Substanţelor Chimice din Noua Zeelandă)
EC50	Effective Concentration (Concentraţia eficientă)	**NOAEL**	No Observable Adverse Effect Level (Nivel de efecte adverse neobservabile)
EC50	Effective Concentration 50%	**NOEC**	No Observed Effect Concentration (Concentraţia fără efect Observat)
EGEST	EOSCA Generic Exposure Scenario Tool	**OSHA**	Occupational Safety & Health Administration (Administraţia pentru Siguranţă şi Sănătate în Muncă)
EOSCA	European Oilfield Specialty Chemicals Association	**PEL**	Permissible Exposure Limit (Limita de expunere admisă)
EINECS	European Inventory of Existing Chemical Substances	**PICCS**	Philippines Inventory of Commercial Chemical Substances (Registrul Substanţelor Chimice din Filipine)
MAK	Germany Maximum Concentration Values	**PRNT**	Presumed Not Toxic (Presupus Non Toxic)
GHS	Globally Harmonized System	**RCRA**	Resource Conservation Recovery Act (Conservarea Resurselor Recuperate)
>=	Greater Than or Equal To (Mai mare sau egal cu)	**STEL**	Short-term Exposure Limit (Limita de Expunere pe termen scurt)
IC50	Inhibition Concentration 50% (Concentraţia inhibitorie 50%)	**SARA**	Superfund Amendments and Reauthorization Act.(Amendamentele Superfund şi de Reautorizare.)
ARC	International Agency for Research on Cancer	**TLV**	Threshold Limit Value (Valoarea prag limită)
IECSC	Inventory of Existing Chemical Substances in China	**TWA**	Threshold Limit Value (Valoarea prag limită)
ENCS	Japan, Inventory of Existing and New Chemical Substances	**TSCA**	Toxic Substance Control Act (Controlul Substanţelor Toxice)
KECI	Korea, Existing Chemical Inventory	**UVCB**	Unknown or Variable Composition Complex Reaction Products, and Biological Materials (Produse de reacţie cu compoziţie complexă necunoscută sau variabilă, şi materiale biologice)
<=	Less Than or Equal To (Mai mic sau egal cu)	**WHMIS**	Workplace Hazardous Materials Information System (Sistemul de Informaţii despre Materiale Periculoase la locul de muncă)
LC50	Lethal Concentration 50% (Concentraţia letală 50%)		

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010

INCORR

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**INCORR**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Inhibitor de coroziune solubil în apă pentru fluide de prelucrare şi de forare pe bază de apă**

Contraindicaţii: Nu sunt date disponibile

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

ACEST AMESTEC ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI:

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

	**GHS07**	**Irit. Piele 2** H315: Provoacă iritarea pielii
		Irit. Ochi 2 H319: Provoacă o iritare gravă a ochilor.
Nici o pictogramă	**Nici un cuvânt de atenţionare**	**H412:** Nociv pentru mediul acvatic cu efecte pe termen lung

Classification according to Directive 67/548/CEE (DPP) or Directive 1999/45/CE (DSP)

	**Xi - Iritant**	**R36 Iritant pentru ochi**

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	 **GHS07**	**Irit. Piele 2** H315: Provoacă iritarea pielii
		Irit. Ochi 2 H319: Provoacă o iritare gravă a ochilor
		H412**:** Nociv pentru mediul acvatic cu efecte pe termen lung
Fraze de precauţie:	P280: Purtaţi mănuşi de protecţie/îmbrăcăminte de protecţie/echipament de protecţie a ochilor/echipament de protecţie a feţei P302+P352: ÎN CAZ DE CONTACT CU PIELEA: spălaţi cu multă apă şi săpun. P305+P351+P338: ÎN CAZ DE CONTACT CU OCHII: Clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi	
Eliminarea:	P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	
Eticheta conform Directivei 67/548/CEE (DPP)		
Identificarea pericolelor:	Xi – Iritant  R36: Iritant pentru ochi	
Sfaturi de siguranţă	S26: În caz de contact cu ochii, clătiţi imediat cu multă apă şi consultaţi medicul S36/37: Purtaţi mănuşi şi haine corespunzatoare	
Eliminare	S60: Acest material şi recipientul său trebuie eliminate ca deşeuri periculoase	

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	amestec
Conţinut:	În conformitate cu tabelul de mai jos
Formula moleculară:	- - -

Numărul EC:	- - -
Number ONU	- - -
Numărul CAS:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Produși de reacție ai 2,2' oxybis etanol cu amoniac, reziduuri ai derivaților morfolinici REACH No. 01-2119560595-31-XXXX	68909-77-3	272-712-1	20-30%	**Ir. Ochi. 2**	 **GHS07**	H319
				Toxicitate acvatică 3	Fără pictogramă	H412
Imidazolina - etoxilat oleic	- - -	- - -	5-10%	**Irit. Ochi 2**		H319
				Irit. Piele 2		H315
Acid Acetic REACH No. 01-2119475328-30-XXXX	64-19-7	200-580-7	1-5%	**Lichid Inflamabil 3**	**GHS02**	H226
				Cor. Piele 1A	 **GHS05**	H314

Nam e	CAS No.	EC No.	Q.ty	Classification	Symbols	Hazard Statements
Produși de reacție ai 2,2' oxybis etanol cu amoniac, reziduuri ai derivaților morfolinici	68909-77-3	272-712-1	20-30%	**Xi - Iritant**		R36
				N – Periculos pentru mediu		R52/53
Imidazolina - etoxilat oleic	- - -	- - -	5-10%	**Xi - Iritant**		R36/38
Acid Acetic	64-19-7	200-580-7	1-5%	**No Pictogram**		R10
				C - Coroziv		R35

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistență medicală. Arătaţi medicului această Fișă cu Date de Securitate.
După inhalare:	În caz de inhalare, scoateți persoana la aer curat. Supravegheați temperatura corpului și asigurați odihna.

După contactul cu pielea:	Scoateți imediat îmbrăcămintea contaminată. Spălați imediat din abundență zona afectată cu apă și săpun, chiar dacă numai se suspectează. A se spăla întreg corpul prin duș sau îmbăiere.
După contactul cu ochii:	În caz de contact cu ochii, clătiţi cu multă apă curată. Consultați un medic oftalmolog. Protejați ochiul nevătămat.
După înghiţire:	Nu induceți voma . Consultaţi un medic imediat.
Alte informaţii:	Nu sunt date disponibile.
4.2. Cele mai importante simptome şi efecte, atât acute, cât si întârziate.	
Simptome	Nu sunt date disponibile.
4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.	
Supraveghere medicală:	Nu este necesară supravegherea medicală în timpul activităţii la locul de muncă sau în caz de accident. În caz de boală sau accident, consultați imediat un medic și arătați-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	Nu sunt date disponibile.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor	
Măsuri de precauție în caz de incendiu:	În caz de incendiu respectaţi următoarele instrucţiuni:
Mijloace de stingere corespunzătoare:	Utilizați: apă, Dioxid de carbon.
Mijloace de stingere necorespunzătoare:	Nici unul cunoscut.
Pericole care derivă din ardere (produşi de descompunere termică periculoşi):	Nu inhalați gaze de explozie sau de ardere.
Echipamente speciale de stingere a incendiilor	În caz de incendiu folosiți aparat pentru respiraţie și îmbrăcăminte de protecție.
Altele	Nu sunt date disponibile.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență	
Echipament de protecţie:	Purtați echipament individual de protecție
Proceduri de urgență:	Deplasați oamenii neprotejați într-o zonă sigură. Furnizați ventilație adecvată.
6.2. Precauţii pentru mediul înconjurător	
Mijloace de limitare:	Utilizați materiale adsorbante, organice, nisip.
Metode de limitare a poluării	Nu permiteți scurgerea în sol /subsol. Preveniți intrarea în ape de suprafață sau în sistemul de scurgere. După strângerea scurgerilor, spălați cu apă din abundență.
Informații suplimentare:	Colectați apele de spălare contaminate și eliminați-le conform reglementărilor.
6.3 Metode şi material pentru izolarea incendiilor şi pentru curăţenie	
	Nu sunt date disponibile.
6.4 Trimiteri către alte secţiuni) (trimiteri către secțiunile 8 și 13).	
	A se vedea şi declaraţiile de la secţiunile 8 şi 13.

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitaţi contactul cu pielea și ochii, inhalarea de vapori sau de ceață. Nu utilizați containere goale înainte ca acestea să fie curățate. Înainte de operațiile de transfer, asigurați-vă că în containere nu sunt materiale incompatibile. Îmbrăcămintea

	contaminată ar trebui schimbată atunci când se intră în zonele de servire a mesei. Atunci când se utilizează produsul, nu se mănâncă și nu se bea.
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Păstrați departe de alimente, băuturi și hrana animalelor.
Specificaţiile zonei de depozitare:	Zone bine ventilate.
Specificaţiile recipienţilor:	Butoaie de plastic
Incompatibilități:	Nu sunt date disponibile.
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Inhibitor de coroziune solubil în apă și bacteriostatic pentru fluide de prelucrare și de forare pe bază de apă**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control		
Substanță:		*Acid Acetic CAS No. 64-19-7*
TLV_{Celing}:		- - -
TLV_{TWA}:		10 ppm – 24,54 mg/m^3
TLV_{STEL}:		15 ppm – 36,81 mg/m^3
Limita biologică:		- - -
8.2. Controale ale expunerii profesionale		
Controale tehnice corespunzătoare :		Se recomandă ventilaţia generală
Protecție colectivă:		Asigurați ventilaţia decvată.
Protecţia individuală	Respiratorie:	În mod normal nu este necesară
	Ochi	Utilizați ochelari de protecție
	Mâini	Mănuși de protecție din PVC, neopren sau cauciuc.
	Corp	Îmbrăcăminte de protecție standard care asigură o protecție cuprinzătoare pentru piele, de ex: bumbac, cauciuc, PVC sau Viton.
8.3. Controlul expunerii mediului		
Scenarii de expunere		Nu sunt date disponibile.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale	
Aspect:	Lichid clar
Starea fizica:	lichid
Culoare:	Nu sunt date disponibile
Miros:	caracteristic
Prag olfactiv:	Nu sunt date disponibile
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH :	7
Punct de topire:	N/A
Punct de fierbere:	100°C
Punct de aprindere:	>100°C
Inflamabilitate (solid, gaz):	Nu sunt date disponibile
Temperatura de autoaprindere:	Nu sunt date disponibile
Temperatura de descompunere:	Nu sunt date disponibile.
Pericol de explozie:	Nu sunt date disponibile
Limita de inflamabilitate	Nu sunt date disponibile

superioară:	
Limita inferioară de inflamabilitate:	Nu sunt date disponibile
Presiunea de vapori:	Nu sunt date disponibile.
Densitatea la 20 °C:	Nu sunt date disponibile
Densitatea aparentă (20°C)	Nu sunt date disponibile
Densitatea în vrac (Bulk)	Nu sunt date disponibile.
Densitatea relativă (20°C):	1.03
Densitatea de vapori:	Nu sunt date disponibile.
Rata de evaporare:	Nu sunt date disponibile.
Solubilitate în apă (20°C):	solubil
Coeficientul de distribuție (n-octanol):	Nu sunt date disponibile.
Vâscozitatea (40°C):	Nu sunt date disponibile
9.3. Alte informaţii	
Alte informaţii:	Nu sunt date disponibile.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Stabil în condiții normale de utilizare. Evitați expunerea la surse de căldură.
10.2. Stabilitate chimică	
Materiale incompatibile	Oxidanți puternici
Posibilitatea de reacții periculoase:	Stabil în condiții normale

10.3. Posibilitatea de reacţii periculoase
Nu sunt date disponibile

10.4. Condiţii de evitat
Nu sunt date disponibile.

10.5. Materiale incompatibile
Nu sunt date disponibile.

10.6. Produși de descompunere periculoși
Nu sunt date disponibile.

11. INFORMAŢII TOXICOLOGICE

11.1. Informaţii privind efectele toxicologice

Toxicitatea amestec:	
Toxicitate Acută	
Toxicitate orală acută:	LD50 (șobolan): >2000 mg/kg.
Toxicitate inhalatorie acută:	Nu sunt date disponibile.
Toxicitate cutanată acută:	Nu sunt date disponibile
11.2. Corozivitate	
Piele:	Poate cauza ușoare iritații
Ochi:	Iritant
11.3. Iritaţie	
Piele:	Nu sunt date disponibile.
Ochi:	Nu sunt date disponibile.
11.4. Toxicitate la doze repetate	
Ingestie:	Nu sunt date disponibile.

Inhalare:	Nu sunt date disponibile
11.5. Sensibilitate	
Piele:	Nu sunt date disponibile
Ochi:	Nu sunt date disponibile.
11.6 Cancerogenitate	
	Nu sunt date disponibile.
11.7 Mutagenitate	
	Nu sunt date disponibile.
11.8 Toxicitate pentru reproducere	
	Nu sunt date disponibile.

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Toxicitate în apă:	Nu sunt date disponibile
Toxicitate în aer:	Nu sunt date disponibile.
Toxicitate în sol:	Nu sunt date disponibile.
12.2. Persistență și degradabilitate	
Alte informații:	Nu sunt date disponibile
12.3. Potențial de Bioacumulare	
Alte informații:	Nu sunt date disponibile
12.4. Mobilitate în sol	
Alte informații:	Nu sunt date disponibile.
12.5. Rezultatele evaluării PBT și vPvB	
PBT:	Nu sunt date disponibile.
vPvB:	Nu sunt date disponibile.
12.6. Alte efecte adverse	
Alte informații:	Nu sunt date disponibile

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Recuperați dacă este fezabil. Eliminaţi conform reglementărilor Directivelor Europene referitoare la deșeuri și deșeuri periculoase.
Cod de deșeu:	Nu sunt date disponibile.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Eliminare conform reglementărilor în vigoare locale şi naţionale.
Alte recomandări:	Nu sunt date disponibile.
	Legislaţia privind eliminarea deşeurilor: **Legea 211/2011** privind regimul deşeurilor. **HG 427/2010** pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor. **HG 1061/2008** privind transportul deşeurilor periculoase şi nepericuloase pe teritoriul României. **HG 268/2005** pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor. **HG 349/2005** privind depozitarea deşeurilor; **OMAPM nr.756/2004** pentru aprobarea Normativului tehnic privind incinerarea deşeurilor; **HG 856/ 2002** privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase. **HG 128/2002** privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.
	Legislaţia pentru deşeuri de ambalaj: **Ordinul 794/2012** privind procedura de raportare a datelor referitoare la ambalaje si deşeuri de ambalaje. **HG 247/2011** pentru modificarea si completarea Hotărârii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deşeurilor de ambalaje. **HG 1872/2006** pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilo

	de ambalaje. **HG 621/2005** privind gestionarea ambalajelor şi deşeurilor de ambalaje.

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Norme de transport ONU	Nu sunt date disponibile.
Clasa (clasele) de pericol pentru transport	Nu sunt date disponibile.
Grupul de ambalare:	Nu sunt date disponibile.
Pericol pentru mediu	Nu sunt date disponibile.
Precauţii pentru utilizatori	
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Poluant marin:	Nu sunt date disponibile.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Clasa IATA	Nu sunt date disponibile.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Codul IBC:	Nu sunt date disponibile.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Reglementări naţionale:

Legea 319/2006 – legea referitoare la sănătatea şi securitatea în muncă
HG 1425/2006 consolidată – Norme de aplicare ale Legii 301/2006
HG 1218/2006 privind Stabilirea cerinţelor minime de securitate şi sănătate în muncă pentru asigurarea protecţiei lucrătorilor împotriva riscurilor legate de prezenţa agenţilor chimici
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.

15.2 Evaluarea securităţii chimice	Nu a fost efectuată o evaluare a securităţii chimice**.**

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Reţeaua de Informaţii şi Date despre Substanţele Chimice utilizate în Mediul Înconjurător creată de Joint Research Centre, Commission of the European Communities - Centrul European Comun de Cercetare al Comisiei Comunităţilor Europene

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche-/ Institutul Superior de sănătate – Inventarul Naţional al Substanţelor (Italia)

ACGIH - Threshold Limit Values - 2009 edition/ ACGIH – Valorile limită de prag - ediţia 2009

Ghid de redactare a fișelor cu date de securitate, versiunea 2, Decembrie 2013, ECHA

16.2. Lista frazelor de pericol şi de precauţie utilizate Alte informaţii –

Fraze de pericol utilizate în secţiunile anterioare

H226: Lichid şi vapori inflamabili.
H314: Provoacă arsuri grave ale pielii şi lezarea ochilor
H315: Provoacă iritarea pielii.
H319: Provoacă o iritare gravă a ochilor

H412: Nociv pentru mediul acvatic cu efecte pe termen lung.

Fraze de precauție utilizate în secţiunile anterioare

P280: Purtaţi mănuşi de protecţie/îmbrăcăminte de protecţie/echipament de protecţie a ochilor/echipament de protecţie a feţei
P302+P352: ÎN CAZ DE CONTACT CU PIELEA: spălaţi cu multă apă şi săpun.
P305+P351+P338: ÎN CAZ DE CONTACT CU OCHII: Clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

16.3. Abrevieri și acronime utilizate:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate
GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice
ECHA – Agenția Europeană pentru Substanţe Chimice
EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente
CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința Americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
EUH: declarație de pericol, care este convenită în afara sitemului global armonizat GHS
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
N/A: neaplicabil
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
Ppm: părți per milion
FSD: Fişa de Date de securitate
STOT SE: Toxicitate asupra unui organ ţintă specific – o singură expunere
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii –

16.4.1 Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul EU 453/2010/. Această fișă anulează și înlocuiește orice ediție precedentă. Modificările intervenite între două ediţii ale unei FDS sunt ţinute sub control la producător.

16.4.2 Clauze de exonerare de răspundere

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document. Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere conform celor indicate în fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă pentru utilizarea intenţionată declarată. Este responsabilitatea utilizatorului să se asigure că este în posesia ultimei ediţii a fişei de securitate.

16.4.3 Răspundere

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate cu excepţia acelor informaţii din secţiunile 1, 13, 15 şi 16 care au fost armonizate cu legislaţia română în vigoare. De asemenea, structura fişei de securitate a fost armonizată cu structura din Anexa II B a Regulamentului UE 1907/2008.

Răspunderea pentru conţinutul versiunii în limba engleză al acestei FDS aparţine Ava S.p.A.
Răspunderea pentru traducerea în limba română a reviziei 3 a acestei FDS şi armonizarea cu cerinţele legislaţiei române la secţiunile mai sus indicate , aparţine AVA EASTERN EUROPE D.F & S srl prin Compartimentul QSHE şi Isabela NIŢĂ, inginer chimist.

Sfârșitul fişei de securitate

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

NATROSOL 250HHR-P

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**NATROSOL 250HHR-P**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Stabilizator de șist pentru fluide de foraj**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C. AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

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Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

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2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Fraze de precauţie:	**P260:** Nu inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	

Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Sfaturi de siguranţă::	**S22:** A nu se inspira praful. **S28:** În caz de contact cu pielea: spălaţi cu multă apă şi săpun	
Eliminarea:		

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	In conformitate cu tabelul următor:
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Hydroxyethyl cellulose	9004-62-0	- - -	- - -	- - -	- - -	- - -

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistență medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Mutați victima la aer. Daca simptomele pesista, chemati medicul. In caz de intrerupere a respiratiei, administrati oxigen.
După contactul cu pielea:	Indepartati imediat imbracamintea si incaltamintea contaminata. Spalati imediat cu apa din abundenta.
După contactul cu ochii:	Clătiți ochii cu apă cel puțin 15 minute. Consultati medicul dacă apare iritația ochilor sau persistă. Îndepărtați lentilele de contact
După înghiţire:	Nu induceti voma fără aviz medical. Nu administrați nimic pe gură la o persoană în stare de inconștiență. Consultați un medic dacă este necesar
Alte informaţii:	N.a.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	Iritatie mecanica

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	N.a.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	În caz de incendiu, respectaţi instrucțiunile.
Mijloace de stingere corespunzătoare:	Apa pulverizata, pulbere ABC
Mijloace de stingere necorespunzătoare:	Nu utilizati niciodata jet de apa
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Monoxid de carbon si dioxid de carbon
Echipamente speciale de stingere a incendiilor	Aparat respirator si costum de protectie, daca este necesar
Recomandări destinate pompierilor:	N.a.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență

Echipament de protecţie:	Evitati formarea de praf
Proceduri de urgență:	Evitati respirarea de praf si contactul cu ochii

6.2. Precauţii pentru mediul înconjurător

Medii de izolare:	Pastrati in recipiente corespunzatoare, inchise pentru eliminare
Metode de limitare a poluarii	Utilizati mătura și lopata. Îndepărtați dacă este posibil cu un sistem vidat pentru a preveni generarea de praf
Informatii suplimentare:	N.a.

7. MANIPULARE ŞI DEPOZITARE	
7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitati formarea de praf. Nu inspirati vaporii / praful. Fumatul, mâncatul și băutul sunt interzise Mențineți o buna curatenie. Nu permiteti acumularea de straturi de praf, de exemplu, pe podele, proeminente și echipamente, pentru a se evita orice potențiale pericole legate de praf. Materialul poate acumula sarcină statică și, prin urmare, poate provoca aprindere electrica a atmosferei inflamabile Asigurați-vă că toate echipamentele au pamantare și sunt corespunzator conectate electric, înainte de a începe operațiunile de transfer
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Păstrați într-un loc răcoros, bine ventilat. Păstrați recipientul închis ermetic
Specificaţiile zonei de depozitare:	Păstrați într-un loc răcoros, bine ventilat.
Specificaţiile recipienţilor:	Pastrati recipientul ermetic inchis .
Incompatibilități:	N.a.
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Stabilizator de șist pentru fluide de foraj**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ		
8.1. Parametri de control (Limite de expunere)		
Amestec		
TLV_{Celing}:		- - -
TLV_{TWA}:		- - -
TLV_{STEL}:		- - -
Limita biologică:		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Ventilaţia adecvata este recomandata.
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Asigurati ventilatie adecvata. Statie de spalare ochi in apropiere.
Protecţia individuală	Respiratorie:	In general nu este necesara.
	Ochi	Ochelari de protectie.
	Maini	Manusi de protectie
	Corp	Imbracaminte de protectie standard.
8.3. Controlul expunerii mediului		
Variante de expunere		N.a.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Forma:	Granule, pulbere, solid
Aspect:	Pulbere
Culoare:	Aproape alb
Miros:	Inodor
Prag olfactiv:	N.a.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH:	6.0 – 8.5; 2% (solutie apoasa)
Punct de topire:	N.a.
Punct de fierbere:	N.a.
Punct de aprindere:	N.a.
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	120°C
Temperatura de aprindere	460°C
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C:	1,38 g/cm3
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	N.a.
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	N.a.
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE	
10.1. Reactivitate	
Condiții care trebuie evitate:	Expunere la lumina soarelui
10.2. Stabilitate chimică	
Materiale incompatibile:	Acizi, baze si agenti oxidanti
Posibilitatea de reacții periculoase:	Pulberi organice la o concentrație suficientă pot forma amestecuri explozive în aer
10.3. Produși de descompunere periculoși	
Alte informaţii:	Monixid de carbon si dioxid de carbon

11. INFORMAŢII TOXICOLOGICE	
11.1. Toxicitate Acută	
Toxicitatea amestecului	
Toxicitate orală acută:	N.a.
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	N.a.
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Toxicitate în apă:	N.a.
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	Incet biodegradabil
12.3. Potențial de Bioacumulare	
Alte informații:	N.a.
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Consultati un firma cu licență în vederea eliminării conform reglementărilor locale. Nu deversați în sistemul de canalizare sau în mediu, eliminati la un punct de colectare a deșeurilor autorizat
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	N.a.
Alte recomandări:	N.a.

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Normele de transport ONU:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.

Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.

REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor

HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;

HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;

REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi

al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:
Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societății Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose **-** doză letală medie

NOEC: no observable effect concentration – concentraţia fără efect observat

PNEC: predicted no-effect concentration - concentrația fără efect prevăzut

PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice

vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative

TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore

TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt

TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de precautie / siguranta utilizate în secţiunile anterioare

P260: Nu inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

S22: A nu se inspira praful.
S28: În caz de contact cu pielea: spălaţi cu multă apă şi săpun

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

SODIUM BICARBONATE

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**SODIUM BICARBONATE**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Regulator de duritate**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C. AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

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2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Fraze de precauţie:		
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	

Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Sfaturi de siguranţă::	**S22:** A nu se inspira praful.	
Eliminarea:		

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Substaţă
Conţinut:	În conformitate cu tabelul următor
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Bicarbonat de sodiu REACH No. 01-2119457606-32-XXXX	144-55-8	205-633-8	>=98%	- - -	- - -	- - -

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În caz de afectare, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Scoateţi imediat persoana afectata afară / la aer curat. Solicitați asistență medicală pentru orice dificultăți de respirație.
După contactul cu pielea:	Scoate-ti hainele și faceti un duș. Solicitați imediat asistență medicală.
După contactul cu ochii:	Spălați-vă bine cu apă din abundenta pentru cel putin 15 minute Solicitați sfatul medicului imediat.
După înghiţire:	Nu induceti voma. Beti apa.
Alte informaţii:	- - -

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	N.a.

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	N.a.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	In caz de incendiu respectati urmatoarele instructiuni
Mijloace de stingere corespunzătoare:	Utilizare: spray de apă, spumă, pulbere, CO2
Mijloace de stingere necorespunzătoare:	Niciunul in mod special
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Nu respirați produse de combustie (oxidul de carbon, produse de piroliză toxice etc.)
Echipamente speciale de stingere a incendiilor	N.a.
Altele	În caz de incendiu, purtati imbracaminte de protectie completa

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență

Echipament de protecţie:	Purtați echipament individual de protecție adecvat. Evitați generarea de praf
Proceduri de urgență:	N.a.

6.2. Precauţii pentru mediul înconjurător

Medii de izolare:	Colectati mecanic și eliminati restul folosind jeturi de apă
Metode de limitare a poluarii	Pastrati containerele inchise
Informatii suplimentare:	Nu se va deversa în apele de suprafață sau în sistemul de canalizare

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate

Precauţii pentru manipulare în condiţii de securitate:	Evitați medii umede. Manipulați în zone bine ventilate

7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi

Condiţii de depozitare:	A se păstra în recipiente închise, la distanta de surse de căldură
Specificaţiile zonei de depozitare:	Depozitați în zone racoroase si uscate
Specificaţiile recipienţilor:	Pastrati containerele inchise

Incompatibilități:	N.a.
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Regulator de duritate**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control (Limite de expunere)		
Substanţă		***Bicarbonat de sodiu CAS No. 144-55-8***
TLV_{Celing}:		- - -
TLV_{TWA}:		TWA = 10mg/m^3
TLV_{STEL}:		- - -
Limita biologica		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Ventilatia generala este recomandata
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Asigurati ventilatie adecvata
Protecţia individuală	Respiratorie:	Nu este necesară
	Ochi	Nu este necesară
	Maini	Nu este necesară
	Corp	Nu este necesară
8.3. Controlul expunerii mediului		
Variante de expunere		N.a.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale	
Forma:	Solid
Aspect:	Pulbere
Culoare:	Alba
Miros:	Inodor
Prag olfactiv:	Niciunul
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH (10 g/l) la 25 °C:	8.5
Punct de topire:	N.a.
Punct de fierbere:	N.a.
Temperatura de descompunere	>60°C
Punct de aprindere:	N.a.
Inflamabilitate (solid, gaz):	Nu este inflamabil
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C	N.a.
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	N.a.

Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	9.6 g 100 ml
Solubilitate	N.a.
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	1.2 mPa.s
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Nici una in mod special
10.2. Stabilitate chimică	
Materiale incompatibile:	Acizi
Posibilitatea de reacții periculoase:	Niciuna
10.3. Produși de descompunere periculoși	
Alte informaţii:	Descompunerea termică sau în caz de incendiu poate elibera gaze și vapori potențial periculosi pentru sănătate

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Toxicitatea amestecului	***Sodium bicarbonate CAS No. 144-55-8***
Toxicitate orală acută:	DL50 (Șobolan): > 4.000 mg/kg
Toxicitate inhalatorie acută:	CL50 (Șobolan): > 4,74 mg/l
Toxicitate cutanată acută:	N.a.
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate	
Toxicitate în apă:	EC50 (Daphnia magna) 48h: 4100 mg/l LC50 (lepomis macorchirus) 96h: 7100 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Degradare abiotică:	Apa hidrolizeaza. Rezultat: Raportul Acid / baza este in funcție de pH
Degradare biologică:	Metode de determinare a biodegradabilității nu sunt aplicabile la substanțele anorganice

12.3. Potențial de Bioacumulare	
Alte informații:	N.a.
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Recuperati substanta dacă este posibil. Eliminati în conformitate cu reglementările locale și naționale
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Eliminati în conformitate cu reglementările locale și naționale
Alte recomandări:	N.a.

14. INFORMAŢII REFERITOARE LA TRANSPORT	
14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Normele de transport ONU:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) şi Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:

Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:

Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate
GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice
EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente
CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societăţii Americane de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

BARITE

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**BARITE**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Agent de ingreunare pentru fluide de foraj**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare	
Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă		
+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile	
E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator	
Nume:	S.C. AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă		
	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile	
E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică	
Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om și mediul înconjurător:

SUBSTANŢA / AMESTECUL NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)		
---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
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2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)		
Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Fraze de precauţie:	**P260:** Nu inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	
Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Sfaturi de siguranță::	**S22:** A nu se inspira praful. **S26:** În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul. **S 24/25:** Evitaţi contactul cu pielea şi ochii.	
Eliminarea:		

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Substaţă
Conţinut:	În conformitate cu tabelul următor
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Sulfat de bariu REACH No. 01-2119491274-35-XXXX	7727-43-7	231-784-4	100%	- - -	- - -	- - -

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistență medicală. Arătaţi medicului această Fișă cu Date de Securitate.
După inhalare:	Scoateţi imediat persoana afectată afară / la aer curat. Obţineţi asistență medicală pentru orice dificultăți de respirație.
După contactul cu pielea:	Spălați zona expusă cu apă și săpun. Obţineţi sfatul medicului în cazul apariției de iritații

După contactul cu ochii:	Spălați-vă bine cu apă de la robinet. Obţineţi sfatul medicului în cazul apariției de iritații.
După înghiţire:	A se bea mai multe pahare de apă pentru a dilua cantitatea de produs înghiţită. În cazul în care au fost înghițite cantități mari, solicitaţi asistență medicală.
Alte informaţii:	N.a.
4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.	
Simptome	N.a.
4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.	
Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	N.a.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor	
Măsuri de precauție în caz de incendiu:	În caz de incendiu respectati instrucțiunile de mai jos:
Mijloace de stingere corespunzătoare:	Nu este inflamabil, nu este exploziv
Mijloace de stingere necorespunzătoare:	N.a.
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Nu se consideră a fi un pericol de explozie
Echipamente speciale de stingere a incendiilor	N.a.
Altele	În caz de incendiu, purtati imbracaminte de protectie si aparat de respirat autonom certificat NIOSH, care acoperă faţa complet, şi care funcţionează în funcţie de cererea de presiune sau intr-un alt mod de presiune pozitivă.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență	
Echipament de protecţie:	Purtati echipament de protectie PPE corespunzător. Aerisiti zona de scurgere sau deversare. Purtați echipament individual de protecție adecvat. Mătura și depozitati in containere pentru recuperare sau eliminare. Aspirarea sau maturarea umeda pot fi folosite pentru a evita dispersarea prafului
Proceduri de urgență:	N.a.
6.2. Precauţii pentru mediul înconjurător	
Medii de izolare:	N.a.
Metode de limitare a poluarii	Evitati maturarea uscata prin pulverizare cu apa sau utilizarea unui sistem vidat pentru a preveni formarea de praf. Rețineți că bentonita poate fi alunecoasa in conditii de umiditate.
Informatii suplimentare:	Nu se aşteaptă să apară reacţii adverse.

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitați formarea de praf. Asigurați ventilație adecvată în locurile unde se formează praf. În caz de ventilare insuficientă purtati echipament de protecție respiratorie adecvata
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Asigurați o ventilație adecvata și depozitati pentru a preveni deteriorarea accidentală. A se feri de umiditate
Specificaţiile zonei de depozitare:	Depozitați într-un loc răcoros si uscat.
Specificaţiile recipienţilor:	Pastrati containerele ermetic inchise

Incompatibilități:	N.a.
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Agent de ingreunare pentru fluide de foraj**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control (Limite de expunere)		
Substanţă		
TLV_{Celing}:		- - -
TLV_{TWA}:		- - -
TLV_{STEL}:		- - -
Limita biologica		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Asigurati ventilatie adecvata
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Ventilatia generala este recomandata
Protecţia individuală	Respiratorie:	În mod normal nu este necesara. Evitați generarea de praf. În caz de expunere praf purta masca de praf , minim tip FFP1
	Ochi	Ochelari de protecție recomandați.
	Maini	Purtați mănuși de protecție
	Corp	Îmbracăminte curată care acoperă corpul.
8.3. Controlul expunerii mediului		
Variante de expunere		N.a.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale	
Forma:	Solid
Aspect:	Pulbere sau granular
Culoare:	Roşu
Miros:	Inodor
Prag olfactiv:	N.a.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH (10 g/l) la 20 °C:	N.a.
Punct de topire:	1580° C
Punct de fierbere:	N.a.
Punct de aprindere:	Nu este inflamabil.
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	Nu este exploziv
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C	N.a.
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	4,2-4,4 gr/cm^3
Densitatea de vapori:	N.a.

Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	Neglijabila
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Chimic stabil, fara incompatibilitati speciale
10.2. Stabilitate chimică	
Materiale incompatibile:	Niciunul in mod particula
Posibilitatea de reacții periculoase:	N.a.
10.3. Produși de descompunere periculoși	
Alte informaţii:	La temperaturi mai mari de 1580 ° C se descompune si emite vapori toxici

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Substanța	***Sulfat de Bariu CAS No.7727-43-7***
Toxicitate orală acută:	N.a.
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	N.a.
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	Nu este iritant
Ochi:	Moderat iritant
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate	
Toxicitate în apă:	N.a.
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	Nu este persistent
12.3. Potențial de Bioacumulare	
Alte informații:	Nu este bio-acumulativ
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	

PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informaţii:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Materialul trebuie să fie îngropat pentru a preveni eliberarea de praf respirabil. Reciclarea ar trebui să fie preferată decat eliminarea
Cod de deşeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Nici unul in mod special. În orice caz, trebuie evitată formarea de reziduuri de praf de ambalaj şi trebuie garantata o protecţie adecvată a lucrătorilor. Reciclarea şi eliminarea ambalajelor trebuie să fie efectuata de o societate de management adecvat al deşeurilor
Alte recomadari:	N.a.

14. INFORMAŢII REFERITOARE LA TRANSPORT	
14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Normele de transport ONU:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE
15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.
Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei
Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.
Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.
Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH)
Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) şi Directiva 1999/45/CE (DSP)
Regulament (CE) nr.1907/2006 (REACH) **Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009:** Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:

Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:

Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societăţii Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose **-** doză letală medie

NOEC: no observable effect concentration – concentraţia fără efect observat

PNEC: predicted no-effect concentration - concentrația fără efect prevăzut

PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice

vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative

TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore

TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt

TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol / siguranta utilizate în secţiunile anterioare

P260: Nu inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare

S22: A nu se inspira praful.
S26: În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul.
S 24/25: Evitaţi contactul cu pielea şi ochii.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVABENTOIL HY

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVABENTOIL HY**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Agent de creştere a vâscozităţii pentru fluide de foraj pe bază de ulei (OBM)**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C. AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om și mediul înconjurător:

SUBSTANŢA / AMESTECUL NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)		
---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)		
Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Fraze de precauţie:	**P261:** Evitaţi să inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	
Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Sfaturi de siguranţă::	**S22:** A nu se inspira praful. **S51:** Folosiţi numai zone în bine ventilate	
Eliminarea:		

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	In conformitate cu tabelul următor:
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Sare de bentonita ditallodimetilamoniu *(Ditallodimethylammonium salt of bentonite)*	68153-30-0	273-219-4	100%	- - -	- - -	- - -
Siliciu cristalin *(Crystalline Silica)*	14808-60-7	238-878-4	< 5%	**STOT RE 1**	 **GHS08**	**H372**

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Sare de bentonita ditallodimetilamoniu *(Ditallodimethylammonium salt of bentonite)*	68153-30-0	273-219-4	100%	- - -	- - -	- - -
Siliciu cristalin *(Crystalline Silica)*	14808-60-7	238-878-4	< 5%	**Xn - nociv**		**R48/20**
	Notă: Acest produs conține o cantitate mai mică de 1% de cuarț respirabil.Cuarț respirabil este clasificat ca si STOT RE 1					

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistență medicală. Arătaţi medicului această Fișă cu Date de Securitate.
După inhalare:	Scoateţi imediat persoana afectată afară / la aer curat. Tratați simptomele. Adresați-vă unui medic.
După contactul cu pielea:	Scoateţi imediat toate hainele contaminate. Spălați-vă imediat cu apă și săpun.
După contactul cu ochii:	Clătiti bine cu apă. Dacă iritația persistă, adresați-vă unui medic.
După înghiţire:	Clătiti imediat gura bine cu apă de mai multe ori. Dacă este necesar adresați-vă unui medic.
Alte informaţii:	N.a.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	N.a.

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	N.a.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	În caz de incendiu, respectaţi instrucțiunile.
Mijloace de stingere corespunzătoare:	În caz de incendiu utilizati ceata, spumă, produse chimice uscate, bioxid de carbon CO2
Mijloace de stingere necorespunzătoare:	Evitati jeturi de apă
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Mediu aerian cu concentratie de praf mai mare de 50 g / m3 se poate aprinde la 470 ° C
Echipamente speciale de stingere a incendiilor	Aparat respirator și îmbrăcăminte de protecţie.
Recomandări destinate pompierilor:	- - -

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ	
6.1. Precauţii personale, echipament de protecţie şi proceduri de urgenţă	
Echipament de protecţie:	Purtați echipament individual de protecție (mănuși, ochelari și combinezonul)
Proceduri de urgenţă:	Nu respirati praf. Produsul este foarte alunecos atunci când este umed.
6.2. Precauţii pentru mediul înconjurător	
Medii de izolare:	Îndepărtați dacă este posibil cu un sistem de vidare, pentru a preveni generarea de praf
Metode de limitare a poluarii	Pentru scurgeri mari, umeziti cu apă pentru a reduce depunerea prafului, maturati si eliminati în conformitate cu reglementările locale
Informatii suplimentare:	N.a.

7. MANIPULARE ŞI DEPOZITARE	
7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitati generarea de praf. A nu se inspira praful. A se evita acumularea de praf pe suprafețe pentru a preveni riscul de explozie.
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Evitati acumularea de încărcare electrostatică și echipamente terestre. Utilizați o mască de praf.
Specificaţiile zonei de depozitare:	Păstrați în zone uscate, bine ventilate
Specificaţiile recipienţilor:	Recipiente închise ermetic
Incompatibilități:	N.a.
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Agent de creştere a vâscozităţii pentru fluide de foraj pe bază de ulei (OBM)**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ		
8.1. Parametri de control (Limite de expunere)		
Substanta		***Siliciu cristalin (Crystalline silica) CAS No. 14808-60-7***
TLV_{Celing}:		- - -
TLV_{TWA}:		Praf (fracţiune inhalabilă): TLV-TWA = 10 mg/m3 Praf (fracţiune respirabilă): TLV-TWA = 3.0 mg / m³
TLV_{STEL}:		- - -
Limita biologică:		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Ventilaţia generală este recomadată.
8.2.2. Măsuri de protecţie individuală, precum echipamentul de protecţie personală.		Staţie de spălare ochi. Disponibilitatea de duş de urgenţă.
Protecţia individuală	Respiratorie:	In mod normal un este necesara
	Ochi	Ochelari de protecție.
	Maini	Mănuși de protecţie
	Corp	Recomandată îmbrăcăminte de protecție
8.3. Controlul expunerii mediului		
Variante de expunere		N.a.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Forma:	Crema
Aspect:	Crema pulbere
Culoare:	N.a.
Miros:	Usor
Prag olfactiv:	N.a.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH:	N.a.
Punct de topire:	N.a.
Punct de fierbere:	N.a.
Punct de aprindere:	N.a.
Inflamabilitate (solid, gaz):	470°C
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C:	N.a.
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	700-800 Kg/m3
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	Neglijabila
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE	
10.1. Reactivitate	
Condiții care trebuie evitate:	Stabil in conditii normale de depozitare si manipulare
10.2. Stabilitate chimică	
Materiale incompatibile:	Agenti oxidanti puternici
Posibilitatea de reacții periculoase:	Niciuna
10.3. Produși de descompunere periculoși	
Alte informaţii:	Poate elibera oxizi de azot și monoxid de carbon prin ardere. Debutul descompunerii organice este la 220 ° C

11. INFORMAŢII TOXICOLOGICE	
11.1. Toxicitate Acută	
Toxicitatea amestecului	
Toxicitate orală acută:	LD50 (Sobolan): >5000 mg/kg
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	N.a.

11.2. Corozivitate	
Piele:	Non-iritant pe piele nesensibilizata
Ochi:	Iritant numai din cauza efectelor de abraziune fizica ale pulberii
11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	Poate cauza usoara iritabilitate respiratorie
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate	
Toxicitate în apă:	N.a.
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	Porțiunea organică a produsului este biodegradabil.Bentonita nu se va degrada, ci este un mineral natural
12.3. Potențial de Bioacumulare	
Alte informații:	N.a.
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	Contactaţi o firmă autorizată în vederea eliminării în conformitate cu reglementările locale. Nu deversați în sistemul de canalizare sau în mediul înconjurător, eliminaţi la un punct autorizat de colectare a deșeurilor.
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Eliminati în conformitate cu reglementările locale și naționale
Alte recomandări:	N.a.

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Normele de transport ONU:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.

Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor și a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum și de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.

HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:
Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate
GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice
EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanţelor chimice existente
CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose - doză letală medie
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H372: Poate provoca afectari ale organelor in caz de expunere repetata sau prelungita
R48/20: Nociv, pericol de efecte grave asupra sănătății la expunere prelungită prin inhalare

Fraze de siguranţă utilizate în secţiunile anterioare

P261: Evitaţi să inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare

S22: A nu se inspira praful.
S51: Folosiți numai zone în bine ventilate

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010

AVABIOFIL HT – marca comercială Techwax® FLA 12 copolymeri, deţinută de Ashland

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII		
1.1. Element de identificare a produsului		
Denumire produs:	**AVABIOFIL HT – Techwax® FLA 12 copolymeri, deţinută de Ashland**	
1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate		
Utilizare:	Reducător a pierderilor de fluid pentru fluide de foraj	
Contraindicaţii: Nu sunt date disponibile		
1.3. Detalii privind furnizorul fişei cu date de securitate		
Identificarea companiei producătoare		
Nume:	Ava S.p.A.	
Adresă:	Via Salaria 1313/C	
Oraş/Ţară:	00138 ROMA (Italia)	
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111	
Fax:	+39 06 8889363	
Număr de telefon care poate fi apelat în caz de urgenţă		
+39 06 885611386	+39 06 885611324	+39 06 8856111
Adresa de e-mail a persoanei responsabile		
E-mail:	laboratorio.roma@newpark.com	
Importator / Distribuitor / Utilizator		
Nume:	S.C AVA EASTERN EUROPE D.F&S SRL	
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1	
Oraş/Ţară:	BUCURESTI / Romania	
Număr de telefon:	004 021 312 44 23; 021 312 28 72,	
Fax:	004 021 311 18 14	
Număr de telefon care poate fi apelat în caz de urgenţă		
	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88
Adresa de e-mail a persoanei responsabile		
E-mail:	aionescu@newpark.com	
1.4. Număr de telefon care poate fi apelat în caz de urgență		
Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică		
Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)	
E-mail:	mihaela.purcarea@insp.gov.ro	
Telefon de urgență	**112**	

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

ACEST AMESTEC NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI:

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

-	-	-

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	- - -	***Nu este clasificat ca fiind periculos în conformitate cu Regulamentul(UE) nr. 1272/2008***
Fraze de precauţie:	**P260:** Nu respiraţi praf/fum/gaz/ceaţă/vapori/spray. **P280**: Purtaţi mănuşi protectoare/ echipament de protecţie/ protejaţi ochii/faţa	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul de mai jos
Formula moleculară:	- - -
Numărul EC:	- - -
Number ONU	- - -
Numărul CAS:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
calcar	1317-65-3	- - -	≥10-15%	-	-	-

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Scoateți persoana la aer curat. În caz de expunere prelungită, cereti sfatul medicului
După contactul cu pielea:	Scoateți îmbrăcămintea contaminată. Spălați zona afectată cu apă din abundență.
După contactul cu ochii:	Clătiţi imediat uşor cu multă apă. Dacă persistă iritarea, solicitați asistență medicală.
După înghiţire:	Clătiţi-vă gura cu apă. Solicitați asistență medicală dacă este necesar.
Alte informaţii:	Nu sunt date disponibile

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	Nu sunt date disponibile

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În

	caz de boală sau accident, consultaţi imediat un medic şi arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenţie:	Nu sunt date disponibile

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauţie în caz de incendiu:	În caz de incendiu respectaţi, urmaţi instrucţiunile.
Mijloace de stingere corespunzătoare:	În caz de incendiu utilizaţi jeturi/spray-uri de apă.
Mijloace de stingere necorespunzătoare:	Nici
Pericole care derivă din ardere (produşi de descompunere termică periculoşi):	În condiţii de incendiu se descompune în oxid de calciu, dioxid de carbon, monoxid de carbon şi polimeri. Fumul poate conţine fragmente de polimeri de varii compoziţii şi produşi neidentificaţi toxici sau iritanţi.
Echipamente speciale de stingere a incendiilor	Nu sunt date disponibile
Altele	În caz de incendiu, purtati echipament de protecţie corespunzător şi utilizaţi un aparat care să permită respiraţia şi să vă protejeze întreaga faţă.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecţie şi proceduri de urgenţă

Echipament de protecţie:	Purtaţi echipament individual de protecţie (PPE). Evitaţi să respiraţi praf. Materialul poate crea condiţii de alunecare.
Proceduri de urgenţă:	Nu aruncaţi în ape de suprafaţă sau în sisteme de canalizare

6.2. Precauţii pentru mediul înconjurător

Mijloace de limitare:	Îndepărtaţi produsul dacă este posibil cu un sistem de vacuum pentru a preveni generarea prafului. Păstraţi produsul în ambalaje potrivite şi Închise pentru eliminare.
Metode de limitare a poluarii	Curăţaţi depunerile prin periere sau vacuum şi colectaţi în containere potrivite pentru eliminare. Ridicaţi containerele şi desfăşuraţi eliminarea fără a provoca praf.
Informatii suplimentare:	Nu sunt date disponibile

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate

Precauţii pentru manipulare în condiţii de securitate:	Evitaţi generarea prafului. Nu respiraţi praf. Evitaţi acumularea de praf pe suprafeţe pentru a preveni riscul de explozie.

7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi

Condiţii de depozitare:	Evitaţi acumularea sarcinilor electrostatice în echipamentele de pe teren. Utilizaţi o mască de praf.
Specificaţiile zonei de depozitare:	Depozitaţi în zone uscate şi bine ventilate, în containere închise etanş.
Specificaţiile pentru recipienţi:	Utilizaţi saci multistratificaţi cu peliclă interioară de PE. Păstraţi sacii închişi.
Incompatibilităţi:	Nu sunt date disponibile

7.3. Utilizare finală specifică:

Utilizări finale specifice:	Flui reducător a pierderilor de fluid pentru fluide de foraj

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control

TLV_{Celing}:	- - -

TLV_{TWA}:		Praf (fracţia inhalată): TLV-TWA = 10 mg/m^3 Praf (fracţia respirată): TLV-TWA = 5.0 mg / m^3
TLV_{STEL}:		- - -
Limita biologică:		- - -
8.2. Controale ale expunerii profesionale		
Controale tehnice corespuzătoare:		Ventilaţie generală este cerută.
Protecţie colectivă:		Spălătoare pentru ochi în apropiere, duşuri.
Protecţia individuală	Respiratorie:	Protecţia nu este necesară în mod normal.
	Ochi	Se recomandă ochelari de protecţie
	Maini	Mănuşi
	Corp	Îmbrăcăminte de protecţie standard
8.3. Controlul expunerii mediului		
Scenarii de expunere		Nu sunt date disponibile

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale	
Aspect:	solid
Starea fizica:	pulbere
Culoare:	alb
Miros:	inodor
Prag olfactiv:	Nu sunt date disponibile
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH (10 gr/l) la 20 °C:	Nu sunt date disponibile
Punct de topire:	Se descompune la aprox. 200 ° C
Punct de fierbere:	N/A
Punct de aprindere:	Nu sunt date disponibile
Inflamabilitate (solid, gaz):	Nu sunt date disponibile
Temperatura de autoaprindere:	Nu sunt date disponibile
Temperatura de descompunere:	Nu sunt date disponibile
Pericol de explozie:	Nu sunt date disponibile
Limita de inflamabilitate superioară:	Nu sunt date disponibile
Limita inferioară de inflamabilitate:	Nu sunt date disponibile
Presiunea de vapori:	Nu sunt date disponibile.
Densitatea la 20 °C:	0.91-0.96 g/cm^3
Densitatea în vrac (Bulk)	Nu sunt date disponibile
Densitatea relativă (20°C):	Nu sunt date disponibile
Densitatea de vapori:	Nu sunt date disponibile
Rata de evaporare:	Nu sunt date disponibile
Solubilitate în apă (20°C):	insolubil
Coeficientul de distribuţie (n-octanol):	Nu sunt date disponibile
Vâscozitatea (40°C):	Nu sunt date disponibile
9.3. Alte informaţii	
Alte informaţii:	Nu sunt date disponibile

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiţii care trebuie evitate:	A se păstra la distanţă de căldură, flăcări, scântei şi alte surse de aprindere sau de căldură excesivă.
10.2. Stabilitate chimică	
Materiale incompatibile:	Acizi, săruri de amoniu, săruri de aluminiu, floruri, agenţi oxidanţi puternici.
Posibilitatea de reacţii periculoase:	Nu se înregistrează reacţii periculoase.
10.3. Produși de descompunere periculoși	
Alte informaţii:	Oxid de calciu, dioxid de carbon şi monoxid de carbon
10.4. Condiţii de evitat	
Nu sunt date disponibile.	
10.5. Materiale incompatibile	
Nu sunt date disponibile.	
10.6. Produși de descompunere periculoși	
Nu sunt date disponibile.	

11. INFORMAŢII TOXICOLOGICE	
11.1. Informaţii privind efectele toxicologice	
Toxicitatea substanţei:	**Calcar ,** *CAS No. 1317-65-3*
Toxicitate orală acută:	LD50 (şobolan): 6450 mg/kg
Toxicitate inhalatorie acută:	Nu sunt date disponibile
Toxicitate cutanată acută:	Nu sunt date disponibile
11.2. Corozivitate	
Piele:	Nu sunt date disponibile
Ochi:	Nu sunt date disponibile
11.3. Iritabilitate primară	
Piele:	Nu sunt date disponibile
Ochi:	Nu sunt date disponibile
11.4. Nocivitate	
Ingestie:	Nu sunt date disponibile
Inhalare:	Nu sunt date disponibile
11.5. Sensibilitate	
Piele:	Nu sunt date disponibile
Ochi:	Nu sunt date disponibile

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Toxicitate în apă:	Nu sunt date disponibile
Toxicitate în aer:	Nu sunt date disponibile
Toxicitate în sol:	Nu sunt date disponibile
12.2. Persistență și degradabilitate	
Alte informații:	Nu sunt date disponibile
12.3. Potența Bioacumulativ	
Alte informații:	Nu sunt date disponibile
12.4. Mobilitate în sol	
Alte informații:	Nu sunt date disponibile
12.5. Resultatele evaluării PBT și vPvB	
PBT:	Nu sunt date disponibile

vPvB:	Nu sunt date disponibile
12.6. Alte efecte adverse	
Alte informaţii:	Nu sunt date disponibile

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Consultaţi un furnizor licenţiat pentru eliminare conform reglementărilor locale. Nu eliminaţi în sistemele de scurgere sau în mediu. Eliminaţi final la un punct de colectare autorizat.
Cod de deşeu:	Nu sunt date disponibile
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Ambalajele care nu pot fi curţate trebuie să fie eliminate ca deşeuri periculoase.
Alte recomandări:	Eliminaţi în conformitate cu reglementările locale și naționale
	Legislaţia privind eliminarea deşeurilor: (trece la 13) **Legea 211/2011** privind regimul deşeurilor. **HG 427/2010** pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor. **HG 1061/2008** privind transportul deşeurilor periculoase şi nepericuloase pe teritoriul României. **HG 268/2005** pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor. **HG 349/2005** privind depozitarea deşeurilor; **OMAPM nr.756/2004** pentru aprobarea Normativului tehnic privind incinerarea deşeurilor; **HG 856/ 2002** privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase. **HG 128/2002** privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.
	Legislaţia pentru deşeuri de ambalaj: **Ordinul 794/2012** privind procedura de raportare a datelor referitoare la ambalaje si deșeuri de ambalaje. **HG 247/2011** pentru modificarea si completarea Hotărârii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deșeurilor de ambalaje. **HG 1872/2006** pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor ş deşeurilor de ambalaje. **HG 621/2005** privind gestionarea ambalajelor şi deşeurilor de ambalaje.

14. INFORMAŢII REFERITOARE LA TRANSPORT	
14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Norme de transport ONU	Nu sunt date disponibile
Clasa (clasele) de pericol pentru transport	Nu sunt date disponibile
Grupul de ambalare:	Nu sunt date disponibile
Pericol pentru mediu	Nu sunt date disponibile
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Poluant marin:	Nu sunt date disponibile
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Clasa IATA	Nu sunt date disponibile
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Codul IBC:	Nu sunt date disponibile

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Reglementări naţionale:

Legea 319/2006 – legea referitoare la sănătatea şi securitatea în muncă
HG 1425/2006 consolidată – Norme de aplicare ale Legii 301/2006
HG 1218/2006 privind Stabilirea cerinţelor minime de securitate şi sănătate în muncă pentru asigurarea protecţiei lucrătorilor împotriva riscurilor legate de prezenţa agenţilor chimici
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.

15.2 Evaluarea securităţii chimice	Nu a fost efectuată o evaluare a securităţii chimice**.**

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Reţeaua de Informaţii şi Date despre Substanţele Chimice utilizate în Mediul Înconjurător creată de Joint Research Centre, Commission of the European Communities - Centrul European Comun de Cercetare al Comisiei Comunităţilor Europene

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche-/ Institutul Superior de Sănătate – Inventarul Naţional al Substanţelor (Italia)

ACGIH - Threshold Limit Values - 2009 edition/ ACGIH – Valorile limită de prag - ediţia 2009

Ghid de redactare a fișelor cu date de securitate, versiunea 2, Decembrie 2013, ECHA

16.2. Lista frazelor de pericol şi de precauţie utilizate Alte informaţii –

Fraze de pericol utilizate în secţiunile anterioare

- -

Fraze de precauție utilizate în secţiunile anterioare

P260: Nu respiraţi praf/fum/gaz/ceaţă/vapori/spray.
P280: Purtaţi mănuşi protectoare/ echipament de protecţie/ protejaţi ochii/faţa
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare

16.3. Abrevieri și acronime utilizate:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate
GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice
ECHA – Agenţia Europeană pentru Substanţe Chimice
EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente
CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința Americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
N/A: neaplicabil
NOEC: no observable effect concentration – concentraţia fără efect observat
P.E: Polietilenă
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
FSD: Fişa de Date de securitate
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore

TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii –

16.4.1 Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul EU 453/2010/. Această fișă anulează și înlocuiește orice ediție precedentă. Modificările intervenite între două ediţii ale unei FDS sunt ţinute sub control la producător.

16.4.2 Clauze de exonerare de răspundere

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document. Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere conform celor indicate în fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă pentru utilizarea intenţionată declarată. Este reponsabilitatea utilizatorului să se asigure că este în posesia ultimei ediţii a fişei de securitate.

16.4.3 Răspundere

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate cu excepţia acelor informaţii din secţiunile 1, 13, 15 şi 16 care au fost armonizate cu legislaţia română în vigoare. De asemenea, structura fişei de securitate a fost armonizată cu structura din Anexa II B a Regulamentului UE 1907/2008.

Răspunderea pentru conţinutul versiunii în limba engleză al acestei FDS aparţine Ava S.p.A.
Răspunderea pentru traducerea în limba română a reviziei 3 a acestei FDS şi armonizarea cu cerinţele legislaţiei române la secţiunile mai sus indicate , aparţine AVA EASTERN EUROPE D.F & S srl prin Compartimentul QSHE şi Isabela NIŢĂ, inginer chimist.

Sfârșitul fișei de securitate

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010

AVOIL DW

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVOIL DW**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Agent de modificare a vâscozității pentru fluide de foraj pe bază de ulei**

Contraindicaţii: Nu sunt date disponibile

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om și mediul înconjurător:

ACEST AMESTEC ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI:

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

		Irit. Piele 2 H315: Provoacă iritarea pielii

	**GHS07**	**Irit. Ochi 2** H319: Provoacă o iritare gravă a ochilor

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	 **GHS07**	**Irit. Piele 2** H315: Provoacă iritarea pielii
		Irit. Ochi 2 H319: Provoacă o iritare gravă a ochilor
	EUH208	Conţine dietilentriamina. Poate provoca o reacţie alergică
Fraze de precauţie:	P264 Spălaţi-vă bine faţa, mâinile şi pielea expusă după utilizare P280: Purtaţi mănuşi de protecţie/îmbrăcăminte de protecţie/echipament de protecţie a ochilor/echipament de protecţie a feţei P302+P352: ÎN CAZ DE CONTACT CU PIELEA: Spălaţi cu multă apă şi săpun P305+P351+P338: ÎN CAZ DE CONTACT CU OCHII: Clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi	
Eliminarea:	P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	amestec
Conţinut:	În conformitate cu tabelul de mai jos
Formula moleculară:	- - -
Numărul EC:	- - -
Number ONU	- - -
Numărul CAS:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Dipropilen glicol, monoetil eter REACH No. 01-2119450011-60-XXXX	34590-94-8	252-104-2	50-100%	- - -	- - -	- - -
Amestec de amide (NJTSR # 00190701001-6000-P)	- - -	Nu este listat	25-50%	**Irit.pielea 2** **Irit.ochi 2**	 **GHS07**	H315 H319
				Tox. Acută 4		H302 H312

Dietilen triamină REACH No. 01-2119473793-27-XXXX	111-40-0	203-865-4	<0,5%		 **GHS07**	
				Tox. Acută. 2	 **GHS06**	H330
				Cor Piele 1B	 **GHS05**	H314
				Sens. Piele 1		H317
				STOT SE 3	 **GHS07**	H335

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	În caz de inhalare, scoateți persoana la aer curat și țineți-o într-o poziție confortabilă pentru respirat. Dacă sunt dificultăți de respirație, administrați oxigen
După contactul cu pielea:	Spălați imediat din abundență zona afectată cu apă și săpun. Dacă iritațiile continuă, consultați un medic.
După contactul cu ochii:	În caz de contact cu ochii, clătiți cu multă apă curată în timp ce țineți pleoapele deschise. Dacă iritațiile continuă, consultați un medic.
După înghiţire:	Nu înghițiți, consultaţi un medic şi arătaţi această Fişă cu Date de Securitate. Nu induceți voma fără sfat medical. Niciodată nu administrați ceva pe gură unei persoane aflată în inconștiență.
Alte informaţii:	Evitați contactul cu pielea și ochii.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si întârziate.

Simptome	Iritații severe la ochi. Iritarea mucoaselor. Înroșiri. Inflamarea țesuturilor. Poate cauza reacții alergice ale pielii.

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Nu este necesară supravegherea medicală în timpul activităţii la locul de muncă sau în caz de accident. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	Tratați simptoamele.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	În caz de incendiu respectaţi următoarele instrucţiuni:
Mijloace de stingere	Dioxid de carbon, pulbere, spumă rezistentă la alcooli, nisip uscat.

corespunzătoare:	
Mijloace de stingere necorespunzătoare:	Nu sunt
Pericole care derivă din ardere (produşi de descompunere termică periculoşi):	Oxizi de carbon, oxizi e azot.
Echipamente speciale de stingere a incendiilor	Aparat pentru respiraţie de utilizat în timpul incendiului, dacă este necesar.
Altele	Se emite fum toxic în caz de incendiu.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecţie şi proceduri de urgenţă	
Echipament de protecţie:	Purtaţi echipament individual de protecţie
Proceduri de urgenţă:	Ţineţi oamenii departe de zona unde a apărut scurgerea/emisia.
6.2. Precauţii pentru mediul înconjurător	
Mijloace de limitare:	Limitaţi scurgerile cu materiale absorbante(nisip, silicagel, absorbant pentru acizi, absorbant universal, rumeguş.
Metode de limitare a poluării	Strângeţi în containere potrivite pentru eliminare. Preveniţi intrarea produselor în sistemul de scurgere. Curăţaţi zona contaminată cu grijă. Autorităţile locale ar trebui anunţate dacă cantităţi importante de produs scurs nu pot fi ţinute sub control şi curăţate.
Informaţii suplimentare:	Preveniţi eventualele pierderi dacă este sigur să faceţi asta. Nu aruncaţi în apele de suprafaţă sau în sistemele de canalizare. .
6.3 Metode şi material pentru izolarea incendiilor şi pentru curăţenie	
	Nu sunt date disponibile.
6.4 Trimiteri către alte secţiuni) (trimiteri către secţiunile 8 şi 13).	
	A se vedea şi declaraţiile de la secţiunile 8 şi 13.

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitaţi contactul cu ochii, pielea şi îmbrăcămintea Evitaţi să respiraţi vapori de ceaţă sau praf. Spălaţi bine mâinile după manipulare.
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Depozitaţi în zone uscate şi bine ventilate. Păstraţi containerele închise etanş şi departe de căldură şi surse de aprindere.
Specificaţiile zonei de depozitare:	Depozitaţi în zone reci, bine ventilate.
Specificaţiile recipienţilor:	Păstraţi containere închise etanş.
Incompatibilităţi:	Nu sunt date disponibile.
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Agent de modificare a vâscozităţii pentru fluide de foraj pe bază de ulei**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control	
TLV_{Celing}:	- - -
TLV_{TWA}:	- - -
TLV_{STEL}:	- - -
Limita biologică:	- - -
8.2. Controale ale expunerii profesionale	

Controale tehnice corespunzătoare :		Mențineți un control adecvat al dispozitivelor de comandă sau a ventilării astfel încât componentele periculoase să fie ținute sub limitele acceptabile. Utilizați un dispozitiv de respirat atunci când limitele sunt depășite.
Protecție colectivă:		Se recomandă ventilaţia generală.
Protecţia individuală	Respiratorie:	În caz de expunere la ceață, spray sau aerosoli, folosiți un dispozitiv de respirație corespunzător.
	Ochi	Utilizați ochelari de protecție care se fixează foarte bine pe față.
	Mâini	Mănuși de protecţie
	Corp	Îmbrăcăminte de protecție standard..
8.3. Controlul expunerii mediului		
Scenarii de expunere		Nu sunt date disponibile.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale	
Aspect:	Lichid vâscos
Starea fizica:	lichid
Culoare:	galben
Miros:	Ușor
Prag olfactiv:	Nu sunt date disponibile.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH	10-11
Punct de topire:	N/A
Punct de fierbere:	>175°C
Punct de aprindere:	82 °C
Inflamabilitate (solid, gaz):	Nu sunt date disponibile
Temperatura de autoaprindere:	Nu se autoaprinde
Temperatura de descompunere:	Nu sunt date disponibile.
Pericol de explozie:	Vaporii pot forma amestecuri explozive cu aerul
Limita de inflamabilitate superioară:	Nu sunt date disponibile
Limita inferioară de inflamabilitate:	Nu sunt date disponibile
Presiunea de vapori:	Nu sunt date disponibile.
Densitatea la 20 °C:	1.0-1.1 g/cm^3
Densitatea aparentă (20°C)	0.96 g/cm^3
Densitatea în vrac (Bulk)	Nu sunt date disponibile.
Densitatea relativă (20°C):	Nu sunt date disponibile
Densitatea de vapori:	Nu sunt date disponibile.
Rata de evaporare:	Nu sunt date disponibile.
Solubilitate în apă (20°C):	Insolubil
Coeficientul de distribuție (n-octanol):	Nu sunt date disponibile.
Vâscozitatea (40°C):	Nu sunt date disponibile
9.3. Alte informaţii	
Alte informaţii:	Nu sunt date disponibile.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Căldură, flăcări și scântei.
10.2. Stabilitate chimică	
Materiale incompatibile	Agenți de oxidare puternici
Posibilitatea de reacții periculoase:	Nu sunt cunoscute reacții periculoase în condiții de utilizare normală.
10.3. Posibilitatea de reacţii periculoase	
Nu sunt date disponibile.	
10.4. Condiţii de evitat	
Nu sunt date disponibile.	
10.5. Materiale incompatibile	
Nu sunt date disponibile.	
10.6. Produși de descompunere periculoși	
Nu sunt date disponibile.	

11. INFORMAŢII TOXICOLOGICE	
11.1. Informaţii privind efectele toxicologice	
Toxicitatea substanței:	Dipropilen glicol monometil eter, *CAS No. 34590-94-8*
Toxicitate Acută	
Toxicitate orală acută:	LD50 (șobolan): 5230 mg/kg.
Toxicitate inhalatorie acută:	Nu sunt date disponibile.
Toxicitate cutanată acută:	LD50 (Iepure): 9500 mg/kg
Toxicitatea substanței:	Dietilen triamină, *CAS No. 111-40-0*
Toxicitate Acută	
Toxicitate orală acută:	LD50 (șobolan): 819 mg/kg.
Toxicitate inhalatorie acută:	Nu sunt date disponibile.
Toxicitate cutanată acută:	LD50 (Iepure): 672 mg/kg
11.2. Corozivitate	
Piele:	Nu sunt date disponibile
Ochi:	Nu sunt date disponibile
11.3. Iritaţie	
Piele:	Nu sunt date disponibile.
Ochi:	Nu sunt date disponibile.
11.4. Toxicitate la doze repetate	
Ingestie:	Nu sunt date disponibile.
Inhalare:	Nu sunt date disponibile
11.5. Sensibilitate	
Piele:	Poate cauza reacții alergice ale pielii.
Ochi:	Nu sunt date disponibile.
11.6 Cancerogenitate	
	Nu sunt date disponibile.
11.7 Mutagenitate	
	Nu sunt date disponibile.
11.8 Toxicitate pentru reproducere	
	Nu sunt date disponibile.

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Substanță:	Dipropilen glicol monometil eter, *CAS No. 34590-94-8*
Toxicitate în apă:	LC50 (pește) 96h: 10 g/l EC50 (Daphnia magna) 48h: 1919 mg/l
Toxicitate în aer:	Nu sunt date disponibile.
Toxicitate în sol:	Nu sunt date disponibile.
Substanță:	Dietilen triamină, *CAS No. 111-40-0*
Toxicitate în apă:	LC50 (Pește) 96h: 248 mg/l EC50 (Daphnia magna) 48h: 16 mg/l
Toxicitate în aer:	Nu sunt date disponibile.
Toxicitate în sol:	Nu sunt date disponibile.
12.2. Persistență și degradabilitate	
Alte informații:	Nu sunt date disponibile
12.3. Potențial de Bioacumulare	
Alte informații:	Nu sunt date disponibile
12.4. Mobilitate în sol	
Alte informații:	Nu sunt date disponibile.
12.5. Rezultatele evaluării PBT și vPvB	
PBT:	Nu sunt date disponibile.
vPvB:	Nu sunt date disponibile.
12.6. Alte efecte adverse	
Alte informații:	Nu permiteți ca produsul să ajungă în apele freatice, cursurile de apă sau în sistemul de canalizare. Periculos pentru apa potabilă chiar dacă cantități mici s-au scurs în sol.

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Nu contaminați iazuri, cursuri de apă sau canale cu produse chimice sau cu ambalaje. Eliminaţi conform reglementărilor în vigoare locale şi naţionale.
Cod de deșeu:	Nu sunt date disponibile.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Eliminarea trebuie făcută la punctele autorizate pentru managementul deșeurilor, conform reglementărilor în vigoare locale şi naţionale.
Alte recomandări:	Ambalajele golite ar trebui duse la reciclatorii locali pentru eliminare.
	Legislaţia privind eliminarea deşeurilor: (trece la 13) **Legea 211/2011** privind regimul deşeurilor. **HG 427/2010** pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor. **HG 1061/2008** privind transportul deşeurilor periculoase şi nepericuloase pe teritoriul României. **HG 268/2005** pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor. **HG 349/2005** privind depozitarea deşeurilor; **OMAPM nr.756/2004** pentru aprobarea Normativului tehnic privind incinerarea deşeurilor; **HG 856/ 2002** privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase. **HG 128/2002** privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.
	Legislaţia pentru deşeuri de ambalaj: **Ordinul 794/2012** privind procedura de raportare a datelor referitoare la ambalaje si deşeuri de ambalaje. **HG 247/2011** pentru modificarea si completarea Hotărârii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deşeurilor de ambalaje. **HG 1872/2006** pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor ş deşeurilor de ambalaje. **HG 621/2005** privind gestionarea ambalajelor şi deşeurilor de ambalaje.

14. INFORMAŢII REFERITOARE LA TRANSPORT	
14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Norme de transport ONU	Nu sunt date disponibile.
Clasa (clasele) de pericol pentru transport	Nu sunt date disponibile.
Grupul de ambalare:	Nu sunt date disponibile.
Pericol pentru mediu	Nu sunt date disponibile.
Precauţii pentru utilizatori	
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Poluant marin:	Nu sunt date disponibile.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Clasa IATA	Nu sunt date disponibile.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Codul IBC:	Nu sunt date disponibile.

15. INFORMAŢII DE REGLEMENTARE	
15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.	
Reglementări naţionale: Legea 319/2006 – legea referitoare la sănătatea şi securitatea în muncă HG 1425/2006 consolidată – Norme de aplicare ale Legii 301/2006 HG 1218/2006 privind Stabilirea cerinţelor minime de securitate şi sănătate în muncă pentru asigurarea protecţiei lucrătorilor împotriva riscurilor legate de prezenţa agenţilor chimici **HG 1093/2006** privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.	
15.2 Evaluarea securităţii chimice	Nu a fost efectuată o evaluare a securităţii chimice**.**

16. ALTE INFORMAŢII
16.1. Principalele surse bibliografice
ECDIN - Environmental Chemicals Data and Information Network - Reţeaua de Informaţii şi Date despre Substanţele Chimice utilizate în Mediul Înconjurător creată de Joint Research Centre, Commission of the European Communities - Centrul European Comun de Cercetare al Comisiei Comunităţilor Europene
SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold
Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche-/ Institutul Superior de sănătate – Inventarul Naţional al Substanţelor (Italia)
ACGIH - Threshold Limit Values - 2009 edition/ ACGIH – Valorile limită de prag - ediţia 2009
Ghid de redactare a fișelor cu date de securitate, versiunea 2, Decembrie 2013, ECHA
http://www.acronymfinder.com/New-Jersey-Trade-Secret-Registry-(NJTSR).html
http://www.ilpi.com/Msds/ref/tsrn.html
16.2. Lista frazelor de pericol şi de precauţie utilizate Alte informaţii –
Fraze de pericol utilizate în secţiunile anterioare
H302: Nociv în caz de înghiţire H312: Nociv în contact cu pielea.

H314: Provoacă arsuri grave ale pielii şi lezarea ochilor
H315: Provoacă iritarea pielii
H317: Poate provoca o reacţie alergică a pielii.
H319: Provoacă o iritare gravă a ochilor
H330: Mortal în caz de inhalare
H335: Poate provoca iritarea căilor respiratorii.
EUH208: Conține dietilentriamina. Poate provoca o reacție alergică

Fraze de precauţie utilizate în secţiunile anterioare

P264 Spălaţi-vă bine fața, mâinile și pielea expusă după utilizare
P280: Purtaţi mănuşi de protecţie/îmbrăcăminte de protecţie/echipament de protecţie a ochilor/echipament de protecţie a feţei
P302+P352: ÎN CAZ DE CONTACT CU PIELEA: Spălaţi cu multă apă şi săpun
P305+P351+P338: ÎN CAZ DE CONTACT CU OCHII: Clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare

16.3. Abrevieri și acronime utilizate:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate
GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice
ECHA – Agenţia Europeană pentru Substanţe Chimice
EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente
CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința Americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
EUH: declarație de pericol, care este convenită în afara sitemului global armonizat GHS
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
N/A: neaplicabil
NJTSR: New Jersey Trade Secret Registry Number - Număr de înregistrare al produselor cu compoziție declarată de secretă, comercializate în statul New Jersey
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
FSD: Fişa de Date de securitate
STOT SE: Toxicitate asupra unui organ ţintă specific – o singură expunere
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii –

16.4.1 Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul

trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranţă şi trebuie să aibă acces la această informaţie.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul EU 453/2010/. Această fișă anulează și înlocuiește orice ediție precedentă. Modificările intervenite între două ediţii ale unei FDS sunt ţinute sub control la producător.

16.4.2 Clauze de exonerare de răspundere

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document. Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere conform celor indicate în fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă pentru utilizarea intenţionată declarată. Este responsabilitatea utilizatorului să se asigure că este în posesia ultimei ediţii a fişei de securitate.

16.4.3 Răspundere

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate cu excepţia acelor informaţii din secţiunile 1, 13, 15 şi 16 care au fost armonizate cu legislaţia română în vigoare. De asemenea, structura fişei de securitate a fost armonizată cu structura din Anexa II B a Regulamentului UE 1907/2008.

Răspunderea pentru conţinutul versiunii în limba engleză al acestei FDS aparţine Ava S.p.A.
Răspunderea pentru traducerea în limba română a reviziei 3 a acestei FDS şi armonizarea cu cerinţele legislaţiei române la secţiunile mai sus indicate , aparţine AVA EASTERN EUROPE D.F & S srl prin Compartimentul QSHE şi Isabela NIŢĂ, inginer chimist.

Sfârșitul fişei de securitate

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVOIL FC

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVOIL FC**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Reducator de filtrat pentru fluide de foraj pe baza de ulei**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om și mediul înconjurător:

SUBSTANŢA / AMESTECUL NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) șI amendamentele, HG 1408/2008, HG 937/2010.

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2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Fraze de precauție:		
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	

Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) șI amendamentele, HG 1408/2008, HG 937/2010.

Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Sfaturi de siguranță::	**S24/25**: Evitaţi contactul cu pielea şi ochii.	
Eliminarea:		

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul următor:
Formula moleculară:	- - -
Numărul ONU:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Etandiol REACH No. 01-2119456816-28-XXXX	107-21-1	203-473-3	>1-<2,5%	**Asp. Tox. 4**	 **GHS07**	**H302**
				STOT RE 2	 **GHS08**	**H373**

Name	CAS No.	EC No.	Quantity	Classification	Symbols	Hazard Statements
Etandiol	107-21-1	203-473-3	>1-<2,5%	**Xn - nociv**		**R22**

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Scoateţi imediat persoana afectată afară/la aer curat. Dacă simptomele persistă, adresaţi-vă unui medic.
După contactul cu pielea:	Scoateți îmbrăcămintea contaminată. Spălați zona afectată cu apă. Consultați medicul dacă există o iritație a pielii.
După contactul cu ochii:	Clătiți ochii cu apă cel puțin 15 minute. Solicitați asistență medicală dacă iritația ochilor se dezvoltă sau persistă.
După înghiţire:	Nu induceti voma fără aviz medical. Niciodată nu administraţi nimic pe cale orală unei persoane în stare de inconștiență. Consultaţi un medic dacă este necesar.
Alte informaţii:	N.a.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	N.a.

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultaţi imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	N.a.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	În caz de incendiu respectaţi următoarele instrucțiuni:
Mijloace de stingere corespunzătoare:	ABC pulbere, CO2, produse chimice uscate, apa pulverizată.
Mijloace de stingere necorespunzătoare:	Halon
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Alcooli, aldehide, dioxid de carbon și monoxid de carbon, eteri, hidrocarburi, oxid de potasiu
Echipamente speciale de stingere a incendiilor	În caz de incendiu, trebuie utilizat aparat de respirație autonom cu mască completă, funcționând cu presiune pozitivă si echipament de protecție corespunzător. Nu permiteți ca scurgerile de la stingerea incendiilor să pătrundă în canalizare sau în cursurile de apă

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență

Echipament de protecţie:	Evitați contactul cu ochii și pielea. Scoateţi toate hainele contaminate. Atunci când se utilizează, nu se va mânca, bea sau fuma. Persoanele care nu poartă echipament de protecție trebuie să fie excluse din zona de deversare până când procesul de curăţare a fost finalizat.
Proceduri de urgență:	N.a.

6.2. Precauţii pentru mediul înconjurător

Medii de izolare:	Absorbiti cu un material absorbant inert (spre exemplu nisip, silicagel, liant pentru acizi, liant universal, rumeguș)

Metode de limitare a poluării	Scurgerile mari ar trebui să fie colectate mecanic (aspirare cu ajutorul pompelor) pentru a fi eliminate. Păstraţi în containere adecvate, închise - pentru eliminare
Informaţii suplimentare:	Preveniţi scăpările sau scurgerile ulterioare dacă acest lucru se poate face în condiţii de siguranţă. Nu deversaţi în sistemul de canalizare sau în mediu. Nu se va contamina pânza de apă freatică

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate

Precauţii pentru manipulare în condiţii de securitate:	Nu respirati vaporii sau jetul de pulverizare

7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi

Condiţii de depozitare:	Depozitaţi în containerul original. Se vor păstra containerele ermetic închise, într-un loc uscat, răcoros și bine ventilat.
Specificaţiile zonei de depozitare:	Depozitați în zone uscate și bine ventilate
Specificaţiile recipienţilor:	A se păstra în containerul original bine închis
Incompatibilităţi:	Stabil în condițiile de depozitare recomandate. A se feri de îngheț

7.3. Utilizare finală specifică:

Utilizări finale specifice:	**Reducator de filtrat pentru fluide de foraj pe baza de ulei**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control

Limitele sunt în conformitate cu tabelele următoare.

Substanţa	***Etandiol CAS No. 107-21-1***
TLV_{Celing}:	- - -
TLV_{TWA}:	20 ppm - 52 mg/m3
TLV_{STEL}:	40 ppm – 104 mg/m3
Limita biologica	- - -

8.2. Controale ale expunerii profesionale

8.2.1. Controale tehnice corespunzătoare		Furnizaţi mecanic ventilație suficientă (generală, de evacuare și / sau local) pentru a menține expunerea sub nivelul de supraexpunere (de efecte adverse cunoscute, suspectate sau evidente).
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Ventilație forțată, stație de spălare ochi.
Protecţia individuală	Respiratorie:	În condiţii normale, nu este necesar echipament de protecție respiratorie
	Ochi	Ochelari de protecție cu ecrane laterale
	Maini	Mănuși impermeabile.
	Corp	Îmbrăcăminte de protecție standard,

8.3. Controlul expunerii mediului

Variante de expunere	Preveniţi scăpările sau scurgerile ulterioare dacă acest lucru se poate face în condiţii de siguranţă.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale

Forma:	Lichid
Aspect:	Lichid
Culoare:	Negru
Miros:	Caracteristic
Prag olfactiv:	N.a.

9.2. Informaţii pentru sănătate, siguranţă şi mediu

pH	11
Punct de topire:	N.a.
Punct de fierbere:	N.a.
Punct de aprindere:	111 °C
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 50 °C:	N.a.
Densitatea aparentă (20°C):	1 g/cm^3
Densitatea relativă:	N.a.
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	N.a.
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Nu se produce o polimerizare periculoasă. Căldură excesivă, căldură, flăcări și scântei.
10.2. Stabilitate chimică	
Materiale incompatibile:	Aldehide, metale alcaline, metale alcalino-pământoase, baze, aluminiu, acizi tari baze tari, agenți oxidanți puternici, compuși ai sulfului.
Posibilitatea de reacții periculoase:	În condiții normale de depozitare și utilizare, nu vor avea loc reacții periculoase
10.3. Produși de descompunere periculoși	
Alte informaţii:	Aldehide, dioxid de carbon și monoxid de carbon, hidrocarburi, acizi organici, oxizi de sulf, cetone

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Toxicitatea substanţei	*Etandiol CAS No. 107-21-1*
Toxicitate orală acută:	LD50 (Şobolan): 6.140 mg/kg Organele țintă: supraexpunerea la acest material (sau componentele acestuia), a sugerat ca fiind cauza pentru următoarele efecte adverse la indivizi umani: leziuni renale, afecțiuni hepatice
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	LD50 (iepure): 9.530 mg / kg Evaluare: Poate provoca leziuni ale organelor în caz de expunere prelungită sau repetată
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.

11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Toxicitatea substanţei	*Etandiol CAS No. 107-21-1*
Toxicitate în apă:	LC50 (Peşti) 96 h: 27.540 mg/l LC50 (Dafnii) 48 h: > 10.000 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	N.a.
12.3. Potențial de Bioacumulare	
Alte informații:	Potențialul de bioacumulare nu poate fi determinat
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	Utilizare în conformitate cu procedurile de lucru, evitând dispersia în mediul înconjurător.

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Nu deversați în sistemul de canalizare sau în mediul înconjurător, eliminaţi la un centru autorizat de colectare a deșeurilor. Eliminaţi în conformitate cu directivele europene privind deșeurile și deșeurile periculoase.
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	N.a.
Alte recomandări:	Se va elimina în conformitate cu reglementările locale

14. INFORMAŢII REFERITOARE LA TRANSPORT	
14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Norme de transport ONU	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Denumirea oficială a transportului	N.a.
Cod de acces în galerie/tunel	N.a.

14.2. Transport Maritim (IMDG)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Număr EMS	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare	N.a.
Poluant marin:	N.a.
Denumirea oficială a transportului	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Clasa ICAO / IATA	N.a.
Eticheta	N.a.
Grupul de ambalare	N.a.
Denumirea oficială a transportului	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.

Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.

REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor

HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;

HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;

REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase

HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:
Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei

fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate
GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice
EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente
CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societăţii Americane de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H302: Nociv în caz de înghiţire.
H373: Poate provoca afectari ale organelor in caz de expunere repetata sau prelungita

R22: Nociv în caz de înghiţire

Fraze de precauţie utilizate în secţiunile anterioare

P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

S24/25: Evitaţi contactul cu pielea şi ochii.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVOIL PE-LT

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVOIL PE-LT**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Emulsificator primar cu toxicitate redusă pentru fluide de foraj pe baza de ulei (OBM)**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

	**GHS05**	**Cor. Piele 1C** **H314:** Causes severe skin burns and eye damage
	**GHS07**	**Sens. cut. 1** **H 317:** Poate provoca o reacţie alergică a pielii.
	**GHS08**	**Tox. Asp. 1** **H304** – Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii
	**GHS09**	**Acvatic ac. 1** **H400:** Foarte toxic pentru mediul acvatic.
		Acvatic cr. 1 **H 410:** Foarte toxic pentru mediul acvatic cu efecte pe termen lung.

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

	**C - Coroziv**	**R 34:** Provoacă arsuri.
	**Xi**	**R65:** Nociv: poate provoca afecţiuni pulmonare în caz de inghiţire.
		R 43: Poate provoca sensibilizare la conatct cu pielea
	**N – Periculos pentru mediul înconjurător**	**R 50/53:** Foarte toxic pentru organismele acvatice, poate provoca efecte adverse pe termen lung asupra mediului acvatic.

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:				
	GHS08	**GHS05**	**GHS07**	**GHS09**

	Tox. Asp. 1 **H304** – Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii **Cor. Piele 1C** **H314:** Causes severe skin burns and eye damage **Sens. cut. 1** **H 317:** Poate provoca o reacţie alergică a pielii. **Acvatic cr. 1** **H 410:** Foarte toxic pentru mediul acvatic cu efecte pe termen lung.
Fraze de precauţie:	**P261:** Evitaţi să inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul. **P280:** Purtaţi mănuşi de protecţie / îmbrăcăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei. **P310:** Sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic. **P301 + 310:** ÎN CAZ DE INGHIŢIRE: sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic. **P303 + P361 + P353:** ÎN CAZ DE CONTACT CU PIELEA (sau părul): scoateţi imediat toată îmbrăcămintea contaminată. Clătiţi pielea cu apă/faceţi duş. **P305 + P351 + P338:** ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare pentru substanţe/amestecuri periculoase.
Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.	
Identificarea pericolelor:	 **C – Coroziv** **R 34:** Provoacă arsuri.
	 **Xn – Nociv** **R65:** Nociv: poate provoca afecţiuni pulmonare în caz de inghiţire.
	Xn – Nociv **R 43:** Poate provoca sensibilizare la conatct cu pielea
	 **N – Periculos pentru mediul înconjurător** **R 50/53:** Foarte toxic pentru organismele acvatice, poate provoca efecte adverse pe termen lung asupra mediului acvatic.
Sfaturi de siguranţă::	**S23:** A nu se inspira gazul/fumul.vaporii (termenul(ii) corespunzator(i) se specifică de către producător) **S26:** În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul. **S62:** În caz de înghiţire, a nu se provoca voma: a se consulta un medic şi a i se arăta ambalajul (recipientul) sau eticheta. **S24/25**: Evitaţi contactul cu pielea şi ochii. **S37/39:** Purtaşi mănusi corespunzătoare şi mască de protecţie pentru ochi/faţă.
Eliminarea:	**S60:** Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.
2.3. Alte pericole	
- - -	

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul de mai jos
Natură chimică:	Acumulator static
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS	- - -
Numărul UN:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Distilate de petrol hidrotratate **[Hydrotreated petroleum distillates]**	64742-47-8	265-149-8	>40-<50%	**Tox. Asp. 1**	 **GHS08**	**H304**
Acizi graşi, produse de reacţie cu dietilentriamina **[Fatty acids, tall-oil, reaction products with diethylenetriamine]** REACH No.01-2119487013- 43-XXXX	- - ---	1226892-43-8	>25-<40%	**Cor. Piele 1C**	 **GHS05**	**H314**
				Lez: Oc. 1		**H318**
				Sens. Piele 1	 **GHS07**	**H317**
				Acvatic ac. 1	 **GHS09**	**H400**
				Acvatic cr. 1		**H410**
Derivaţi de acid benzensulfonic, 4 - C10-13-sec – alchil. **[Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs.]**	85536-14-7	287-494-3	>2,5-<5%	**Tox. Acut 4**	 **GHS07**	**H302**
				Cor.Piele 1B	 **GHS05**	**H314**
Alcool polioxietilenă trimetildecil **[Polyoxyethylene trimethyldecyl alcohol]**	69011-36-5	- - -	>1-<2,5%	**Tox. Acut 4**	 **GHS07**	**H302**
				Lez. Oc. 1	 **GHS05**	**H318**
Propanol (Metoximetiletoxi)	34590-94-8	252-104-2	>2,5-<5%	-	- -	- - -

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Distilate de petrol hidrotratate [Hydrotreated petroleum distillates]	64742-47-8	265-149-8	>40-<50%	**Xn - nociv**		**R65**
Acizi graşi, produse de reacţie cu dietilentriamina [Fatty acids, tall-oil, reaction products with diethylenetriamine]	- -	1226892-43-8	>25-<40%	**C – Coroziv**		**R 34** **R 43**
				N – Periculos pentru mediul înconjurător		**R 50/53**
Derivaţi de acid benzensulfonic, 4 - C10-13-sec – alchil. [Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs.]	85536-14-7	287-494-3	>2,5-<5%	**C – Coroziv**		**R34**
				Xn - nociv		**R22**
Alcool polioxietilenă trimetildecil [Polyoxyethylene trimethyldecyl alcohol]	69011-36-5	- - -	>1-<2,5%	**Xn - nociv**		**R22**
				Xi - iritant		**R41**
Propanol (Metoximetiletoxi)	34590-94-8	252-104-2	>2,5-<5%	-	- - -	**- - -**

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistență medicală. Arătaţi medicului această Fișă cu Date de Securitate.
După inhalare:	Scoateţi persoana la aer curat. Consultaţi un medic după o expunere semnificativă. Dacă simptomele persistă se va solicita asistență medicală. În caz de dificultăţi (întrerupere) de respiratie, se va administra oxigen.
După contactul cu pielea:	Se vor scoate hainele și încălțămintea contaminate. Dacă simptomele persistă se va solicita asistență medicală.
După contactul cu ochii:	Țineți pleoapele deschise și ochii vor spăla cu apă din abundență, timp de cel puțin 15 minute. Solicitaţi asistență medicală. Scoateți lentilele de contact.
După înghiţire:	NU induceti voma. Nu administrați nimic pe cale orală unei persoane în stare de inconștiență. Obțineţi asistență medicală.
Alte informaţii:	N.a.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	Semne si simptome ale expunerii la acest material, prin respirație, înghițire, și/sau trecerea materialului prin piele pot include: tulburări digestive, de stomac sau intestinale, (greaţuri, vărsături, diaree), iritație (a nasului, gâtului, cailor respiratorii), iritație pulmonară, deprimarea sistemului nervos central (amețeli, somnolență, slăbiciune, oboseală, greaţuri , dureri de cap, pierderea cunoștinței). Lipsă de coordonare, confuzie, narcoză, bătăi neregulate ale inimii (senzație de amețeală sau leşin), convulsii. Inhalarea unor concentrații mari din acest material, cum ar putea

	avea loc în spații închise sau în timpul abuzului deliberat, pot fi asociate cu aritmii cardiace. Pericolul potențial de aspirație trebuie să fie pus în balanță ca o posibilă toxicitate dobândită pe calea aerului.
4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.	
Supraveghere medicală:	Supravegherea medicală în timpul activității la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și să îi arătaţi aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	Nu există riscuri care să necesite măsuri speciale de prim-ajutor.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor	
Măsuri de precauție în caz de incendiu:	În caz de incendiu urmaţi următoarele instrucţiuni
Mijloace de stingere corespunzătoare:	Pulbere ABC, dioxid de carbon (CO_2), produse chimice uscate, apă pulverizată
Mijloace de stingere necorespunzătoare:	Halon
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Dioxid de carbon și monoxid de carbon, hidrocarburi, oxizi de azot (NOx)
Echipamente speciale de stingere a incendiilor	În caz de incendiu, purtați un aparat de respirat. Utilizati echipament de protectie individual

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență	
Echipament de protecţie:	Purtați echipament de protecție adecvat PPE. (Echipament de protectie individual)
Proceduri de urgență:	Persoanele care nu poartă echipament de protecție trebuie să fie îndepărtate din zona de deversare până cînd procesul de curăţare a fost finalizat. Acordaţi atenție la răspândirea de gaze mai ales la nivelul solului (mai greu decât aerul) și la direcția vântului.
6.2. Precauţii pentru mediul înconjurător	
Medii de izolare:	Nu deversați în sistemul de canalizare sau în mediu. Nu contaminati sistemul de apă subteran.
Metode de limitare a poluarii	Conținutul scurgerilor, se va colecta cu material absorbant necombustibil, (de exemplu, nisip, pământ, pământ kiselgur, vermiculit) și se va depozita în containere pentru eliminare în conformitate cu reglementările locale / naționale. Păstraţi în containere adecvate, închise, în vederea eliminării.
Informatii suplimentare:	Preveniţi scăpările sau scurgerile ulterioare dacă acest lucru se poate face în condiţii de siguranţă.

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Nu respiraţi vaporii sau jetul de pulverizare. Evitați contactul cu pielea și ochii. Asigurați reîmprospătarea aerului și / sau o ventilație corespunzătoare la locul de muncă. Se va evita depășirea limitelor de expunere la locul de muncă. Fumatul, mâncatul și băutul sunt interzise în spațiul de utilizare.
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Se vor păstra containerele ermetic închise, într-un loc uscat, ventilat fără surse de aprindere.
Specificaţiile zonei de depozitare:	Depozitați într-o zonă uscată, rece și bine ventilată.
Specificaţiile recipienţilor:	Pastrati în containerul original. Păstraţi containerele ermetic închise.
Incompatibilități:	Păstrați la distanţă de sursele de căldură și de aprindere.

7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Emulsificator primar cu toxicitate redusă pentru fluide de foraj pe baza de ulei (OBM)**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control

Limitele sunt în conformitate cu tabelele următoare.

Substanţa		***Propanol (***Metoximetiletoxi)***) CAS n° 34590-94-8***
TLV_{Celing}:		- - -
TLV_{STEL}:		- - -
TLV_{TWA}:		50 ppm – 308 mg/m^3
Limita biologică:		- - -

8.2. Controale ale expunerii profesionale

8.2.1. Controale tehnice corespunzătoare		Se recomandă ventilație generală.
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Ventilație forțată, stație de spălare ochi în apropiere.
Protecţia individuală	Respiratorie:	Protecția respiratorie în mod normal nu este necesară. Dacă este nevoie, puteţi purta un aparat de respirație corespunzător.
	Ochi	Ochelari de protecție cu ecrane laterale
	Maini	Purtați mănuși rezistente, cum ar fi: polivinil alcool.
	Corp	Îmbrăcăminte standard de protecție și încălțăminte de protecție.

8.3. Controlul expunerii mediului

Variante de expunere	Preveniţi scăpările sau scurgerile ulterioare, dacă acest lucru se poate face în condiţii de siguranţă.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale

Forma:	Lichid
Aspect:	Lichid
Culoare:	Maro
Miros:	N.a.
Prag olfactiv:	N.a.

9.2. Informaţii pentru sănătate, siguranţă şi mediu

pH	N.a.
Punct de topire:	N.a.
Punct de fierbere:	N.a.
Punct de aprindere:	>65 °C
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 50 °C:	N.a.
Densitatea aparentă (20°C):	0,92 g/cm^3

Densitatea relativă:	N.a.
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	Insolubil
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea (50 °C):	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Nu permiteţi evaporarea până la deshidratare. Căldură, flăcări și scântei. Expunerea la aer.
10.2. Stabilitate chimică	
Materiale incompatibile:	Acizi, agenți oxidanți, săruri de baze puternice, baze puternice, agenți puternic reducători.
Posibilitatea de reacții periculoase:	În condiții normale de depozitare și utilizare, nu vor avea loc reacții periculoase
10.3. Produși de descompunere periculoși	
Alte informaţii:	Aldehide, dioxid de carbon și monoxid de carbon, hidrocarburi, oxizi de azot (NOx), cetone

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Substance	***Distilate de petrol hidrotratate [Hydrotreated petroleum distillates] CAS n° 64742-47-8***
Toxicitate orală acută:	LD50 (Șobolan): >8000 mg/kg LC50 (Șobolan) 4h: >2500 ppm LD50 (Iepure): >4000 mg/kg
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	N.a.
Substance	***Acizi grași, produse de reacție cu dietilentriamina [Fatty acids, tall-oil, reaction products with diethylenetriamine] CAS n° 61790-69-0***
Toxicitate orală acută:	LD50 (Șobolan): > 2000 mg/kg
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	N.a.
Substance	***Benzenesulfonic acid, 4-C10-13-sec-alkyl derivs. CAS No. 85536-14-7***
Toxicitate orală acută:	LD50 (Șobolan): > 1470 mg/kg
Toxicitate inhalatorie acută:	Coroziv prin inhalare
Toxicitate cutanată acută:	N.a.
Substance	***(Methoxymethylethoxy)propanol CAS No. 34590-94-8***
Toxicitate orală acută:	LD50 (Șobolan): > 5000 mg/kg
Toxicitate inhalatorie acută:	LC50 (Șobolan) 8h: >553ppm
Toxicitate cutanată acută:	LD50 (Șobolan): > 5000 mg/kg
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	N.a.

Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	Substanța sau amestecul este cunoscut pentru riscul de a determina pericole de toxicitate prin aspirare
11.5. Sensibilitate	
Piele:	N.a
Ochi:	N.a

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate	
Substance	***Acizi grași, produse de reacție cu dietilentriamina [Fatty acids, tall-oil, reaction products with diethylenetriamine]***
Toxicitate în apă:	LC50 (Peşti) 96h: 0,19 mg/l EC50 (Dafnii) 48h: 0,18 mg/l EC50 (Alge) 72h: 0,477 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
Substance	***Polyoxyethylene trimethyldecyl alcohol CAS No. 69011-36-5***
Toxicitate în apă:	LC50 (Peşti) 96h: 1-10 mg/l EC50 (Dafnii) 48h: 1-10 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
Substance	***(Methoxymethylethoxy)propanol CAS No. 34590-94-8***
Toxicitate în apă:	LC50 (Peşti) 96h: > 10000 mg/l EC50 (Dafnii) 48h: 1919 mg/l EC50 (Alge) 72h: > 969 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	N.a.
12.3. Potențial de Bioacumulare	
Alte informații:	Nu se aşteaptă să se producă bioacumulare (log Pow <= 3)
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	A se utiliza în conformitate cu bunele practici de lucru, evitând dispersia în mediul înconjurător. Foarte toxic pentru mediul acvatic cu efecte de lungă durată

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	A se elimina în conformitate cu directivele europene privind deșeurile și substanţele chimice periculoase
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Nu contaminati apele si canalele de scurgere cu substanţele chimice sau utilizate. Recipientele sunt periculoase atunci când sunt goale. Se vor elimina în conformitate cu reglementările locale. Goliți conținutul rămas. Îndepărtaţi produsul neutilizat. Containerele goale trebuie să fie colectate la un centru autorizat pentru reciclare sau eliminare. A nu se refolosi containerele goale. A nu se arde sau a nu se utiliza o flacără de tăiere, recipientul gol este periculos chiar şi gol. Se vor elimina în conformitate cu reglementările locale.
Alte recomandări:	Goliti continutul ramas. Eliminaţi produsul neutilizat

14. INFORMAŢII REFERITOARE LA TRANSPORT	
14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	UN1760
Norme de transport ONU	LICHID COROZIV, N.O.S.
Clasa (clasele) de pericol pentru transport	8
Grupul de ambalare:	III
Denumirea oficială a transportului	Periculos pentru mediu
Cod de restrictie in tunel:	- - -
14.2. Transport Maritim (IMDG)	
Număr ONU	UN1760
Număr EMS	LICHID COROZIV, N.O.S.
Cod de acces în tunel	- - -
Grupul de ambalare	III
Poluant marin:	POLUANT MARIN
Denumirea oficială a transportului	Periculos pentru mediu
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Număr ONU	UN1760
Clasa ICAO / IATA	8
Eticheta	-----
Grupul de ambalare	III
Denumirea oficială a transportului	Periculos pentru mediu
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	-----
Codul IBC:	-----
Alte informaţii:	-----

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) şi Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic și științific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și științific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:

Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii
Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H302: Nociv în caz de înghiţire
H304: Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii
H314: Provoacă arsuri grave ale pielii şi lezarea ochilor.
H317: Provoacă iritarea pielii
H318: Provoacă leziuni oculare grave.
H400: Foarte toxic pentru mediul acvatic.
H 410: Foarte toxic pentru mediul acvatic cu efecte pe termen lung.

R22: Nociv în caz de înghiţire
R34: Provoacă arsuri
R41: Risc de leziuni oculare grave.
R 43: Poate provoca sensibilizare în contact cu pielea
R65: Nociv: poate provoca afecţiuni pulmonare în caz de ingiţire.
R50 / 53: Foarte toxic pentru organismele acvatice, poate provoca efecte adverse pe termen lung în mediu acvatic

Fraze de precauție utilizate în secţiunile anterioare

P 261: Evitaţi să inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.
P280: Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei.
P 310: Sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic.
P301 + 310: ÎN CAZ DE INGHIŢIRE: sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic.
P 303 + P361 + P353: ÎN CAZ DE CONTACT CU PIELEA (sau părul): scoateţi imediat toată îmbrăcămintea contaminată. Clătiţi pielea cu apă/faceţi duş.
P305 + P351 + P338: ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare pentru substanţe/amestecuri periculoase.

S23: A nu se inspira gazul/fumul.vaporii (termenul(ii) corespunzator(i) se specifică de către producător)
S 26: În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul.
S62: În caz de înghiţire, a nu se provoca voma: a se consulta un medic şi a i se arăta ambalajul (recipientul) sau eticheta.
S24/25: Evitaţi contactul cu pielea şi ochii.
S37/39: Purtaţi mănusi corespunzătoare şi mască de protecţie pentru ochi/faţă.
S60: Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVOIL SE-LT

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVOIL SE/LT**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Emulgator secundar cu toxicitate redusă pentru fluide de foraj pe bază de ulei (OBM)**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om și mediul înconjurător:

SUBSTANŢA / AMESTECUL ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)		
	**GHS08**	**Tox. asp. 1** **H304** – Poate fi mortal în caz de înghiţire şi pătrundere în căile respiratorii
	**GHS07**	**Sens. piele 1** **H317** – Poate provoca o reacţie alergică a pielii
Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
	**Xi - Iritant**	**R43** – Poate provoca sensibilizare în contact cu pielea
	Xn - Nociv	**R65** – Poate provoca afectare pulmonara in caz de inghitire

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)	
Identificarea pericolelor:	 **GHS08** **GHS07**
	Tox. asp. 1 **H304** – Poate fi mortal în caz de înghiţire şi pătrundere în căile respiratorii **Sens. piele 1** **H317** – Poate provoca o reacţie alergică a pielii
Fraze de precauție:	**P261:** Evitaţi să inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul. **P280:** Purtaţi mănuşi de protecţie/îmbrăcăminte de protecţie/echipament de protecţie a ochilor/echipament de protecţie a feţei **P331**: NU provocaţi voma. **P363:** Spălaţi îmbrăcămintea contaminată înainte de reutilizare. **P301 + 310:** ÎN CAZ DE INGHIŢIRE: sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic. **P333 + P313:** În caz de iritare a pielii sau de erupţie cutanată: consultaţi medicul.
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare pentru substanţe/amestecuri periculoase.
Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.	
Identificarea pericolelor:	 **Xi – Iritant** **R43** – Poate provoca sensibilizare în contact cu pielea
	Xn – Nociv **R65** – Poate provoca afectare pulmonara in caz de inghitire
Sfaturi de siguranță::	**S25**: Evitaţi contactul cu pielea **S28:** După contactul cu pielea, spălaţi imediat din abundenţă cu apă. **S37/39:** Purtați mănuși corespunzătoare și mască de protecție pentru ochi / față
Eliminarea:	**S60:** Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul de mai jos:
Natura chimică	Materialul poate acumula incarcatura statica
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul ONU:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Acizi grași, ulei de produse de reacție cu dietilentriamina, anhidridă maleică, tetraetilenpentamină și trietilentetramină REACH No. 01-2119496070-42-0003	68990-47-6	203-601-0	>/= 25-<40%	**Sens. piele 1**	 **GHS07**	**H317**
Distilate de petrol hidrotratate	64742-47-8	265-149-8	>/= 25-<40%	**Tox. Asp. 1**	 **GHS08**	**H304**
(methyl-2-methoxyethoxy) propanol	34590-94-8	252-104-2	≥5-<10%	- - -	- - -	- - -

Name	CAS No.	EC No.	Quantity	Classification	Symbols	Hazard Statements
Acizi grași, ulei de produse de reacție cu dietilentriamina, anhidridă maleică, tetraetilenpentamină și trietilentetramină	68990-47-6	203-601-0	>25-<40%	**Xi**		**R43**
Distilate de petrol hidrotratate	85117-49-3	285-599-9	>25-<40%	**Xn**		**R65**
(methyl-2-methoxyethoxy) propanol	34590-94-8	252-104-2	≥5-<10%	- - -	- - -	- - -

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistență medicală. Arătaţi medicului această Fișă cu Date de Securitate.
După inhalare:	Mutați persoana expusă la aer curat. Solicitați asistență medicală. În caz de întrerupere a respiratiei, administrati oxigen.
După contactul cu pielea:	Scoateţi hainele și încălțămintea contaminate. Spălați zona afectată cu multă apă. Spălaţi hainele contaminate înainte de re-utilizare. Dacă persistă iritarea pielii, solicitați asistență medicală.

După contactul cu ochii:	Clătiți ochii cu apă cel puțin 15 minute. Solicitați asistență medicală dacă iritația ochilor progresează sau persistă. Scoateți lentilele de contact.
După înghiţire:	Nu provocaţi vărsături fără aviz medical. Niciodată nu se va administra nimic la o persoană în stare de inconştienţă. Adresaţi-vă unui medic dacă este necesar.
Alte informaţii:	N.a.
4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.	
Simptome	Inhalarea de concentraţii mari din acest amestec, care poate avea loc în spaţii închise sau în timpul abuzul deliberat, pot fi asociate cu aritmii cardiace. Medicamente simpatomimetice pot iniția aritmii cardiace la persoanele expuse la acest amestec. Acest amestec este periculos prin aspirare. Pericolul potențial de aspirație trebuie evaluat în comparaţie cu posibila toxicitate orală
4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.	
Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și să îi arătaţi aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	- - -

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor	
Măsuri de precauție în caz de incendiu:	În caz de incendiu respect următoarele instrucțiuni:
Mijloace de stingere corespunzătoare:	În caz de incendiu, utilizați pulbere ABC, dioxid de carbon (CO2), produs chimic uscat, apă pulverizată.
Mijloace de stingere necorespunzătoare:	Halon
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Amine, dioxid de carbon și monoxid de carbon, hidrocarburi, oxizi de azot (NOx), oxizi de fosfor, oxizi de sulf
Echipamente speciale de stingere a incendiilor	În caz de incendiu purtați aparat de respirație autonom cu mască completă pe față, funcționând cu presiune pozitivă și echipament de protecție.
Alte informații:	Păstraţi containerele şi zona înconjurătoare răcite cu jet de apă. Preveniţi ca apa de stingere a incendiilor să nu contamineze apa de suprafață sau pânza de apă freatică. Reziduurile de ardere și apa contaminată folosită la stingere, trebuie eliminate în conformitate cu reglementările locale

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență	
Echipament de protecţie:	Purtați echipament individual de protecție (mănuși, ochelari și combinezonul). Persoanele care nu poartă echipament de protecție trebuie să fie scoase din zona de deversare până când procesul de curăţare a fost finalizat.
Proceduri de urgență:	Evitați contactul cu ochii și pielea. Scoateţi toate hainele contaminate
6.2. Precauţii pentru mediul înconjurător	
Medii de izolare:	Conținutul scurgerilor, se va colecta cu material absorbant necombustibil, (de exemplu, nisip, pământ, pământ, diatomit, vermiculit)
Metode de limitare a poluarii	Păstraţi în containere adecvate, închise.
Informatii suplimentare:	Preveniţi scăpările sau scurgerile ulterioare dacă acest lucru se poate face în condiţii de siguranţă.

7. MANIPULARE ŞI DEPOZITARE	
7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Nu respiraţi vaporii sau jetul de pulverizare. Nu beţi, mănâncaţi sau fumaţi în zona de utilizare a amestecului. Containerele care sunt deschise trebuie închise cu grijă și ținute în poziție verticală pentru a preveni scurgerile.
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Păstrați containerele la distanţă de sursele de căldură și de aprindere.
Specificaţiile zonei de depozitare:	Depozitați într-o zonă uscată și bine ventilată.
Specificaţiile recipienţilor:	Depozitaţi în containerul original. Păstrați recipientul închis ermetic
Incompatibilități:	Stabil în condițiile de depozitare recomandate
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Emulgator secundar cu toxicitate redusă pentru fluide de foraj pe bază de ulei (OBM)**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ		
8.1. Limite de expunere		
Substanta		*Hydrotreated petroleum distillates CAS No. 85117-49-3*
TLV_{Celing}:		- - -
TLV_{Celing}:		200 mg/m3
TLV_{STEL}:		- - -
Limita biologică:		- - -
Substanta		*(methyl-2-methoxyethoxy) propanol CAS No. 34590-94-8*
TLV_{Celing}:		- - -
TLV_{Celing}:		50 ppm 308 mg/m3
TLV_{STEL}:		- - -
Limita biologică:		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Asigurati ventilatie adecvata
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Ventilatia generala este recomandata
Protecţia individuală	Respiratorie:	Protecția respiratorie nu este necesară în mod normal. Evitați generarea de aerosoli și de vapori.
	Ochi	Ochelari de protecție cu ecrane laterale
	Maini	Mănuși impermeabile (Nitril cauciuc)
	Corp	Echipament de protecție complate și încălțăminte de protecție.
8.3. Controlul expunerii mediului		
Variante de expunere		Preveniţi scăpările sau scurgerile ulterioare, dacă acest lucru se poate face în condiţii de siguranţă.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Forma:	Lichid
Aspect:	Vâscos
Culoare:	Ambră închisă la culoare.
Miros:	Caracteristic
Prag olfactiv:	N.a.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	

pH :	N.a.
Punct de topire:	N.a.
Punct de fierbere:	>150°C
Punct de aprindere:	>65 °C
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 25 °C:	1 g/cm3
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	N.a.
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	Insolubil
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea (50 °C):	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Căldură, flăcări și scântei
10.2. Stabilitate chimică	
Materiale incompatibile:	Agenţi puternic oxidanţi, agenti slab reducători
Posibilitatea de reacții periculoase:	Niciunua
10.3. Produși de descompunere periculoși	
Alte informaţii:	Amine, dioxid de carbon și monoxid de carbon, hidrocarburi, oxizi de azot (NOx), oxizi de fosfor, oxizi de sulf

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Substanţa	***Distilate de petrol hidrotratate CAS No. 64742-47-8***
Toxicitate orală acută:	LD50 (Şobolan): >8000 mg/kg
Toxicitate inhalatorie acută:	LC50 (Şobolan): >2500 ppm, 4h
Toxicitate cutanată acută:	LD50 (Iepure): > 4000 mg/kg
Substanţa	***(methyl-2-methoxyethoxy) propanol CAS No. 34590-94-8***
Toxicitate orală acută:	LD50 (Şobolan): >5000 mg/kg
Toxicitate inhalatorie acută:	LC50 (Şobolan) vapori 7h: >275 ppm
Toxicitate cutanată acută:	LD50 (Iepure): > 5000 mg/kg
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	

Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate	
Substanţa	***Acizi graşi, ulei de produse de reacţie cu dietilentriamina, anhidridă maleică, tetraetilenpentamină şi trietilentetramină CAS No. 68990-47-6***
Toxicitate în apă:	LC50 (Peşti) 96h: >100 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
Substanţa	***(methyl-2-methoxyethoxy) propanol CAS No. 34590-94-8***
Toxicitate în apă:	LC50 (Peşti) 96h: >10000 mg/l LC50 (Dafnii) 48h: 1919 mg/l CE50 (Alge) 72h: >969 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	N.a.
12.3. Potențial de Bioacumulare	
Alte informații:	N.a.
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	Eliminaţi în conformitate cu directivele europene privind deşeurile şi substanţele chimice periculoasei. Nu contaminaţi apele şi canalele de scurgere cu produsul chimic sau recipientul folosit. Containerele sunt periculoase atunci când sunt goale. Eliminaţi în conformitate cu reglementările locale
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Goliți conținutul rămas. Îndepărtaţi produsul nefolosit Containerele goale trebuie să fie colectate la un centru autorizat pentru reciclare sau eliminare. A nu se refolosi containerele goale. A nu se arde sau a nu se utiliza o flacără de tăiere.
Alte recomandări:	N.a.

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Norme de transport ONU	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Denumirea oficială a transportului	N.a.
Cod de acces în tunel	N.a.
14.2. Transport Maritim (IMDG)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Număr EMS	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare	N.a.
Poluant marin:	N.a.
Denumirea oficială a transportului	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Clasa ICAO / IATA	N.a.
Eticheta	N.a.
Grupul de ambalare	N.a.
Denumirea oficială a transportului	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.

Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.

REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic și științific, a Regulamentului (CE) nr.

1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:
Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie

informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose **-** doză letală medie

NOEC: no observable effect concentration **–** concentraţia fără efect observat

PNEC: predicted no-effect concentration - concentrația fără efect prevăzut

PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice

vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative

TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore

TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt

TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H304 – Poate fi mortal în caz de înghiţire şi pătrundere în căile respiratorii

H317 – Poate provoca o reacţie alergică a pielii

R43 – Poate provoca sensibilizare în contact cu pielea

R65 - Nociv: poate provoca afecţiuni pulmonare în caz de înghiţire.
Fraze de precauție/siguranta utilizate în secţiunile anterioare
P261: Evitaţi să inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul. **P280:** Purtaţi mănuşi de protecţie/îmbracăminte de protecţie/echipament de protecţie a ochilor/echipament de protecţie a feţei **P331**: NU provocaţi voma. **P363:** Spălaţi îmbracămintea contaminată înainte de reutilizare. **P301 + 310:** ÎN CAZ DE INGHIŢIRE: sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic. **P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare pentru substanţe/amestecuri periculoase.
S25: Evitaţi contactul cu pielea **S28:** După contactul cu pielea, spălaţi imediat din abundenţă cu apă. **S37/39:** Purtați mănuși corespunzătoare și mască de protecție pentru ochi / față **S60:** Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVOIL TN/LT

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVOIL TN/LT**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Agent de reduce a vascozitatii** pentru fluide de foraj pe baza de ulei (OBM)

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

	**GHS08**	**Tox. Asp. 1** **H304** – Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

	**Xn - nociv**	**R65** – Nociv: poate provoca afecţiuni pulmonare în caz de înghiţire.

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	 **GHS08**	**Tox. Asp. 1** **H304** – Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii
Fraze de precauţie:	**P331**: NU provocaţi voma. **P301 + 310:** ÎN CAZ DE INGHIŢIRE: sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic. **P405:** A se depozita sub cheie	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	

Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

Identificarea pericolelor:		**Xn - nociv** **R65** – Nociv: poate provoca afecţiuni pulmonare în caz de înghiţire
Sfaturi de siguranță::	**S23:** A nu se inspira vaporii şi spray-ul. **S 26:** În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul. **S62:** În caz de înghiţire, a nu se provoca voma: a se consulta imediat un medic şi a-i arăta ambalajul (recipientul) sau eticheta. **S24/25**: Evitaţi contactul cu pielea şi ochii. **S36/37/39:** Purtați echipament de protecție corespunzător, mănuși și mască de protecție pentru ochi / față	
Eliminarea:	**S60:** Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.	

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul următor:
Formula moleculară:	- - -
Numărul ONU:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Kerosine (petroleum)	8008-20-6	232-366-4	≥50-<60%	**Flam. Liq. 3**	 **GHS02**	**H226**
				Tox. Asp.1	 **GHS08**	**H304**
Hydrotreated petroleum distillates REACH No. 01-2119942421-46-XXXX	64742-47-8	265-149-8	≥25-<40%	**Tox. Asp. 1**	 **GHS08**	**H304**
(2-Methoxymethylethoxy) propanol Reach No. 01-2119450011-60-XXXX	34590-94-8	252-104-2	≥2,5-<5%	- - -	- - -	- - -

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Kerosine (petroleum)	8008-20-6	232-366-4	≥50-<60%	**Xn - nociv**		**R65**
Hydrotreated petroleum distillates	64742-47-8	265-149-8	≥25-<40%	**Xn - nociv**		**R65**
(2-Methoxymethylethoxy) propanol	34590-94-8	252-104-2	≥2,5-<5%	- - -	- - -	- - -

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistență medicală. Arătaţi medicului această Fișă cu Date de Securitate.
După inhalare:	Mutați persoana expusă la aer curat. Adresati-va unui medic dupa expunere semnificativa. Daca simptomele persista, solicitati ajutor medical.
După contactul cu pielea:	Scoateti imbracamintea contaminata si incaltamintea imediat. Spalati imediat cu apa din abundenta.
După contactul cu ochii:	Spălaţi imediat ochii, cu apă din abundență timp de cel puțin 15 minute. Solicitați imediat asistență medicală daca iritarea ochiului persista
După înghiţire:	NU induceți voma. Nu administrați niciodată nimic pe cale orală unei persoane în stare de inconștiență. Solicitați imediat asistență medicală.
Alte informaţii:	N.a.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	- - -

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și să îi arătaţi aceasta Fișă cu Date de Securitate.

5. MĂSURI DE COMBATERE A INCENDIILOR	
5.1. Mijloace de stingere a incendiilor	
Măsuri de precauție în caz de incendiu:	În caz de incendiu sau dacă este încălzit, presiunea va crește și recipientul poate exploda.
Mijloace de stingere corespunzătoare:	Utilizați un agent adecvat pentru stingerea incendiilor: pulbere ABC, dioxid de carbon (CO2), chemical chimical, pulbere de apa.
Mijloace de stingere necorespunzătoare:	Haloni
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Produșii de descompunere pot include următoarele materiale: Aldehide, dioxid de carbon și monoxid de carbon, hidrocarburi, oxizi de azot (NOx), oxizi de sulf.
Echipamente speciale de stingere a incendiilor	Purtați aparat de respirat autonom.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ	
6.1. Precauţii personale, echipament de protecție și proceduri de urgență	
Echipament de protecţie:	Purtați echipament individual de protecție (mănuși, ochelari și combinezon).
Proceduri de urgență:	N.a.
6.2. Precauţii pentru mediul înconjurător	
Medii de izolare:	Colectati cu material non-combustibil absorbant (de exemplu, nisip, pământ, diatomit, vermiculit)
Metode de limitare a poluarii	Păstrați în recipiente adecvate, închise pentru eliminarea reziduurilor
Informatii suplimentare:	N.a.

7. MANIPULARE ŞI DEPOZITARE	
7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Nu se inspirati vaporii sau jetul de pulverizare. Asigurați o reîmprospătare a aerului și / sau evacuare de la locul de muncă
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	A se depozita în locuri răcoroase şi bine ventilate, la distanță de surse de aprindere.
Specificaţiile zonei de depozitare:	A se păstra într-un loc uscat, răcoros și bine ventilat
Specificaţiile recipienţilor:	A se păstra în recipientul original. Se vor păstra containerele ermetic închise
Incompatibilități:	Păstrați la distanta de căldură și de sursele de aprindere
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Agent de reduce a vascozitatii pentru fluide de foraj pe baza de ulei (OBM)**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ		
8.1. Parametri de control – Limitele de expunere		
Substaţă		***(2-Methoxymethylethoxy) propanol CAS No. 34590-94-8***
TLV_{Celing}:		- - -
TLV_{TWA}:		308 mg/m3 – 50 ppm
TLV_{STEL}:		- - -
Limita biologică:		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Ventilaţia generală este recomandata
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Ventilaţie forţată, staţie de spălare ochi.
Protecţia	Respiratorie:	Echipament adecvat de protectie respiratorie

individuală	Ochi	Ochelari de protecție cu ecrane laterale
	Maini	Mănuși de protecție rezistente
	Corp	Imbracaminte de protecție completă a corpului.
8.3. Controlul expunerii mediului		
Variante de expunere		Preveniti scăpările sau scurgerile ulterioare dacă este sigur să se facă acest lucru

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale	
Stare:	Lichid
Aspect:	Lichid
Culoare:	Ambră
Miros:	Hidrocarburi
Prag olfactiv:	N.a.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH	N.a.
Punct de topire:	N.a.
Punct de fierbere:	>200°C
Punct de aprindere:	69 °C
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	>200°C
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C:	1 g/cm3
Densitatea aparentă	N.a.
Densitatea relativă:	N.a.
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	Insolubil
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea (40 °C):	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Căldură excesivă, nu permit evaporarea la sec. Căldură, flăcări și scântei. Expunerea la aer
10.2. Stabilitate chimică	
Materiale incompatibile:	Acizi, aluminiu, oxigen, săruri ale bazelor puternice, baze tari, agenti de oxidare tari, agenti puternici de reducere
Posibilitatea de reacții periculoase:	În condiții normale de depozitare și utilizare, nu au loc reacții periculoase.
10.3. Produși de descompunere periculoși	
Alte informaţii:	Aldehide, dioxid de carbon și monoxid de carbon, hidrocarburi, oxizi de azot (NOx), oxizi de sulf, cetone

11. INFORMAŢII TOXICOLOGICE	
11.1. Toxicitate Acută	
Toxitatea substantei	***Kerosine (petroleum) CAS No. 8008-20-6***
Toxicitate orală acută:	LD50 (Sobolan): >5000 mg/kg
Toxicitate inhalatorie acută:	LC50 (Sobolan) 4h: >5000 mg/kg
Toxicitate cutanată acută:	LD50 (Iepure): >2 g/kg
Toxitatea substantei	***Hydrotreated petroleum distillates CAS No. 64742-47-8***
Toxicitate orală acută:	LD50 (Sobolan): >8000 mg/kg
Toxicitate inhalatorie acută:	LC50 (Sobolan) 4h: >2500 ppm
Toxicitate cutanată acută:	LD50 (Iepure): >4000 mg/kg
Toxitatea substantei	***(2-Methoxymethylethoxy)propanol CAS No. 34590-94-8***
Toxicitate orală acută:	LD50 (Sobolan): >5000 mg/kg
Toxicitate inhalatorie acută:	LC50 (Sobolan) 4h: >553 ppm
Toxicitate cutanată acută:	LD50 (Iepure): >5000 mg/kg
Toxitatea amestecului	
Toxicitate orală acută:	N.a.
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	N.a.
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Substanta	***(2-Methoxymethylethoxy)propanol CAS No. 34590-94-8***
Toxicitate în apă:	LC50 (Pesti) 96h: >10000 mg/l LC50 (Daphnia magna) 48h: 1.919 mg/l EC50 (Alge) 72h: >969 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	75%
12.3. Potențial de Bioacumulare	
Alte informații:	N.a.
12.4. Mobilitate în sol	
Alte informații:	N.a.

12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	Eliminati în conformitate cu directivele europene privind reziduurile și deșeurile periculoase. Nu contaminati apele si canalele de scurgere cu substanta chimica sau recipientul folosit. Containerul este periculos când este gol. Eliminati în conformitate cu reglementările locale
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	N.a.
Alte recomandări:	Containerele goale ar trebui colectate la un centru certificat pentru manipularea deșeurilor pentru reciclare sau eliminare. A nu se refolosi containerele goale

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Norme de transport ONU	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Denumirea oficială a transportului	N.a.
Cod de restricţie a accesului în tunel	N.a.
14.2. Transport Maritim (IMDG)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Număr EMS	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Poluant marin:	N.a.
Denumirea oficială a transportului	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Clasa ICAO/IATA	N.a.
Etichetă	N.a.
Grupul de ambalare:	N.a.
Denumirea oficială a transportului	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) şi Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor şi a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:

Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii
Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
NOEC: no observable effect concentration **–** concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H226: - Lichid şi vapori inflamabili.
H304 – Poate fi mortal în caz de înghiţire şi pătrundere în căile respiratorii

R65 – Poate provoca afectare pulmonara in caz de inghitire

Text complet - Fraze de precauție/siguranta utilizate în secţiunile anterioare

P331: NU provocaţi voma.
P301+P310: IF SWALLOWED: immediately call a POISON CENTER or doctor/physician.
P405: A se depozita sub cheie
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

S23: A nu se inspira vaporii şi spray-ul.
S26: În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul.
S62: În caz de înghiţire, a nu se provoca voma: a se consulta imediat un medic şi a-i arăta ambalajul (recipientul) sau eticheta.
S24/25: Evitaţi contactul cu pielea şi ochii.
S36/37/39: Purtați echipament de protecție corespunzător, mănuși și mască de protecție pentru ochi / față
S60: Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVOIL WA/LT

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVOIL WA/LT**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Agent de umectare pentru fluide de foraj pe bază de ulei (OBM)**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om și mediul înconjurător:

SUBSTANŢA / AMESTECUL ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)		
	**GHS08**	**Tox. Asp. 1** **H304** – Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii
	**GHS07**	**Sens. Cut. 1** **H317** – Poate provoca o reacţie allergică a pielii
	EUH066	Expunerea repetată poate provoca uscarea sau crăparea pielii
Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
	**Xi - iritant**	**R43:** Poate provoca sensibilizare în contact cu pielea

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)	
Identificarea pericolelor:	  **GHS08** **GHS07**
	Tox. Asp. 1 **H304** – Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii **Sens. Cut. 1** **H317** – Poate provoca o reacţie allergică a pielii
EUH066	Expunerea repetată poate provoca uscarea sau crăparea pielii
Fraze de precauţie:	**P262:** Evitaţi orice contact cu ochii, pielea sau îmbracamintea. **P280:** Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei.
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare pentru substanţe/amestecuri periculoase.
Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.	
Identificarea pericolelor:	 **Iritant** **R43:** Poate provoca sensibilizare în contact cu pielea
Sfaturi de siguranţă::	**S24:** A se evita contactul cu pielea. **S37:** Purtaţi mănuşi de protecţie
Eliminarea:	**S60:** Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul de mai jos
Formula moleculară:	- - -
Numărul EC:	- - -

Numărul ONU:	- - -
Numărul CAS:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Colofoniu (Rosina) REACH No. 01-2119480418-32-XXXX INDEX N° 650-015-00-7	8050-09-7	232-475-7	< 20%	**Sens. Cut. 1**	 **GHS07**	**H317**
Distilaţi (de petrol) uşor hidrotrataţi Distillates (petroleum), hydrotreated light REACH N° 01-2119458871-30-XXXX	64742-47-8	918-973-3	5-15%	**Tox. Asp. 1**	 **GHS08**	**H304** **EUH066**

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Colofoniu (Rosina)	8050-09-7	232-475-7	> 20%	**Xi - iritant**		**R43**
Distilaţi (de petrol) uşor hidrotrataţi	64742-47-8	918-973-3	5-15%	**Xn - nociv**		**R66** **R65**

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Mutaţi persoana expusă la aer curat.
După contactul cu pielea:	Scoateți imediat toate hainele contaminate. Spălați imediat cu multă apă sub jet de apă, și, eventual cu săpun, zone de ale corpului care au venit în contact cu produsul, chiar dacă există doar o suspiciune. Spălați-vă bine corpul (duș sau cadă). Scoateți imediat hainele contaminate și eliminaţi-le în condiții de siguranță.
După contactul cu ochii:	Spălaţi/irigaţi imediat ochii, cu apă din abundență. Solicitați asistență medicală.
După înghiţire:	Nu provocați voma. Solicitați asistență medicală.
Alte informaţii:	N.a.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	N.a.

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și să îi arătaţi aceasta Fişă cu Date de Securitate.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	In caz de incendiu urmati aceste instructiuni
Mijloace de stingere corespunzătoare:	În caz de incendiu, utilizați apă, dioxid de carbon CO2

Mijloace de stingere necorespunzătoare:	Niciunul
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Nu inhalați gazele de explozie și de ardere.
Echipamente speciale de stingere a incendiilor	În caz de incendiu purtaţi faţa complet acoperită cu un aparat de respirat autonom cu presiune pozitivă si costum de protectie. Colectaţi separat apa contaminată folosită pentru a stinge focul. Nu evacuaţi această apă utilizată la stingerea încendiilor în sistemul de canalizare. Dacă este posibil în ceea ce privește siguranța, îndepărtaţi ambalaje nedeteriorate de pericolul imediat.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență

Echipament de protecţie:	Purtați echipament individual de protecție (mănuși, ochelari și combinezon). Mutați toate persoanele într-o zonă de siguranță.
Proceduri de urgență:	Evitați contactul cu ochii și pielea. Scoateţi toate hainele contaminate.

6.2. Precauţii pentru mediul înconjurător

Medii de izolare:	Folosiți material absorbant, organic, nisip.
Metode de limitare a poluarii	Spălaţi cu apă din abundenţă.
Informatii suplimentare:	Nu se permiteţi infiltrarea în sol / subsol. Preveniţi scurgerile în apele de suprafață sau în sistemul de canalizare. Reţineţi apa de spălare contaminată, în vederea colectării şi eliminării acesteia.

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate

Precauţii pentru manipulare în condiţii de securitate:	Evitaţi contactul cu ochii și pielea, nu inhalaţi vapori și ceața. Nu utilizaţi containerele goale înainte de a fi curățate. Înainte de operațiunile de transfer asigurați-vă că nu există materiale incompatibile în containere. Hainele contaminate trebuie schimbate înainte de a intra locurile de servit masa. Nu mâncaţi și nu beţi în timpul lucrului.

7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi

Condiţii de depozitare:	În scopul asigurării performanței produsului, depozitaţi la temperatura camerei și protejaţi de îngheț. A se păstra la distanţă de alimente, băuturi și hrană pentru animale.
Specificaţiile zonei de depozitare:	Zone bine ventilate.
Specificaţiile recipienţilor:	Container/recipient metalic.
Incompatibilități:	N.a.

7.3. Utilizare finală specifică:

Utilizări finale specifice:	**Agent de umectare pentru fluide de foraj pe bază de ulei (OBM)**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control - Limite de expunere

Substaţă	***Colofoniu (Rosina) CAS No. 8050-09-7***
TLV_{Celing}:	- - -
TLV_{STEL} (15 minute):	0.15 mg/m3
UK - EH40/2005 (WEL) - LTE(8h):	0.05 mg/m3
Valori limită de expunere DNEL	**Expunere:** **Inhalare umană - pe termen lung** - Lucrător Profesional: 176 mg / m3 - Lucrător industrial: 176 mg/m3

	- Consumator: 52 mg/m3 **Dermic uman - Efecte sistemice pe termen lung** - Lucrător Profesional: 25 mg / m3 - Lucrător industrial: 25 mg/m3 - Consum: 15 mg/m3 **Efectele umane sistemice – administrare orală pe termen lung** - Consum: 15 mg/m3
Valori limită de expunere PNEC	**Țintă:** Apă proaspătă - Valoare: 0,0054 mg / l **Țintă:** Apa de mare - Valoare: 0,0054 mg / l **Țintă:** Sedimente de apă dulce - Valoare: 0,02 mg / kg **Țintă:** Sedimente apa de mare - Valoare: 0,02 mg / kg **Țintă:** Sol - Valoare: 0.0015 mg / kg
Substaţă	***Distilaţi (de petrol) uşor hidrotrataţi CAS No. 64742-47-8***
TLV-TWA	- - -
DE - TRGS 900 (MAK) - LTE(8h):	140 mg/m3, 20 ppm
8.2. Controale ale expunerii profesionale	
8.2.1. Controale tehnice corespunzătoare	Ventilația generală este recomandată.
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.	Staţie de spălare ochi în apropiere.
Protecţia individuală — Respiratorie:	Utilizați un aparat de respirat
Protecţia individuală — Ochi	Ochelari de protecție.
Protecţia individuală — Maini	Mănuși de protecție totală.
Protecţia individuală — Corp	Imbracaminte de protecție completă a corpului.
8.3. Controlul expunerii mediului	
Variante de expunere	N.a.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Forma:	Lichid (20 °C)
Aspect:	Lichid
Culoare:	N.a.
Miros:	Uşor
Prag olfactiv:	N.a.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH	N.a.
Punct de topire:	N.a.
Punct de fierbere:	N.a.
Punct de aprindere:	130 °C
Inflamabilitate (solid, gaz):	N.d.
Temperatura de autoaprindere:	N.d.
Temperatura de descompunere:	N.d.
Pericol de explozie:	N.d.
Limita de inflamabilitate superioară:	N.d.
Limita inferioară de inflamabilitate:	N.d.
Presiunea de vapori:	N.d.
Densitatea la 50 °C:	N.d.
Densitatea aparentă (20°C):	0.92 - 0,96 kg/l. (20°C.)

Densitatea relativă:	N.d.
Densitatea de vapori:	N.d.
Rata de evaporare:	N.d.
Solubilitate în apă (20°C):	Insolubil
Coeficientul de distribuție (n-octanol):	N.d.
Vâscozitatea (40 °C):	> 7 cSt la 40°C.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Stabil în condiţii normale.
10.2. Stabilitate chimică	
Materiale incompatibile:	Nu se cunosc
Posibilitatea de reacții periculoase:	Stabil
10.3. Produși de descompunere periculoși	
Alte informaţii:	N.a.

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Toxicitatea amestecului	
Toxicitate orală acută:	LD50 (Şobolan): > 2000 mg/kg
Toxicitate inhalatorie acută:	LC50 (Şobolan) 4h: > 5.28 mg/l
Toxicitate cutanată acută:	LD50 (Iepure) 24h: > 2000 mg/kg
11.2. Corozivitate	
Piele:	Iritant
Ochi:	Pe ochi iepure: neiritant
11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	Nu este sensibilizant
Ochi:	N.a.
Substaţă	***Colofoniu (Rosina) CAS No. 8050-09-7***
Toxicitate orală acută:	LD50 (Şobolan): > 2800 mg/kg
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	LD50 (Şobolan_Piele) 24h: > 2000 mg/kg
11.6. Corozivitate	
Piele:	Iepure_Piele: nu este iritant 4h
Ochi:	Iepure_Ochi: nu este iritant
11.7. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.8. Nocivitate	

Ingestie:	N.a.
Inhalare:	N.a.
11.9. Sensibilitate	
Piele:	Şobolan: nu este sensibilizant
Ochi:	N.a.
Substaţă	***Distilaţi (de petrol) uşor hidrotrataţi CAS No. 64742-47-8***
Toxicitate orală acută:	LD50 (Şobolan): > 5000 mg/kg
Toxicitate inhalatorie acută:	LC50 (Şobolan) 4h: > 5.8 mg/l
Toxicitate cutanată acută:	LD50 (Iepure) 24h: >2000 mg/kg
11.10. Corozivitate	
Piele:	Iepure: Iritant (24h)
Ochi:	Iepure: Nu este iritant
11.11. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.12. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.13. Sensibilitate	
Piele:	
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE	
Toxicitatea Amestecului	
Toxicitate în apă:	N.a.
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
Substaţă	***Colofoniu (Rosina) CAS No. 8050-09-7***
Toxicitate în apă:	LCO (Peşti) 96h: 10000 mg/l EL50 (Dafnii mari) 48h: 911 mg/l EL50 (Alge) 72h: 1000 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
Substaţă	***Distilaţi (de petrol) uşor hidrotrataţi CAS No. 64742-47-8***
Toxicitate în apă:	LC0 (Peşti) 96h: > 2 mg/l EL50 (Dafnii mari) 48h: 1.4 mg/l EL50 (Alge) 72h: 1-3 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.1. Persistență și degradabilitate	
Alte informații:	Rosin Nr. CAS 8050-09-7 : rapid degradabile (OECD 301 D - Durata: 28g - Scor: 71%) Distilate (petroliere) ușoare, tratate cu hidrogen Nr. CAS 64742-47-8 : nu este ușor degradabil (OECD 301 F - Durata: 28 zile - Rezultat: 58,6%)
12.2. Potențial de Bioacumulare	
Alte informații:	N.a.
12.3. Mobilitate în sol	
Alte informații:	N.a.
12.4. Resultatele evaluării PBT și vPvB	

PBT:	N.a.
vPvB:	N.a.
12.5. Alte efecte adverse	
Alte informaţii:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	Nu deversaţi în sistemul de canalizare sau în mediul înconjurător, eliminaţi la o firmă autorizată pentru colectarea deşeurilor
Cod de deşeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	N.a.
Alte recomandări:	N.a.

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Norme de transport ONU	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Denumirea oficială a transportului	N.a.
Cod de restricţie a accesului în tunel	N.a.
14.2. Transport Maritim (IMDG)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Număr EMS	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Poluant marin:	N.a.
Denumirea oficială a transportului	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Clasa ICAO/IATA	N.a.
Etichetă	N.a.
Grupul de ambalare:	N.a.
Denumirea oficială a transportului	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al

Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:

Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:

Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fișa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose **-** doză letală medie

NOEC: no observable effect concentration – concentraţia fără efect observat

PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H304: Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii
H317 : Poate provoca o reacţie alergică a pielii
EUH066: Expunerea repetată poate provoca uscarea sau crăparea pielii

R43: Poate provoca sensibilizare în contact cu pielea
R65: Nociv: poate provoca afecţiuni pulmonare în caz de înghiţire.
R66: Expunerea repetată poate provoca uscarea sau crăparea pielii

Fraze de precauţie / siguranta utilizate în secţiunile anterioare

P262: Evitaţi orice contact cu ochii, pielea sau îmbracamintea.
P280: Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

S24: A se evita contactul cu pielea.
S36/37/39: Purtați echipament de protecție corespunzător, mănuși și mască de protecție pentru ochi / față
S60: Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVAWASH OBM-LT

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVAWASH OBM-LT**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Agent deblocant cu toxicitate redusa, de conducte pentru fluide de foraj pe baza de ulei (OBM)**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

	**GHS07**	**Toxicitate orală acută 4** **H302** - Nociv în caz de înghiţire
	**GHS05**	**Afectare oculară 1** **H318** – Provoacă leziuni oculare grave.

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

	**Xn - nociv**	**R22:** Nociv în caz de înghiţire
	**Xi - nociv**	**R41:** Risc de leziuni oculare grave

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	 **GHS07** **GHS05**
Fraze de precauţie:	**P264:** Spălaţi-vă bine pe mâini după utilizare. **P270:** A nu mânca. bea sau fuma în timpul utilizării produsului **P280:** Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei. **P310:** Sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic. **P305 + P351 + P338:** ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

Identificarea pericolelor:		**Xn –** Nociv **R22**: Nociv în caz de înghiţire **Xi –** Iritant **R41**: Risc de leziuni oculare grave.
Sfaturi de siguranţă::	**S25:** A se evita contactul cu ochii. **S24/25:** Evitaţi contactul cu pielea şi ochii. **S36/37:** Purtaţi echipament de protecţie şi mănuşi corespunzătoare.	
Eliminarea:	**S60:** Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos	

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul de mai jos
Formula moleculară:	- - -
Index Number	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Alcool tridecil polioxietilat **Polyoxyethylated tridecyl alcohol**	24938-91-8	- - -	≥ 15 - <25%	**Toxicitate acută orală 4**	 **GHS07**	**H302**
				Afectare oculară 1	 **GHS05**	**H318**
2,2 '-imminodietanol REACH No. 01-2119488930-28-XXXX	111-42-2	203-868-0	≥ 3 - <5%	**Toxicitate acută orală 4**	 **GHS07**	**H302**
				Iritant cutanat 2		**H315**
				Afectare oculară 1	 **GHS05**	**H318**
				STOT RE 2	 **GHS08**	**H373**
				Acvatic cronic 3	**Fara Pictograma**	**H412**

Name	CAS No.	EC No.	Quantity	Classification	Symbols	Hazard Statements
Alcool tridecil polioxietilat **Polyoxyethylated tridecyl alcohol**	24938-91-8	- - -	≥ 15 - <25%	**Xn - nociv**		**R22**
				Xi - iritant		**R41**
2,2 '-imminodietanol	111-42-2	203-868-0	≥ 3 - <5%	**Xn - nociv**		**R22**
						R48/22
				Xi - iritant		**R38**
						R41

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistență medicală. Arătaţi medicului această Fișă cu Date de Securitate.
După inhalare:	Scoateţi imediat persoana afectată afară/la aer curat și țineți-o la căldură și în repaus. Daca simptomele persista, solicitati ajutor medical. In caz de intreruperi ale respiratiei, administrati oxigen.
După contactul cu pielea:	Scoateţi imediat toate hainele contaminate. Clatiti imediat cu apa din abundenta.
După contactul cu ochii:	Țineți pleoapele deschise și spălati ochii cu apă din abundență timp de cel puțin 15 minute. Solicitati asistență medicală. Îndepărtați lentilele de contact
După înghiţire:	Nu induceti voma. Solicitati ajutor medical imediat.
Alte informaţii:	N.a.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	N.a.

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	N.a.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	În caz de incendiu respectaţi, urmați instrucțiunile.
Mijloace de stingere corespunzătoare:	În caz de incendiu utilizaţi ABC pulbere, dioxid de carbon CO2, produse chimice uscate, apa pulverizată.
Mijloace de stingere necorespunzătoare:	Halon
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Nu permiteți ca scurgerile de materiale folosite la stingerea incendiilor să pătrundă în canalizare sau în cursurile de apă
Echipamente speciale de stingere a incendiilor	Păstrați containerele și zonele inconjuratoare reci cu jet de apă. Preveniti ca apa folosita la stingerea incendiilor să nu contamineze apa de suprafață sau pânza freatică. Reziduurile de ardere și apa folosită la stingere care a fost contaminată trebuie să fie eliminate în conformitate cu reglementările locale

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență

Echipament de protecţie:	Purtați echipament de protecție (mănuși, ochelari de protecție și îmbrăcăminte)
Proceduri de urgență:	Fiti atenti la răspândirea de gaze în special la nivelul solului (mai greu decât aerul) și pe direcția vântului

6.2. Precauţii pentru mediul înconjurător

Medii de izolare:	Material absorbant, organic, nisip
Metode de limitare a poluarii	Nu permiteți să intre în sol / subsol. Păstrați în containerele închise și adecvate pentru eliminare.
Informatii suplimentare:	N.a.

7. MANIPULARE ŞI DEPOZITARE	
7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Nu inspirati vaporii sau jetul de pulverizare. Asigurați o reîmprospătare a aerului suficientavși / sau evacuare la locul de muncă. Evitați depășirea limitelor de expunere la locul de muncă
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	A se păstra în recipientul original. Se vor păstra containerele ermetic închis, într-un loc uscat, răcoros și bine ventilat
Specificaţiile zonei de depozitare:	Depozitati in zone uscate, bine ventilate
Specificaţiile recipienţilor:	Se vor păstra containerele ermetic închise
Incompatibilităţi:	Păstrați la distanta de căldură și de sursele de aprindere
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Agent deblocant cu toxicitate redusa, de conducte pentru fluide de foraj pe baza de ulei (OBM)**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ		
8.1. Parametri de control		
Substanta		***2,2' – Iminodiethanol CAS No. 111-42-2***
TLV_{Celing}:		- - -
TLV_{TWA}:		1 mg/m3
TLV_{STEL}:		- - -
Limika biologică:		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Ventilaţie generală este necesara
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Asigurați o ventilație adecvată. Statie de spalare ochi si dus de urgenta – in apropiere.
Protecţia individuală	Respiratorie:	Atunci când lucrătorii se confruntă cu concentrații peste limita de expunere trebuie să utilizeze aparate de respirat corespunzătoare certificate
	Ochi	Folosiți ochelari cu ecrane laterale
	Maini	Purtați mănuși de protecție rezistente, de exemplu în cauciuc nitril sau cauciuc butil
	Corp	Utilizați îmbrăcăminte care oferă protecție completă pentru piele
8.3. Controlul expunerii mediului		
Variante de expunere		Preveniti scăpările sau scurgerile ulterioare dacă este sigur să facă acest lucru

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Forma:	Lichid
Aspect:	Lichid
Culoare:	Ambră
Miros:	Caracteristic
Prag olfactiv:	N.a.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH:	11
Punct de topire:	N.a.
Punct de fierbere:	>150°C
Punct de aprindere:	65°C

Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C:	1,007 g/cm 3
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	N.a.
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	Solubil
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Nu se produce o polimerizare periculoasă. Evitați căldura excesivă, căldura, flăcări și scântei
10.2. Stabilitate chimică	
Materiale incompatibile:	Aldehide, alcalinizante, cetone, anhidride organice, halogenuri organice, acizi tari, baze tari, agenţi de oxidare tari, agenţi reducători puternici.
Posibilitatea de reacții periculoase:	Stabil in conditii normale de depozitare
10.3. Produși de descompunere periculoși	
Alte informaţii:	Dioxid de carbon și monoxid de carbon, hidrocarburi, oxizi de azot (NOx), oxizi de sulf.

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Substance	***2,2'-imminodietanol CAS No. 111-42-2***
Toxicitate orală acută:	DL50 (Şobolan): 680 mg/kg
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	DL50 (Iepure): > 8.200 mg/kg
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	N.a.

Ochi:	N.a.
11.6. Alte efecte adverse	
Alte informații:	N.a.

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate	
Substance	***2,2'-imminodietanol CAS No. 111-42-2***
Toxicitate în apă:	LC50 (Peşti) 96 h: > 100 mg/l LC50 (Daphnia magna) 48 h: 96,3 - 124,6 mg/l LC50 (Daphnia magna) 48 h: 55 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	N.a.
12.3. Potența Bioacumulativ	
Alte informații:	N.a.
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	Evacuați în conformitate cu Directivele europene privind reziduurile și deșeurile periculoase
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Eliminati în conformitate cu reglementările locale și naționale
Alte recomandări:	Nu contaminati apele si canalele de scurgere cu substanta chimica sau containerele utilizate. Containerele sunt periculoase si atunci când sunt goale.

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Norme de transport ONU	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport

Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor și a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor şi a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:

Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societății Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H302: Nociv în caz de înghiţire
H315: Provoacă iritarea pielli
H318: Provoacă leziuni oculare grave
H373: Poate provoca leziuni ale organelor în caz de expunere prelungită sau repetată.
H412: Nociv pentru mediul acvatic cu efecte pe termen lung.

R22: Nociv în caz de înghiţire
R38: Iritant pentru piele
R41: Risc de leziuni oculare grave
R48/22: Nociv: pericol de efecte grave asupra sănătății la expunere prelungită prin inghițire.

Fraze de precauție / siguranta utilizate în secţiunile anterioare

P264: Spălaţi-vă bine pe mâini după utilizare.
P270: A nu mânca. bea sau fuma în timpul utilizării produsului
P280: Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei.
P310: Sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic.
P305 + P351 + P338: ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

S25: A se evita contactul cu ochii.
S24/25: Evitaţi contactul cu pielea şi ochii.
S36/37: Purtaţi echipament de protecţie şi mănuşi corespunzătoare.
S60: Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **SODIUM BROMIDE BRINE**

Revision Date: 29-Jan-2013

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Statement of Hazardous Nature Non-Hazardous according to the criteria of NOHSC, Non-Dangerous Goods according to the criteria of ADG.

Manufacturer/Supplier

Halliburton Australia Pty. Ltd.
15 Marriott Road
Jandakot
WA 6164
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

Product Emergency Telephone
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

Fire, Police & Ambulance - Emergency Telephone
Australia: 000
Papua New Guinea: 000
New Zealand: 111

Identification of Substances or Preparation

Product Trade Name: SODIUM BROMIDE BRINE
Synonyms: None
Chemical Family: Salt
UN Number: None
Dangerous Goods Class: None
Subsidiary Risk: None
Hazchem Code: None Allocated
Poisons Schedule: None Allocated
Application: Additive

Prepared By

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT	Australia NOHSC	New Zealand WES	ACGIH TLV-TWA
Sodium bromide	7647-15-6	30 - 60%	Not applicable	Not applicable	Not applicable

Non-Hazardous Substance to Total of 100%

3. HAZARDS IDENTIFICATION

Hazard Overview May cause eye and skin irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed. Repeated overexposure may cause liver and kidney effects.

Risk Phrases R36 Irritating to eyes.

HSNO Classification Not Determined

4. FIRST AID MEASURES

Inhalation If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

Eyes In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media All standard fire fighting media

Extinguishing media which must not be used for safety reasons None known.

Special Exposure Hazards Decomposition in fire may produce toxic gases.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Wash hands after use. Launder contaminated clothing before reuse.

Storage Information Store away from oxidizers. Store away from acids. Store in a cool, dry location. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)

Hand Protection Nitrile gloves.

Skin Protection Normal work coveralls.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Clear colorless
Odor:	Odorless
pH:	Not Determined
Specific Gravity @ 20 C (Water=1):	1.44 - 1.5
Density @ 20 C (kg/l):	1.5
Bulk Density @ 20 C (kg/m^3):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (C):	Not Determined
Pour Point/Range (C):	Not Determined
Flash Point/Range (C):	Not Determined
Flash Point Method:	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (g/m^3):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (g/m^3):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (g/l):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined
Decomposition Temperature (C):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data: Stable

Hazardous Polymerization: Will Not Occur

Conditions to Avoid None anticipated

Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure Eye or skin contact, inhalation.

Sympotoms related to exposure

Inhalation Vapors given off by heated product may be harmful. May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Skin Contact May cause skin irritation.

Eye Contact May cause eye irritation.

Ingestion Harmful if swallowed. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions. May cause liver and kidney damage.

Aggravated Medical Conditions Skin disorders. Central nervous system disorders.

Chronic Effects/Carcinogenicity Repeated overexposure may cause liver and kidney effects.

Other Information None known.

Toxicity Tests

Oral Toxicity:	LD50: 3500 mg/kg (Rat)
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not determined
Bio-accumulation	Not determined

Ecotoxicological Information

Acute Fish Toxicity: Not determined
Acute Crustaceans Toxicity: Not determined
Acute Algae Toxicity: Not determined

Chemical Fate Information Not determined

Other Information Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

ADR
Not restricted

Air Transportation

ICAO/IATA
Not restricted

Sea Transportation

IMDG
Not restricted

Other Transportation Information

Labels: None

15. REGULATORY INFORMATION

Chemical Inventories

Australian AICS Inventory All components listed on inventory or are exempt.
New Zealand Inventory of Chemicals All components listed on inventory or are exempt.
US TSCA Inventory All components listed on inventory or are exempt.
EINECS Inventory This product, and all its components, complies with EINECS

Classification Xi - Irritant.

Risk Phrases R36 Irritating to eyes.

Safety Phrases None S25 Avoid contact with eyes.

16. OTHER INFORMATION

The following sections have been revised since the last issue of this SDS
Not applicable

Contact

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

New Zealand National Poisons Centre
0800 764 766

Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

FIŞĂ TEHNICĂ DE SECURITATE

SECŢIUNEA 1 IDENTIFICAREA SUBSTANŢEI/AMESTECULUI ŞI A COMPANIEI/ANTEPRIZEI

La data revizuirii de mai sus, aceasta Fisa Tehnica de Securitate este conforma cu legislatia din România.

1.1. IDENTIFICATOR PRODUS

Denumirea produsului: **ESCAID 110**
Descrierea produsului: Hidrocarburi dearomatizate
Denumire de înregistrare:
Hidrocarburi, C11-C14, n-alcani, izoalcani, ciclice, <2% aromatice

Număr de înregistrare:
01-2119456620-43-0000; 01-2119456620-43

1.2. UTILIZĂRI IDENTIFICATE RELEVANTE ALE SUBSTANŢEI SAU AMESTECULUI ŞI UTILIZĂRI NERECOMANDATE

Utilizare specifică: Solvent minier, Solvent

Utilizari identificate:
Fabricarea substanţei
Distribuirea substanţei
Formularea şi (re)ambalarea substanţelor şi amestecurilor
Utilizare în operaţiunile de foraj şi producţie petrolieră - Industrial
Utilizare în laboratoare - Industrial
Substanţe chimice de uz minier
Utilizare în operaţiunile de foraj şi producţie petrolieră - Profesional
Utilizare în laboratoare - Profesional

Utilizari nerecomandate: Utilizările identificate de mai sus sunt specifice clientului căruia îi este destinată această Fişă tehnică de securitate şi sunt utilizări pentru care datele din această Fişă tehnică de securitate sunt aplicabile. Pot fi suportate/înregistrate şi alte utilizări pentru acest produs. Acest produs nu este recomandat pentru nicio utilizare industrială, profesională sau de consum decât cele care sunt suportate/înregistrate.

1.3. DETALIILE FURNIZORULUI FIŞEI TEHNICE DE SECURITATE

Furnizor:
ExxonMobil Chemical Belgium
A division of ExxonMobil Petroleum & Chemical
Polderdijkweg 3B
B-2030 ANTWERP
Belgia
Telefon: 32 3 543 31 11

Contact general cu furnizorul: +49 221-770-31
E-mail: SDS.DE@EXXONMOBIL.COM

1.4. NUMĂR DE TELEFON PENTRU URGENŢE

Urgenţe medicale 24 ore: SGS Romania 0040-744- 34 14 53
Urgenţe pe timp de noapte - 0040-744-34 14 53

Centrul naţional de control al toxicităţii: +49 30 30686 790 (Giftnotruf Berlin)

SECŢIUNEA 2 IDENTIFICAREA PERICOLELOR

2.1. CLASIFICAREA SUBSTANŢEI SAU AMESTECULUI

Clasificarea în conformitate cu Regulamentul (CE) nr.1272/2008
Toxic prin aspiraţie: Categoria 1.
H304: Poate fi mortal în caz de înghiţire şi de pătrundere pe căile respiratorii.

Clasificare conform Directivei UE 67/548/CEE/ 1999/45 CE
| Xn; R65 | R66 |
Nociv.
R65; Nociv: poate cauza vatamari pulmonare, daca este înghitit. R66; Expunerea repetata poate cauza uscarea sau craparea pielii.

Clasificarea acestui produs se bazeaza în întregime sau în parte pe datele testului.

2.2. ELEMENTE DE ETICHETARE

Elemente de etichetare în conformitate cu Regulamentul (CE) nr.1272/2008

Pictograme:



Cuvânt-semnal: Pericol

Fraze de pericol:

H304: Poate fi mortal în caz de înghiţire şi de pătrundere pe căile respiratorii.
EUH066: Expunerea repetată poate cauza uscarea şi fisurarea pielii.

Fraze de precauţie:

P210: A se păstra departe de flăcări şi suprafeţe încinse. -- Fumatul interzis. P280: Purtaţi mănuşi de protecţie şi echipament de protecţie a ochilor/ echipament de protecţie a feţei.
P301 + P310: ÎN CAZ DE ÎNGHIŢIRE: sunaţi imediat la un CENTRU PENTRU OTRĂVIRI sau un doctor. P331: NU provocaţi voma. P370 + P378: În caz de incendiu: Folosiţi abur de apă, spumă, substanţă chimică uscată sau dioxid de carbon (CO2) pentru a stinge focul.
P403 + P235: A se depozita într-un spaţiu bine aerisit. A se păstra la rece. P405: A se depozita într-un spaţiu încuiat.

P501: Aruncaţi conţinutul şi recipientul în conformitate cu reglementările locale.

Conţine: Hidrocarburi, C11-C14, n-alcani, izoalcani, ciclice, <2% aromatice

2.3. ALTE PERICOLE

Pericole Fizice/Chimice:

Materialul poate acumula încărcături electrostatice care pot provoca incendiu. Produsul poate elibera vapori ce formeaza rapid amestecuri inflamabile. Acumularea de vapori poate lua foc si/sau exploda daca este aprinsa. Inflamabil.

Pericole pentru sănătate:

Poate irita ochii, nasul, gâtul si plamânii. Expunerea repetata poate cauza uscarea sau craparea pielii.

Riscuri pentru mediul înconjurător:

Nu sunt pericole semnificative. Materialul nu întruneşte criteriile de a fi un PBT sau un vPvB, conform Anexei XIII a REACH.

SECŢIUNEA 3 COMPOZIŢIE / INFORMAŢII DESPRE INGREDIENŢI

3.1. SUBSTANŢE

Acest material este definit ca substanţă.

Substanţă(e) periculoasă(e) raportabilă(e) conformă(e) cu criteriile de clasificare şi/sau cu limită de expunere (OEL)

Denumire	CAS#	Nr. CE	Înregistrare#	Concentraţie*	clasificare GHS/CLP
Hidrocarburi, C11-C14, n-alcani, izoalcani, ciclice, <2% aromatice		926-141-6	01-2119456620-43	100 %	Asp. Tox. 1 H304, EUH066, [Flam. Liq. 4 H227]

Notă – orice clasificare redată între paranteze este un bloc GHS care nu a fost adoptat de către UE în reglementarea CLP (nr. 1272/2008) şi, prin urmare, nu este aplicabilă în ţările UE sau non-UE care au implementat reglementarea CLP, fiind dată cu scop pur informativ.

Denumire	CAS#	Nr. CE	Înregistrare#	Concentraţie*	Simboluri DSD/Fraze de risc
Hidrocarburi, C11-C14, n-alcani, izoalcani, ciclice, <2% aromatice		926-141-6	01-2119456620-43	100 %	Xn;R65, R66

* Toate concentratiile sunt exprimate în procente de greutate, în afara de cazurile în care produsul este un gaz. Concentratiile gazelor sunt exprimate în procente de volum. Concentraţiile pot varia.

Notă: Orice intrare în coloana EC# care începe cu cifra 9 este un număr provizoriu de listă furnizat de ECHA până la publicarea numărului oficial de inventar EC pentru substanţă. Vezi secţiunea 15 pentru informaţii suplimentare privind numărul CAS pentru substanţă.

Notă: Consultaţi secţiunea 16 a FTS pentru textul integral al razelor R. Vezi FTS(M) Secţiunea 16 pentru textul complet al frazelor de pericol.

3.2. AMESTECURI Nu este cazul. Acest produs este reglementat ca substanţă.

SECŢIUNEA 4 MĂSURI DE PRIM AJUTOR

4.1. DESCRIEREA MĂSURILOR DE PRIM AJUTOR

INHALARE

Îndepartati persoana din zona de expunere. Persoanele care acorda primul ajutor trebuie sa evite expunerea. Se va utiliza protectie respiratorie corespunzatoare. În cazul în care apar iritatii ale cailor respiratorii, ameteli, greata sau în caz de pierderea cunostintei, solicitati imediat asistenta medicala. În cazul stopului respirator, asigurati ventilatia cu ajutorul dispozitivelor medicale mecanice sau utilizati metoda de resuscitare gura la gura.

CONTACT CU PIELEA

Spalati cu apa si sapun zonele care au intrat în contact cu produsul. Îndepartati îmbracamintea contaminata. Spalati îmbracamintea contaminata înainte de reutilizare.

CONTACTUL CU OCHII

Clatiti abundent cu apa. În cazul cînd apar iritatii, solicitati asistenta medicala.

ÎNGHITIRE

Adresati-va imediat medicului. Nu induceti starea de voma.

4.2. CELE MAI IMPORTANTE SIMPTOME ŞI EFECTE, ATÂT ACUTE CÂT ŞI TARDIVE

Înroşire, uscare şi fisurare a pielii.

4.3. INDICAŢIE PENTRU SOLICITARE DE ASISTENŢĂ MEDICALĂ IMEDIATĂ ŞI TRATAMENT SPECIAL

Daca este ingerata, substanta poate fi aspirata în plamâni si cauza pneumonie chimica. Acordati tratamentul corespunzator.

SECŢIUNEA 5 MĂSURI DE COMBATERE A INCENDIULUI

5.1. MEDII DE STINGERE A INCENDIILOR

Mediu de stingere adecvat: Folositi apa pulverizata, spuma, pudra chimica sau dioxid de carbon (CO2) pentru a stinge incendiul.

Mediu de stingere nepotrivit: Jet direct de apa.

5.2. PREICOLE SPECIALE CARE DECURG DIN SUBSTANŢĂ SAU AMESTEC

Produse periculoase rezultate din combustie: Fum, vapori, Produse de combustie incompletă, Oxizi de carbon

5.3. RECOMANDĂRI PENTRU POMPIERI

Instrucţiuni de stingere a incendiilor: Evacuati zona. Luati masuri de prevenire ca scurgerea reziduurilor rezultate din stingerea incendiului sa nu patrunda în cursuri de apa, în reteaua de canalizare, sau în reteaua de alimentare cu apa potabila. Pompierii trebuie sa foloseasca echipamente de protectie standard, iar pentru incendii în spatii închise, aparate de respiratie autonome. Folositi apa pulverizata pentru racirea containerelor expuse incendiului si pentru protejarea personalului.

Riscuri în timpul incendiului: Inflamabil. Substanta periculoasa. Pompierii trebuie sa foloseasca echipamentul de protectie indicat la Sectiunea 8.

PROPRIETAŢI DE INFLAMABILITATE

Punct de inflamabilitate [Metoda]: >70°C (158°F) [ASTM D-93]
Limite superioară/inferioară de inflamabilitate (Exprimate în % de volum în aer): UEL: 7.0 LEL: 0.6 [Extrapolat]
Temperatura de autoaprindere: >200°C (392°F) [Extrapolat]

SECŢIUNEA 6 MĂSURI ÎMPOTRIVA PIERDERILOR ACCIDENTALE

6.1. PRECAUŢII PERSONALE, ECHIPAMENT DE PROTECŢIE ŞI PROCEDURI DE URGENŢĂ

PROCEDURI DE NOTIFICARE

În cazul scurgerilor accidentale ale produsului, anuntati autoritatile competente conform regulamentelor aplicabile.

MĂSURI DE PROTECŢIE

Evitati contactul cu produsul varsat. Avertizati sau evacuati persoanele aflate în apropriere si în zonele din directia vântului, daca toxicitatea si inflamabilitatea produsului o cer. Consultati Sectiunea 5 pentru Informatii privind combaterea incendiilor. Pentru Pericole semnificative, vezi Secţiunea de Identificare a Pericolelor. A se vedea Sectiunea 4 pentru Recomandari de acordare a primului ajutor. Consultaţi Secţiunea 8 pentru îndrumări privind cerinţele minime referitoare la echipamentul de protecţie personală. Pot fi necesare măsuri de protecţie suplimentare, în funcţie de împrejurările specifice şi/sau de expertiza persoanelor care acţionează ca răspuns la situaţia de urgenţă.

Mănuşi de lucru (de preferinţă mănuşi lungi) care asigură un grad adecvat de rezistenţă chimică. Notă: mănuşile fabricate din PVA nu sunt rezistente la apă şi nu sunt potrivite pentru utilizare în situaţii de urgenţă. Dacă este posibil sau anticipat contactul cu produsul fierbinte, se recomandă utilizarea de mănuşi termorezistente şi izolate termic. Protecţie respiratorie: se pot purta mască parţială sau completă cu filtru(e) anti- vapori organici şi, acolo unde este cazul, anti-H2S, precum şi aparat de respirat autonom (SCBA), în funcţie de mărimea deversării şi de nivelul potenţial de expunere. Dacă expunerea nu poate fi caracterizată complet ori este posibilă sau anticipată o atmosferă cu deficit de oxigen, se recomandă utilizarea SCBA. Se recomandă utilizarea de mănuşi de lucru care sunt rezistente la hidrocarburi aromatice. Notă: mănuşile fabricate din polivinil acetat (PVA) nu sunt rezistente la apă şi nu sunt potrivite pentru utilizare în situaţii de urgenţă. Se recomandă purtarea de ochelari de protecţie chimică dacă sunt posibile împroşcarea sau contactul cu ochii. Deversări mici: îmbrăcămintea de lucru antistatică normală este, de obicei, adecvată. Deversări mari: se recomandă folosirea unui combinezon complet din material rezistent la substanţe chimice, antistatic.

6.2. PROTECŢIA MEDIULUI

Scurgeri importante: Îndiguiti scurgerea de lichid pentru recuperare si eliminare ulterioara. Preveniti scurgerea produsului în cursuri de apa, în canalizare sau în spatii închise. Luati masuri pentru a preveni patrunderea în cursuri de apa, canale de scurgere sau zone închise.

6.3. METODE ŞI MATERIALE PENTRU STĂVILIRE ŞI CURĂŢARE

Deversare pe sol: Opriti scurgerea daca acest lucru este posibil fara riscuri. Absorbiti sau acoperiti cu pamânt, nisip ori alt produs necombustibil uscat si puneti substanta în containere. Recuperati sau îndepartati produsul prin pompare sau cu ajutorul unor materiale absorbante inerte.

Deversare în apă: Opriti scurgerea daca acest lucru este posibil fara riscuri. Avertizaţi celelalte transporturi.

Îndepărtaţi de pe suprafaţă prin colectare superficială sau cu ajutorul unor absorbanţi adecvaţi. Soliciati opinia unui specialist înainte de a utiliza dispersanti.

Recomandarile referitoare la scurgerile produsului în apa si pe sol se bazeaza pe cel mai probabil scenariu de scurgere pentru acest produs; totusi, conditiile geografice, vântul, temperatura si (în cazul scurgerilor în apa) valurile, directia si viteza curentilor pot influenta mult alegerea celor mai adecvate metode ce urmeaza a fi adoptate. Din aceste motive, vor trebui consultati specialistii locali. Nota: Regulamentele locale recomanda sau interzic metodele ce urmeaza a fi adoptate.

6.4. REFERINŢE CĂTRE ALTE SECŢIUNI

Vezi secţiunile 8 şi 13.

SECŢIUNEA 7 MANIPULARE ŞI DEPOZITARE

7.1. PRECAUŢII PENTRU MANIPULARE ÎN CONDIŢII DE SIGURANŢĂ

Evitati contactul cu pielea. Preveniti pierderile si scurgerile în cantitati mici pentru a evita pericolul de alunecare. Materialul poate acumula încărcături electrostatice care pot provoca o scânteie electrică (sursă de aprindere). Când materialul este manipulat în vrac, o scânteie electrică poate aprinde orice vapori inflamabili proveniţi de la lichidele sau reziduurile care pot fi prezente (de exemplu, în cursul operaţiunilor de „switch-loading"). Utilizaţi proceduri adecvate de legare şi/sau împământare. Cu toate acestea, instalaţiile de legare şi împământare nu pot elimina pericolul reprezentat de acumulările electrostatice. Pentru îndrumare, consultaţi standardele locale aplicabile. Referinţele suplimentare includ American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents), National Fire Protection Agency 77 (Recommended Practice on Static Electricity) sau CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Temperatură la încărcare / descărcare: [Ambient]

Temperatura la transport: [Ambient]
Presiunea la transport: [Ambient]

Acumulare electrostatica: Acest material acumuleaza sarcini electrostatice. În mod tipic, un lichid este considerat ca fiind un acumulator static non-conductor dacă conductivitatea sa este mai mică de 100 pS/m (100x10E-12 Siemens per metru) şi este considerat ca fiind un acumulator static semi-conductor dacă conductivitatea sa este mai mică de 10,000 pS/m. Precauţiile sunt aceleaşi indiferent dacă lichidul este non-conductor sau semi-conductor. O serie de factori, de exemplu temperatura lichidului, prezenţa contaminanţilor, aditivii anti-statici şi filtrarea pot influenţa puternic conductivitatea unui lichid.

7.2. CONDIŢII PENTRU DEPOZITAREA ÎN SIGURANŢĂ, INCLUSIV ORICE INCOMPATIBILITĂŢI

Alegerea containerului, de exemplu a vasului pentru depozitare, poate influenţa acumularea şi disiparea sarcinilor electrostatice. Pastrati containerul închis. Manipulati containerele cu grija. Deschideti-le încet pentru a controla schimbarea de presiune. A se depozita într-o zona racoroasa si bine aerisita. Containerele de depozitare trebuie asezate pe pamânt si legate. Containerele fixe de depozitare, containerele de transfer şi echipamentele asociate trebuie să fie prevăzute cu legătură de împământare pentru a preveni acumulările electrostatice.
Temperatura de depozitare: [Ambient]
Presiunea de depozitare: [Ambient]

Containere/ ambalaje corespunzătoare: Bărci; Canistre; Autocisterne; Vagoane automotoare
Materialele şi acoperirile adecvate (compatibilitate chimică):: Oţel carbon; Oţel inoxidabil; Poliester; Polietilenă; Polipropilenă; Teflon
Materiale şi învelişuri necorespunzătoare: Cauciuc natural; Butil cauciuc; Etilen-propilen-dienă monomer

(EPDM); Polistiren

7.3. UTILIZĂRI FINALE SPECIFICE: Secţiunea 1 informează în legătură cu utilizările finale identificate. Nu este disponibil un ghid cu specificitate de industries au sector.

SECŢIUNEA 8 CONTROLUL EXPUNERII / PROTECŢIE PERSONALĂ

8.1. PARAMETRI DE CONTROL

VALOARI ALE LIMITEI DE EXPUNERE

Limitele/standardele de expunere (Notă: Limitele de expunere nu au caracter adiţional)

Denumirea substanţei	Formă	Limită / Standard			Notă	Sursă
Hidrocarburi, C11-C14, n-alcani, izoalcani, ciclice, <2% aromatice	Vapori	RCP - TWA	1200 mg/m3	165 ppm	Total hidrocarburi	ExxonMobil

Limitele ocupationale de expunere conform Legii 319/2006 - Securitatea si sănătatea în muncă si HG 1218/2006 privind stabilirea cerintelor minime de securitate si sănătate în muncă pentru asigurarea protectiei lucrătorilor împotriva riscurilor legate de prezenta agentilor chimici-anexa 1.

Nota: Informatiile referitoare la procedurile recomandate de monitorizare pot fi obtinute de la urmatoarele agentii sau institutii:
Ministerul Muncii Solidaritatii Sociale si Familiei

NIVELUL DERIVAT NICIUN EFECT (DNEL)/NIVELUL DERIVAT EFECT MINIM (DMEL)

Muncitor

Denumirea substanţei	Dermic	Inhalare
Hidrocarburi, C11-C14, n-alcani, izoalcani, ciclice, <2% aromatice	NA	NA

Consumator

Denumirea substanţei	Dermic	Inhalare	Oral / bucal
Hidrocarburi, C11-C14, n-alcani, izoalcani, ciclice, <2% aromatice	NA	NA	NA

Notă: Nivelul Derivat Nici un Efect (DNEL) este un nivel estimat de siguranţă a expunerii care este derivat din datele de toxicitate în conformitate cu îndrumările specifice aferente reglementărilor REACH europene. DNEL poate fi diferit de Limita de Expunere Ocupaţională (OEL) pentru aceeaşi substanţă chimică. Valorile OEL pot fi recomandate de o companie individuală, de o instituţie guvernamentală de reglementare sau de o organizaţie de expertiză, cum sunt Scientific Commitee for Occupational Exposure Limits (SCOEL) sau American Conference of Governmental Industrial Hygienists (ACGIH). OEL sunt considerate ca fiind nivele sigure de expunere pentru un muncitor tipic într-un mediu ocupaţional, pentru un schimb de lucru de 8 ore, 40 de ore pe săptămână, ca o medie ponderată pe un interval de timp (TWA) sau o limită de expunere pe termen scurt, de 15 minute (STEL). Considerate, de asemenea, ca având un rol

protector pentru sănătate, OEL-urile sunt derivate printr-un process diferit de cel utilizat în cazul REACH.

CONCENTRAŢIA PREVĂZUTĂ NICIUN EFECT (PNEC)

Denumirea substanţei	Apă (apă dulce)	Apă (apă de mare)	Apă (eliberare intermitentă)	Uzină de tratare a apelor uzate	Sediment	Sol	Oral (otrăvire secundară)
Hidrocarburi, C11-C14, n-alcani, izoalcani, ciclice, <2% aromatice	NA	NA	NA	NA	NA	NA	NA

Pentru UVCB-urile hidrocarbonate, nu este identificată o valoare PNEC singulară pentru substanţa globală sau nu este utilizată în calculele de evaluare a riscului. Prin urmare, în tabelul de mai sus nu sunt date valori ale PNEC. Pentru informaţii suplimentare, vă rugăm să contactaţi ExxonMobil.

8.2. MĂSURI DE CONTROL AL EXPUNERII

CONTROALE TEHNICE

Nivelul de protectie si masurile necesare de control a expunerii variaza în functie de conditiile potentiale de expunere. Masuri tehnice de control ce vor fi luate în considerare:

Ventilarea adecvata este necesara pentru a se evita depasirea limitelor de expunere. Folositi un echipament de ventilare protejat împotriva exploziilor.

PROTECŢIE PERSONALĂ

Alegerea echipamentului personal de protectie variaza în functie de conditiile potentiale de expunere, cum ar fi operatiile de aplicare si manipulare, concentratia si ventilatia. Informatiile de mai jos, referitoare la alegerea echipamentului de protectie ce urmeaza a fi utilizat în timpul manipularii acestui produs, se refera la utilizarea in conditii normale a produsului.

Protecţie respiratorie: Daca masurile de control tehnic nu mentin concentratiile vaporilor si aerosolilor din aer la un nivel adecvat pentru protectia sanatatii muncitorilor, este necesara purtarea unei masti de gaze aprobate. Alegerea, utilizarea si întretinerea mastii de gaze se va face în conformitate cu reglementarile in vigoare, acolo unde este cazul. Tipurile mastilor de gaze necesare în cazul acestui tip de material includ:

Filtru respirator pentru jumatate de fata. Material de filtrare tip A, Comitetul European pentru Standardizare (CEN) standardele EN 136, 140 şi 405 prevăd măşti respiratorii, iar EN 149 şi 143 recomandă filtre.

Pentru concentratii mari de vapori în aer, utilizati o masca de gaze aprobata, prevazuta cu alimentare de aer si cu presiune pozitiva. Mastile de gaze cu alimentare de aer si cu butelie de evacuare se pot dovedi necesare atunci când nivelul de oxigen este insuficient, când conditiile de avertizare referitoare la gaze/vapori sunt necorespunzatoare sau când capacitatea/puterea nominala filtrelor de purificare a aerului este depasita.

Protecţia mâinilor: Informatiile privind mânusile de protectie se bazează pe date din literatură sau pe datele furnizate de producător. Conditiile de lucru pot afecta semnificativ durabilitatea mânusilor. Contactati producătorii de mânusi pentru recomandările specifice in ceea ce priveste alegerea mânusilor pentru conditiile Dvs. specifice de lucru.Verificati si înlocuiti mânusile uzate sau deteriorate. Tipurile de mânusi de protectie necesare în cazul acestui tip de produs includ:

Se recomanda purtarea manusilor de protectie împotriva agentilor chimici. Cauciuc nitrilic, Standardele CEN: EN 420 şi EN 374 prezintă cerinţe generale şi enumeră tipuri de mânuşi

Protecţia ochilor: În cazul în care exista posibilitatea de contact, este recomandabil sa purtati ochelari de protectie cu ecrane laterale.

Protecţia pielii şi a corpului: Toate datele referitoare la echipamentul de protectie se bazeaza pe materialele publicate si pe informatiile furnizate de producator. Tipurile de echipament de protectie necesar în cazul acestui tip de material includ:
Se recomanda purtarea unui echipament de protectie împotriva produsilor chimici/uleiosi.

Măsuri de igienă specifice: Respectati întotdeauna regulile de igiena personala, cum ar fi spalatul pe mâini dupa manipularea materialului si înainte de a mânca, bea si/sau fuma. Spalati în mod regulat hainele de lucru si echipamentul de protectie pentru a elimina contaminarea. Îndepartati de articolele de îmbracaminte si încaltaminte contaminate ce nu mai pot fi curatate. Respectati regulamentele de manipulare si organizare.

MĂSURI DE CONTROL CU PRIVIRE LA MEDIUL ÎNCONJURĂTOR

Respectaţi reglementările aplicabile pentru protecţia mediului înconjurător, care limitează descărcarea în aer, apă şi sol. Protejaţi mediul înconjurător prin aplicarea de măsuri de control adecvate pentru a preveni sau limita emisiile.

SECŢIUNEA 9 PROPRIETAŢI FIZICE ŞI CHIMICE

Notă: Proprietăţile fizice şi chimice sunt date numai în scopul prevederilor referitoare la siguranţă, sănătate şi mediu şi este posibil să nu reprezinte pe deplin specificaţiile produsului. Pentru informaţii suplimentare, contactaţi furnizorul.

9.1. INFORMAŢII PRIVIND PROPRIETĂŢI FIZICE ŞI CHIMICE DE BAZĂ

Stare fizică: Lichid
Formă: Clar
Culoare: Fără culoare
Miros: Uşoara
Prag de miros: Nu există date disponibile
pH: Nu există date disponibile
Punct de topire: Nu există date disponibile
Punct de îngheţ: Nu există date disponibile
Punct de fierbere iniţial / şi interval de fierbere: 180°C (356°F) - 270°C (518°F) [ASTM D86]
Punct de inflamabilitate [Metoda]: >70°C (158°F) [ASTM D-93]
Viteza de evaporare (acetat de n-butil = 1): 0.01 [Metodă locală]
Inflamabilitate (solid, gaz): Nu există date disponibile
Limite superioară/inferioară de inflamabilitate (Exprimate în % de volum în aer): UEL: 7.0 LEL: 0.6 [Extrapolat]
Presiunea de vapori: [Nedeterminată la 20 °C] | < 0.1 kPa (0.75 mm Hg) la 25°C [Metodă locală]
Densitatea vaporilor (în aer = 1): > 1 la 101 kPa [Calculata]
Densitate relativă (la 15 °C): 0.771 - 0.871 [În legătură cu apa] [Calculata]

Solubilitate/solubilităţi: apă Neglijabil
Coeficientul de repartiţie (coeficient de repartiţie n-octanol/apă): Nu există date disponibile
Temperatura de autoaprindere: >200°C (392°F) [Extrapolat]
Temperatura de descompunere: Nu există date disponibile
Vâscozitate: [Nedeterminată la 40 °C] | 2 cSt (2 mm2/sec) la 20°C - 3.5 cSt (3.5 mm2/sec) la 20°C [ASTM D7042]
Proprietăţi explozive: Nici unul/ nici una
Proprietăţi oxidante: Nici unul/ nici una

9.2. ALTE INFORMAŢII

Densitate (la 15 °C): 770 kg/m3 (6.43 lbs/gal, 0.77 kg/dm3) - 870 kg/m3 (7.26 lbs/gal, 0.87 kg/dm3) [ISO 12185]
Punct de curgere: < -20°C (-4°F) [ASTM D5950]
Masa moleculara: 178 G/MOLE [Calculata]
Higroscopic: No
Coeficient de expansiune temică: 0.00093 V/VDEGC [Metodă locală]

SECŢIUNEA 10 STABILITATE ŞI REACTIVITATE

10.1. REACTIVITATE: Vezi sub-secţiunile de mai jos.

10.2. STABILITATE CHIMICĂ: Produsul este stabil în conditii normale de utilizare.

10.3. POSIBILITATE DE REACŢII PERICULOASE: Nu va avea loc polimerizarea periculoasă.

10.4. CONDIŢII CE TREBUIE EVITATE: Nu lasati produsul în apropierea surselor de caldura, scânteilor, flacarilor sau altor surse de aprindere.

10.5. MATERIALE INCOMPATIBILE: Oxidanţi puternici

10.6. PRODUŞI PERICULOŞI DE DESCOMPUNERE: Produsul nu se descompune la temperatura ambianta.

SECŢIUNEA 11 INFORMAŢII TOXICOLOGICE

11.1. INFORMAŢII PRIVIND EFECTELE TOXICOLOGICAL

Clasa de risc	Concluzie / Observatii
Inhalare	
Toxicitate acuta: (Şobolan) 8 oră(e) LC50 > 5000 mg/m3 (Vapori) Scorurile testelor sau alte rezultate ale studiilor nu întrunesc criteriile pentru clasificare.	Toxicitate minima. Pe baza datelor obtinute din teste efectuate pentru materiale cu compozitie similara Test(e) echivalent(e) sau similar(e) cu ghidul OECD. 403
Iritare: Nu există date referitoare la punctul-limită pentru material.	Risc neglijabil la temperaturi de manipulare ambiante/normale. Pe baza datelor obtinute din teste efectuate pentru materiale cu compozitie similara
Înghitire	
Toxicitate acuta (Şobolan): LD50 > 5000 mg/kg Scorurile testelor sau alte rezultate	Toxicitate minima. Pe baza datelor obtinute din teste efectuate pentru materiale cu compozitie similara Test(e) echivalent(e) sau

ale studiilor nu întrunesc criteriile pentru clasificare.	similar(e) cu ghidul OECD. 401
Piele	
Toxicitate acuta (Iepure): LD50 > 5000 mg/kg Scorurile testelor sau alte rezultate ale studiilor nu întrunesc criteriile pentru clasificare.	Toxicitate minima. Pe baza datelor obtinute din teste efectuate pentru materiale cu compozitie similara Test(e) echivalent(e) sau similar(e) cu ghidul OECD. 402
Corosiunea pielii/Iritare: Date disponibile Scorurile testelor sau alte rezultate ale studiilor nu întrunesc criteriile pentru clasificare.	Poate usca pielea, cauzând disconfort si dermatita. Pe baza datelor obtinute din teste efectuate pentru materiale cu compozitie similara Test(e) echivalent(e) sau similar(e) cu ghidul OECD. 404
Ochi	
Leziuni oculare grave/Iritare: Date disponibile Scorurile testelor sau alte rezultate ale studiilor nu întrunesc criteriile pentru clasificare.	Poate cauza disconfort usor si de scurta durata pentru ochi. Pe baza datelor obtinute din teste efectuate pentru materiale cu compozitie similara Test(e) echivalent(e) sau similar(e) cu ghidul OECD. 405
Sensibilizare	
Sensibilizare respiratorie: Nu există date referitoare la punctul-limită pentru material.	Nu este de aşteptat să fie sensibilizant pentru căile respiratorii.
Sensibilizarea pielii: Date disponibile. Scorurile testelor sau alte rezultate ale studiilor nu întrunesc criteriile pentru clasificare.	Nu este de aşteptat să fie sensibilizant pentru piele. Pe baza datelor obtinute din teste efectuate pentru materiale cu compozitie similara Test(e) echivalent(e) sau similar(e) cu ghidul OECD. 406
Aspiraţie: Date disponibile.	Poate fi mortal în caz de înghiţire şi de pătrundere pe căile respiratorii. Pe baza proprietăţilor fizico-chimice ale materialului.
Mutagenitate asupra celulelor germinale: Date disponibile. Scorurile testelor sau alte rezultate ale studiilor nu întrunesc criteriile pentru clasificare.	Nu este de aşteptat să fie mutagen pentru celulele germinale. Pe baza datelor obtinute din teste efectuate pentru materiale cu compozitie similara Test(e) echivalent(e) sau similar(e) cu ghidul OECD. 471 473 474 476 478 479
Carcinogenicitate: Date disponibile. Scorurile testelor sau alte rezultate ale studiilor nu întrunesc criteriile pentru clasificare.	Nu este de aşteptat să cauzeze cancer. Pe baza datelor obtinute din teste efectuate pentru materiale cu compozitie similara Test(e) echivalent(e) sau similar(e) cu ghidul OECD. 453
Toxicitate pentru sistemul reproductiv: Date disponibile. Scorurile testelor sau alte rezultate ale studiilor nu întrunesc criteriile pentru clasificare.	Nu este de aşteptat să fie toxic pentru funcţia de reproducere. Pe baza datelor obtinute din teste efectuate pentru materiale cu compozitie similara Test(e) echivalent(e) sau similar(e) cu ghidul OECD. 414 421 422
Alăptare: Nu există date referitoare la punctul-limită pentru material.	Nu este de aşteptat să dăuneze copiilor alăptaţi la sân.
Toxicitate specifică de organ-ţintă (STOT)	
Expunere unică: Nu există date referitoare la punctul-limită pentru material.	Nu este de aşteptat să dăuneze organelor printr-o expunere unică.
Expunere repetată: Date disponibile. Scorurile testelor sau alte rezultate ale studiilor nu întrunesc criteriile pentru clasificare.	Nu este de aşteptat să dăuneze organelor prin expunere prelungită sau repetată. Pe baza datelor obtinute din teste efectuate pentru materiale cu compozitie similara Test(e) echivalent(e) sau similar(e) cu ghidul OECD. 408 413 422

ALTE INFORMAŢII

Produsul ca atare:

Concentratiile de vapori care depasesc nivelurile de expunere recomandate sunt iritante pentru ochi si pentru caile respiratorii, pot provoca dureri de cap si ameteli, sunt anestezice si pot avea alte efecte asupra sistemului nervos central. Contactul repetat si/sau prelungit cu pielea al substantelor cu vâscozitate scazuta poate determina degresarea pielii, ceea ce poate duce la iritatii si dermatita. Cantitati mici de lichid aspirat in plamâni in timpul înghitirii sau prin inducere de voma pot cauza pneumozee chimica sau edem pulmonar.

SECŢIUNEA 12 INFORMAŢII ECOLOGICE

Informatiile furnizate se bazeaza pe datele disponibile pentru produs, elementele produsului si pentru produse similare.

12.1. TOXICITATE

Material -- Nu este de aşteptat să fie nociv faţă de organismele acvatice.
Material -- Nu are toxicitate cronica asupra organismelor acvatice.

12.2. PERSISTENŢĂ ŞI DEGRADABILITATE

Biodegradare:

Material -- Se anticipeaza biodegradarea rapida.

Hidroliză:

Material -- Transformarea datorata hidrolizei nu va fi semnificativa.

Fotoliză:

Material -- Transformarea datorata fotolizei nu va fi semnificativa.

Oxidare atmosferică:

Material -- Aceasta substanta se poate degrada rapid în aer.

12.3. POTENŢIAL DE BIOACUMULARE Nedeterminat.

12.4. MOBILITATE ÎN SOL Nedeterminat.

12.5. PERSISTENŢĂ, BIOACUMULARE ŞI TOXICITATE PENTRU SUBSTANŢĂ(E)

Acest produs nu este sau nu conţine o substanţă care este un PBT sau un vPvB.

12.6. ALTE EFECTE ADVERSE

Nu sunt previzibile efecte adverse.

ALTE INFORMAŢII ECOLOGICE

VOC: Da

DATE ECOLOGICE

Ecotoxicitate

Test	Durata	Tip de organism	Resultatele testului
Acvatic - Toxicitate acuta	48 oră(e)	Daphnia magna	EL0 1000 mg/l: date pentru material
Acvatic - Toxicitate acuta	72 oră(e)	Pseudokirchneriella subcapitata	EL0 1000 mg/l: date pentru material
Acvatic - Toxicitate acuta	96 oră(e)	Oncorhynchus mykiss	LL0 1000 mg/l: date pentru material

Persistenţă,degradabilitate şi potenţial de bioacumulare

Mijloace	Tipul testului	Durata	Resultatele testului: Bază
Apă	Pregătit pentru biodegradabilitate	28 zi(le)	Procentul degradat 69

SECŢIUNEA 13 MASURI PRIVIND ELIMINAREA DESEURILOR

Recomandarile de eliminare se bazeaza pe produs în starea în care a fost furnizat. Eliminarea se va face în conformitate cu reglementarile nationale, tinând cont de caracteristicile produsului în momentul eliminarii.

13.1. METODE PENTRU TRATAREA DEŞEURILOR

Se recomanda incinerarea produsului într-un arzator închis, controlat pentru puterea calorifica a combustibilului sau eliminarea prin incinerare supravegheata la temperaturi foarte înalte pentru a preveni formarea produselor secundare de combustie.

INFORMAŢII PRIVIND REGLEMENTĂRILE REFERITOARE LA ELIMINAREA DESEURILOR

Codul European al Deşeurilor: 08 XX XX

NOTA: Aceste coduri sunt atribuite în functie de utilizarile cele mai frecvente ale acestui produs si este posibil sa nu reflecte impuritatile care rezulta din utilizarea reala. Producatorii de deseuri trebuie sa evalueze procesele propriu-zise utilizate în momentul generarii deseurilor si contaminantilor respectivi, în vederea atribuirii codului(rilor) de deseu corespunzatoare.

Avertisment privind containerele goale Avertisment pentru container golit (dacă este cazul): Containerele golite pot conţine reziduuri şi pot fi periculoase. Nu încercaţi să reumpleţi sau să curăţaţi containerele în lipsa instrucţiunilor corespunzătoare. Butoaiele golite trebuie scurse complet şi depozitate în siguranţă până la recondiţionarea sau eliminarea lor, în condiţii de siguranţă. Containerele golite trebuie să fie trimise spre reciclare, recuperare sau eliminare prin intermediul unui contractor calificat şi licenţiat în mod corespunzător şi în conformitate cu reglementările guvernamentale. A NU SE PRESURIZA, TĂIA, SUDA, ALĂMI, LIPI, GĂURI, POLIZA SAU EXPUNE ASEMENEA CONTAINERE LA CĂLDURĂ, FLĂCĂRI, SCÂNTEI, ELECTRICITATE STATICĂ SAU ALTE SURSE DE APRINDERE. ELE POT EXPLODA, CAUZÂND RĂNIRE SAU DECES.

SECŢIUNEA 14 INFORMAŢII REFERITOARE LA TRANSPORT

TERESTRU (ADR/RID): **14.1-14.6** Neclasificat pentru transportul terestru

CĂI NAVIGABILE INTERNE (ADNR/ADN)

14.1. Număr (sau ID) ONU: 9003
14.2. Denumirea proprie ONU a transportului (Denumire tehnică): SUBSTANTE CU 60°C < f.p.<= 100°C (Undecan şi dodecan)
14.3. Clasă(e) de pericol la transport: 9
14.4. Grup ambalare: (Nu este cazul)
14.5. Riscuri pentru mediul înconjurător: Nici unul/ nici una
14.6. Precauţii speciale pentru utilizatori:
Eticheta(e)/ Semn(e): 9 (F)

MARITIM (IMDG): **14.1-14.6** Neclasificat pentru transportul maritim conform codului IMDG

MARE (Convenţia MARPOL 73/78 - Anexa II):

14.7. Transport în vrac conform cu Anexa II a MARPOL 73/78 şi Codul IBC
Denumirea substanţei: LICHID NOCIV, N.F., (7) N.O.S., (ESCAID 110, conţine izo- şi cicloalcani (12+))
Este cerut tipul de navă: 3
Categorie de poluare: Y

AER (IATA): **14.1-14.6** Neclasificat pentru transportul aerian

SECŢIUNEA 15 INFORMAŢII PRIVIND REGLEMENTARILE

STATUT LEGAL ŞI LEGI ŞI REGLEMENTĂRI APLICABILE

Răspunde următoarelor cerinţe de inventar chimic naţional/regional: AICS, DSL, ENCS, IECSC, KECI, PICCS, TSCA

Următoarea/următoarele substanţă(e) din acest produs este/sunt identificată(e) prin numărul CAS în ţările în care nu se aplică reglementările REACH sau în reglementările care nu sunt încă actualizate prin noua convenţie de nomenclatură pentru solvenţii hidrocarbonaţi.

Denumire	CAS
Hidrocarburi, C11-C14, n-alcani, izoalcani, ciclice, <2% aromatice	64742-47-8

15.1. REGLEMENTĂRILE/LEGISLAŢIA PRIVIND SĂNĂTATEA, SIGURANŢA ŞI MEDIUL ÎNCONJURĂTOR SPECIFICE PENTRU SUBSTANŢĂ SAU AMESTEC

Directivele si Reglementările aplicabile în UE:

Regulamentul (CE) 1907/2006 [... referitor la Înregistrarea, Evaluarea, Autorizarea şi Restricţionarea substanţelor chimice ... şi amendamentele aferente]
2004/42/CE [referitoare la limitarea emisiilor de compuşi organici volatili datoraţi utilizării de solvenţi organici în anumite vopsele, lacuri şi produse de finisare pentru vehicule, cu amendarea Directivei 1999/13/CE.]
98/24/CE [... referitor la protecţia muncitorilor împotriva riscului legat de agenţi chimici la locul de muncă ...] Consultaţi Directiva pentru detalii referitoare la cerinţe.
1272/2008 [referitor la clasificarea, etichetarea şi ambalarea substanţelor ţi amestecurilor.. şi amendamentele respective]

Consultaţi reglementările UE/naţionale relevante pentru detalii privind orice acţiuni sau restricţii cerute de Reglementarea/reglementările/Directiva/directivele menţionate mai sus.

15.2. EVALUARE DE SIGURANŢĂ CHIMICĂ

Informaţii REACH: A fost efectuată o evaluare a siguranţei chimice pentru una sau mai multe substanţe prezente în acest material.

SECŢIUNEA 16 ALTE INFORMAŢII

REFERINŢE: Sursele de informaţii care au fost utilizate la întocmirea prezentei FTS include una sau mai multe dintre următoarele: rezultate ale studiilor toxicologice efectuate local sau de către furnizor, Dosarele de produs CONCAWE, publicaţii ale altor asociaţii comerciale cum sunt Consorţiul REACH pentru solvenţi hidrocarbonaţi din UE, Rezumatele detaliate de program HPV din SUA, Baza de date IUCLID din UE, publicaţiile NTP din SUA şi alte surse, după caz.

Lista abrevierilor şi acronimelor care pot fi (dar nu sunt neapărat) utilizate în prezenta fişă tehnică de securitate:

Acronim	Textul complet
Nu este cazul	Inaplicabil
Nedeterminat/ă	Nedeterminată
NE	Nu este stabilit
VOC	Compus organic volatil
AICS	Lista oficială a substanţelor chimice, cu valabilitate în Australia
AIHA WEEL	Limitele de expunere ambientală la locul de muncă agreate de American Industrial Hygiene Association
ASTM	ASTM International, cunoscută iniţial sub denumirea de American Society for Testing and Materials (ASTM)
DSL	Lista substanţelor de uz casnic (Canada)
EINECS	Inventarul european al substanţelor existente introduse pe piaţă
ELINCS	Lista europeană a substanţelor chimice notificate
ENCS	Substanţele chimice existente şi cele noi (lista cu valabilitate în Japonia)
IECSC	Lista substanţelor chimice existente, cu valabilitate în China
KECI	Inventarul substanţelor chimice existente din Coreea
NDSL	Lista substanţelor de uz non-casnic (Canada)
NZIoC (Lista oficială a substanţelor chimice din Noua Zeelandă)	Lista oficială a substanţelor chimice din Noua Zeelandă
PICCS	Lista oficială a substanţelor chimice, cu valabilitate în Filipine
TLV	Pragul valorii-limită (American Conference of Governmental Industrial Hygienists)
TSCA	Toxic Substances Control Act (lista cu valabilitate în SUA)
UVCB	Substanţe cu compoziţie necunoscută sau variabilă, Produşi de reacţie complecşi sau Materiale biologice
LC	Concentraţie letală
LD	Doză letală
LL	Încărcare letală
EC	Concentraţie eficientă
EL	Încărcare eficientă
NOEC	Concentraţia pentru niciun efect observabil
NOELR	Rata de încărcare pentru niciun efect observabil

LISTA FRAZELOR DE RISC ALE COMPONENTILOR ENUMERATE ÎN SECTIUNILE 2 SI 3 ALE ACESTUI

DOCUMENT (doar cu titlu de referinta):
R65; Nociv: poate provoca afecţiuni pulmonare in caz de înghiţire.
R66; Expunerea repetată poate cauza uscarea sau crăparea pielii

CHEIA PENTRU CODURILE H DIN SECŢIUNEA 3 A ACESTUI DOCUMENT (cu scop pur informativ):
[Flam. Liq. 4 H227]: Combustibil lichid; Lichid inflamabil, Cat
Asp. Tox. 1 H304: Poate fi mortal în caz de înghiţire şi de pătrundere pe căile respiratorii; Aspirare, Cat
EUH066: Expunerea repetată poate cauza uscarea şi fisurarea pielii.

ACEASTĂ FIŞĂ TEHNICĂ DE SECURITATE CONŢINE URMĂTOARELE REVIZUIRI:
Nu este disponibilă nici o informaţie revăzută.

Informatiile si recomandarile continute în prezentul document sunt, în masura tuturor cunostintelor detinute de ExxonMobil, corecte si adevarate la data la care au fost emise. Puteti contacta compania ExxonMobil pentru a va asigura ca acest document este ultima versiune disponibila, oferita de ExxonMobil. Informatiile si recomandarile sunt oferite pentru a fi luate în considerare si pentru a fi verificate de catre utilizator. Utilizatorul are responsabilitatea de a se asigura ca produsul corespunde utilizarii prevazute. În cazul în care cumparatorul reambaleaza acest produs, utilizatorul are responsabilitatea de a se asigura ca în container sunt incluse informatii corespunzatoare referitoare la sanatate, sigurnasa si alte informatii necesare. Manipulantii si utilizatorii trebuie informati în mod corespunzator cu privire la avertismentele si procedurile de manipulare. Modificarea prezentului document este strict interzisa. Nu este permisa republicarea sau retransmiterea acestui document în totalitate sau partial, decât în masura prevazuta de lege. Termenul „ExxonMobil" este folosit ca prescurtare si poate include oricare sau mai multe dintre societatile ExxonMobil Chemical Company, ExxonMobil Corporation, sau orice companie afiliata în care corporatia detine interese în mod direct sau indirect.

Numai de uz intern
MHC: 1A, 0, 0, 0, 1, 0

DGN: EMD2470HDE
(1019101)----------

ANEXĂ

Anexa nu este necesară pentru acest material.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

INTAFLOW

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**INTAFLOW**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Agent de reducere a pierderilor de circulatie pentru fluidele de foraj**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Fraze de precauție:		
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	

Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Sfaturi de siguranță::	**S22:** A nu se inspira praful.	
Eliminarea:		

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Substanţă
Conţinut:	In conformitate cu urmatorul tabel:
Formula moleculară:	- - -
Greutatea moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Carbonat de calciu micronizat natural Micronized Natural Calcium Carbonate REACH No. 01-2119486795-18-XXXX	471-34-1	207-439-9	100%	- - -	- - -	- - -

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Scoateţi imediat persoana afectată afară, în afara zonei contaminate cu praf şi lăsaţi-l să-şi sufle nasul.
După contactul cu pielea:	A se spală cu apă
După contactul cu ochii:	Clătiti bine cu apă. Dacă iritația persistă, adresați-vă unui medic.
După înghiţire:	Nu provocați voma. Adresați-vă unui medic .
Alte informaţii:	N.a.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	Poate provoca iritație ușoară

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	N.a.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	Produsul nu este combustibil. În caz de incendiu respectaţi, urmați instrucțiunile.
Mijloace de stingere corespunzătoare:	Produsul nu este combustibil.
Mijloace de stingere necorespunzătoare:	Niciunul
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Produsul în sine nu arde, nu se aprinde. Nu prezintă risc de incendiu sau explozie.
Echipamente speciale de stingere a incendiilor	În caz de incendiu, masca de praf și echipamentul de protecţie.
Recomandări destinate pompierilor:	N.a.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență

Echipament de protecţie:	Purtați echipament de protecție (mănuși, ochelari de protecție și îmbrăcăminte)
Proceduri de urgență:	Eliminaţi persoanele neprotejate. Asiguraţi o ventilație adecvată. Se recomandă utilizarea de ochelari de protecție, mănuși și mască de praf de tip P1, în cazul unor cantități mari de praf

6.2. Precauţii pentru mediul înconjurător

Medii de izolare:	Non-toxic, inert, nu dăunează mediului
Metode de limitare a poluarii	Îndepărtarea mecanică a produsului
Informatii suplimentare:	Evacuaţi apa de spălare contaminată în conformitate cu reglementările locale

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate

Precauţii pentru manipulare în condiţii de securitate:	Este o substanţă non-toxică. Respectați măsurile normale de protecție individuală. Se recomandă utilizarea de ochelari de protecție, mănuși și mască de praf de tip P1, în cazul unor cantități mari de praf

7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi

Condiţii de depozitare:	Depozitați în locuri răcoroase și uscate. Depozitați la distanţă de acizi

Specificaţiile zonei de depozitare:	Depozitați în locuri răcoroase și uscate
Specificaţiile recipienţilor:	Păstrați recipientul închis ermetic
Incompatibilități:	Depozitați la distanţă de de acizi
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Agent de reducere a pierderilor de circulatie pentru fluidele de foraj**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control		
Substanța		***Carbonat de calciu micronizat natural CAS No. 471-34-1***
TLV_{Celing}:		- - -
TLV_{TWA}:		3,0 mg/m^3
TLV_{STEL}:		10 mg/m^3
Limita biologică:		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Ventilatie generala este recomandata
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Asiguraţi ventilaţie corespunzătoare.
Protecţia individuală	Respiratorie:	În mod normal nu este necesară protecţie respiratorie. Evitati generarea de praf. În caz de expunere la praf, se va utiliza cel puţin masca de praf tip P1.
	Ochi	Ochelari de protecție în cazul prezenţei unei cantităţi importante de praf.
	Maini	Mănuși
	Corp	Îmbrăcăminte de protecție
8.3. Controlul expunerii mediului		
Variante de expunere		Niciuna

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale	
Forma:	Pudră
Aspect:	Pudră
Culoare:	Alba
Miros:	Inodor
Prag olfactiv:	Inodor
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH (10 g/l) la 20 °C:	8,5 – 9,5
Punct de topire:	825°C cu descompunere
Punct de fierbere:	N.a.
Punct de aprindere:	Nu este inflamabil
Inflamabilitate (solid, gaz):	Nu este inflamabil
Temperatura de autoaprindere:	Nu este inflamabil
Temperatura de descompunere:	825°C
Pericol de explozie:	Nu este explozibil
Limita de inflamabilitate superioară:	Nu este inflamabil/ Nu este explozibil
Limita inferioară de inflamabilitate:	Nu este inflamabil/ Nu este explozibil
Presiunea de vapori:	N.a.
Densitatea la 20 °C:	N.a.
Densitatea aparentă (20°C):	N.a.

Densitatea relativă:	2.71 g/cm^3
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	0,014 g/l a 20°C
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Inert, nu reactiv. Stabil în condiții normale. Se descompune la temperatură de peste 825 ° C, cu degajare de CO2 și formarea de CaO
10.2. Stabilitate chimică	
Materiale incompatibile:	Acizi
Posibilitatea de reacții periculoase:	Reacționează cu acizii, cu formarea de CO2
10.3. Produși de descompunere periculoși	
Alte informaţii:	Reacționează cu acizii, cu formarea de CO2

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Amestec toxic	***Micronized Natural Calcium Carbonate CAS No. 471-34-1***
Toxicitate orală acută:	LD50 (Şobolan): >6450 mg/kg
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	N.a.
11.2. Corozivitate	
Piele:	Substanța nu este corozivă
Ochi:	Substanța nu este corozivă
11.3. Iritabilitate primară	
Piele:	Substanța nu este iritantă
Ochi:	Poate provoca iritarea uşoară a ochilor.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	Nu există efecte nocive aşteptate. Nu este periculos.
Ochi:	Nu există efecte nocive aşteptate. Nu este periculos.

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate	
Toxicitate în apă:	Nu este toxic
Toxicitate în aer:	Nu este toxic
Toxicitate în sol:	Nu este toxic
12.2. Persistență și degradabilitate	
Alte informații:	Nu este biodegradabil
12.3. Potențial de Bioacumulare	
Alte informații:	N.a.
12.4. Mobilitate în sol	

Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	Substanța nu este clasificată ca deșeu periculos. Contactaţi o firmă autorizată pentru eliminare
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Substanța nu este clasificată ca deșeu periculos. Contactaţi o firmă autorizată pentru eliminare
Alte recomandări:	N.a.

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Normele de transport ONU:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) şi Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:

Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:

Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate
GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice
EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente
CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societății Americane de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de precauție si siguranta utilizate în secţiunile anterioare

S22: A nu se inspira praful.

P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010

VAR STINS (Var hidratat)

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	VAR (Var hidratat)

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Material pentru reglarea pH-ului**

Contraindicaţii: Nu sunt date disponibile

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

ACEST AMESTEC ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI:

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

	**GHS05**	**Lezare ochi 1** H318: Provoacă leziuni oculare grave
	**GHS07**	**Irit. Piele 2** H315: Provoacă iritarea pielii
		STOT SE H335: Poate provoca iritarea căilor respiratorii.

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	 **GHS05 …GHS07**	**Lezare ochi 1** H318: Provoacă leziuni oculare grave
		Irit. Piele 2 H315: Provoacă iritarea pielii **STOT SE** H335: Poate provoca iritarea căilor respiratorii.
Fraze de precauţie:	P280: Purtaţi mănuşi de protecţie/îmbrăcăminte de protecţie/echipament de protecţie a ochilor/echipament de protecţie a feţei P302+P352: ÎN CAZ DE CONTACT CU PIELEA: spălaţi cu multă apă şi săpun. P305+P351+P338: ÎN CAZ DE CONTACT CU OCHII: Clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi	
Eliminarea:	P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Substanţă
Conţinut:	În conformitate cu tabelul de mai jos
Formula moleculară:	- - -
Numărul EC:	- - -
Number ONU	- - -
Numărul CAS:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol

Hidroxid de calciu REACH No. 01- 2119475151-45-XXXX	1305-62-0	215-137-3	- - -	**Lezare ochi 1**	 **GHS05**	H318
				Irit. Piele 2 **STOT SE**	 **GHS07**	H315 H335

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistență medicală. Arătaţi medicului această Fișă cu Date de Securitate.
După inhalare:	Dacă respirația este neregulată sau nu respiră, procedați la respirație artificială.. Solicitaţi asistență medicală. Arătaţi medicului ambalajul sau eticheta.
După contactul cu pielea:	Spălați imediat din abundență zona afectată cu apă și săpun.
După contactul cu ochii:	În caz de contact cu ochii, clătiţi cu multă apă curată o perioadă suficientă de timp. Consultați un medic oftalmolog. Protejați ochiul nevătămat.
După înghiţire:	Clătiți gura cu apă și beți apă din abundență. Nu induceți voma . Consultaţi un medic imediat.
Alte informaţii:	Hidroxidul de calciu. Nu este definit ca fiind toxic dacă este înghițit, inhalat sau dacă vine în contact cu pielea. Este clasificat ca fiind iritant pentru piele și poate cauza leziuni severe ale ochilor. Nu există preocupări pentru efecte sistemice adverse deoarece principalul pericol pentru sănătate îl reprezintă efectele locale (efectul pH-ului)

4.2. Cele mai importante simptome şi efecte, atât acute, cât si întârziate.

Simptome	Nu sunt date disponibile.

4.3. Indicații privind orice fel de asistență medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Nu este necesară supravegherea medicală în timpul activităţii la locul de muncă sau în caz de accident. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	Nu este cazul.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	În caz de incendiu respectaţi următoarele instrucţiuni:
Mijloace de stingere corespunzătoare:	Produsul nu este combustibil. Pentru stingere utilizați: pulbere, spumă sau Dioxid de carbon. Utilizați măsurile de stingere care sunt corespunzătoare circumstanțelor locale și a mediului înconjurător.
Mijloace de stingere necorespunzătoare:	apa
Pericole care derivă din ardere (produşi de descompunere termică periculoşi):	Hidroxidul de calciu este iritant pentru piele și sistemul respirator, și implică un risc serios de lezare a ochilor.
Echipamente speciale de stingere a incendiilor	În caz de incendiu folosiți aparat pentru respiraţie adecvat.
Altele	Nu sunt date disponibile.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență

Echipament de protecţie:	Purtați echipament individual de protecție. Protecție respiratorie adecvată.
Proceduri de urgență:	Nu respirați praful. Deplasați oamenii neprotejați într-o zonă sigură. Furnizați ventilație adecvată.
6.2. Precauţii pentru mediul înconjurător	
Mijloace de limitare:	Măturați și strângeți cu lopata. Pentru praf fin, utilizați sisteme de aspirare.
Metode de limitare a poluării	Evitați formarea prafului. Păstrați materialul uscat, dacă este posibil. Ridicați produsul mecanizat fără apă. Utilizați un aspirator sau o lopată și aruncați intr-un sac.
Informații suplimentare:	Nu sunt date disponibile.
6.3 Metode şi material pentru izolarea incendiilor şi pentru curăţenie	
	Nu sunt date disponibile.
6.4 Trimiteri către alte secţiuni) (trimiteri către secțiunile 8 și 13).	
	A se vedea şi declaraţiile de la secţiunile 8 şi 13.

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitaţi contactul cu pielea și ochii. Nu respirați praf. Purtați echipament de protecție individual.
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Păstrați ambalajele închise etanș. Păstrați departe de alimente, băuturi și hrana animalelor. Evitați contactul cu aerul și umiditatea.
Specificaţiile zonei de depozitare:	Zone ventilate adecvat, departe de materiale incompatibile.
Specificaţiile recipienţilor:	Întotdeauna păstrați containerele închise etanș.
Incompatibilităţi:	Depozitați departe de acizi, de cantități semnificative de hârtie, paie sau nitrocompuși.
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	Material pentru reglarea pH-ului

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control		
Substanță:		
TLV_{Celing}:		- - -
TLV_{TWA}:		1 mg/m³
TLV_{STEL}:		4 mg/m^3
Limita biologică:		- - -
8.2. Controale ale expunerii profesionale		
Controale tehnice corespunzătoare :		Asigurați ventilaţie adecvată.
Protecţie colectivă:		Asigurați ventilaţia adecvată. Fântâni pentru ochi, în apropiere.
Protecţia individuală	Respiratorie:	Utilizați aparate pentru respirație.
	Ochi	Utilizați ochelari de protecție
	Mâini	Mănuși de protecţie totală.
	Corp	Îmbrăcăminte de protecție pentru întreg corpul.
8.3. Controlul expunerii mediului		
Scenarii de expunere		Nu sunt date disponibile.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale	
Aspect:	Pulbere fină

Starea fizica:	pulbere
Culoare:	Alb - bej
Miros:	inodor
Prag olfactiv:	N/A
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH :	12,4
Punct de topire:	> 450 ° C
Punct de fierbere:	N/A
Punct de aprindere:	N/A
Inflamabilitate (solid, gaz):	Nu sunt date disponibile
Temperatura de autoaprindere:	Nu sunt date disponibile
Temperatura de descompunere:	> 580 ° C: se descompune în CaO și apă.
Pericol de explozie:	Nu sunt date disponibile
Limita de inflamabilitate superioară:	Nu sunt date disponibile
Limita inferioară de inflamabilitate:	Nu sunt date disponibile
Presiunea de vapori:	Nu sunt date disponibile.
Densitatea la 20 °C:	Nu sunt date disponibile
Densitatea aparentă (20°C)	Nu sunt date disponibile
Densitatea în vrac (Bulk)	Nu sunt date disponibile.
Densitatea relativă (20°C):	2,24 g/cm^3
Densitatea de vapori:	Nu sunt date disponibile.
Rata de evaporare:	Nu sunt date disponibile.
Solubilitate în apă (20°C):	1845 mg/l
Coeficientul de distribuție (n-octanol):	Nu sunt date disponibile.
Vâscozitatea (40°C):	Nu sunt date disponibile
9.3. Alte informaţii	
Alte informaţii:	Nu sunt date disponibile.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Minimizați expunerea la aer și umiditate pentru a preveni degradarea substanței..
10.2. Stabilitate chimică	
Materiale incompatibile	Reacționează exoterm cu acizii pentru a forma săruri. În prezența umidității, hidroxidul de calciu reacționează cu aluminiul și alama, astfel formând hidrogen. Ca (OH) 2 + 2 Al + 6 H2O _ Ca [Al (OH) 4] 2 + 3 H2
Posibilitatea de reacții periculoase:	Posibile reacții exoterme cu acizii.

10.3. Posibilitatea de reacţii periculoase

Hidroxidul de calciu reacționează cu dioxidul de carbon, formând carbonatul de calciu, o substanță existentă în natură.

Ca(OH)2 + CO2 _ CaCO3 + H2O

10.4. Condiţii de evitat

Nu sunt date disponibile.

10.5. Materiale incompatibile

Nu sunt date disponibile.

10.6. Produși de descompunere periculoși

Nu sunt date disponibile.

11. INFORMAŢII TOXICOLOGICE	
11.1. Informaţii privind efectele toxicologice	
Toxicitatea substanţă:	*Hidroxid de calciu CAS No. 1305-62-0*
Toxicitate Acută	
Toxicitate orală acută:	LD50 (șobolan): >2000 mg/kg.
Toxicitate inhalatorie acută:	Nu sunt date disponibile.
Toxicitate cutanată acută:	LD50 (iepure): >2500 mg/kg
11.2. Corozivitate	
Piele:	Nu sunt date disponibile
Ochi:	Nu sunt date disponibile
11.3. Iritaţie	
Piele:	Iritant pentru piele.
Ochi:	Risc de lezare gravă a ochilor
11.4. Toxicitate la doze repetate	
Ingestie:	Nu sunt date disponibile.
Inhalare:	Iritant a traiectului respirator superior.
11.5. Sensibilitate	
Piele:	Nu sunt date disponibile
Ochi:	Nu sunt date disponibile.
11.6 Cancerogenitate	
	Nu sunt date disponibile.
11.7 Mutagenitate	
	Nu sunt date disponibile.
11.8 Toxicitate pentru reproducere	
	Nu sunt date disponibile.

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Toxicitate în apă:	LC50 (96h) (peste de apă dulce): 50,6 mg/l LC50 (96h) (pește de apă sărată): 457 mg/l EC50 (48h) (nevertebrate de apă dulce): 49,1 mg/l LC50 (96h) (nevertebrate marine): 158 mg/l EC50 (72h) (alge de apă dulce) : 184,57 mg/l
Toxicitate în aer:	Nu sunt date disponibile.
Toxicitate în sol:	Nu sunt date disponibile.
12.2. Persistență și degradabilitate	
Alte informații:	Nu sunt date disponibile
12.3. Potențial de Bioacumulare	
Alte informații:	Nu sunt date disponibile
12.4. Mobilitate în sol	
Alte informații:	Hidroxidul de calciu este o substanță solubilă moderat și de aceea are o mobilitate slabă în cele mai multe soluri și de aceea este utilizată ca fertilizator.
12.5. Rezultatele evaluării PBT și vPvB	
PBT:	Nu este PTB
vPvB:	Nu este vPvT.
12.6. Alte efecte adverse	

Alte informaţii:	Nu sunt date disponibile

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului

Sfaturi:	Eliminaţi conform reglementărilor Directivelor Europene referitoare la deşeuri şi deşeuri periculoase.
Cod de deşeu:	Nu sunt date disponibile.

13.2. Metode de eliminare a ambalajului

Sfaturi:	Nu sunt date disponibile.
Alte recomandări:	Eliminare conform reglementărilor în vigoare locale şi naţionale.
	Legislaţia privind eliminarea deşeurilor: **Legea 211/2011** privind regimul deşeurilor. **HG 427/2010** pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor. **HG 1061/2008** privind transportul deşeurilor periculoase şi nepericuloase pe teritoriul României. **HG 268/2005** pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor. **HG 349/2005** privind depozitarea deşeurilor; **OMAPM nr.756/2004** pentru aprobarea Normativului tehnic privind incinerarea deşeurilor; **HG 856/ 2002** privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase. **HG 128/2002** privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.
	Legislaţia pentru deşeuri de ambalaj: **Ordinul 794/2012** privind procedura de raportare a datelor referitoare la ambalaje si deşeuri de ambalaje. **HG 247/2011** pentru modificarea si completarea Hotărârii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deşeurilor de ambalaje. **HG 1872/2006** pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor ş deşeurilor de ambalaje. **HG 621/2005** privind gestionarea ambalajelor şi deşeurilor de ambalaje.

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)

Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Norme de transport ONU	Nu sunt date disponibile.
Clasa (clasele) de pericol pentru transport	Nu sunt date disponibile.
Grupul de ambalare:	Nu sunt date disponibile.
Pericol pentru mediu	Nu sunt date disponibile.
Precauţii pentru utilizatori	

14.2. Transport Maritim (IMDG)

Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Poluant marin:	Nu sunt date disponibile.

14.3. Transport Aerian (ICAO-TI si IATA-DGR)

Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Clasa IATA	Nu sunt date disponibile.

14.4. Transport în vrac

Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Codul IBC:	Nu sunt date disponibile.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Reglementări naţionale:

Legea 319/2006 – legea referitoare la sănătatea şi securitatea în muncă

HG 1425/2006 consolidată – Norme de aplicare ale Legii 301/2006 HG 1218/2006 privind Stabilirea cerinţelor minime de securitate şi sănătate în muncă pentru asigurarea protecţiei lucrătorilor împotriva riscurilor legate de prezenţa agenţilor chimici **HG 1093/2006** privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.	
15.2 Evaluarea securităţii chimice	Nu a fost efectuată o evaluare a securităţii chimice**.**

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Reţeaua de Informaţii şi Date despre Substanţele Chimice utilizate în Mediul Înconjurător creată de Joint Research Centre, Commission of the European Communities - Centrul European Comun de Cercetare al Comisiei Comunităţilor Europene

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche-/ Institutul Superior de sănătate – Inventarul Naţional al Substanţelor (Italia)

ACGIH - Threshold Limit Values - 2009 edition/ ACGIH – Valorile limită de prag - ediţia 2009

Ghid de redactare a fișelor cu date de securitate, versiunea 2, Decembrie 2013, ECHA

16.2. Lista frazelor de pericol şi de precauţie utilizate Alte informaţii –

Fraze de pericol utilizate în secţiunile anterioare

H315: Provoacă iritarea pielii.
H318: Provoacă leziuni oculare grave
H335: Poate provoca iritarea căilor respiratorii

Fraze de precauţie utilizate în secţiunile anterioare

P280: Purtaţi mănuşi de protecţie/îmbrăcăminte de protecţie/echipament de protecţie a ochilor/echipament de protecţie a feţei
P302+P352: ÎN CAZ DE CONTACT CU PIELEA: spălaţi cu multă apă şi săpun.
P305+P351+P338: ÎN CAZ DE CONTACT CU OCHII: Clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

16.3. Abrevieri și acronime utilizate:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate
GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice
ECHA – Agenţia Europeană pentru Substanţe Chimice
EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanţelor chimice existente
CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința Americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
EUH: declarație de pericol, care este convenită în afara sitemului global armonizat GHS
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
N/A: neaplicabil
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
Ppm: părți per milion
FSD: Fişa de Date de securitate
STOT SE: Toxicitate asupra unui organ ţintă specific – o singură expunere
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe

termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii –

16.4.1 Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul EU 453/2010/. Această fișă anulează și înlocuiește orice ediție precedentă. Modificările intervenite între două ediţii ale unei FDS sunt ţinute sub control la producător.

16.4.2 Clauze de exonerare de răspundere

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document. Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere conform celor indicate în fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă pentru utilizarea intenţionată declarată. Este responsabilitatea utilizatorului să se asigure că este în posesia ultimei ediţii a fişei de securitate.

16.4.3 Răspundere

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate cu excepţia acelor informaţii din secţiunile 1, 13, 15 şi 16 care au fost armonizate cu legislaţia română în vigoare. De asemenea, structura fişei de securitate a fost armonizată cu structura din Anexa II B a Regulamentului UE 1907/2008.

Răspunderea pentru conţinutul versiunii în limba engleză al acestei FDS aparţine Ava S.p.A.
Răspunderea pentru traducerea în limba română a reviziei 3 a acestei FDS şi armonizarea cu cerinţele legislaţiei române la secţiunile mai sus indicate , aparţine AVA EASTERN EUROPE D.F & S srl prin Compartimentul QSHE şi Isabela NIŢĂ, inginer chimist.

Sfârșitul fişei de securitate

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010

SAND SEAL F-C

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	SAND SEAL F-C

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Material de reducere a pierderilor de circulație pentru fluidele de foraj**

Contraindicaţii: Nu sunt date disponibile

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	infotox@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om și mediul înconjurător:

ACEASTĂ SUBSTANŢĂ/ACEST AMESTEC NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI:

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

- - -	- - -	NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Directivei 67/548/CEE (DPP) sau Directivei 1999/45/CE (DSP)		
- - -	- - -	NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)		
Identificarea pericolelor:	- - -	NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI
Fraze de precauție:	**P260:** Nu inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	

Etichetarea conform Directivei 67/548/CEE (DPP)		
Identificarea pericolelor:	- - -	NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI
Fraze de precauție:	**S22:** Nu inspiraţi praf **S26**: În caz de contact cu ochii, clătiţi imediat cu apă din abundenţă şi consultaţi un medic **S24/25**: Evitaţi contactul cu pielea şi ochii	
Eliminarea:	-	

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	substanţă
Conţinut:	În conformitate cu tabelul de mai jos
Formula moleculară:	- - -
Numărul EC:	- - -
Număr ONU	- - -
Numărul CAS:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Pulbere de cereale organice naturale		- - -	- - -	100%	- - -	-

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Scoateţi persoana la aer curat şi trataţi în funcţie de simptoame. Consultaţi un medic.
După contactul cu pielea:	Spălaţi zona expusă cu apă și săpun. Consultaţi un medic dacă iritaţiile se dezvoltă.
După contactul cu ochii:	Clătiţi cu grijă ochii cu apă curată. Dacă iritaţiile continuă, consultaţi un medic.
După înghiţire:	Daţi câteva pahare de apă pentru a dilua. Dacă a fost înghiţită o cantitate mare, consultaţi un medic
Alte informaţii:	Nu sunt date disponibile.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si întârziate.	
Simptome	Nu sunt date disponibile.
4.3. Indicaţii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.	
Supraveghere medicală:	Nu este necesară supravegherea medicală în timpul activităţii la locul de muncă. În caz de boală sau accident, consultaţi imediat un medic şi arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenţie:	Nu sunt date disponibile.

5. MĂSURI DE COMBATERE A INCENDIILOR	
5.1. Mijloace de stingere a incendiilor	
Măsuri de precauţie în caz de incendiu:	În caz de incendiu respectaţi următoarele instrucţiuni:
Mijloace de stingere corespunzătoare:	Utilizati stingatoare de incendiu standard
Mijloace de stingere necorespunzătoare:	Nu sunt date disponibile.
Pericole care derivă din ardere (produşi de descompunere termică periculoşi):	Nu este considerat că are potenţial explozibil
Echipamente speciale de stingere a incendiilor	Nu sunt date disponibile.
Altele	Utilizati materialul solicitat in zona.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ	
6.1. Precauţii personale, echipament de protecţie şi proceduri de urgenţă	
Echipament de protecţie:	Evitati respirarea prafului
Proceduri de urgenţă:	Nu sunt date disponibile.
6.2. Precauţii pentru mediul înconjurător	
Mijloace de limitare:	Nu sunt date disponibile
Metode de limitare a poluării	Evitaţi măturarea uscată; stropiţi cu apă sau utilizaţi un sistem de aspirare pentru a preveni formarea prafului.
Informaţii suplimentare:	Nu sunt aşteptate efecte adverse.

7. MANIPULARE ŞI DEPOZITARE	
7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitaţi generarea de praf.
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Asiguraţi o ventilaţie potrivită şi depozitaţi pentru a preveni deteriorări accidentale. Protejaţi de umiditate.
Specificaţiile zonei de depozitare:	Depozitaţi în zone uscate şi reci.
Specificaţiile recipienţilor:	Păstraţi containerele închise etanş.
Incompatibilităţi:	Nu sunt date disponibile.
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Material de reducere a pierderilor de circulaţie pentru fluidele de foraj**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ
8.1. Parametri de control

TLV_{Celing}:		- - -
TLV_{TWA}:		10 mg/m3 total dust; 4 mg/m3 respirable dust
TLV_{STEL}:		- - -
Limita biologică:		- - -
8.2. Controale ale expunerii profesionale		
Controale tehnice corespunzătoare :		Asigurați o ventilare adecvată.
Protecție colectivă:		Se recomandă o ventilare generală.
Protecţia individuală	Respiratorie:	În mod normal nu este necesară.
	Ochi	Se recomandă ochelari de protecție
	Mâini	Mănuși de protecţie
	Corp	Se recomandă îmbrăcăminte de protecție.
8.3. Controlul expunerii mediului		
Scenarii de expunere		Nu sunt date disponibile.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Aspect:	solid
Starea fizica:	Pulbere de granulație fină sau medie
Culoare:	Maro închis sau bej
Miros:	inodor
Prag olfactiv:	Nu sunt date disponibile.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH	Nu sunt date disponibile
Punct de topire:	Nu sunt date disponibile
Punct de fierbere:	N/A
Punct de aprindere:	Nu sunt date disponibile
Inflamabilitate (solid, gaz):	Nu sunt date disponibile
Temperatura de autoaprindere:	Nu sunt date disponibile
Temperatura de descompunere:	Nu sunt date disponibile.
Pericol de explozie:	Nu sunt date disponibile.
Limita de inflamabilitate superioară:	Nu sunt date disponibile.
Limita inferioară de inflamabilitate:	Nu sunt date disponibile.
Presiunea de vapori:	N/A
Densitatea la 20 °C:	Nu sunt date disponibile.
Densitatea aparentă (20°C)	Nu sunt date disponibile
Densitatea în vrac	Nu sunt date disponibile.
Densitatea relativă	1.1 g/m3 – forma fină; 0.8 g/m3 / forma cu granulație medie
Densitatea de vapori:	Nu sunt date disponibile.
Rata de evaporare:	Nu sunt date disponibile.
Solubilitate în apă (20°C):	Nu sunt date disponibile.
Coeficientul de distribuție (n-octanol):	Nu sunt date disponibile.
Vâscozitatea (40°C):	Nu sunt date disponibile
9.3. Alte informaţii	

Alte informaţii:	Nu sunt date disponibile.

10. STABILITATE ŞI REACTIVITATE	
10.1. Reactivitate	
Condiţii care trebuie evitate:	Stabil chimic, nu se cunoaște nici o incompatibilitate specială
10.2. Stabilitate chimică	
Materiale incompatibile	Nici unul
Posibilitatea de reacţii periculoase:	Nici unul
10.3. Posibilitatea de reacţii periculoase	
Alte informaţii	Nu sunt date disponibile

11. INFORMAŢII TOXICOLOGICE	
11.1. Informaţii privind efectele toxicologice	
Toxicitate Acută	
Toxicitate orală acută:	Nu sunt date disponibile.
Toxicitate inhalatorie acută:	Nu sunt date disponibile.
Toxicitate cutanată acută:	Nu sunt date disponibile.
11.2. Corozivitate	
Piele:	Nu sunt date disponibile
Ochi:	Nu sunt date disponibile
11.3. Iritaţie	
Piele:	Nu sunt date disponibile.
Ochi:	Nu sunt date disponibile.
11.4. Toxicitate la doze repetate	
Ingestie:	Nu sunt date disponibile.
Inhalare:	Nu sunt date disponibile
11.5. Sensibilitate	
Piele:	Nu sunt date disponibile.
Ochi:	Nu sunt date disponibile.

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Toxicitate în apă:	Sand Seal F-C este o pudra nepericuloasa, de origini vegetale iar deseul nu este un subiect de cerinte speciale
Toxicitate în aer:	Nu sunt date disponibile.
Toxicitate în sol:	Nu sunt date disponibile.
12.2. Persistență și degradabilitate	
Alte informații:	Nu sunt date disponibile
12.3. Potențial de Bioacumulare	
Alte informații:	Nu sunt date disponibile
12.4. Mobilitate în sol	
Alte informații:	Nu sunt date disponibile.
12.5. Rezultatele evaluării PBT și vPvB	
PBT:	Nu sunt date disponibile.
vPvB:	Nu sunt date disponibile.
12.6. Alte efecte adverse	

Alte informații:	Sand Seal F-C este o pudra nepericuloasa, de origini vegetale iar deseul nu este un subiect de cerinte speciale

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	Materialul trebuie îngropat pentru a preveni emisia de praf respirabil. Reciclarea ar trebui să fie preferată în detrimentul eliminării.
Cod de deșeu:	Nu sunt date disponibile.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Nici unul în special. În orice caz, ar trebui evitată formarea prafului de la ambalare și garantată o protecție adecvată pentru lucrători. Reciclarea și eliminarea ambalajelor ar trebui să fie realizată de o companie cu un management al deșeurilor adecvat.
Alte recomandări:	**Legislaţia română privind eliminarea deşeurilor:** (trece la 13) **Legea 211/2011** privind regimul deșeurilor. **HG 427/2010** pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor. **HG 1061/2008** privind transportul deşeurilor periculoase şi nepericuloase pe teritoriul României. **HG 268/2005** pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor. **HG 349/2005** privind depozitarea deşeurilor; **OMAPM nr.756/2004** pentru aprobarea Normativului tehnic privind incinerarea deşeurilor; **HG 856/ 2002** privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase. **HG 128/2002** privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.
	Legislaţia pentru deşeuri de ambalaj: **Ordinul 794/2012** privind procedura de raportare a datelor referitoare la ambalaje si deșeuri de ambalaje. **HG 247/2011** pentru modificarea si completarea Hotărârii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deșeurilor de ambalaje. **HG 1872/2006** pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor ş deşeurilor de ambalaje. **HG 621/2005** privind gestionarea ambalajelor şi deşeurilor de ambalaje.

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Norme de transport ONU	Nu sunt date disponibile.
Clasa (clasele) de pericol pentru transport	Nu sunt date disponibile.
Grupul de ambalare:	Nu sunt date disponibile.
Pericol pentru mediu	Nu sunt date disponibile.
Precauţii pentru utilizatori	
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Poluant marin:	Nu sunt date disponibile.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Clasa IATA	Nu sunt date disponibile.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările in transport
Codul IBC:	Nu sunt date disponibile.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Reglementări naţionale:
Legea 319/2006 – legea referitoare la sănătatea şi securitatea în muncă
HG 1425/2006 consolidată – Norme de aplicare ale Legii 301/2006
HG 1218/2006 privind Stabilirea cerinţelor minime de securitate şi sănătate în muncă pentru asigurarea protecţiei lucrătorilor împotriva riscurilor legate de prezenţa agenţilor chimici
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.

15.2 Evaluarea securităţii chimice	Nu a fost efectuată o evaluare a securităţii chimice**.**

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Reţeaua de Informaţii şi Date despre Substanţele Chimice utilizate în Mediul Înconjurător creată de Joint Research Centre, Commission of the European Communities - Centrul European Comun de Cercetare al Comisiei Comunităţilor Europene

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche-/ Institutul Superior de sănătate – Inventarul Naţional al Substanţelor (Italia)

ACGIH - Threshold Limit Values - 2009 edition/ ACGIH – Valorile limită de prag - ediţia 2009

Ghid de redactare a fișelor cu date de securitate, versiunea 2, Decembrie 2013, ECHA

16.2. Lista frazelor de pericol şi de precauţie utilizate Alte informaţii –

Fraze de pericol utilizate în secţiunile anterioare

- -

Fraze de precauție utilizate în secţiunile anterioare

P260: Nu inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare

S22: Nu inspiraţi praf
S26: În caz de contact cu ochii, clătiţi imediat cu apă din abundenţă şi consultaţi un medic
S24/25: Evitaţi contactul cu pielea şi ochii

16.3. Abrevieri și acronime utilizate:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate
GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice
ECHA – Agenţia Europeană pentru Substanţe Chimice
EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente
CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societăţii Americane de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința Americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
EUH: declarație de pericol, care este convenită în afara sistemului global armonizat GHS
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
N/A: neaplicabil
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
FSD: Fişa de Date de securitate
STOT SE: Toxicitate asupra unui organ ţintă specific – o singură expunere
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt

TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii –

16.4.1 Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul EU 453/2010/. Această fișă anulează și înlocuiește orice ediție precedentă. Modificările intervenite între două ediţii ale unei FDS sunt ţinute sub control la producător.

16.4.2 Clauze de exonerare de răspundere

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document. Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere conform celor indicate în fiecare secţiune a prezentei fişe, astfel ca produsul să fie utilizat în siguranţă pentru utilizarea intenţionată declarată. Este responsabilitatea utilizatorului să se asigure că este în posesia ultimei ediţii a fişei de securitate.

16.4.3 Răspundere

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate cu excepţia acelor informaţii din secţiunile 1, 13, 15 şi 16 care au fost armonizate cu legislaţia română în vigoare. De asemenea, structura fişei de securitate a fost armonizată cu structura din Anexa II B a Regulamentului UE 1907/2008.

Răspunderea pentru conţinutul versiunii în limba engleză al acestei FDS aparţine Ava S.p.A.
Răspunderea pentru traducerea în limba română a reviziei 3/4 a acestei FDS şi armonizarea cu cerinţele legislaţiei române la secţiunile mai sus indicate , aparţine AVA EASTERN EUROPE D.F & S srl prin Compartimentul QSHE şi Isabela NIŢĂ, inginer chimist.

Sfârșitul fișei de securitate

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVACARB

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVACARB**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Material de îngreunare pentru fluide de foraj**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare	
Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă		
+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile	
E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator	
Nume:	S.C. AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă		
	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile	
E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică	
Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om și mediul înconjurător:

SUBSTANŢA / AMESTECUL NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)		
---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)		
Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Fraze de precauţie:		
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	
Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Sfaturi de siguranţă::	**S22:** A nu se inspira praful.	
Eliminarea:		

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	Compoziţia în conformitate cu tabelul următor:
Formula moleculară:	---
Numărul EC:	---
Numărul CAS:	---
Numărul ONU:	---
Numărul REACH:	---

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Carbonat de calciu ventilat natural REACH No. 01-2119486795-18-XXXX	471-34-1	207-439-9	100%	- - -	- - -	- - -

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Scoateţi imediat persoana afectată afară la aer proaspăt. Trataţi simptomele. Adresaţi-vă unui medic.
După contactul cu pielea:	Spălaţi zona contaminată cu apă din abundenţă.
După contactul cu ochii:	Clătiti bine cu apă. Dacă iritaţia persistă, adresaţi-vă unui medic.
După înghiţire:	Clătiti imediat gura bine cu apă de mai multe ori. Adresaţi-vă unui medic.
Alte informaţii:	N.a.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.	
Simptome	N.a.
4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.	
Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultaţi imediat un medic şi arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenţie:	- - -

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor	
Măsuri de precauţie în caz de incendiu:	În caz de incendiu, respectaţi instrucţiunile.
Mijloace de stingere corespunzătoare:	Acest produs nu este inflamabil.
Mijloace de stingere necorespunzătoare:	Niciunul
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Produsul nu se aprinde singur. Nu sunt prezentate pericolele de incendiu sau explozie.
Echipamente speciale de stingere a incendiilor	Purtaţi aparatul respirator şi îmbrăcăminte de protecţie.
Recomandări destinate pompierilor:	N.a.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecţie şi proceduri de urgenţă	
Echipament de protecţie:	Purtaţi echipament individual de protecţie (mănuşi, ochelari şi combinezon)
Proceduri de urgenţă:	Îndepărtaţi persoanele neprotejate. Asiguraţi o ventilaţie adecvată.
6.2. Precauţii pentru mediul înconjurător	
Medii de izolare:	N.a.
Metode de limitare a poluarii	Îndepărtaţi cu mătura, lopata sau sistem de vidare.
Informatii suplimentare:	Evacuaţi apa de spălare contaminată în conformitate cu reglementările locale

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitati generarea de praf
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Depozitaţi în locuri răcoroase şi uscate
Specificaţiile zonei de depozitare:	Depozitaţi în zone uscate, bine ventilate
Specificaţiile recipienţilor:	N.a.
Incompatibilităţi:	Depozitaţi la distanţă de acizi
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Material de îngreunare pentru fluide de foraj**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control (Limite de expunere)	
Amestec	
TLVCeling:	- - -
TLV_{TWA}:	TLV-TWA (fracţiune inhalabilă): 10 mg/m3

TLV_{STEL}:		TLV-TWA (fracţiune respirabilă): 3,0 mg/m3
Limita biologică:		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Staţie de spălare ochi în apropiere.
8.2.2. Măsuri de protecţie individuală, precum echipamentul de protecţie personală.		Ventilaţie forţată
Protecţia individuală	Respiratorie:	În mod normal, nu este necesară. Evitati generarea de praf. Mască de praf tip FFP1, cel ăputin atunci când există expunere la praf.
	Ochi	Ochelari de protecţie.
	Maini	Mănuşi de protecţie
	Corp	Recomandată îmbrăcăminte de protecţie
8.3. Controlul expunerii mediului		
Variante de expunere		N.a.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Formă:	Solid
Aspect:	Praf
Culoare:	Alb
Miros:	Inodor
Prag olfactiv:	N.a.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH (10 g/l) la 25 °C:	9.4
Punct de topire:	N.a.
Punct de fierbere:	N.a.
Punct de aprindere:	N.a.
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C:	N.a.
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	2.71 g/cm^3 la 20°C
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	0.008 g/l a 20°C
Coeficientul de distribuţie (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE	
10.1. Reactivitate	
Condiţii care trebuie evitate:	N.a.
10.2. Stabilitate chimică	
Materiale incompatibile:	Acizi tari
Posibilitatea de reacţii periculoase:	N.a.
10.3. Produşi de descompunere periculoşi	
Alte informaţii:	N.a.

11. INFORMAŢII TOXICOLOGICE	
11.1. Toxicitate Acută	
Substanţă	
Toxicitate orală acută:	N.a.
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	N.a.
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	Poate provoca iritaţii uşoare ale pielii.
Ochi:	Poate provoca iritarea uşoară a ochilor
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	Nu există efecte nocive
Ochi:	Nu există efecte nocive

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Toxicitate în apă:	N.a.
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistenţă şi degradabilitate	
Alte informaţii:	N.a.
12.3. Potenţial de Bioacumulare	
Alte informaţii:	Nu există efecte nocive
12.4. Mobilitate în sol	
Alte informaţii:	N.a.
12.5. Resultatele evaluării PBT şi vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informaţii:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Contactaţi o firmă autorizată în vederea eliminării în conformitate cu reglementările locale.
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Se vor elimina în conformitate cu reglementările locale și naționale
Alte recomandări:	N.a.

14. INFORMAŢII REFERITOARE LA TRANSPORT	
14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Normele de transport ONU:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fișă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.

Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.

REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor

HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și științific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:
Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie

informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societăţii Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose **-** doză letală medie

NOEC: no observable effect concentration – concentraţia fără efect observat

PNEC: predicted no-effect concentration - concentrația fără efect prevăzut

PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice

vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative

TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore

TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt

TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de precauție/siguranţă utilizate în secţiunile anterioare

P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.
S22: A nu se inspira praful.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVAMICA F-M-C

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVAMICA F-C**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Material de reducere a pierderilor de circulatie pentru fluidele de foraj**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C. AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om și mediul înconjurător:

SUBSTANŢA / AMESTECUL NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)		
---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)		
Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Fraze de precauţie:		
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	
Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Sfaturi de siguranţă::	**S22:** A nu se inspira praful.	
Eliminarea:		

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	In conformitate cu tabelul următor
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Mica	12001-26-2	601-648-2	- - -	- - -	- - -	- - -
Siliciu cristalin	14808-60-7	238-878-4	- - -	**STOT RE 1**	 **GHS08**	**H372**
	Notă: Acest produs conţine o cantitate mai mica de 1% de quart respirabil. Cuarţul respirabil este clasificat STOT RE 1					

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Scoateţi imediat persoana afectată afară / la aer curat. Tratament simptomatic.

După contactul cu pielea:	Scoateţi hainele contaminate. Spălați partea/partile afectate cu apă din abundenta.
După contactul cu ochii:	Clătiti bine cu apă. Dacă iritatia persista, solicitati asistenta medicala.
După înghiţire:	Clătiti imediat gura bine cu apă si repetat de mai multe ori. Daca este necesar sa solicitati asistenta medicala
Alte informaţii:	- - -
4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.	
Simptome	N.a.
4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.	
Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	- - -

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor	
Măsuri de precauție în caz de incendiu:	În caz de incendiu, respectaţi instrucțiunile.
Mijloace de stingere corespunzătoare:	Produsul nu este combustibil. Nu este nevoie de metode de stingere specifice
Mijloace de stingere necorespunzătoare:	N.a.
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Non-combustibil. Nu se descompune termic periculos
Echipamente speciale de stingere a incendiilor	Nu este necesară o protecție specială de stingere a incendiilor. Folosiți un agent de stingere corespunzator pentru stingerea incendiilor
Recomandări destinate pompierilor:	N.a.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență	
Echipament de protecţie:	A se evita generarea de praf în aer. Purtati echipament de protecție individual în conformitate cu legislația națională
Proceduri de urgență:	N.a.
6.2. Precauţii pentru mediul înconjurător	
Medii de izolare:	Nu deversați în sistemele de canalizare, cursurile de apă sau în pământ
Metode de limitare a poluarii	Evitați măturatul uscat și utilizati pulverizarea cu apă sau sisteme de curățare cu vid, pentru a preveni generarea de praf in aer. Purtați echipament individual de protecție, în conformitate cu legislația națională
Informatii suplimentare:	N.a.

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitati generarea de praf din aer. În caz de ventilare insuficientă, purtați echipament de protecție respiratorie adecvat. Nu a mânca, bea și fuma în zonele de lucru; a se spala mâinile după utilizare; îndepărtati îmbrăcămintea contaminată și echipamentul de protecție înainte de a pătrunde în locurile de alimentatie
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Depozitati într-o zonă uscata acoperită
Specificaţiile zonei de depozitare:	Minimizati generarea de praf in aer și preveniti dispersarea in vânt în timpul de încărcare și descărcare
Specificaţiile recipienţilor:	Păstrați containerele închise și depozitati produsele ambalate astfel încât să se

	previnã spargerea accidentală
Incompatibilităţi:	Nu sunt disponibile.
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Material pentru prevenirea si stoparea pierderilor de circulatie**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ		
8.1. Parametri de control (Limite de expunere)		
Substanta		***Praf anorganic***
TLV_{Celing}:		- - -
TLV_{TWA}:		4 mg/m^3
TLV_{STEL}:		- - -
Limita biologica		- - -
Substanta		***Mica Cas No. 12001-26-2***
TLV_{Celing}:		- - -
TLV_{TWA}:		0,8 mg/m3
TLV_{STEL}:		- - -
Limita biologica		- - -
Substanta		***Siliciu Cristalin CAS No. 14808-60-7***
TLV_{CELING}:		- - -
TLV_{TWA}:		0,1 mg/m^3
TLV_{STEL}:		
Limita biologica		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Ventilatie generala
8.2.2. Măsuri de protecţie individuală, precum echipamentul de protecţie personală.		Statie spalare- ochi in apropiere.
Protecţia individuală	Respiratorie:	Masca de praf
	Ochi	Ochelari de protecţie recomandati
	Maini	Mănuşi
	Corp	Imbrăcăminte de protecţie recomandata
8.3. Controlul expunerii mediului		
Variante de expunere		- - -

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Aspect:	Pudra sau granule
Forma:	Pudra sau granule
Culoare:	Alb / aproape alb
Miros:	Aproape inodor
Prag olfactiv:	Niciunul
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH (10 g/l) la 25 °C:	N.a.
Punct de topire:	N.a.
Punct de fierbere:	N.a.
Punct de aprindere:	N.a.
Inflamabilitate (solid, gaz):	N.a.

Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C:	N.a.
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	2.3 kg/l
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	Insolubil
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Stabil în condiţii normale de temperatura si recomandate de utilizare
10.2. Stabilitate chimică	
Materiale incompatibile:	Nu sunt specificate materiale, sau grupe de materiale care sunt susceptibile de a reacționa pentru a produce o situatie periculoasă.
Posibilitatea de reacții periculoase:	Niciuna
10.3. Produși de descompunere periculoși	
Alte informaţii:	Niciuna in conditii normale

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Toxicitatea amestecului	
Toxicitate orală acută:	N.a.
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	N.a.
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	Contactul prelungit poate provoca uscarea pielii
Ochi:	Prezenta particulelor în ochi poate provoca iritații și usturime
11.4. Nocivitate	
Ingestie:	Nu sunt de așteptat efecte nocive
Inhalare:	Praful în concentrații ridicate poate irita sistemul respirator
11.5. Sensibilitate	
Piele:	Nu sunt de așteptat efecte nocive
Ochi:	Nu sunt de așteptat efecte nocive

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Toxicitate în apă:	N.a.
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	Produsul nu este biodegradabil
12.3. Potențial de Bioacumulare	
Alte informații:	N.a.
12.4. Mobilitate în sol	
Alte informații:	Insolubil in apa
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Nu există informaţii speciale. A se elimina printr-o firma specializata autorizat
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	N.a.
Alte recomandări:	Eliminati în conformitate cu reglementările locale și naționale

14. INFORMAŢII REFERITOARE LA TRANSPORT	
14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Normele de transport ONU:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) şi Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:

Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose - doză letală medie

NOEC: no observable effect concentration – concentraţia fără efect observat

PNEC: predicted no-effect concentration - concentrația fără efect prevăzut

PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice

vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H372: Poate provoca afectari ale organelor in caz de expunere repetata sau prelungita.

Fraze de precautie/ siguranta utilizate în secţiunile anterioare

P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.
S22: A nu se inspira praful.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVOIL VS / LT

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVOIL VS/LT**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Agent de modificare a proprietatilor reologice toxicitate redusă pentru fluide de foraj pe baza de ulei (OBM)**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

	**GHS08**	**Tox. Asp. 1** **H304** – Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii
	**GHS05**	**Cor. Piele 1C** **H314:** Provoacă arsuri grave ale pielii şi lezarea ochilor.
	**GHS07**	**Sens. Piele 1** **H317:** Poate provoca o reacţie alergică a pielii.
	**GHS09**	**Acvatic Cronic 1** **H410:** Foarte toxic pentru mediul acvatic cu efecte pe termen lung.

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

	**Xn - Nociv**	**R65** – Nociv: poate provoca afecţiuni pulmonare în caz de înghiţire.
	**Xi - Iritant**	**R36/38** – Iritant pentru ochi şi pentru piele

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Fraze de pericol:	    **GHS08** **GHS05** **GHS07** **GHS09**
	Tox. Asp. 1 **H304** – Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii
	Cor. Piele 1C **H314:** Provoacă arsuri grave ale pielii şi lezarea ochilor.
	Sens. Piele 1 **H317:** Poate provoca o reacţie alergică a pielii.
	Acvatic Cronic 1 **H410:** Foarte toxic pentru mediul acvatic cu efecte pe termen lung.
Fraze de precauţie:	**P261**: Evitaţi să inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul. **P280:** Purtaţi mănuşi de protecţie / îmbrăcăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei. **P301 + 310:** ÎN CAZ DE INGHIŢIRE: sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau

	un medic. **P303+P361+P353:** ÎN CAZ DE CONTACT CU PIELEA (sau părul): scaoteţi imediat toată îmbracămintea contaminată. Clătiţi pielea cu apă/faceţi duş. **P305 + P351 + P338:** ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare pentru substanţe/amestecuri periculoase.
Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.	
Identificarea pericolelor:	 **Xn - Nociv** **R65** – Nociv: poate provoca afecţiuni pulmonare în caz de înghiţire **Xi – Iritant** **R36/38** – Iritant pentru ochi şi pentru piele
Sfaturi de siguranță:	**S23:** A nu se inspira gazul/fumul.vaporii (termenul(ii) corespunzator(i) se specifică de către producător) **S 26:** În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul. **S28:** După contactul cu pielea, spălaţi imediat cu apă din abundenţă, cu produsul corespunzător specificat de producător. **S36/37/39:** Purtați echipament de protecție corespunzător, mănuși și mască de protecție pentru ochi / față
Eliminarea:	**S60:** Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos
2.3. Alte pericole	
- - -	

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul următor:
Formula moleculară:	- - -
Natura chimică:	Acumulator static
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul UN:	- - -
Numărul REACH	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Distilaţi de petrol hidrotrataţi **(Hydrotreated petroleum distillates)**	64742-47-8	265-149-8	>50-<60%	**Tox. Asp. 1**	 **GHS08**	**H304**
Acizi graşi, C18 nesat, produse de reacţie ale dietilentriaminei **(Fatty acids, C18 unsat, reaction products with diethylenetriamine)** REACH No. 01-2119487013-43-XXXX	1226892-43-8	- - -	>40-<50%	**Skin Corr. 1C**	 **GHS05**	**H314**
				Sens. Piele 1	 **GHS07**	**H317**
				Acvatic Cronic 1	 **GHS09**	**H410**
(2 - methoxymethylethoxi) Propanol	34590-94-8	252-104-2	>1-<2,5%	- - -	- - -	- - -

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Distilaţi de petrol hidrotrataţi **(Hydrotreated petroleum distillates)**	64742-47-8	265-149-8	>50-<60%	**Xn - nociv**		**R65**
Acizi graşi, C18 nesat, produse de reacţie ale dietilentriaminei **(Fatty acids, C18 unsat, reaction products with diethylenetriamine)**	1226892-43-8	- - -	>40-<50%	**Xi - iritant**		**R36/38**
(2 - methoxymethylethoxi) Propanol	34590-94-8	252-104-2	>1-<2,5%	- - -	- - -	- - -

4. MĂSURI DE PRIM AJUTOR	
4.1. Descrierea măsurilor de prim ajutor	
Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Mutați persoana expusă la aer curat..Consultaţi un medic după o expunere semnificativă.
După contactul cu pielea:	Scoateți îmbrăcămintea contaminatăb si incaltamintea imediat. Spălați zona afectată cu apă din abundență. Dacă iritaţia pielii persistă, solicitați asistență medicală.
După contactul cu ochii:	Clatiti ochii cu apă din abundență, timp de cel puțin 15 minute. Solicitați asistență medicală. Scoateți lentilele de contact.
După înghiţire:	Nu provocați voma. Solicitați asistență medicală.
Alte informaţii:	N.a.
4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.	
Simptome	N.a.
4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.	
Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și să îi arătaţi aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	N.a.

5. MĂSURI DE COMBATERE A INCENDIILOR	
5.1. Mijloace de stingere a incendiilor	
Măsuri de precauție în caz de incendiu:	În caz de incendiu urmaţi instrucţiunile:
Mijloace de stingere corespunzătoare:	În caz de incendiu utilizaţi: pulbere ABC, dioxid de carbon (CO2), Produs chimic uscat, apă pulverizată
Mijloace de stingere necorespunzătoare:	Halon
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Dioxid de carbon și monoxid de carbon, hidrocarburi, oxizi de azot (NOx)
Echipamente speciale de stingere a incendiilor	În caz de incendiu purtaţi un aparat de respirat autonom cu presiune pozitivă și îmbrăcăminte de protecție. Nu permiteți scurgerile de la stingerea incendiului să pătrundă în sistemul de canalizare sau în cursurile de apă.
Informatii suplimentare:	Păstraţi containerele şi zonele înconjurătoare răcite cu jet de apă. Prevenirea ca apa de la stingerea incendiilor să nu contamineze apa de suprafață sau pânza de apă freatică. Reziduurile de ardere și apa contaminată folosită la stingere, trebuie eliminate în conformitate cu reglementările locale.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ	
6.1. Precauţii personale, echipament de protecție și proceduri de urgență	
Echipament de protecţie:	Purtați echipament individual de protecție (mănuși, ochelari și combinezon).
Proceduri de urgență:	N.a.
6.2. Precauţii pentru mediul înconjurător	
Medii de izolare:	Păstraţi în containere corespunzătoare si închise
Metode de limitare a poluarii	Opriţi scurgerile, și apoi colectaţi cu material absorbant non-combustibil (de exemplu, nisip, pământ, pământ kiselgur, vermiculit) și colectaţi în container în vederea eliminării în conformitate cu reglementările locale / naționale.
Informatii suplimentare:	Preveniţi scăpările sau scurgerile ulterioare dacă acest lucru se poate face în condiţii de siguranţă.

7. MANIPULARE ŞI DEPOZITARE	
7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Nu respiraţi vaporii sau jetul de pulverizare. Evitaţi contactul cu pielea şi ochii. Asiguraţi reîmprospătarea aerului şi / sau o ventilaţie corespunzătoare la locul de muncă. Nu mâncaţi sau beţi în timpul utilizării.
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Depozitaţi în containerul original
Specificaţiile zonei de depozitare:	Depozitați într-un loc uscat, răcoros și bine ventilat
Specificaţiile recipienţilor:	Păstraţi containerele ermetic închise
Incompatibilități:	Stabil în condițiile de depozitare recomandate
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Agent de modificare a proprietatilor reologice toxicitate redusă pentru fluide de foraj pe baza de ulei (OBM)**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ		
8.1. Parametri de control		
Substaţă		*(2 - methoxymethylethoxi) Propanol CAS No. 34590-94-8*
TLV_{Celing}:		- - -
TLV_{TWA}:		308 mg/m3 - 50 ppm
TLV_{STEL}:		- - -
Limita biologică:		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Asigurati ventilatie corespunzatoare
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Se recomandă ventilație generală. Staţie de spălare ochi în apropiere. Disponibilitatea de duș de siguranță.
Protecţia individuală	Respiratorie:	Protecție respiratorie nu este necesară în mod normal. Evitați generarea de aerosoli și vapori.
	Ochi	Ochelari de protecție cu ecrane laterale
	Maini	Purtați mănuși rezistente, cum ar fi din: polivinil alcool
	Corp	Purtaţi echipament de protectie individual standard.
8.3. Controlul expunerii mediului		
Variante de expunere		Preveniţi scăpările sau scurgerile ulterioare, dacă acest lucru se poate face în condiţii de siguranţă.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Forma:	Lichid
Aspect:	Lichid
Culoare:	Ambră
Miros:	Caracteristic
Prag olfactiv:	N.a.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH	N.a.
Punct de topire:	N.a.
Punct de fierbere:	>150°C
Punct de aprindere:	>75 °C
Inflamabilitate (solid, gaz):	N.a.

Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C:	N.a.
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	n.A.
Densitatea:	0,94 g/cm3
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	Insolubil
Solubilitatea în alţi solvenţi:	Solvent : ulei solubil
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea (40 °C):	> 100 mPa.s
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Nu permiteţi evaporarea până la uscare. Căldură, flăcări și scântei. Expunerea la aer.
10.2. Stabilitate chimică	
Materiale incompatibile:	Acizi, săruri de baze tari, baze tari, agenți puternic oxidanți, agenți puternic reducători
Posibilitatea de reacții periculoase:	Stabil în condiţiile de depozitare recomandate
10.3. Produși de descompunere periculoși	
Alte informaţii:	Aldehide, dioxid de carbon și monoxid de carbon, hidrocarburi, oxizi de azot (NOx), cetone

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Substanţa	***Distilaţi de petrol hidrotrataţi*** ***Hydrotreated petroleum distillates*** ***CAS No. 64742-47-8***
Toxicitate orală acută:	LD 50 (Şobolan): > 8.000 mg/kg
Toxicitate inhalatorie acută:	LC 50 (RŞobolan) 4h: > 2500 ppm
Toxicitate cutanată acută:	LD 50 (Iepure): > 4.000 mg/kg
Substanţa	***Acizi grași, C18 nesat, produse de reacție ale dietilentriaminei*** ***Fatty acids, C18 unsat, reaction products with diethylenetriamine*** ***CAS No. 1226892-43-8***
Toxicitate orală acută:	LD 50 (Şobolan): > 2.000 mg/kg
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	N.a.
Substanţa	***(2 - methoxymethylethoxi) Propanol*** ***CAS No. 34590-94-8***
Toxicitate orală acută:	LD 50 (Şobolan): > 5.000 mg/kg

Toxicitate inhalatorie acută:	LC 50 (RŞobolan) 8h: > 553 ppm
Toxicitate cutanată acută:	LD 50 (Iepure): > 5.000 mg/kg
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	Substanța sau amestecul este cunoscut pentru riscul de toxicitate provocat prin aspirare umană sau trebuie să fie luat în considerare, la fel ca și în cazul în care se produce un pericol de toxicitate prin aspirare umană
11.5. Sensibilitate	
Piele:	Poate provoca o reacție alergică a pielii
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate	
Substanţa	***Fatty acids, C18 unsat, reaction products with diethylenetriamine*** ***CAS No. 1226892-43-8***
Toxicitate în apă:	LC50 (Peşti) 96 h: 0,19 mg/l EC50 (Crustacee-Dafnii) 48 h: 0,18 mg/l EC50 (Alge) 72 h: 0,477 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
Substanţa	***(2 - methoxymethylethoxi) Propanol*** ***CAS No. 34590-94-8***
Toxicitate în apă:	LC 50 (Peşti) 96 h: > 10.000 mg/l LC 50 (Crustacee-Dafnii) 48 h: 1.919 mg/l EC 50 (Alge) 72 h: > 969 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	N.a.
12.3. Potențial de Bioacumulare	
Alte informații:	- ***Acizi grași, C18 nesat, produse de reacție ale dietilentriaminei*** : aerobi, 17-50%, Timp de expunere: 28 z - ***(2 - methoxymethylethoxi) Propanol*** : 75%, timpul de expunere: 28 z, - ***Acizi grași, C18 nesat, produse de reacție ale dietilentriaminei***: Nu este de așteptat să apară bioacumulare (log Pow <= 3). Această substanță nu este considerată a fi persistenta, nici din punct de vedere al bioacumulării, nici din punct de vedere toxic (PBT)., Această substanță nu este considerată ca fiind foarte persistentă și nici un potenţial de bio acumulare (vPvB)
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	Amestecul este foarte toxic pentru mediul acvatic cu efecte pe termen lung

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Eliminaţi în conformitate cu directivele europene privind deşeurile şi reziduurile chimice periculoase. Nu contaminati apele si canalele de scurgere cu produsul chimic sau recipientul folosit. Containerele sunt periculoase chiar şi atunci când sunt goale.
Cod de deşeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	N.a.
Alte recomandări:	Goliți conținutul rămas. Îndepărtaţi produsul nefolosit Containerele goale trebuie să fie colectate la un centru autorizat pentru reciclare sau eliminare. A nu se refolosi containerele goale. A nu se arde sau a nu se utiliza o flacără de tăiere.

14. INFORMAŢII REFERITOARE LA TRANSPORT	
14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	UN3265
Norme de transport ONU	*ADR:* CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (**Acizi grași, C18 nesat, produse de reacție ale dietilentriaminei**)
Clasa (clasele) de pericol pentru transport	8
Grupul de ambalare:	III
Denumirea oficială a transportului	N.a.
Cod de restricţie a accesului în tunel	N.a.
14.2. Transport Maritim (IMDG)	
Număr ONU	UN3265
Norme de transport ONU	*MARITIM INTERNAŢIONAL MĂRFURI PERICULOASE:* CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (**Acizi grași, C18 nesat, produse de reacție ale dietilentriaminei**)
Număr EMS	N.a.
Clasa (clasele) de pericol pentru transport	8
Grupul de ambalare:	III
Poluant marin:	N.a.
Denumirea oficială a transportului	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Număr ONU	UN3265
Norme de transport ONU	*ASOCIAŢIA INTERNAŢIONALĂ DE TRANSPORT AERIAN - CARGO / PASAGERI:* CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (**Acizi grași, C18 nesat, produse de reacție ale dietilentriaminei**)
Clasa (clasele) de pericol pentru transport	8
Etichetă	N.a.
Grupul de ambalare:	III
Denumirea oficială a transportului	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu este reglementat
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:

Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:

Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.

HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
NOEC: no observable effect concentration **–** concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H304 – Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii
H314: Provoacă arsuri grave ale pielii şi lezarea ochilor.
H317: Poate provoca o reacţie alergică a pielii.
H410: Foarte toxic pentru mediul acvatic cu efecte pe termen lung.

R65 – Nociv: poate provoca afecţiuni pulmonare în caz de înghiţire.
R36/38 – Iritant pentru ochi şi pentru piele

Fraze de precauție/ siguranta utilizate în secţiunile anterioare

P261: Evitaţi să inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.
P280: Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei.
P301 + 310: ÎN CAZ DE INGHIŢIRE: sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic.
P303+P361+P353: ÎN CAZ DE CONTACT CU PIELEA (sau părul): scaoteţi imediat toată îmbracămintea contaminată. Clătiţi pielea cu apă/faceţi duş.
P305 + P351 + P338: ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

S23: A nu se inspira gazul/fumul.vaporii (termenul(ii) corespunzator(i) se specifică de către producător)
S 26: În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul.
S28: După contactul cu pielea, spălaţi imediat cu apă din abundenţă, cu produsul corespunzător specificat de producător.
S36/37/39: Purtați echipament de protecție corespunzător, mănuși și mască de protecție pentru ochi / față

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

CALCIUM CHLORIDE 34-36% - LIQ.

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**CALCIUM CHLORIDE 34-36% - LIQ.**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Aditiv pentru workover si completion**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

	**GHS07**	**Irit. Ocul. 2** **H319:** Provoacă iritatie severa a ochilor

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

	**Xi - iritant**	**Xi - iritant** **R36:** Iritant pentru ochi

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	 **GHS07**	**Irit. Ocul. 2** **H319:** Provoacă iritatie severa a ochilor
Fraze de precauţie:	**P264:** Spălaţi-vă bine pe mâini după utilizare. **P280:** Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei. **P337+P313:** Dacă iritarea ochilor persist: consultaţi medicul. **P305 + P351 + P338:** ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	

Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

Identificarea pericolelor:		**Xi – iritant** **R36:** Iritant pentru ochi
Sfaturi de siguranţă:	**S22:** A nu se inspira praful. **S24:** Evitaţi contactul cu pielea	
Eliminarea:	**S60:** Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.	

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul urmator
Formula moleculară:	- - -
Number ONU	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Calcium Chloride REACH No. 01-2119494219-28-XXXX	10043-52-4	233-140-8	34-36%	**Irit. ocul. 2**	 **GHS07**	**H319**
Nume	**Nr. CAS**	**Nr. EC**	**Cantitate**	**Clasificare**	**Simbol**	**Fraze de pericol**
Calcium Chloride	10043-52-4	233-140-8	34-36%	**Xi - iritant**		**R36**

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Sunați medicului dumneavoastră. Între timp, scoateti persoana la aer curat, la distanta de locul pacientului. In caz de respiratie neregulata sau oprirea respiratieie, administrati respirație artificială, luati măsurile de precautie adecvate pentru salvator.
După contactul cu pielea:	Scoateți toata îmbrăcămintea contaminată imediat si faceti un dus. Consultați un medic imediat. Spalati imbracamintea inaintea reutilizarii.
După contactul cu ochii:	Spalati imediat ușor cu multă apă timp de cel puțin 15 ' si chemati medicul. In caz de dificultate la deschiderea pleoapelor, spalati ochiul cu un analgezic.
După înghiţire:	Clatiti gura. Administrati sa bea apa in cantitati cat mai mari posibil, daca pacientul este constient.Chemati medicul imediat. Nu induceti voma.
Alte informaţii:	- - -

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	N.a.

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	- - -

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	În caz de incendiu utilizati mijloacele de stingere corespunzatoare pentru focul inconjurator
Mijloace de stingere corespunzătoare:	Pulbere, spuma, CO2, apa pulverizata
Mijloace de stingere necorespunzătoare:	Niciunul in mod specific
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Produsul nu este nici inflamabil, nici combustibil. In caz de incendiu, se pot elibera vapori de acid clorhidric și clor
Echipamente speciale de stingere a	Cască cu vizieră, îmbrăcăminte ignifugă, mănuși de lucru, aparat de respirație

incendiilor	
Altele:	Pulverizati apă pentru a răci containerele, pentru a preveni descompunerea produsului și eliberarea de substanțe potențial periculoase pentru sănătate. Purtați întotdeauna echipament de protectie complet. Colectati apa folosită la stingere, care nu trebuie să fie evacuata în sistemul de canalizare. Eliminați apa contaminată folosită pentru stingere și resturile dupa incendiu, în conformitate cu reglementările în vigoare.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență

Echipament de protecţie:	Eliminati toate sursele de aprindere din zona în care a avut loc scurgerea. In caz de ceață, asigurati protecție respiratorie. Opriți scurgerea dacă este sigur să facă acest lucru. Nu manipulați containere deteriorate sau produsul scurs înainte de îmbrăcarea unui echipament de protecție adecvat
Proceduri de urgență:	Îndepărtați persoanele neprotejate. Asigurați ventilație adecvată

6.2. Precauţii pentru mediul înconjurător

Medii de izolare:	Împiedicați intrarea produsului in sistemul de canalizare, apa de suprafață, apele subterane și zonele învecinate
Metode de limitare a poluarii	Absorbiți scurgerile cu un material absorbant inert (nisip, vermiculit, pamant diatomit). Colectati cea mai mare parte a materialului rămas și depozitati-l-l în mod corespunzător, in containere etichetate coresounzator pentru eliminare. Asigurați ventilarea adecvată a zonei afectate de pierderile de produs. Eliminarea materialului contaminat trebuie să se facă în conformitate cu normele în vigoare
Informatii suplimentare:	Eliminati apa de spălare contaminată în conformitate cu reglementările locale

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate

Precauţii pentru manipulare în condiţii de securitate:	Nu mâncati și beti în timpul lucrului. A nu se inspira praful. Evitați contactul cu pielea și ochii. Folosiți sistem de ventilație localizat.

7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi

Condiţii de depozitare:	Soluțiile de clorură de calciu pot favoriza coroziuni în puncte a unor oțeluri. Dacă este posibil, depozitați produsul în ambalajul original, etichetat în mod corespunzător și bine închis
Specificaţiile zonei de depozitare:	Pastrati in containere într-o zonă rece, bine ventilata, la distanta de surse de căldură sau alte surse de aprindere
Specificaţiile recipienţilor:	Utilizati containere/recipiente din metal (fier) sau PVC.
Incompatibilități:	Agenti de oxidare și puternic reducatori

7.3. Utilizare finală specifică:

Utilizări finale specifice:	**Aditivi pentru workover si completion**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control

Substanta		***Calcium Chloride CAS No. 10043-52-4***
TLV_{Celing}:		- - -
TLVTWA:		Inhalat: efect acut local = 10mg/m3 (muncitori) Efecte cronice = 5mg/m3 local (muncitori)
TLV_{STEL}:		- - -
Limita biologică:		Lipsit de o valoare limită de expunere profesională

8.2. Controale ale expunerii profesionale

8.2.1. Controale tehnice corespunzătoare		Asigurați o bună aerisire la locul de muncă prin aspirație locală eficientă sau aerisire prin ventilatie
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Ventilație forțată, statie de spalare ochi in apropiere. În cazul în care operațiunile de lucru n u permit menținerea concentrației produsului sub valorile limită de expunere la locul de muncă, purtați echipament de protecție adecvat pentru tractul respirator
Protecţia individuală	Respiratorie:	Utilizati masca de protectie respiratorie cu filtru de tip B.
	Ochi	Ochelari de protecție ermetici
	Maini	Mănuși de protecție categoria I PVC, neopren sau cauciuc nitril.
	Corp	Imbrăcăminte de protectie completa (salopeta).

8.3. Controlul expunerii mediului

Variante de expunere	- - -

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale

Forma:	Lichid clar
Aspect:	Lichid clar
Culoare:	Incolor
Miros:	Inodor
Prag olfactiv:	N.a.

9.2. Informaţii pentru sănătate, siguranţă şi mediu

pH (10 g/l) la 20 °C:	7-8
Punct de topire:	782 ° C (se referă la o clorură de calciu solidă)
Punct de fierbere:	1935°C
Punct de aprindere:	> 60°C
Inflamabilitate (solid, gaz):	Nu este inflamabil
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	Nu este explozibil
Limita de inflamabilitate superioară:	Nu este inflamabil
Limita inferioară de inflamabilitate:	Nu este inflamabil
Presiunea de vapori 20°C:	<10Pa
Densitatea la 20 °C:	2,15 gr/cm3
Densitatea vrac:	500-600 Kg/cm3
Densitatea relativă:	2,15 gr/cm3
Densitatea de vapori :	N.a.
Rata de evaporare:	N.a.

Greutatea specifica (20°C):	Calcium chloride solid: 2.15 g/cm3 Calcium Chloride 26-38% solutie: 1240g / l
Solubilitate în apă (20°C):	740 g/l
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE	
10.1. Reactivitate	
Condiții care trebuie evitate:	Soluțiile de clorură de calciu pot favoriza coroziunea in "în puncte" pentru unele oțeluri. Nu există riscuri particulare de reacție cu alte substanțe în conditii normale de utilizare
10.2. Stabilitate chimică	
Materiale incompatibile:	Agenți puternici, reducători și oxidanți
Posibilitatea de reacții periculoase:	În condiții normale de utilizare și depozitare nu sunt previzibile reacții periculoase.
10.3. Produși de descompunere periculoși	
Alte informaţii:	N.a.

11. INFORMAŢII TOXICOLOGICE	
11.1. Toxicitate Acută	
Toxicitatea substantei	
Toxicitate orală acută:	LD50 (Şobolani): 2301 mg/kg
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	DL50 (Iepure) : >5000mg/kg
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	Nu este iritant (iepure).
Ochi:	Puternic iritant pentru ochi (iepure)
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	Contactul repetat sau prelungit cu pielea poate cauza dermatite
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Toxicitate în apa:	CL50 (Pesti) 96h: 4630mg/l EC50 (Daphnia magna) 48h: 2400mg/l EC50 (Alge) 48h: 2900mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	N.a.
12.3. Potența Bioacumulativ	
Alte informații:	Nu se aplica pentru substante anorganice
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Reziduurile de produs trebuie considerate deșeuri periculoase speciale, se vor elimina in conformitate cu reglementările locale
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Considerati ambalajele contaminate ca deșeuri periculoase de produs periculos. Eliminați în conformitate cu reglementările locale
Alte recomandări:	- - -

14. INFORMAŢII REFERITOARE LA TRANSPORT	
14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Norme de transport ONU	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Denumirea oficiala a transportului	N.a.
Cod de restrictie in galerie/tunel	N.a.
14.2. Transport Maritim (IMDG)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Numarul EMS	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Poluant marin:	N.a.
Denumirea oficiala a transportului	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Clasa IACO/ATA	N.a.

Eticheta	N.a.
Grupul de ambalare:	N.a.
Denumirea oficiala a transportului	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor şi a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului

European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:
Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societății Americane

de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H319: Provoacă iritarea ochilor

R36: Iritant pentru ochi

Fraze de precauție / siguranta utilizate în secţiunile anterioare

P264: Spălaţi-vă bine pe mâini după utilizare.
P280: Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei.
P305 + P351 + P338: ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi
P337+P313: Dacă iritarea ochilor persist: consultaţi medicul.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

S60: Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.

S22: A nu se inspira praful.
S24: Evitaţi contactul cu pielea
S60: Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

GRANULAR F-M-C

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**GRANULAR F-M-C**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Material de reducere a pierderilor de circulatie pentru fluidele de foraj**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare	
Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă		
+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile	
E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator	
Nume:	S.C. AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă		
	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile	
E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică	
Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Fraze de precauţie:		
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	

Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Sfaturi de siguranţă::	**S22:** A nu se inspira praful.	
Eliminarea:		

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul următor
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
- - -	- - -	- - -	- - -	- - -	- - -	- - -

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	N.a.

După contactul cu pielea:	N.a.
După contactul cu ochii:	N.a.
După înghiţire:	N.a.
Alte informaţii:	N.a.
4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.	
Simptome	N.a.
4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.	
Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	N.a.

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor	
Măsuri de precauție în caz de incendiu:	În caz de incendiu respect următoarele instrucțiuni:
Mijloace de stingere corespunzătoare:	Produse de stingere standard
Mijloace de stingere necorespunzătoare:	N.a.
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	N.a.
Echipamente speciale de stingere a incendiilor	N.a.
Altele	N.a.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecție și proceduri de urgență	
Echipament de protecţie:	Niciunul
Proceduri de urgență:	Niciuna
6.2. Precauţii pentru mediul înconjurător	
Medii de izolare:	Niciunul
Metode de limitare a poluarii	Îndepărtați cu matura sau cu un sistem vidat
Informatii suplimentare:	Niciuna

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Nu există reglementări specifice
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Nu există reglementări specifice
Specificaţiile zonei de depozitare:	Nu există reglementări specifice
Specificaţiile recipienţilor:	Nu există reglementări specifice
Incompatibilităţi:	Nu sunt disponibile
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Material de reducere a pierderilor de circulatie pentru fluidele de foraj**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control (Limite de expunere)

Ameste	Amestecul nu are nici o limită de expunere
TLV_{Celing}:	- - -
TLV_{TWA}:	- - -
TLV_{STEL}:	- - -
Limita biologica	- - -

8.2. Controale ale expunerii profesionale

8.2.1. Controale tehnice corespunzătoare		Ventilație generală
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Niciuna
Protecţia individuală	Respiratorie:	Protecție respiratorie în mod normal nu este necesară. Evitați generarea de praf; mască de praf tip FPP1, în caz de expunere
	Ochi	Ochelari de protecție
	Maini	Nu este necesară
	Corp	Nu este necesară

8.3. Controlul expunerii mediului

Variante de expunere	- - -

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale

Forma:	Granule
Aspect:	Granule
Culoare:	Maro
Miros:	Inodor
Prag olfactiv:	Niciunul

9.2. Informaţii pentru sănătate, siguranţă şi mediu

pH (10 g/l) la 20 °C:	N.a.
Punct de topire:	N.a.
Punct de fierbere:	N.a.
Punct de aprindere:	N.a.
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C	N.a.
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	N.a.
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	Insolubil
Coeficientul de distribuție (n-	N.a.

octanol):	
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE	
10.1. Reactivitate	
Condiții care trebuie evitate:	Stabil in conditii normale de utilizare
10.2. Stabilitate chimică	
Materiale incompatibile:	Niciunul
Posibilitatea de reacții periculoase:	Niciuna
10.3. Produși de descompunere periculoși	
Alte informaţii:	Niciuna

11. INFORMAŢII TOXICOLOGICE	
11.1. Toxicitate Acută	
Toxicitatea amestecului	
Toxicitate orală acută:	Niciuna
Toxicitate inhalatorie acută:	Niciuna
Toxicitate cutanată acută:	Niciuna
11.2. Corozivitate	
Piele:	Niciuna
Ochi:	Niciuna
11.3. Iritabilitate primară	
Piele:	Niciuna
Ochi:	Niciuna
11.4. Nocivitate	
Ingestie:	Niciuna
Inhalare:	Niciuna
11.5. Sensibilitate	
Piele:	Niciuna
Ochi:	Niciuna

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Toxicitate în apă:	N.a.
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	N.a.
12.3. Potențial de Bioacumulare	
Alte informații:	N.a.
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	

Alte informaţii:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	N.a.
Cod de deşeu:	N.a.
13.2. Metode de eliminare a produsului	
Sfaturi:	N.a.
Alte recomandari:	N.a.

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Normele de transport ONU:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.

Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.

REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor

HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;

HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;

REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a

Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum și de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și științific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:
Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate
GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice
EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente
CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societății Americane de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de precauție / siguranta utilizate în secţiunile anterioare

P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.
S22: A nu se inspira praful.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

INTASOL F-M-C

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**INTASOL F-M-C**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Material de reducere a pierderilor de circulatie pentru fluidele de foraj**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

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2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Fraze de precauţie:	**P260:** Nu inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	

Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Sfaturi de siguranță::	**S22:** A nu se inspira praful.	
Eliminarea:	- - -	

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	In conformitate cu tabelul urmator
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Carbonat de calciu REACH No. 01-211948679518-XXXX	471-34-1	207-439-9	90/100%	- - -	- - -	- - -

4. MĂSURI DE PRIM AJUTOR	
4.1. Descrierea măsurilor de prim ajutor	
Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Scoateţi imediat persoana afectată afară, la aer proaspăt in caz de inhalare accidentala de praf sau fum prim supraincalzire sau ardere. Daca simptomele persista solicitati sfatul unui medic.
După contactul cu pielea:	Se vor scoate hainele și încălțămintea imediat. Spălați zona afectată cu apă și săpun.
După contactul cu ochii:	Irigaţi uşor cu apă curată. Solicitaţi asistenţă medicală. Scoateti lentilele de contact. Protejati ochiul care nu este afectat.
După înghiţire:	Clătiți imediat și repetat gura cu apă. Dacă este necesar solicitaţi asistenţă medicală
Alte informaţii:	N.a.
4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.	
Simptome	N.a.
4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.	
Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	N.a.

5. MĂSURI DE COMBATERE A INCENDIILOR	
5.1. Mijloace de stingere a incendiilor	
Măsuri de precauție în caz de incendiu:	În caz de incendiu respectaţi instrucțiunile.
Mijloace de stingere corespunzătoare:	Se vor folosi metode de stingere care sunt adecvate condițiilor locale și mediului înconjurător.
Mijloace de stingere necorespunzătoare:	N.a.
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Niciunul
Echipamente speciale de stingere a incendiilor	În caz de incendiu, utilizaţi aparatul respirator şi echipament de protecţie.
Recomandări destinate pompierilor:	- - -

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ	
6.1. Precauţii personale, echipament de protecție și proceduri de urgență	
Echipament de protecţie:	Nu generati praf
Proceduri de urgență:	N.a.
6.2. Precauţii pentru mediul înconjurător	
Medii de izolare:	N.a.
Metode de limitare a poluarii	Mătura și lopata. Păstrați în recipiente adecvate, închise pentru eliminarea reziduurilor
Informatii suplimentare:	N.a.

7. MANIPULARE ŞI DEPOZITARE	
7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Sistem de ventilație adecvată în locurile unde se formează praf.
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	A se păstra la loc uscat
Specificaţiile zonei de depozitare:	A se depozita într-un loc uscat și bine ventilat,
Specificaţiile recipienţilor:	Păstrați recipientul închis ermetic
Incompatibilități:	Depozitați la distanţă de de acizi
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Material de reducere a pierderilor de circulatie pentru fluidele de foraj**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ		
8.1. Parametri de control (Limite de expunere)		
Substanța		***Carbonat de calciu CAS No. 471-34-1***
TLV_{Celing}:		- - -
TLV_{TWA}:		PNOS- Pulberi poluare (particule inhalabile): TLV-TWA = 10 mg/m³ PNOS- Pulberi poluare (particule respirabile): TLV-TWA = 3.0 mg/m³
TLV_{STEL}:		- - -
Limita biologică:		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Se recomandă ventilaţie generală.
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Staţie de spălare ochi în apropiere.
Protecţia individuală	Respiratorie:	Atunci când va confruntati cu concentrații peste limita de expunere trebuie să utilizati aparat respirator certificate corespunzătoare. Mască cu un filtru de particule P2
	Ochi	Ochelari de protecție.
	Maini	Mănuși
	Corp	Îmbrăcăminte de protecție
8.3. Controlul expunerii mediului		
Variante de expunere		- - -

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Forma:	Solid
Aspect:	Pulbere
Culoare:	Alba
Miros:	Caracteristic
Prag olfactiv:	N.a.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH (10 g/l) la 25 °C:	8.5-9.5 g/l
Punct de topire:	>800°C
Punct de fierbere:	N.a.
Punct de aprindere:	Produsul nu este inflamabil.

Inflamabilitate (solid, gaz):	Produsul nu este inflamabil.
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	Nu se aplica
Densitatea la 20 °C:	2.6-2.8 g/cm3
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	N.a.
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	0,014 g/l
Coeficientul de distribuție (n-octanol):	POW: < 1
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE

10.1. Reactivitate	
Condiții care trebuie evitate:	Produsul este stabil în condiții normale de depozitare
10.2. Stabilitate chimică	
Materiale incompatibile:	Acizi tari
Posibilitatea de reacții periculoase:	Reacționează cu acizi cu eliberare de dioxid de carbon (CO2), care poate mobiliza oxigenul în aer, în spații închise
10.3. Produși de descompunere periculoși	
Alte informaţii:	Niciuna

11. INFORMAŢII TOXICOLOGICE

11.1. Toxicitate Acută	
Amestec toxic	
Toxicitate orală acută:	LD50 (Sobolan): >5000 mg/kg
Toxicitate inhalatorie acută:	N.a.
Toxicitate cutanată acută:	N.a.
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	Conform criteriilor de clasificare ale Uniunii Europene, produsul nu este considerat a fi iritant pentru piele
Ochi:	Conform criteriilor de clasificare ale Uniunii Europene, produsul nu este considerat a fi iritant pentru ochi
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	Nu există efecte nocive aşteptate.

Ochi:	Nu există efecte nocive aşteptate.

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate	
Toxicitate în apă:	CL50 (Pesti) 96h: >10000 mg/l CE50 (Dafnii) 48h: >1000 mg/l CE50 (Alge) 72h: >200 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	N.a.
12.3. Potențial de Bioacumulare	
Alte informații:	Nu există efecte adverse aşteptate.
12.4. Mobilitate în sol	
Alte informații:	Nu există efecte adverse aşteptate.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	Consultaţi o firmă autorizată pentru eliminare în conformitate cu reglementările locale. Nu deversați în sistemul de canalizare sau în mediul înconjurător, eliminaţi la un punct autorizat de colectare a deșeurilor
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Goliti continutul ramas
Alte recomandări:	Manipulati în conformitate cu reglementările locale și naționale.

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Normele de transport ONU:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în

	transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.

Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.

REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor

HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;

HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;

REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase

HG 735/2006 privind limitarea emisiei de compuşi organici volatili.

HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.

Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;

Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;

HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.

REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.

HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.

HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:

Legea 211/2011 privind regimul deseurilor.

HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.

HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.

HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.

HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate
GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice
EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente
CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societății Americane de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose **-** doză letală medie
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de precauție utilizate în secţiunile anterioare

P260: Nu inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

S22: A nu se inspira praful.

FISA CU DATE DE SECURITATE

Aditiv Soltex® E

Versiunea 1.3 Data reviziei 28-03-2014-03

SECŢIUNEA 1: IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

Informaţii despre produs

Denumire comercială : Aditiv Soltex® E
Material : 1110476

Utilizări relevente identificate : utilizat in foraj şi producţie în domeniul extracţiei petrolului şi gazelor naturale
Utilizare Industrială

Compania : Drilling Specialties Company
10001 Six Pines Drive
The Woodlands, TX 77380

Sediul pentru Europa : Chevron Phillips Chemicals International N.V.
Brusselsesteenweg 355
B-3090 Overijse
Belgium

Solicitare SDS: (800) 852-5530
Infomaţii Tehnice: (832) 813-4862
Parte responsabilă: Product Safety Group
Email:msds@cpchem.com

Telefon de urgenţă:

Sănătate:
866.442.9628 (America de Nord)
1.832.813.4984 (Internaţional)
Transport:
North America: CHEMTREC 800.424.9300 or 703.527.3887
Asia: +800 CHEMCALL (+800 2436 2255)
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Department Responsabil: G r u p u l p e n t r u S e c u r i t a t e a Produsului şi Toxicologie
E-mail address : MSDS@CPChem.com
Website : www.CPChem.com

SECŢIUNEA 2: Identificarea pericolelor

Clasificarea substanţei sau amestecului

REGULAMENTUL (CE) No 1272/2008

Nu este o substanţă periculoasă sau un amestec periculos conform Regulamentului (CE) No 1272/2008.

Clasificare după directive (67/548/EEC, 1999/45/EC)

Nu este o substanţă periculoasă sau un amestec periculos conform –Directivelor CE 67/548/EEC or 1999/45/EC.

Elemente de etichetare

Etichetare (REGULAMENTUL (CE) No 1272/2008)

Nu este o substanţă periculoasă sau un amestec periculos conform Regulamentului (CE) No 1272/2008.

SECŢIUNEA 3: Compoziţie/Informaţii privind componenţii

Sinonime : Aditiv pentru noriul de foraj
Inhibitor pentru şist

Formula Moleculară : UVCB

Nu conţine componenţi periculoşi conform GHS. :

Remarci : Nu conţine componenţi periculoşi conform GHS.

SECŢIUNEA 4: MĂSURI DE PRIM AJUTOR

Informaţii generale : Nu sunt cunoscute pericole care să necesite măsuri de prim ajutor speciale.

După inhalare : Dacă se găseşte o persoană inconştientă, se plasează aceasta în poziţia de recuperare şi se solicită ajutor medical. Dacă simptomele persistă, sunaţi un medic..

După contactul cu ochii : Scoateți lentilele de contact. Solicitați asistență medicală dacă iritarea persită. Protejaţi ochiul sănătos..

După înghiţire Păstraţi traiectul respirator curat. Niciodată nu daţi ceva pe gură unei persoane inconştiente. Solicitați asistență medicală dacă simptomele persistă..

SECŢIUNE 5: MĂSURI DE COMBATERE A INCENDIILOR

Punct de inflamabilitate : Ne aplicabil

Temperatură de autoaprindere: Nu sunt data disponibile

Echipamente speciale de stingere a incendiilor: Purtați echipament de protecție corespunzător pentru stingerea incendiilor care să includă şi dispozitiv pentru respirat

Altele : În caz de incendiu respectaţi, urmați instrucțiunile pentru incendii ale substanţelor chimice. Utilizaţi măsurile de stingere care sunt corespunzătoare circumstanţelor locale şi mediului înconjurător.

Măsuri de prevenire: Asiguraţi ventilare corespunzătoare în zonele unde se formează praf

SECŢIUNE 6: MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

Precauţii personale, : E v i t a ţ i f o r m a r e a p r a f u l u i .

Precauţii pentru mediul înconjurător: Dacă produsul contaminează râurile şi lacurile sau scurgerile, informaţii autorităţile respective.

Metode de curăţare a poluării: Păstraţi produsul în ambalaje închise şi potrivite pentru eliminare. Curăţaţi podelele şi obiectele contaminate ţinând cont de reglementările de mediu. Ridicaţi cantităţile pierdure şi eliminaţi-le fără a crea praf. Adunaţi cu o mătură şi ridicaţi cu lopata. Păstraţi în containere închise în vederea eliminării.

SECŢIUNE 7: MANIPULARE ŞI DEPOZITARE

MANIPULARE

Precauţii pentru manipulare în condiţii de securitate :Pentru protecţia personala a ase vedea secţiunea 8. Nu mâncați și nu beți în timpul lucrului..

Recomandări pentru protecţia faţ de incendii si explozii : Asiguraţi ventilarre corespunzătoare acolo unde se formează praf.

DEPOZITARE

Condiţii de depozitare : Instalaţiile electrice şi materialele utilizate trebuie să fie conforme cu standardele de securitate tehnologică..

Specificaţii referitoare la depozitare: Nu sunt menţionate materiale specifice.

SECŢIUNE 8: CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

DNEL : Utilizare finală: muncitori
Calea de expunere: contact cu pielea
Potenţiale efecte asupra sănătăţii: efecte cronice, efecte sistemice
Valoare: 14,3 mg/kg

DNEL : Utilizare finală: muncitori
Calea de expunere: inhalare
Potenţiale efecte asupra sănătăţii: efecte cronice, efecte sistemice
Valoare: 25,2 mg/m3

PNEC : Apă de mare
Valoare: 0,12 mg/kg

PNEC : Sediment marin:
Valoare: 0,097 mh/kg

Măsuri tehnice:

A se lua în considerare potenţialele pericole ale acestui amestec (a se vedea Secţiunea 2), limitele de expunere aplicabile, activităţile şi alte substanţe de la locul de muncă, atunci când se proiectează modul de ţinere sub control al tehnologiei şi se alege echipamentul de protecţie individual. Dacă modurile de ţinere sub control al tehnologiei sau practicile de lucru nu sunt adecvate pentru a preveni expunerea la concentraţii periculoase ale acestui amestec, se recomandă echipamentele de protecţie individuale enumerate mai jos. Utilizatorul ar trebui să citească şi să înţeleagă toate instrucţiunile şi limitările furnizate o data cu echipamentele de vreme ce protecţia este, de obicei, furnizată pentru o perioadă limitată de timp sau în anumite circumstanţe

Echipamentul de protecţie personală

Protecţie Respiratorie: Purtaţi un aparat de respirat care furnizează aer aprobat NIOSH – pentru spaţiul USA sau certificat CE – pentru spaţiul UE, dacă ventilaţia sau ale măsuri de control tehnologic sunt corespunzătoare pentru a asigura un conţinut minim de oxigen de 19,5% v/v la presiune normală.

Protecţie Maini: Adecvarea pentru locuri de muncă specifice ar trebui discutată cu furnizorii de mănuşi de protecţie. A se avea în vedere instrucţiunile referitoare permeabilitatea şi timpul de străpungere al acestora comunicat de producători. De asemenea, atenţie trebuie acordată şi condiţiilor locale de utilizare a mănuşilor, respectiv pericolele de tăiere, abraziune şi timpul de contact. Mănuşile ar trebui eliminate şi schimbate dacă există orice indicaţie referitoare la degradarea acestora fizică sau chimică.

Protecţie Ochi: Ochelari de protecție. Sticlă cu apă pentru spălarea ochilor.

Protecţie Corp şi piele : Îmbrăcaţi după cum este cazul: alegeţi o protecţie corporală corespunzătoare cantităţii şi concentraţiei substanţei periculoase de la locul de muncă. Purtaţi o îmbrăcăminte protectivă uşoară.

Măsuri de igiena: practica generală industrială referitoare la igienă. Pentru detalii suplimentare, a se vedea scenariile de expunere din anexa.

SECŢIUNE 9: PROPRIETĂŢI FIZICE ŞI CHIMICE

Informaţii despre prorpietăţile fizice şi chimice de bază

Aspect

Stare fizică : Solid
Culoare : maro inchis, negru
Miros : inodor

Date de securitate

Punct de inflamabilitate : N / A
Limita inferioară de explozie : N / A
Limita superioară de explozie : N / A
Temperatura de autoaprindere: Nu sunt date disponibile
Formula Moleculară : UVCB
pH : N / A
Punct/interval de fierbere: N / A
Presiune de vapori: N / A
Densitate relativa: 1,4 - 1,6
Solubilitate în apă: parţial solubil
Densitatea relativă a vaporilor: N / A

SECŢIUNE 10: STABILITATE ŞI REACTIVITATE

Stabilitate chimică: Stabil în condiţii normale de mediu, de depozitare şi manipulare, la temperatură şi presiune normale.

Posibilitatea de reacţii periculoase:

Condiţii care trebuie evitate:: Nu sunt date disponibile

Alte informaţii:: N u s e d e s c o m p u n e d a c ă e s t e d e p o z i t a t ş i u t i l i z a t c a a t a r e .

SECŢIUNE 11: INFORMAŢII TOXICOLOGICE

Soltex® E Additive:

Toxicitate orală acută:: LD50: > 5.000 mg/kg

Soltex® E Additive
Toxicitate inhalatorie acută: Nu sunt date disponibile

Soltex® E Additive
Toxicitate cutanată acută: Nu sunt date disponibile

Soltex® E Additive
Iritaţia pielii : N u i r i t ă p i e l e a

Soltex® E Additive
Iritaţia ochilor : N u i r i t ă o c h i i

Soltex® E Additive
Sensibilizare : N u c a u z e a z ă s e n s i b i l i y a r e a p e a n i m a l e d e l a b o r a t o r .

Soltex® E Additive
Toxicitatea la doze repetate: Specie: şobolan,
Sex: mascul
Calea de expunere: oral
Doza: 0, 250, 500, 1000 mg/kg
Timp de Expunere: 43 zile Număr de expuneri: zilnic
NOEL: 1.000 mg/kg
Metodă: OECD Guideline 422

Soltex® E Additive
Toxicitatea pentru reproducere : Specie: şobolan
Sex: mascul şi femelă
Calea de expunere: oral
Doza: 0, 250, 500, 1000 mg/kg
Timp de Expunere: 43-54 zile
Număr de expuneri: zilnic
Metoad: OECD Guideline 422
NOAEL Părinţi: 1.000 mg/kg
NOAEL F1: 1.000 mg/kg

Soltex® E Additive

Toxicitatea pentru Dezvoltare : Specie: şobolan
Calea de expunere: oral
Doza: 0, 250, 500, 1000 mg/kg
Număr de expuneri: zilnic Timp
de Expunere: 54 zile
NOAEL Teratogenicitate: 1.000 mg/kg
NOAEL Maternală: 1.000 mg/kg

Evaluarea toxicologică :

Soltex® E Additive

Efecte CMR effects : *Carcinogenicitate:* Nu sunt date disponibile
Mutagenicitate: Încercările pe culturi de bacterii sau pe celule de mamifere nu au arătat efecte mutagenice.
Teratogenicitate: Încercările pe animale nu au arătat nici un efect asupra dezvoltării fetale
Toxicitate Reproductivă: Încercările pe animale nu au arătat nici un efect asupra fertilităţii.

SECŢIUNE 12: INFORMAŢII ECOTOXICOLOGICE

Efecte asupra Ecotoxicităţii

Toxicitate la peşti : LC50 (peşti): > 240 mg/l
Timp de expunere: 96 h
Specie: Scophthalmus maximus (calcan)
Metoda de încercare: semi-statică: OECD Test Guideline 203

Toxicitate la daphnia şi al alte nevertrebrate acvatice: LC50(nevertrebrate) : 380 mg/l
Timp de expunere: 48 h
Specie: Acartia tonsa (Marine Copepod)
Metoda de încercare: statică

Toxicitate la alge : EC50(alge): 240 mg/l
Timp de expunere: 72 h
Specie: Skeletonema costatum (Algă marină)
Metoda de încercare: statică

Alte informații:: Nu se aşteaptă ca acest amestec să fie dăunător organismelor acvatice.

SECŢIUNE 13: CONSIDERAŢII PRIVIND ELIMINAREA

Aceste informaţii din acest SDS se referă numai la produs aşa cum este transportat. A se utiliza materialul pentru scopul intenţionat sau a se recicla dacă este posibil. Acest material, dacă ar trebui să fie eliminat, ar putea să îndeplinească criteriile de deşeu periculos aşa cum sunt definite în EPA la RCRA (40 CFR 261) sau al altor reglementări naţionale sau locale. Ar putea fi necesare măsurarea unor caracteristici fizice şi examinarea detaliată pentru componenţii obişnuiţi. Dacă acest material este clasificat ca fiind periculos, legile federale solicită eliminarea la un furnizor licenţiat pentru preluarea deşeurilor periculoase.

Ambalaje contaminate : Ambalajele goale ar trebui duse la un depozit aprobat pentru manipularea deşeurilor în vederea reciclării sau eliminării.

Pentru detalii suplimentare, a se vedea Scenariile de expunere din zona de anexe

SECŢIUNE 14: INFORMAŢII REFERITOARE LA TRANSPORT

Informaţiile despre transport prezentate aici se referă numai la transportul în vrac şi se poate să nu fie aplicabile pentru transportul în ambalaje (a se vederea definiţia din reglementare).

Consultaţi reglementările pentru mărfuri periculoase corespunzătoare pentru transportul intern sau internaţional cele mai potrivite pentru modul de ambalare şi cantitatea aferentă pentru informaţii suplimentare referitoare la cerinţe pentru transport (de exemplu denumiri tehnice sau nume etc). Valoarea punctului de inflamabilitate al materialului din SDS poate varia uşor comparativ cu valoarea înscrisă în documentele însoţitoare..

US DOT (MINISTRUL DE TRANSPORT AL SUA)
Nu sunt mărfuri periculoase în conformitate cu reglementările in transport conform regulilor acestei agenţii.

IMO / IMDG (TRANSPORT MARITIM)
Nu sunt mărfuri periculoase în conformitate cu reglementările in transport conform regulilor acestei agenţii

IATA (TRANSPORT AERIAN)
Nu sunt mărfuri periculoase în conformitate cu reglementările in transport conform regulilor acestei agenţii.

ADR (TRANSPORT RUTIER)
Nu sunt mărfuri periculoase în conformitate cu reglementările in transport conform regulilor acestei agenţii.

RID (TRANSPORT FEROVIAR (EUROPE))
Nu sunt mărfuri periculoase în conformitate cu reglementările in transport conform regulilor acestei agenţii.

ADN (TRANSPORT FLUVIAL EUROPEAN)
Nu sunt mărfuri periculoase în conformitate cu reglementările in transport conform regulilor acestei agenţii.

Transport in vrac conform Anexei II la MARPOL 73/78 şi la Codul IBC

SECŢIUNE 15: INFORMAŢII DE REGLEMENTARE

Legislaţie Naţională

Evaluare de Siguranţă Chimică

Ingrediente : Asfalt sulfonat, sare de sodiu 269-212-0 sulfonated,

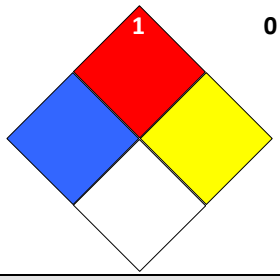
Pericol de Accidente Majore: 96/82/EC Actualizat: 2003
Legislaţie Directiva 96/82/EC nu se aplică

Clasa de contamianre a apei: WGK 1 puţin periculos pentru apă
(Germania) Classificare conform VwVwS, Annex 3.

Statut de notificare
Europa REACH : Acest amestec conţine numai componenţi care au fost înregistraţi conform cu Regulamentul (EU) No. 1907/2006 (REACH).
SUA TSCA : este în Inventarul TSCA
Canada DSL : Toţi componenţii acestui produs sunt în DSL canadian.
Australia AICS : in inventar sau în conformitate cu inventarul
New Zealand NZIo : Nu sunt în conformitate cu inventarul
Japan ENCS : in inventar sau în conformitate cu inventarul
Korea KECI : in inventar sau în conformitate cu inventarul
Philippines PICC : in inventar sau în conformitate cu inventarul
China IECSC : in inventar sau în conformitate cu inventarul

SECŢIUNE 16: ALTE INFORMAŢII

Clasificare NFPA : Pericol pt. sănătate:1
Pericol de incendiu: 1
Pericol de Reactivitate: 0



Modificările semnificative faţă de ediţia precedentă sunt indicate pe margine. Această versiune înlocuieşte toate versiunile anterioare.

Informaţiile din această SDS se referă numai la produsul aşa cum este transportat.

Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale. Aceste informaţii oferite sunt destinate ca îndrumare pentru manipularea, utilizarea, procesarea, depozitarea şi eliminarea în siguranţă a a cestui produs şi nu trebuie considerate ca fiind o garanţie sau o specificaţie de calitate.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică
CMR - Cancerigen, mutagen sau toxic pentru reproducere
EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
NOAEL: no observed adverse effect level – nivelul la care nu se observă vreun efect advers
NOEL: No observed effect level – nivelul la care nu se observă vreun efect
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
DNEL: nivel calculat fără efect
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă
UVCB – Unknown or Variable Composition, Complex Product or Biological Material – Compoziţie Necunoscută sau Variabilă, Produs Complex sau Material Biologic
WHMIS Workplace Hazardous Materials Information System – Sistem de Informaţii despre materialele periculoase la locul de muncă

Anexa

1. Ttilu scurt al scenariului de expunere: **Utilizarea în domeniul forajului si producţiei de petrol şi gaze -**

Principalele grupuri de utilizatori **SU 3: Utilizatori industriali**: utilizeaza substanţele chimice aşa cum sunt sau le prepară pe amplasamentele industriale.
Sector de utilizare : **SU2b:** Industriile Offshore
Process category : **PROC4:** Se utilizează pentru realizarea loturilor şi în alte procese (sinteze), situaţii în care există posibilitatea de expunere

Categoria de emisii în mediu: **ERC4:** Uz industrial al unor aditivi pentru utilizarea în procese şi produse, nu devin parţi de articole

Informaţii ulterioare: Operaţii de producţie şi foraj in domeniul petrolier (inclusiv curăţarea noroaielor de foraj şi a sondei) Inclusiv materiale de transfer, formulări la locul de muncă, activităţi exploatare a sondei, ale camerei de amestec şi activităţi specifice de mentenanţă.

2.1 Scenariu de contribuţie la controlarea expunerii mediului în ERC4: Uz industrial al unor aditivi pentru utilizarea în procese şi produse, nu devin părţi de articole

Proprietăţile produsului

Remarci substanţa este o UVCB complexa.

Alte condiţii date care afectează expunerea mediului

Utilizare/emisie continua

Condiţii şi măsuri tehnice / Măsuri organizaţionale

Remarci : Nu este applicabil

Condiţii şi măsuri referitoare la uzinele de tratare a canalizării orăşeneşti

Remarci : Nu este applicabil deoarece nu există nici o emisie în apa uzată.

Condiţii şi măsuri refertoare la tratarea externă a deşeurilor pentru eliminare

Tratarea deşeurilor : Noroaiele de foraj sunt reciclate şi reutilizate

Condiţii şi măsuri referitoare la recuperarea externă a deşeurilor

Remarci : Noroaiele de foraj sunt reciclate şi reutilizate

2.2 Scenariu de contribuţie la controlarea expunerii lucrătorilor în: PROC4: Se utilizează pentru realizarea loturilor şi în alte procese (sinteze), situaţii în care există posibilitatea de expunere

Proprietăţile produsului

Remarci substanţa este o UVCB complexa

Starea (la utilizare) : solid , cu grad de prăfuire scăzut

Frecvenţa şi durata de de utilizare

Frecvenţa de utilizare : 3 ore/zi

Alte condiţii de utilizare care afectează expunerea lucrătorilor

3.Estimarea expunerii şi referirea la sursele sale

Mediu

Scenariu de Contributie	Metoda de evaluare a expunerii	Condiţii Specifice	Compartiment	Valoare tip	Nivel de expunere	Indicele de caracterizare al riscului
ERC4	EGEST		Ape marine		0,0005	0,00413
			Marine		31,4 mg/L	0,598

ERC4: Uz industrial al unor aditivi pentru utilizarea în procese şi produse, nu devin părţi de articole

Lucrători/Consumatori

Scenariu de Contributie	Metoda de evaluare a expunerii	Condiţii Specifice	Valoare tip	Nivel de expunere	Indicele de caracterizare al riscului
PROC4	ECETOC TRA		Lucrător – dermal, termen lung, sistemic	6,86 mg/kg/d	0,480
			Lucrător – inhalare, termen lung, sistemic	0,420 mg/m3	0,017
			Lucrător – inhalare, termen lung, sistemic, Căi combinate		0,497

PROC4: Se utilizează pentru realizarea loturilor şi în alte procese (sinteze), situaţii în care există posibilitatea de expunere					

4. Indrumări pentru utilizatorul din aval pentru a aprecia dacă activitatea sa este inclusă în limitele scenariilor de expunere prezentate

Atunci când sunt constatate măsurile de risc recomandate (RMMs) şi condiţiile de funcţionare, nu este de aşteptata ca expunerile să fie mai mari decât PNEC estimate şi indicii de caracterizare ai riscului este de aşteptat să fie mai mici decât 1.

Atunci când sunt constatate măsurile de risc recomandate (RMMs) şi condiţiile de funcţionare, nu este de aşteptata ca expunerile să fie mai mari decât DNEL estimate şi indicii de caracterizare ai riscului este de aşteptat să fie mai mici decât 1.

Recomndarea se bazează pe condiţii de operare prezumate carepot să nu fie aceleaşi tuturor locurilor de muncă< de aceea scalarea condiţiilor poate fi necesară pentru a defini măsurile de management al riscului specific corespunzătoare unui loc de muncă

Schlumberger

FISA TEHNICA DE SECURITATE

(Generic EU)

conform directivei CE 1907/2006

Versiune: 3 *Data revizuirii: 03 februarie 2009*

1.IDENTIFICAREA SUBSTANTEI / PREPARARII SI A SOCIETATII / INTREPRINDERII

Denumirea produsului: **SALTBOND* II Additive D80A**

Codul produsului: **D080A**

Identificarea Companiei/Intermediarului

Schlumberger
Pesetastraat 40
2991 XT Barendrecht, The Netherlands
+31 10 2923201
vollebregt1@slb.com

Telefon în caz de urgență: USA: +1-281-595-3518 (24hr)

Folosirea substanței/preparare: Folosit ca aditiv de betonare in aplicatiile pe baza de ulei.

2. IDENTIFICAREA PERICOLELOR

Necunoscut

Indicații de pericol: Produsul nu este periculos conform Directivei 1999/45/EC.

Cele mai importante riscuri

Pericol pentru mediu înconjurător: Necunoscut.

3. COMPOZIŢIA/INFORMAŢII DESPRE INGREDIENTE

Pentru textul complet al frazelor R mentionate în acest paragraf, se va consulta paragraful 16

4. MĂSURI DE PRIM AJUTOR

Inhalare: Se va ieşi la aer curat.

Contact cu pielea: Se va clăti cu apă.

Contact cu ochii: Se va clăti cu multă apă. Dacă simptomele persistă se va chema un medic.

Ingerare: Se va clăti gura. Se va consulta un medic dacă este nevoie.

5. MĂSURI DE COMBATERE A INCENDIILOR

Produse recomandate pentru stingerea incendiului: se va folosi un produs chimic uscat, CO2, apa pulverizata sau spuma de "alcool".

Produse pentru stingerea incendiului ce nu pot fi folosite din motive de securitate: Necunoscut.

Echipament de protectie special pentru pompieri: Purtati haine de protectie in caz de incendiu si evitati sa inhalati vapori.

Riscuri speciale de expunere apar chiar de la substanță sau preparat, produşii lui de ardere sau gazele eliberate: Nimic previzibil în mod normal.

6. MĂSURI IMPOTRIVA PIERDERILOR ACCIDENTALE

Măsuri de prevedere individuale: Se va folosi echipament de protecție individual. Vezi de asemenea secțiunea 8.

Măsuri de prevedere pentru mediu: Se vor preveni scăpări sau scurgeri ulterioare. Nu se va permite ca materialul să contamineze pânza de apă freatică.

Metode de curățire: Se va absorbi cu un absorbant inert. Se va zăgăzui. Produsul va fi colectat în recipiente speciale pentru evacuare. După curățire se vor elimina urmele folosind apă.

7. MANIPULARE ŞI DEPOZITARE

Manipulare:

Măsuri tehnice/Măsuri de prevedere: Nu sunt necesare precauții speciale.
Măsuri de prevedere la manipulare: Nu sunt necesare precauții speciale.

Depozitare:

Măsuri tehnice/Condiții de depozitare: Nu sunt necesare condiții speciale de depozitare.

Cerinte ambalare: Container din otel sau polipropilena cu densitate ridicata (HDPE).

Produse incompatibile: Agenți oxidanți

8. CONTROLUL EXPUNERII / PROTECŢIE PERSONALA

Masuri inginerice pentru a reduce expunerea: Nu sunt necesare măsuri tehnice speciale de protecție

Protectie respiratorie: Nu este necesar în mod normal nici un fel de echipament respirator individual.

Protecția mâinilor: Mănuşi din cauciuc.

Protecția ochilor: Se recomanda sa se poarte ochelari cand se folosesc substante chimice.

Protecția pielii şi a corpului: Curatati hainele. Se va scoate şi se va spăla îmbrăcămintea contaminată, înainte de a se refolosi.

Control al expunerii referitoare la protecția mediului înconjurător

Limita(e) de expunere profesională(e)

SUA	EU

9. PROPRIETĂŢI FIZICO-CHIMICE

Informații generale

Formă:	lichid
Miros:	dulceag
Culoare:	maro închis

Informatii importante despre securitatea sanatatii si a mediului

pH:	7 - 8
Punct/domeniu de fierbere:	101 °C
Punct de aprindere:	nu străluceşte.
Caracteristici explozive:	
Informatii explozie - sensibilitatea la impactul mecanic:	Nu se aplică
Informatii explozie - sensibilitatea la descarcarea statica	Nu se aplică
Limita de inflamabilitate în aer:	
inferioară:	Nu se aplică
superioară:	Nu se aplică
Proprietăți de întreținere a arderii:	nici unul
Densitate relativă:	1.2 (@ 20°C)
Solubilitate:	
Solubilitate în apă:	solubil.
Solubilitate în grăsimi:	insolubil.
Distribuire coeficient (n-octanol/apa):	Nu există informații disponibile.
Vâscozitate:	50 mPa.s
Densitatea de vapori:	> 1 (Aer = 1.0)
Presiune de vapori:	similar apei.

Viteză de evaporare: similar apei.

Informații suplimentare

Punct/categorie de topire: 1 °C

10. STABILITATE ŞI REACTIVITATE

Stabilitate: Stabil în condițiile de depozitare recomandate

Condiții de evitat: Necunoscut.

Materiale de evitat: Agenți oxidanți

Produşi de descompunere potențial periculoşi: Cand sunt incalziti puternic sau arsi,. Oxizi de carbon. Oxizi de sulf.

Polimerizare riscanta: Nu se produce o polimerizare periculoasa.

11. INFORMAŢII TOXICOLOGICE

Efecte locale

Piele: Nu se asteapta niciun efect.

Ochii: Poate provoca o usoara iritatie.

Inhalare: Nu se asteapta niciun efect.

Ingerare: Nu se asteapta niciun efect.

Sensubilizare - piele Nu se stie daca provoaca reactii alergice.

Sensubilizare - plaman Nu se stie daca provoaca reactii alergice

Pericol cronic pentru sănătate

efecte cancerigene: Necunoscut.

efecte mutagene: Nu se stie daca provoaca daune genetice transmisibile.

teratogen: Nu se stie daca provoaca defecte la nastere sau daca are efect daunator asupra dezvoltarii fatului.

Toxicitate în ceea ce priveşte reproducerea: Nu se stie daca afecteaza negativ functiile sau organele de reproducere.

Efectul substantei asupra unui organ (tinta): Necunoscut.

12. INFORMAŢII ECOLOGICE

Ecotoxivitate

Informatii legate de componente

13. CONSIDERAŢII RELATIVE LA ELIMINARE

Deşeuri provenind de la reziduuri / produse neutilizate: Conform cu reglementările locale şi naționale.

Ambalaje contaminate: Containerele goale trebuie puse la dispozitia uzinelor de reciclare locale pentru a fi reciclate, recuperate sau eliminate.

Numărul deşeului conform cu CED: Conform codului european de deşeuri (CED), codul deşeului nu se refera la produs ca atare, ci la modul de aplicație al acestuia
Următoarele coduri ale deşurilor sunt numai sugestii:
07 07 99 - deseuri neprevazute in
16 03 06 - deseuri organice altele decat cele mentionate in 16 03 05

14. INFORMAŢII PRIVIND TRANSPORTUL

Numar UN nici unul
Nume corect de expediere: nu este reglementat.

ADR/RID
Clasa: nu este reglementat

IMDG/IMO
Clasa de pericol: nu este reglementat

ICAO/IATA
Clasa de pericol: nu este reglementat

15. INFORMAŢII PRIVIND REGLEMENTĂRILE SPECIFICE APLICABILE

în conformitate cu legislatia în vigoare

Indicații de pericol:
- Produsul nu este periculos conform Directivei 1999/45/EC

Fraza(e) indicând R (risc):
nici unul

Frază(e) S:
Ingrijiti corespunzator si mentineti curatenia

Inventarieri internationale

Acest produs respecta cerintele EINECS/ELINCS.

Împreună cu această scrisoare primiţi şi noile versiuni ale fişelor de protecţia şi securitatea muncii care vor înlocui versiunile precedente

Se va controla dacă trebuie luate măsuri conform cu directiva 94/33/EC pentru protecția tinerelui:
Acest produs a fost declarat în CEE în conformitate cu Articolul 8 al Directivei CE 67/548

Această scrisoare a fost tipărită electronic şi de aceea nu este semnată: Conformitate reglementare chimica

Informatiile si recomandarile cuprinse in prezenta se bazeaza pe teste considerate fiabile. Insa, Schlumberger nu garanteaza acuratetea sau integritatea lor IAR ACESTE INFORMATII NU CONSTITUIE O GARANTIE, EXPRESA SAU IMPLICITA, CU PRIVIRE LA SIGURANTA PRODUSELOR,COMERCIALIZAREA PRODUSELOR, SAU CONFORMITATEA PRODUSELOR PENTRU UN ANUMIT SCOP. Se poate solicita adaptarea la conditiile propriu-zise de folosire. Schlumberger nu isi anuma nicio raspundere pentru rezultatele obtinute sau pentru daunele incidente sau consecventiale, inclusiv pierderile de profit generate de folosirea acestor informatii. Nu exista nicio garantie cu privire la incalcarea unui brevet, copyright sau marca inregistrata.

Sfârşitul Normelor de Tehnica şi Securitatea Muncii

Schlumberger

FISA TEHNICA DE SECURITATE

(Generic EU)

conform directivei CE 1907/2006

Versiune: 1 *Data revizuirii: 05 februarie 2009*

1.IDENTIFICAREA SUBSTANTEI / PREPARARII SI A SOCIETATII / INTREPRINDERII

Denumirea produsului: **UNISET-LT D177**

Codul produsului: **D177**

Identificarea Companiei/Intermediarului

Schlumberger
Pesetastraat 40
2991 XT Barendrecht, The Netherlands
+31 10 2923201
vollebregt1@slb.com

Telefon în caz de urgență: USA: +1-281-595-3518 (24hr)

Folosirea substanței/preparare: Folosit ca aditiv de betonare in aplicatiile pe baza de ulei.

2. IDENTIFICAREA PERICOLELOR

Indicații de pericol: Xi - Iritant.

Cele mai importante riscuri Iritant pentru ochi şi pentru piele.

Riscuri de sanatate: Poate fi usor iritant daca este inghitit.

Pericol pentru mediu înconjurător: Portiunea organica din acest material nu este biodegradabila.

3. COMPOZIŢIA/INFORMAŢII DESPRE INGREDIENTE

Componente	Nr. CAS	Nr.CE.	Greutate % - Categorie	Clasificare
Phosphoric acid	7664-38-2	231-633-2	5 - 10	C;R34
Pentasodium EDTMP	7651-99-2	231-615-4	5 - 10	Xi;R36/38

Pentru textul complet al frazelor R mentionate în acest paragraf, se va consulta paragraful 16

4. MĂSURI DE PRIM AJUTOR

Inhalare: Se va ieşi la aer curat.

Contact cu pielea: Se va spala imediat cu sapun si multa apa, scotând toate hainele si încaltamintea contaminate. Apelati la ingrijire medicala.

Contact cu ochii: Clatiti imediat ochii cu apa timp de 15 minute tinand ploapele deschise. Apelati la ingrijire medicala.

Ingerare: NU se va induce stare de vomă. Consumati cantitati mari de lapte (de preferat) sau apa. Apelati la ingrijire medicala imediat.

5. MĂSURI DE COMBATERE A INCENDIILOR

Produse recomandate pentru stingerea incendiului: Nu este necesar. Folositi mijloace de stingere corespunzatoare pentru materialul inconjurator.

Produse pentru stingerea incendiului ce nu pot fi folosite din motive de securitate: Necunoscut.

Echipament de protectie special pentru pompieri: Folositi masca de respiratie in spatiile inchise. Purtati haine de protectie in caz de incendiu si evitati sa inhalati vapori.

Riscuri speciale de expunere apar chiar de la substanță sau preparat, produşii lui de ardere sau gazele eliberate: Phosphorus oxides. Cand sunt incalziti puternic sau arsi, oxizii de carbon si aburii organici daunatori sunt eliberati.

6. MĂSURI IMPOTRIVA PIERDERILOR ACCIDENTALE

Măsuri de prevedere individuale: Se va evita contactul cu pielea şi ochii. Se va folosi echipament de protecție individual.

Măsuri de prevedere pentru mediu: Se vor preveni scăpări sau scurgeri ulterioare.

Metode de curățire: Se va zăgăzui. Se va neutraliza folosind lapte de var sau sodă şi se va îndepărta cu multă apă. Puneti in containere corespunzatoare pentru dispunere.

7. MANIPULARE ŞI DEPOZITARE

Manipulare:

Măsuri tehnice/Măsuri de prevedere: Nu sunt necesare precauții speciale.
Măsuri de prevedere la manipulare: Se va evita contactul cu pielea şi ochii. Se va folosi echipament de protecție individual.

Depozitare:

Măsuri tehnice/Condiții de depozitare: Depozitati in zone bine aerisite protejate de lumina directa a soarelui.

Cerinte ambalare: Cutie sau bidon din polipropilena de densitate ridicata (HDPE).

Produse incompatibile: Baze

8. CONTROLUL EXPUNERII / PROTECȚIE PERSONALA

Masuri inginerice pentru a reduce expunerea: Mentineti concentratiile din aer sub limitele de expunere

Protectie respiratorie: Nu este necesar în mod normal nici un fel de echipament respirator individual.

Protecția mâinilor: Manusi impermeabile fabricate din PNC

Protecția ochilor: Ochelari de protecție perfect adecvați.

Protecția pielii şi a corpului: Şorț rezistent la produse chimice.

Control al expunerii referitoare la protecția mediului înconjurător

Limita(e) de expunere profesională(e)

	SUA			EU	
Componente	**TWA / Ceiling**	**STEL**	**Piele**	**8 Hour TWA**	**STEL**
Phosphoric acid	1 mg/m³	3 mg/m³		1 mg/m³	2 mg/m³
Pentasodium EDTMP	nici unul	nici unul		nici unul	nici unul

9. PROPRIETĂȚI FIZICO-CHIMICE

Informații generale

Formă: lichid
Miros: nici unul
Culoare: verde deschis

Informatii importante despre securitatea sanatatii si a mediului

pH: 2.1
Punct/domeniu de fierbere: ~100 °C
Punct de aprindere: >100
Caracteristici explozive:
Informatii explozie - sensibilitatea la impactul mecanic: Nu se aplică
Informatii explozie - sensibilitatea la descarcarea statica Nu se aplică
Limita de inflamabilitate în aer:

inferioară:	Nu se aplică
superioară:	Nu se aplică
Proprietăți de întreținere a arderii:	Necunoscut
Densitate relativă:	1.1
Solubilitate:	
Solubilitate în apă:	solubil.
Solubilitate în grăsimi:	Nu există informații disponibile.
Distribuire coeficient (n-octanol/apa):	Nu se aplică.
Vâscozitate:	5.6 mPa.s (@ 25 °C)
Densitatea de vapori:	la fel ca apa.
Presiune de vapori:	2.3 kPa (@ 20°C)
Viteză de evaporare:	Nu există informații disponibile.
Informații suplimentare	
Punct/categorie de topire:	< 0 °C

10. STABILITATE ŞI REACTIVITATE

Stabilitate:	Stabil în condițiile de depozitare recomandate
Condiții de evitat:	Necunoscut.
Materiale de evitat:	Baze
Produşi de descompunere potențial periculoşi:	Phosphorus oxides. Cand sunt incalziti puternic sau arsi, oxizii de carbon si aburii organici daunatori sunt eliberati.
Polimerizare riscanta:	Nu se produce o polimerizare periculoasa.

11. INFORMAŢII TOXICOLOGICE

Efecte locale

Piele:	Iritant; poate provoca durere, roseata, dermatita.
Ochii:	Iritant pentru ochi. Poate provoca durere, inroseala, disconfort.
Inhalare:	Nu se asteapta niciun efect.
Ingerare:	Poate fi usor iritant.
Sensubilizare - piele	Nu se stie daca provoaca reactii alergice.

Pericol cronic pentru sănătate

efecte cancerigene:	Nu este indicat de IARC, USA NTP, sau USA OSHA.
efecte mutagene:	Nu se stie daca provoaca daune genetice transmisibile.

teratogen: Nu se stie daca provoaca defecte la nastere sau daca are efect daunator asupra dezvoltarii fatului.

Toxicitate în ceea ce priveşte reproducerea: Nu se stie daca afecteaza negativ functiile sau organele de reproducere.

Efectul substantei asupra unui organ (tinta): Rinichi.

12. INFORMAŢII ECOLOGICE

Ecotoxivitate

Informatii legate de componente

Phosphoric acid

Bioacumulare:	Nu se aplică
Persistenta / degradabilitate:	Nu se aplică
Informatii specii de peste apa proaspata	LC50 96 h (Gambusia affinis) = 3 - 3.5 mg/L
Informatii despre puricii de apa:	EC50 12 h (Daphnia magna) = 4.6 mg/L

Pentasodium EDTMP

Bioacumulare:	Nu se bioacumulează log Pow = <-1.5
Persistenta / degradabilitate:	Nu este biodegradabil
Toxicitate alge:	72h EC50=9 mg/l (Skeletonema costatum)

13. CONSIDERAŢII RELATIVE LA ELIMINARE

Deşeuri provenind de la reziduuri / produse neutilizate: Conform cu reglementările locale şi naționale

Ambalaje contaminate: Containerele goale trebuie puse la dispozitia uzinelor de reciclare locale pentru a fi reciclate, recuperate sau eliminate

Numărul deşeului conform cu CED: Conform codului europeen de deşeuri (CED), codul deşeului nu se refera la produs ca atare, ci la modul de aplicație al acestuia
Următoarele coduri ale deşurilor sunt numai sugestii:
16 10 01 - deseuri lichide apoase care contin substante periculoase

14. INFORMAŢII PRIVIND TRANSPORTUL

Numar UN nici unul
Nume corect de expediere: nu este reglementat.

ADR/RID
Clasa: nu este reglementat

14. INFORMAŢII PRIVIND TRANSPORTUL

IMDG/IMO

Clasa de pericol: nu este reglementat

ICAO/IATA

Clasa de pericol: nu este reglementat

15. INFORMAŢII PRIVIND REGLEMENTĂRILE SPECIFICE APLICABILE

în conformitate cu legislatia în vigoare

Indicații de pericol:

- Xi - Iritant



Fraza(e) indicând R (risc):

nici unul

R36/38 - Iritant pentru ochi şi pentru piele.

Frază(e) S:

- S26 - În cazul contactului cu ochii, se spala imediat cu multă apă şi se consulta un specialist.
- S45 - În caz de accident sau boala, a se consulta imediat medicul (Dacă este posibil, a i se arăta eticheta).

Inventarieri internationale

Acest produs respecta cerintele EINECS/ELINCS.

Împreună cu această scrisoare primiţi şi noile versiuni ale fişelor de protecţia şi securitatea muncii care vor înlocui versiunile precedente

Textul frazelor R mentionate la articolul 3

- R34 - Provoacă arsuri.
- R36/38 - Iritant pentru ochi şi pentru piele.

Se va controla dacă trebuie luate măsuri conform cu directiva 94/33/EC pentru protecția tinerelui:

Acest produs a fost declarat în CEE în conformitate cu Articolul 8 al Directivei CE 67/548

Această scrisoare a fost tipărită electronic şi de aceea nu este semnată: Conformitate reglementare chimica

Informatiile si recomandarile cuprinse in prezenta se bazeaza pe teste considerate fiabile. Insa, Schlumberger nu garanteaza acuratetea sau integritatea lor IAR ACESTE INFORMATII NU CONSTITUIE O GARANTIE, EXPRESA SAU IMPLICITA, CU PRIVIRE LA SIGURANTA PRODUSELOR,COMERCIALIZAREA PRODUSELOR, SAU CONFORMITATEA PRODUSELOR PENTRU UN ANUMIT SCOP. Se poate solicita adaptarea la conditiile propriu-zise de folosire. Schlumberger nu isi anuma nicio raspundere pentru rezultatele obtinute sau pentru daunele incidente sau consecventiale, inclusiv pierderile de profit generate de folosirea acestor informatii. Nu exista nicio garantie cu privire la incalcarea unui brevet, copyright sau marca inregistrata.

Sfârşitul Normelor de Tehnica şi Securitatea Muncii

Schlumberger

FISA TEHNICA DE SECURITATE

(Generic EU)

conform directivei CE 1907/2006

Versiune: 2 *Data revizuirii: 11 mai 2009*

1.IDENTIFICAREA SUBSTANTEI / PREPARARII SI A SOCIETATII / INTREPRINDERII

Denumirea produsului: **MUDPUSH* II Spacer D182**

Codul produsului: **D182**

Identificarea Companiei/Intermediarului

Schlumberger
Pesetastraat 40
2991 XT Barendrecht, The Netherlands
+31 10 2923201
vollebregt1@slb.com

Telefon în caz de urgență: USA: +1-281-595-3518 (24hr)

Folosirea substanței/preparare: Folosit ca aditiv de betonare in aplicatiile pe baza de ulei.

2. IDENTIFICAREA PERICOLELOR

Indicații de pericol: Produsul nu este periculos conform Directivei 1999/45/EC

Cele mai importante riscuri

Riscuri de sanatate: Poate provoca iritatie mecanica la ochii. Inhalarea de praf poate provoca sufocări, o senzație de apăsare în piept, dureri în gât şi tuse.

Pericol pentru mediu înconjurător: nici unul.

Principalele riscuri fizice: Fin cand este umed. praf.

3. COMPOZIȚIA/INFORMAȚII DESPRE INGREDIENTE

Componente	Nr. CAS	Nr.CE.	Greutate % - Categorie	Clasificare
Sulfonated organic polymer		Listed	40 - 70	-
Glucoside polymer		Listed	15 - 40	-

Pentru textul complet al frazelor R mentionate în acest paragraf, se va consulta paragraful 16

4. MĂSURI DE PRIM AJUTOR

Inhalare: Se va ieşi la aer curat. Apelati la ingrijire medicala daca apare iritatie.

Contact cu pielea: Se va clăti cu apă.

Contact cu ochii: Se va clăti imediat cu multă apă, inclusiv sub pleoape. Se va consulta un medic dacă este nevoie.

Ingerare: Se va clăti gura. Se va consulta un medic dacă este nevoie. Niciodată nu se va încerca să se forțeze o persoană inconstientă să înghită.

5. MĂSURI DE COMBATERE A INCENDIILOR

Produse recomandate pentru stingerea incendiului: Abur de apa,Spuma de alcool, CO2, Chimicale uscate.

Produse pentru stingerea incendiului ce nu pot fi folosite din motive de securitate: Jet de apă puternic. Fin cand este umed.

Echipament de protectie special pentru pompieri: Purtati haine de protectie in caz de incendiu si evitati sa inhalati vapori. Folositi masca de respiratie in spatiile inchise.

Riscuri speciale de expunere apar chiar de la substanță sau preparat, produşii lui de ardere sau gazele eliberate: Praful suspendat poate prezenta un risc de explozie de praf.

6. MĂSURI IMPOTRIVA PIERDERILOR ACCIDENTALE

Măsuri de prevedere individuale: Se va evita formarea de praf. Nu se va inhala praful.

Măsuri de prevedere pentru mediu: Se va preveni deversarea produsului în sistemul de canalizare. Nu va fi eliberat in mediul înconjurător.

Metode de curățire: Se va mătura şi se va introduce folosind un făraş în containere adecvate pentru a fi eliminat. Se va evita formarea de praf. După curățire se vor elimina urmele folosind apă.

7. MANIPULARE ŞI DEPOZITARE

Manipulare:

Măsuri tehnice/Măsuri de prevedere: Se va evita formarea de praf.

Măsuri de prevedere la manipulare: Se va asigura ventilație adecvată. Praful poate forma un amestec exploziv în aer.

Depozitare:

Măsuri tehnice/Condiții de depozitare: Pastrati materialul uscat.

Cerinte ambalare: Ambalaj anti-umezeala.

Produse incompatibile: Agenți oxidanți

8. CONTROLUL EXPUNERII / PROTECŢIE PERSONALA

Masuri inginerice pentru a reduce expunerea: Se va asigura ventilație adecvată

Protectie respiratorie: Nu este necesar în mod normal nici un fel de echipament respirator individual. În cazul unei ventilații insuficiente se va folosi echipament respirator adecvat. Masti adecvate continând filtre de particule P1 (Normele Europene 143).

Protecția mâinilor: Mănuşi din cauciuc.

Protecția ochilor: Ochelari de protecție perfect adecvați.

Protecția pielii şi a corpului: Curatati hainele.

Control al expunerii referitoare la protecția mediului înconjurător

Limita(e) de expunere profesională(e)

	SUA			EU	
Componente	**TWA / Ceiling**	**STEL**	**Piele**	**8 Hour TWA**	**STEL**
Sulfonated organic polymer	nici unul	nici unul		nici unul	nici unul
Glucoside polymer	nici unul	nici unul		nici unul	nici unul

9. PROPRIETĂŢI FIZICO-CHIMICE

Informații generale

Formă: pulbere
Miros: dulceag / dulce
Culoare: roşu maroniu

Informatii importante despre securitatea sanatatii si a mediului

pH: aproximativ 8
concentratie pH 650 g/l
Punct/domeniu de fierbere: Nu se aplică.
Punct de aprindere: nu străluceşte.
Caracteristici explozive:
Informatii explozie - sensibilitatea la impactul mecanic: nici unul

Informatii explozie - sensibilitatea la descarcarea statica	nici unul
Limita de inflamabilitate în aer:	
inferioară:	Nu se aplică
superioară:	Nu se aplică
Proprietăți de întreținere a arderii:	nici unul
Densitate relativă:	1.3 (@ 20°C)
Greutate volumetrică:	nedeterminat.
Solubilitate:	
Solubilitate în apă:	parțial solubil.
Solubilitate în grăsimi:	insolubil.
Distribuire coeficient (n-octanol/apa):	Vezi de asemenea secțiunea 12
Vâscozitate:	Nu se aplică.
Densitatea de vapori:	Nu se aplică.
Presiune de vapori:	Nu se aplică.
Viteză de evaporare:	Nu se aplică.

Informații suplimentare

Punct/categorie de topire: Descompusi

10. STABILITATE ŞI REACTIVITATE

Stabilitate: Stabil.

Condiții de evitat: Pastrati materialul uscat.

Materiale de evitat: Agenți oxidanți

Produşi de descompunere potențial periculoşi: Cand sunt incalziti puternic sau arsi, oxizii de carbon si aburii organici daunatori sunt eliberati. Oxizi de sulf.

Polimerizare riscanta: Nu se produce o polimerizare periculoasa.

11. INFORMAŢII TOXICOLOGICE

Efecte locale

Piele: Nu se asteapta niciun efect.

Ochii: Poate provoca iritatie mecanica.

Inhalare: Inhalarea de praf poate provoca sufocări, o senzație de apăsare în piept, dureri în gât şi tuse.

Ingerare: Nu este un mijloc de expunere. Nu se asteapta niciun efect.

Sensubilizare - piele Nu se stie daca provoaca reactii alergice.

Sensubilizare - plaman Nu se stie daca provoaca reactii alergice

Pericol cronic pentru sănătate

efecte cancerigene: Necunoscut.

efecte mutagene: Nu se stie daca provoaca daune genetice transmisibile.

teratogen: Nu se stie daca provoaca defecte la nastere sau daca are efect daunator asupra dezvoltarii fatului.

Toxicitate în ceea ce priveşte reproducerea: Nu se stie daca afecteaza negativ functiile sau organele de reproducere.

Efectul substantei asupra unui organ (tinta): Necunoscut.

12. INFORMAŢII ECOLOGICE

Ecotoxivitate

Toxicitate acvatică: Toxicitate redusa la peste.

Informatii legate de componente

Sulfonated organic polymer

Bioacumulare: Nu se bioacumulează
Persistenta / degradabilitate: Dificil biodagradabil

Glucoside polymer

Bioacumulare: Nu poate bioacumula datorita greutatii moleculare ridicate
Persistenta / degradabilitate: Uşor biodegradabil
Informaţii suplimentare: Indicat in lista PLONOR laOSPAR

13. CONSIDERAŢII RELATIVE LA ELIMINARE

Deşeuri provenind de la reziduuri / produse neutilizate: Se va evacua drept deşeu special în conformitate cu reglementările locale şi naţionale.

Ambalaje contaminate: Trimiteti sacose goale pentru pamant sanitar. Transmiteti alte tipuri de containere nefolosibile datorita gauririi sau deteriorarii si pamant sanitar daca regulamentele locale nu interzic acest lucru.

Numărul deşeului conform cu CED: Conform codului european de deşeuri (CED), codul deşeului nu se refera la produs ca atare, ci la modul de aplicaţie al acestuia
Următoarele coduri ale deşurilor sunt numai sugestii:
16 03 06 - deseuri organice altele decat cele mentionate in 16 03 05

14. INFORMAŢII PRIVIND TRANSPORTUL

Numar UN nici unul
Nume corect de expediere: nu este reglementat.

ADR/RID
Clasa: nu este reglementat

IMDG/IMO
Clasa de pericol: nu este reglementat

ICAO/IATA
Clasa de pericol: nu este reglementat

15. INFORMAŢII PRIVIND REGLEMENTĂRILE SPECIFICE APLICABILE

în conformitate cu legislatia în vigoare

Indicații de pericol:
nici unul

Fraza(e) indicând R (risc):
nici unul

Frază(e) S:
Ingrijiti corespunzator si mentineti curatenia

Inventarieri internationale

Acest produs respecta cerintele EINECS/ELINCS.

Împreună cu această scrisoare primiţi şi noile versiuni ale fişelor de protecţia şi securitatea muncii care vor înlocui versiunile precedente

Se va controla dacă trebuie luate măsuri conform cu directiva 94/33/EC pentru protecția tinerelui:
Acest produs a fost declarat în CEE în conformitate cu Articolul 8 al Directivei CE 67/548

Cauza reviziei:
2. IDENTIFICAREA PERICOLELOR
3. COMPOZIȚIA/INFORMAȚII DESPRE INGREDIENTE

Această scrisoare a fost tipărită electronic şi de aceea nu este semnată: Well Services Safety & Environment

Informatiile si recomandarile cuprinse in prezenta se bazeaza pe teste considerate fiabile. Insa, Schlumberger nu garanteaza acuratetea sau integritatea lor IAR ACESTE INFORMATII NU CONSTITUIE O GARANTIE, EXPRESA SAU IMPLICITA, CU PRIVIRE LA SIGURANTA PRODUSELOR,COMERCIALIZAREA PRODUSELOR, SAU CONFORMITATEA PRODUSELOR PENTRU UN ANUMIT SCOP. Se poate solicita adaptarea la conditiile propriu-zise de folosire. Schlumberger nu isi anuma nicio raspundere pentru rezultatele obtinute sau pentru daunele incidente sau consecventiale, inclusiv pierderile de profit generate de folosirea acestor informatii. Nu exista nicio garantie cu privire la incalcarea unui brevet, copyright sau marca inregistrata.

Sfârşitul Normelor de Tehnica şi Securitatea Muncii

Schlumberger

FISA TEHNICA DE SECURITATE

(Generic EU)

în conformitate cu Reglementarile UE No. 1907/2006

Versiune: 3 *Data revizuirii: 13 septembrie 2011*

1.IDENTIFICAREA SUBSTANTEI / PREPARARII SI A SOCIETATII / INTREPRINDERII

Denumirea produsului: **Low Temperature Dispersant D185**

Codul produsului: **D185**

Identificarea Companiei/Intermediarului

Schlumberger
Pesetastraat 40
2991 XT Barendrecht, The Netherlands
+31 10 2923201
vollebregt1@slb.com

Telefon în caz de urgență: USA: +1-281-595-3518 (24hr)

Folosirea substanței/preparare: Folosit ca aditiv de betonare in aplicatiile pe baza de ulei.

2. IDENTIFICAREA PERICOLELOR

Indicații de pericol: Produsul nu este periculos conform Directivei 1999/45/EC.

Cele mai importante riscuri Necunoscut

Pericol pentru mediu înconjurător: Conform rezultatelor testelor de biodegradabilitate acest produs nu este uşor biodegradabil.

3. COMPOZIȚIA/INFORMAȚII DESPRE INGREDIENTE

Componente	Nr. CAS	Nr.CE.	Greutate % - Categorie	Clasificare
Aliphatic acid copolymer		Listed	10 - 30	

Pentru textul complet al frazelor R mentionate în acest paragraf, se va consulta paragraful 16

4. MĂSURI DE PRIM AJUTOR

Inhalare: Se va ieşi la aer curat.

Contact cu pielea: Se va spăla cu apă şi săpun.

Contact cu ochii: Se va (vor) spăla imediat ochiul(i) cu multă apă.

Ingerare: Se va clăti gura. Niciodată nu se va încerca să se forțeze o persoană inconstientă să înghită.

5. MĂSURI DE COMBATERE A INCENDIILOR

Produse recomandate pentru stingerea incendiului: Compatibil pentru toate tipurile.

Produse pentru stingerea incendiului ce nu pot fi folosite din motive de securitate: Nu există informații disponibile

Echipament de protectie special pentru pompieri: Purtati haine de protectie in caz de incendiu si evitati sa inhalati vapori. Folositi masca de respiratie in spatiile inchise.

Riscuri speciale de expunere apar chiar de la substanță sau preparat, produşii lui de ardere sau gazele eliberate: Descompunerea termica provoaca o degajare de gaze si vapori iritanti. Oxizi de carbon.

6. MĂSURI IMPOTRIVA PIERDERILOR ACCIDENTALE

Măsuri de prevedere individuale: Nu sunt necesare precauții speciale. Vezi de asemenea secțiunea 8.

Măsuri de prevedere pentru mediu: Se vor preveni scăpări sau scurgeri ulterioare.

Metode de curățire: Se va zăgăzui. Se va absorbi scurgerea cu ajutorul unui material inert (spre exemplu nisip sau pamânt) si apoi se va pune într-un container de deseuri chimice.

7. MANIPULARE ŞI DEPOZITARE

Manipulare:

Măsuri tehnice/Măsuri de prevedere: Nu sunt necesare precauții speciale.
Măsuri de prevedere la manipulare: Nu sunt necesare precauții speciale. Vezi de asemenea secțiunea 8.

Depozitare:

Măsuri tehnice/Condiții de depozitare: Nu sunt necesare condiții speciale de depozitare.

Cerinte ambalare: Cutie sau bidon din polipropilena de densitate ridicata (HDPE).

Produse incompatibile: Nimic previzibil în mod normal

8. CONTROLUL EXPUNERII / PROTECŢIE PERSONALA

Masuri inginerice pentru a reduce expunerea: Nu sunt necesare măsuri tehnice speciale de protecție

Protectie respiratorie: Nu este necesar în mod normal nici un fel de echipament respirator individual.

Protecția mâinilor: Mănuşi din cauciuc., ,, PNC

Protecția ochilor: Se recomanda sa se poarte ochelari cand se folosesc substante chimice.

Protecția pielii şi a corpului: Curatati hainele.

Control al expunerii referitoare la protecția mediului înconjurător

Limita(e) de expunere profesională(e)

	SUA			EU	
Componente	**TWA / C**	**STEL**	**Piele**	**8 Hour TWA**	**STEL**
Aliphatic acid copolymer	nici unul	nici unul		nici unul	nici unul

9. PROPRIETĂŢI FIZICO-CHIMICE

Informații generale

Formă: lichid
Miros: nici unul
Culoare: incolor

Informatii importante despre securitatea sanatatii si a mediului

pH: 7
Punct/domeniu de fierbere: ~100 °C
Punct de aprindere: nu străluceşte.
Caracteristici explozive:
Informatii explozie - sensibilitatea la impactul mecanic: nici unul
Informatii explozie - sensibilitatea la descarcarea statica nici unul
Limita de inflamabilitate în aer:
inferioară: Nu se aplică
superioară: Nu se aplică
Proprietăți de întreținere a arderii: nici unul
Densitate relativă: > 1.0
Solubilitate:
Solubilitate în apă: solubil.
Solubilitate în grăsimi: insolubil.
Distribuire coeficient (n-octanol/apa): log Pow <3
Vâscozitate: nu există date.
Densitatea de vapori: nu există date.
Presiune de vapori: similar apei.
Viteză de evaporare: similar apei.

Informații suplimentare

Punct/categorie de topire: nu există date.

10. STABILITATE ŞI REACTIVITATE

Stabilitate: Stabil.

Condiții de evitat: Necunoscut.

Materiale de evitat: Necunoscut

Produşi de descompunere potențial periculoşi: Cand sunt incalziti puternic sau arsi, oxizii de carbon si aburii organici daunatori sunt eliberati.

Polimerizare riscanta: Nu se produce o polimerizare periculoasa.

11. INFORMAŢII TOXICOLOGICE

Efecte locale

Piele: Nu se asteapta niciun efect.

Ochii: Nu se asteapta niciun efect.

Inhalare: Nu se asteapta niciun efect.

Ingerare: Nu se asteapta niciun efect.

Sensubilizare - piele Nu se stie daca provoaca reactii alergice.

Sensubilizare - plaman Nu se stie daca provoaca reactii alergice

Pericol cronic pentru sănătate

efecte cancerigene: Necunoscut.

efecte mutagene: Nu se stie daca provoaca daune genetice transmisibile.

teratogen: Nu se stie daca provoaca defecte la nastere sau daca are efect daunator asupra dezvoltarii fatului.

Toxicitate în ceea ce priveşte reproducerea: Nu se stie daca afecteaza negativ functiile sau organele de reproducere.

Efectul substantei asupra unui organ (tinta): Necunoscut.

12. INFORMAŢII ECOLOGICE

Ecotoxivitate

Informatii legate de componente

Aliphatic acid copolymer

Bioacumulare:	Nu se bioacumulează
Persistenta / degradabilitate:	Dificil biodagradabil
Toxicitate peste:	96h LC50= >500 mg/l (Scophthalamus maximus juvenile)

13. CONSIDERAŢII RELATIVE LA ELIMINARE

Deşeuri provenind de la reziduuri / produse neutilizate: Dispunere prin umplere sanitara cu pamant sau alt ametoda acceptabila in conformitate cu regulamentele locale.

Ambalaje contaminate: Containerele goale trebuie puse la dispozitia uzinelor de reciclare locale pentru a fi reciclate, recuperate sau eliminate.

Numărul deşeului conform cu CED: Conform codului europeen de deşeuri (CED), codul deşeului nu se refera la produs ca atare, ci la modul de aplicație al acestuia
Următoarele coduri ale deşurilor sunt numai sugestii:
07 07 99 - deseuri neprevazute in
16 03 06 - deseuri organice altele decat cele mentionate in 16 03 05

14. INFORMAŢII PRIVIND TRANSPORTUL

Numar UN nici unul
Nume corect de expediere: nu este reglementat.

ADR/RID
Clasa: nu este reglementat

IMDG/IMO
Clasa de pericol: nu este reglementat

ICAO/IATA
Clasa de pericol: nu este reglementat

15. INFORMAŢII PRIVIND REGLEMENTĂRILE SPECIFICE APLICABILE

în conformitate cu legislatia în vigoare

Indicații de pericol:
- Produsul nu este periculos conform Directivei 1999/45/EC

Fraza(e) indicând R (risc):
nici unul

Frază(e) S:
- Ingrijiti corespunzator si mentineti curatenia

Inventarieri internationale

Acest produs respecta cerintele EINECS/ELINCS.

Împreună cu această scrisoare primiţi şi noile versiuni ale fişelor de protecţia şi securitatea muncii care vor înlocui versiunile precedente

Cauza reviziei:
Nu se aplică

Această scrisoare a fost tipărită electronic şi de aceea nu este semnată: Conformitate reglementare chimica

Informatiile si recomandarile cuprinse in prezenta se bazeaza pe teste considerate fiabile. Insa, Schlumberger nu garanteaza acuratetea sau integritatea lor IAR ACESTE INFORMATII NU CONSTITUIE O GARANTIE, EXPRESA SAU IMPLICITA, CU PRIVIRE LA SIGURANTA PRODUSELOR,COMERCIALIZAREA PRODUSELOR, SAU CONFORMITATEA PRODUSELOR PENTRU UN ANUMIT SCOP. Se poate solicita adaptarea la conditiile propriu-zise de folosire. Schlumberger nu isi anuma nicio raspundere pentru rezultatele obtinute sau pentru daunele incidente sau consecventiale, inclusiv pierderile de profit generate de folosirea acestor informatii. Nu exista nicio garantie cu privire la incalcarea unui brevet, copyright sau marca inregistrata.

Sfârşitul Normelor de Tehnica şi Securitatea Muncii

Schlumberger

FISA TEHNICA DE SECURITATE

(Generic EU)

în conformitate cu Reglementarile UE No. 1907/2006

Versiune: 2 *Data revizuirii: 11 iulie 2011*

1.IDENTIFICAREA SUBSTANTEI / PREPARARII SI A SOCIETATII / INTREPRINDERII

Denumirea produsului: **Low Temperature Cement Set Enhancer D186**

Codul produsului: **D186**

Identificarea Companiei/Intermediarului

Schlumberger
Pesetastraat 40
2991 XT Barendrecht, The Netherlands
+31 10 2923201
vollebregt1@slb.com

Telefon în caz de urgență: USA: +1-281-595-3518 (24hr)

Folosirea substanței/preparare: Folosit ca aditiv de betonare in aplicatiile pe baza de ulei.

2. IDENTIFICAREA PERICOLELOR

Indicații de pericol: Xi - Iritant.

Cele mai importante riscuri
Fraza(e) indicând R (risc): Risc de leziuni oculare grave.
Riscuri de sanatate: Poate fi nociv prin ingerare. Poate fi usor iritant pentru piele.

Principalele riscuri fizice: Oxidant usor.

3. COMPOZIȚIA/INFORMAȚII DESPRE INGREDIENTE

Componente	Nr. CAS	Nr.CE.	Greutate % - Categorie	Clasificare
Inorganic nitrogen compound #1		Listed	10 - 30	O;R8 Xi;R41
Inorganic nitrogen compound #2		Listed	10 - 30	O;R8
Aliphatic alcohol		Listed	1 - 5	Xn;R22
2,2'-methyliminodiethanol	105-59-9	203-312-7	1 - 5	Xi;R36
Inorganic bromine compound		Listed	1 - 5	Xi;R38

Pentru textul complet al frazelor R mentionate în acest paragraf, se va consulta paragraful 16

4. MĂSURI DE PRIM AJUTOR

Inhalare: Se va ieşi la aer curat. Apelati la ingrijire medicala daca apare iritatie.

Contact cu pielea: Se va spala imediat cu sapun si multa apa, scotând toate hainele si încaltamintea contaminate. Apelati la ingrijire medicala daca apare iritatie.

Contact cu ochii: Clatiti imediat ochii cu apa timp de 15 minute tinand ploapele deschise. Apelati la ingrijire medicala.

Ingerare: Se va clăti gura. Apelati la ingrijire medicala daca apare iritatie. Daca sunt inghitite mai multe grame, este necesar ajutorul medical.

Indicații pentru medici: Metemoglobinemia poate aparea daca materialul este absorbit in corp.

5. MĂSURI DE COMBATERE A INCENDIILOR

Produse recomandate pentru stingerea incendiului: Folositi mijloace de stingere corespunzatoare pentru materialul inconjurator.

Produse pentru stingerea incendiului ce nu pot fi folosite din motive de securitate: Necunoscut.

Echipament de protectie special pentru pompieri: Purtati haine de protectie in caz de incendiu si evitati sa inhalati vapori. Folositi masca de respiratie in spatiile inchise.

Riscuri speciale de expunere apar chiar de la substanță sau preparat, produşii lui de ardere sau gazele eliberate: Descompunerea termica provoaca o degajare de gaze si vapori iritanti.

6. MĂSURI IMPOTRIVA PIERDERILOR ACCIDENTALE

Măsuri de prevedere individuale: Se va evita contactul cu ochii. Nu atingeti de piele sau haine. Spalati cu apa din abundenta dupa folosire. Vezi de asemenea secțiunea 8.

Măsuri de prevedere pentru mediu: Se vor preveni scăpări sau scurgeri ulterioare. Nu va fi lasat sa intre în apele curgatoare.

Metode de curățire: Se va zăgăzui. Se va absorbi cu un absorbant inert. Puneti in containere corespunzatoare pentru dispunere. Vezi de asemenea secțiunea 13.

7. MANIPULARE ŞI DEPOZITARE

Manipulare:

Măsuri tehnice/Măsuri de prevedere: Nu sunt necesare precauții speciale.

Măsuri de prevedere la manipulare: Se va evita contactul cu ochii. Se va ține departe de lumina directă a soarelui. Evitati contactele cu hainele, substantele organice sau alte materiale combustibile.Nu depozitati sau transportati langa materiale corozive, materiale flamabile/combustibile, sau agenti reductori. Nu permiteti lichidului sa se ebaporeze. Materialul uscat este un oxidant puternic.

Depozitare:

Măsuri tehnice/Condiții de depozitare: Depozitati departe de materiale combustibile. Depozitati in zone bine aerisite protejate de lumina directa a soarelui. Se vor păstra containerele ermetic închise, într-un loc uscat, rece şi bine ventilat.

Cerinte ambalare: Cutie sau bidon din polipropilena de densitate ridicata (HDPE).

Produse incompatibile: Acizi tari, Baze tari, Agenți reducători, Substante organice, Vezi de asemenea secțiunea 10

8. CONTROLUL EXPUNERII / PROTECŢIE PERSONALA

Masuri inginerice pentru a reduce expunerea: Se va asigura ventilație adecvată, Controlati sursa

Protectie respiratorie: Nu este necesar în mod normal nici un fel de echipament respirator individual. În cazul unei ventilații insuficiente se va folosi echipament respirator adecvat.

Protecția mâinilor: Mănuşi impermeabile , Nitril

Protecția ochilor: Ochelari de protecție perfect adecvați.

Protecția pielii şi a corpului: Şorț rezistent la produse chimice.

Control al expunerii referitoare la protecția mediului înconjurător

Limita(e) de expunere profesională(e)

	SUA			EU	
Componente	**TWA / C**	**STEL**	**Piele**	**8 Hour TWA**	**STEL**
Inorganic nitrogen compound #1	nici unul	nici unul		nici unul	nici unul
Inorganic nitrogen compound #2	nici unul	nici unul		nici unul	nici unul
Aliphatic alcohol	nici unul	nici unul		nici unul	nici unul
2,2'-methyliminodiethanol	nici unul	nici unul		nici unul	nici unul
Inorganic bromine compound	nici unul	nici unul		nici unul	nici unul

9. PROPRIETĂŢI FIZICO-CHIMICE

Informații generale

Formă: lichid
Miros: nici unul
Culoare: verde deschis

Informatii importante despre securitatea sanatatii si a mediului

pH:	8 - 10
concentratie pH	(100% solutie)
Punct/domeniu de fierbere:	~ 108 °C
Punct de aprindere:	nu străluceşte.
Caracteristici explozive:	
Informatii explozie - sensibilitatea la impactul mecanic:	nici unul
Informatii explozie - sensibilitatea la descarcarea statica	nici unul
Limita de inflamabilitate în aer:	
inferioară:	Nu se aplică
superioară:	Nu se aplică
Proprietăți de întreținere a arderii:	Oxidant usor
Densitate relativă:	1.4
Solubilitate:	
Solubilitate în apă:	solubil.
Solubilitate în grăsimi:	Nu există informații disponibile.
Distribuire coeficient (n-octanol/apa):	Vezi de asemenea secțiunea 12
Vâscozitate:	2 mPa.s (@ 15.5 °C)
Densitatea de vapori:	1 (Aer = 1.0)
Presiune de vapori:	~2 kPa (@ 25°C)
Viteză de evaporare:	Nu există informații disponibile.

Informații suplimentare

Punct/categorie de topire:	< -21 °C

10. STABILITATE ŞI REACTIVITATE

Stabilitate:	Stabil în condițiile de depozitare recomandate
Condiții de evitat:	Căldura. Nu permiteti lichidului sa se ebaporeze. Materialul uscat este un oxidant puternic.
Materiale de evitat:	Acizi, Baze, Agenți reducători, Substante organice
Produşi de descompunere potențial periculoşi:	Amoniac. oxizi de azot (Nox). Oxizi de carbon.
Polimerizare riscanta:	Nu se produce o polimerizare periculoasa.

11. INFORMAŢII TOXICOLOGICE

Efecte locale

Piele:	Poate provoca o usoara iritatie.
Ochii:	Risc de leziuni oculare grave. Iritant. Poate provoca durere, inroseala, disconfort.

Inhalare:	Nu se asteapta niciun efect.
Ingerare:	Inghiterea unor cantitati mari poate fi daunatoare.
Sensubilizare - piele	Nu se stie daca provoaca reactii alergice.
Sensubilizare - plaman	Nu se stie daca provoaca reactii alergice

Pericol cronic pentru sănătate

efecte cancerigene:	Necunoscut.
efecte mutagene:	Nu se stie daca provoaca daune genetice transmisibile.
teratogen:	Nu se stie daca provoaca defecte la nastere sau daca are efect daunator asupra dezvoltarii fatului.
Toxicitate în ceea ce priveşte reproducerea:	Nu se stie daca afecteaza negativ functiile sau organele de reproducere.

12. INFORMAŢII ECOLOGICE

Ecotoxivitate

Toxicitate acvatică: Vezi informatii component mai jos.

Informatii legate de componente

Inorganic nitrogen compound #1

Bioacumulare:	Nu se aplică
Persistenta / degradabilitate:	Nu se aplică
Informatii specii de peste apa proaspata	LC50 96 h (Lepomis macrochirus) = 10000 mg/L
Informatii despre puricii de apa:	EC50 120 h (Daphnia magna) = 2355 mg/L
Informații suplimentare:	Indicat in lista PLONOR laOSPAR

Inorganic nitrogen compound #2

Bioacumulare:	Nu se aplică
Persistenta / degradabilitate:	Nu se aplică

Aliphatic alcohol

Bioacumulare:	log Pow = 0.52
Persistenta / degradabilitate:	30 % (28d; OECD306)
Informatii specii de peste apa proaspata	LC50 96 h (Pimephales promelas) = 75200 mg/L
Informatii despre puricii de apa:	EC50 96 h (water flea) = 0.3 mg/L EC50 48 h (Daphnia magna) = 84000 mg/L

2,2'-methyliminodiethanol

Bioacumulare:	log Pow = <0
Persistenta / degradabilitate:	13 % (28d; OECD306)

Informatii alge apa proaspata:	37 mg/L EC50 (Desmodesmus subspicatus) = 72 h 20 mg/L EC50 (Desmodesmus subspicatus) = 96 h
Informatii specii de peste apa proaspata	1000 mg/L LC50 (Pimephales promelas) = 96 h 1000-2200 mg/L LC50 (Leuciscus idus) = 96 h
Informatii despre puricii de apa:	230 mg/L EC50 (Daphnia magna) = 48 h

Inorganic bromine compound

Bioacumulare:	Nu se aplică
Persistenta / degradabilitate:	Nu se aplică
Informații suplimentare:	Indicat in lista PLONOR laOSPAR

13. CONSIDERAȚII RELATIVE LA ELIMINARE

Deşeuri provenind de la reziduuri / produse neutilizate: Conform cu reglementările locale şi naționale

Ambalaje contaminate: Containerele goale trebuie puse la dispozitia uzinelor de reciclare locale pentru a fi reciclate, recuperate sau eliminate

Numărul deşeului conform cu CED: Conform codului european de deşeuri (CED), codul deşeului nu se refera la produs ca atare, ci la modul de aplicație al acestuia
Următoarele coduri ale deşurilor sunt numai sugestii:
16 10 01 - deseuri lichide apoase care contin substante periculoase

14. INFORMAȚII PRIVIND TRANSPORTUL

Numar UN nici unul
Nume corect de expediere: nu este reglementat.

ADR/RID
Clasa: nu este reglementat

IMDG/IMO
Clasa de pericol: nu este reglementat

ICAO/IATA
Clasa de pericol: nu este reglementat

15. INFORMAȚII PRIVIND REGLEMENTĂRILE SPECIFICE APLICABILE

în conformitate cu legislatia în vigoare

Indicații de pericol:
- Xi - Iritant



Fraza(e) indicând R (risc):
R41 - Risc de leziuni oculare grave.

Frază(e) S:
- S26 - În cazul contactului cu ochii, se spala imediat cu multă apă şi se consulta un specialist.
- S39 - A se purta masca de protecție a ochilor /a fetei.

Inventarieri internationale

Acest produs respecta cerintele EINECS/ELINCS.

Împreună cu această scrisoare primiţi şi noile versiuni ale fişelor de protecţia şi securitatea muncii care vor înlocui versiunile precedente

Textul frazelor R mentionate la articolul 3
- R 8 - Contactul cu materiale combustibile poate provoca incendiu.
- R22 - Nociv în caz de înghițire.
- R36 - Iritant pentru ochi.
- R38 - Iritant pentru piele.
- R41 - Risc de leziuni oculare grave.

Cauza reviziei:
Textul frazelor R mentionate la articolul 3

Această scrisoare a fost tipărită electronic şi de aceea nu este semnată: Conformitate reglementare chimica

Informatiile si recomandarile cuprinse in prezenta se bazeaza pe teste considerate fiabile. Insa, Schlumberger nu garanteaza acuratetea sau integritatea lor IAR ACESTE INFORMATII NU CONSTITUIE O GARANTIE, EXPRESA SAU IMPLICITA, CU PRIVIRE LA SIGURANTA PRODUSELOR,COMERCIALIZAREA PRODUSELOR, SAU CONFORMITATEA PRODUSELOR PENTRU UN ANUMIT SCOP. Se poate solicita adaptarea la conditiile propriu-zise de folosire. Schlumberger nu isi anuma nicio raspundere pentru rezultatele obtinute sau pentru daunele incidente sau consecventiale, inclusiv pierderile de profit generate de folosirea acestor informatii. Nu exista nicio garantie cu privire la incalcarea unui brevet, copyright sau marca inregistrata.

Sfârşitul Normelor de Tehnica şi Securitatea Muncii

Schlumberger

FISA TEHNICA DE SECURITATE

(Generic EU)

în conformitate cu Reglementarile UE No. 1907/2006

Versiune: 2 *Data revizuirii: 08 august 2011*

1.IDENTIFICAREA SUBSTANTEI / PREPARARII SI A SOCIETATII / INTREPRINDERII

Denumirea produsului: **Antifoaming Agent D206**

Codul produsului: **D206**

Identificarea Companiei/Intermediarului

Schlumberger
Pesetastraat 40
2991 XT Barendrecht, The Netherlands
+31 10 2923201
vollebregt1@slb.com

Telefon în caz de urgență: USA: +1-281-595-3518 (24hr)

Folosirea substanței/preparare: Folosit ca aditiv de betonare in aplicatiile pe baza de ulei.

2. IDENTIFICAREA PERICOLELOR

Indicații de pericol: Produsul nu este periculos conform Directivei 1999/45/EC.

Cele mai importante riscuri
Riscuri de sanatate: Poate fi usor iritant pentru ochii.

Pericol pentru mediu înconjurător: Necunoscut.

Principalele riscuri fizice: Fin.

3. COMPOZIŢIA/INFORMAŢII DESPRE INGREDIENTE

Componente	Nr. CAS	Nr.CE.	Greutate % - Categorie	Clasificare
Silicane derivative		Listed	10 - 30	

Pentru textul complet al frazelor R mentionate în acest paragraf, se va consulta paragraful 16

4. MĂSURI DE PRIM AJUTOR

Inhalare: Se va ieşi la aer curat.

Contact cu pielea: Se va clăti cu apă.

Contact cu ochii: Se va clăti cu multă apă. Apelati la ingrijire medicala daca apare iritatie.

Ingerare: Se va clăti gura. Niciodată nu se va încerca să se forțeze o persoană inconstientă să înghită. Apelati la ingrijire medicala.

5. MĂSURI DE COMBATERE A INCENDIILOR

Produse recomandate pentru stingerea incendiului: se va folosi un produs chimic uscat, CO2, apa pulverizata sau spuma de "alcool".

Produse pentru stingerea incendiului ce nu pot fi folosite din motive de securitate: Jet de apă puternic.

Echipament de protectie special pentru pompieri: Purtati haine de protectie in caz de incendiu si evitati sa inhalati vapori. Folositi masca de respiratie in spatiile inchise.

Riscuri speciale de expunere apar chiar de la substanță sau preparat, produşii lui de ardere sau gazele eliberate: Cand sunt incalziti puternic sau arsi, oxizii de carbon, oxizii de sulf, oxizii de nitrogen , amoniacul si aburii organici daunatori sunt eliberati. Oxizi de sulf.

6. MĂSURI IMPOTRIVA PIERDERILOR ACCIDENTALE

Măsuri de prevedere individuale: Nu sunt necesare precauții speciale. Se va purta echipament de protecție corespunzător. Vezi de asemenea secțiunea 8.

Măsuri de prevedere pentru mediu: Se vor preveni scăpări sau scurgeri ulterioare. Large spills released to the environment may disturb the natural chemical balance of soil/fresh water.

Metode de curățire: Se va zăgăzui. Se va absorbi cu un absorbant inert. Puneti in containere corespunzatoare pentru dispunere. După curățire se vor elimina urmele folosind apă.

7. MANIPULARE ŞI DEPOZITARE

Manipulare:

Măsuri tehnice/Măsuri de prevedere: Nu sunt necesare precauții speciale.

Măsuri de prevedere la manipulare: Se va purta echipament de protecție corespunzător. Vezi de asemenea secțiunea 8.

Depozitare:

Măsuri tehnice/Condiții de depozitare: Nu se va îngheța. Se vor păstra containerele ermetic închise, într-un loc uscat, rece şi bine ventilat. Se va ține departe de lumina directă a soarelui.

Cerinte ambalare: Cutie sau bidon din polipropilena de densitate ridicata (HDPE).

Produse incompatibile: Agenți oxidanți

8. CONTROLUL EXPUNERII / PROTECȚIE PERSONALA

Masuri inginerice pentru a reduce expunerea: Se va asigura ventilație adecvată

Protectie respiratorie: Nu este necesar în mod normal nici un fel de echipament respirator individual.

Protecția mâinilor: Manusi impermeabile fabricate din PNC

Protecția ochilor: Ochelari de protecție.

Protecția pielii şi a corpului: Curatati hainele.

Control al expunerii referitoare la protecția mediului înconjurător

Limita(e) de expunere profesională(e)

	SUA			EU	
Componente	**TWA / C**	**STEL**	**Piele**	**8 Hour TWA**	**STEL**
Silicane derivative	nici unul	nici unul		nici unul	nici unul

9. PROPRIETĂȚI FIZICO-CHIMICE

Informații generale

Formă: lichid
Miros: nici unul
Culoare: lăptos, alb

Informatii importante despre securitatea sanatatii si a mediului

pH: 7 - 8
Punct/domeniu de fierbere: 100 °C
Punct de aprindere: nu străluceşte.
Caracteristici explozive:
Informatii explozie - sensibilitatea la impactul mecanic: nici unul
Informatii explozie - sensibilitatea la descarcarea statica nici unul
Limita de inflamabilitate în aer:
inferioară: Nu se aplică
superioară: Nu se aplică
Proprietăți de întreținere a arderii: nici unul
Densitate relativă: aproximativ 1.0 (@ 25°C)
Solubilitate:
Solubilitate în apă: dispersabil.
Solubilitate în grăsimi: insolubil.
Distribuire coeficient (n-octanol/apa): Vezi de asemenea secțiunea 12

Vâscozitate:	~ 100 mPa.s (@ 25 °C)
Densitatea de vapori:	nu există date.
Presiune de vapori:	2.3 kPa (@ 20°C)
Viteză de evaporare:	nu există date.

Informații suplimentare

Punct/categorie de topire:	~ 0 °C

10. STABILITATE ŞI REACTIVITATE

Stabilitate:	Stabil în condițiile de depozitare recomandate.
Condiții de evitat:	înghețare. Căldura.
Materiale de evitat:	Acizi tari şi baze tari, Agenți oxidanți
Produşi de descompunere potențial periculoşi:	Cand sunt incalziti puternic sau arsi, oxizii de carbon, oxizii de sulf, oxizii de nitrogen , amoniacul si aburii organici daunatori sunt eliberati. Silicon oxide.
Polimerizare riscanta:	Nu se produce o polimerizare periculoasa.

11. INFORMAŢII TOXICOLOGICE

Efecte locale

Piele:	Nu se asteapta niciun efect.
Ochii:	Poate fi usor iritant.
Inhalare:	Nu este un mijloc de expunere.
Ingerare:	Nu se asteapta niciun efect.
Sensubilizare - piele	Nu se stie daca provoaca reactii alergice.
Sensubilizare - plaman	Nu se stie daca provoaca reactii alergice

Pericol cronic pentru sănătate

efecte cancerigene:	Necunoscut.
efecte mutagene:	Nu se stie daca provoaca daune genetice transmisibile.
teratogen:	Nu se stie daca provoaca defecte la nastere sau daca are efect daunator asupra dezvoltarii fatului.
Toxicitate în ceea ce priveşte reproducerea:	Nu se stie daca afecteaza negativ functiile sau organele de reproducere.
Efectul substantei asupra unui organ (tinta):	Necunoscut.

12. INFORMAȚII ECOLOGICE

Ecotoxivitate

Informatii legate de componente

Silicane derivative

Bioacumulare:	Nu se bioacumulează
Persistenta / degradabilitate:	Nu este biodegradabil
Toxicitate crustaceu:	48h LC50= 175 mg/l (Acartia tonsa)

13. CONSIDERAȚII RELATIVE LA ELIMINARE

Deşeuri provenind de la reziduuri / produse neutilizate: Conform cu reglementările locale şi naționale.

Ambalaje contaminate: Containerele goale trebuie puse la dispozitia uzinelor de reciclare locale pentru a fi reciclate, recuperate sau eliminate.

Numărul deşeului conform cu CED: Conform codului european de deşeuri (CED), codul deşeului nu se refera la produs ca atare, ci la modul de aplicație al acestuia
Următoarele coduri ale deşurilor sunt numai sugestii:
06 08 99 - deseuri neprevazute in

14. INFORMAȚII PRIVIND TRANSPORTUL

Numar UN nici unul
Nume corect de expediere: nu este reglementat.

ADR/RID
Clasa: nu este reglementat

IMDG/IMO
Clasa de pericol: nu este reglementat

ICAO/IATA
Clasa de pericol: nu este reglementat

15. INFORMAȚII PRIVIND REGLEMENTĂRILE SPECIFICE APLICABILE

în conformitate cu legislatia în vigoare

Indicații de pericol:
- Produsul nu este periculos conform Directivei 1999/45/EC

Fraza(e) indicând R (risc):

Frază(e) S:
Ingrijiti corespunzator si mentineti curatenia

Inventarieri internationale

Acest produs respecta cerintele EINECS/ELINCS.

Împreună cu această scrisoare primiţi şi noile versiuni ale fişelor de protecţia şi securitatea muncii care vor înlocui versiunile precedente

Cauza reviziei:
SECTION 16. OTHER INFORMATION

Această scrisoare a fost tipărită electronic şi de aceea nu este semnată: Conformitate reglementare chimica

Informatiile si recomandarile cuprinse in prezenta se bazeaza pe teste considerate fiabile. Insa, Schlumberger nu garanteaza acuratetea sau integritatea lor IAR ACESTE INFORMATII NU CONSTITUIE O GARANTIE, EXPRESA SAU IMPLICITA, CU PRIVIRE LA SIGURANTA PRODUSELOR,COMERCIALIZAREA PRODUSELOR, SAU CONFORMITATEA PRODUSELOR PENTRU UN ANUMIT SCOP. Se poate solicita adaptarea la conditiile propriu-zise de folosire. Schlumberger nu isi anuma nicio raspundere pentru rezultatele obtinute sau pentru daunele incidente sau consecventiale, inclusiv pierderile de profit generate de folosirea acestor informatii. Nu exista nicio garantie cu privire la incalcarea unui brevet, copyright sau marca inregistrata.

Sfârşitul Normelor de Tehnica şi Securitatea Muncii

Numarul fisei tehnice de siguranta ROMANIA01
Versiune 1
Data revizuirii 08/Sep/2014
Data precedentă Niciunul

Schlumberger

Fişă cu date de securitate
DeepCRETE Blend

1. Identificarea substantei/preparatului si companiei/responsabilului

1.1 De identificare a produsului

Denumire produs DeepCRETE Blend
Cod produs ROMANIA01

1.2 Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare Recomandată Folosit ca aditiv de betonare in aplicatiile pe baza de ulei

Utilizări nerecomandate Utilizare de către consumatori

1.3 Detalii privind furnizorul fişei cu date de securitate

Furnizor
Schlumberger Logelco Inc.
4-8 Nicolae Titulescu
5th Floor, Sector 1
011141 Bucharest
Romania
+47 51577424
SDS@slb.com

1.4 Număr de telefon care poate fi apelat în caz de urgenţă

Telefon care poate fi apelat în caz de urgenţă - (24 de ore), Australia +61 2801 44558, Asia Pacific 65 3158 1074, China +86 10 5100 3039, Europa +44 (0) 1235 239 670, Orientul Mijlociu şi Africa +44 (0) 1235 239 671, Noua Zeelanda + 64 9929 1483, Statele Unite ale Americii 001 281 595 3518

2. Identificarea pericolelor

2.1 Clasificarea substanţei sau a amestecului

Clasificarea în conformitate cu (CE) nr 1272/2008

Pericole pentru sănătate

Corodarea/iritarea pielii	Categoria 2
Iritaţii/leziuni oculare grave	Categoria 1
Toxicitate asupra unui organ ţinta specific (o singura expunere)	Categoria 3

Pericole pentru mediul înconjurător Neclasificat

Pericole Fizice Neclasificat

2.2 Elemente pentru etichetă



Cuvânt de avertizare
PERICOL

Fraze de pericol
H315 - Provoacă iritarea pielii
H318 - Provoacă leziuni oculare grave
H335 - Poate provoca iritarea căilor respiratorii

Fraze de precauţie - UE (§28, 1272/2008)
P260 - Nu inspiraţi praful
P262 - Evitaţi orice contact cu ochii, pielea sau îmbrăcămintea
P305 + P351 + P338 - ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi
P304 + P340 - ÎN CAZ DE INHALARE: transportati victima la aer liber si mentineti-o în stare de repaus, într-o pozitie confortabila pentru respiratie
P302 + P350 - ÎN CAZ DE CONTACT CU PIELEA: spălaţi uşor cu multă apă şi săpun
P315 - Consultati imediat medicul

Frazele de precauţie suplimentare
P264 - După manipulare, spălaţi faţa, mâinile şi orice suprafaţă de piele expusă
P271 - A se utiliza numai în aer liber sau în spaţii bine ventilate
P332 + P313 - În caz de iritare a pielii: consultati medicul
P362 - Scoateţi îmbrăcămintea contaminată şi spălaţi-o înainte de reutilizare
P403 + P233 - A se depozita într-un spaţiu bine ventilat. Păstraţi recipientul închis etanş
P501 - Eliminaţi conţinutul/recipientul la o staţie de eliminare a deşeurilor autorizată

Clasificare conforma cu Directivele UE 67/548/CEE sau 1999/45/CE

Indicaţie de pericol
Xn - Nociv
Xi - Iritant

Cod(uri) R
R37/38; R41; R48/20

Conţine

Portland Cement Clinker

Cuart

Sulfuric acid, calcium salt

Pentru textul complet al frazelor R şi fraze H menţionate în această secţiune, se va consulta paragraful 16

2.3 Alte date

Neclasificata drept PBT/vPvB dupa criteriile UE actuale

3. Compoziţie/informaţii privind componenţii

3.1 Substanţe

Nu se aplică

3.2 Amestecuri

Componentă	Nr.CE.	Nr. CAS	Greutate % - Categorie	Clasificare	Clasificare (Reg. 1272/2008)	Număr de înregistrare REACH
Portland Cement Clinker	266-043-4	65997-15-1	30-60	Xi; R37/R38, R41, R43	Skin Irrit. 2 (H315) Skin Sens. 1B (H317) Eye Dam. 1 (H318) STOT SE 3 (H335)	Nu există date disponibile
Cuart	238-878-4	14808-60-7	10 - <30	Xn; R48/20	STOT REP. 2(H373)	Nu există date disponibile
Sulfuric acid, calcium salt	231-900-3	7778-18-9	1-5	-	Neclasificat	Nu există date disponibile

Comentarii
În conformitate cu articolul 6 alineatul (3) 1999/45/CE este eliminat, clasificarea de ciment ca R43, deoarece efectul de sensibilizare a bazei de ciment pe crom (VI) au fost adăugate pentru a controla nivelul de sensibilizante crom solubil (VI) la mai puţin de 2 mg/kg (0,0002%) din greutatea totală uscată a cimentului gata de utilizare. Produsul contine alte ingrediente care nu contribuie la clasificarea generala.

4. Măsuri de prim ajutor

4.1 Descrierea masurilor de prim-ajutor

Inhalare Daca este inhalat, se scoate din zona de la aer curat. Solicitaţi asistenţa medicala daca iritarea cailor respiratorii se dezvolta sau daca respiraţia devine dificila.

Ingerare Clătiţi gura. Nu provocaţi voma decât la recomandarea unui medic. Nu administraţi nimic pe cale orală unei persoane inconştiente. Apelati la ingrijire medicala daca apare iritatie.

Contact cu pielea Se va spala imediat cu sapun si multa apa, scotând toate hainele si încaltamintea contaminate. Solicitaţi imediat asistenţă medicală dacă apar simptome.

Contact cu ochii Se va îndepăra lentila de contact. Spalaţi imediat ochii cu multa apa în timp ce ridicaţi pleoapele. Continuaţi sa clatiţi pentru cel puţin 15 minute. Solicitaţi asistenţa medicala daca orice stare de disconfort persista.

4.2 Cele mai importante simptome şi efecte, atât acute, cât şi întârziate

Sfaturi generale Gravitatea simptomelor descrise variaza în functie de concentratia si durata expunerii. În cazul în care apar simptomele descrise, victimatrebuie dusa la spital cât mai repede.

Simptome principale

Inhalare Vă rugăm să consultaţi secţiunea 11. Informaţii toxicologice pentru mai multe informaţii.

Ingerare Vă rugăm să consultaţi secţiunea 11. Informaţii toxicologice pentru mai multe informaţii.

Contact cu pielea Vă rugăm să consultaţi secţiunea 11. Informaţii toxicologice pentru mai multe informaţii.

Contact cu ochii Vă rugăm să consultaţi secţiunea 11. Informaţii toxicologice pentru mai multe informaţii.

4.3 Indicaţii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare

Indicaţii pentru medici Trataţi simptomatic.

5. Măsuri de combatere a incendiilor

5.1 Mijloace de stingere a incendiilor

Mijloace de stingere corespunzătoare
Produsul în sine nu arde, Folositi mijloace de stingere corespunzatoare pentru materialul inconjurator.

Mijloace de stingere care nu trebuie utilizate din motive de securitate
Niciuna cunoscută.

5.2 Pericole speciale cauzate de substanţa sau amestecul în cauză

Masuri de precautie contra incendiului si exploziei
Niciuna cunoscută.

Produse de combustie periculoase
Descompunerea termica provoaca o degajare de gaze si vapori iritanti, Reactioneaza cu acidul hidroforic (HF) formand gaz toxic (SiF4).

5.3 Recomandări destinate pompierilor

Echipament special de protecţie pentru pompieri
Ca şi în orice incendiu, se va purta un aparat respirator autonom şi echipament de protecţie complet.

Proceduri speciale de stingere a incendiilor
Containerele aflate în apropierea focului trebuie îndepartate imediat si racite cu apa.

6. Măsuri de luat în caz de dispersie accidentală

6.1 Precauţii personale, echipament de protecţie şi proceduri de urgenţă

Se va folosi echipament de protecţie individual. Vedeţi de asemenea secţiunea 8. Evitaţi inhalarea prafului; în cazul în care sunt expuse la praf concentrare mare, zona pleca imediat. Se va evita contactul cu pielea şi ochii.

6.2 Precauţii pentru mediul înconjurător

Produsul nu va fi lăsat să intre în sistemul de canalizare, cursurile de apă sau în pământ.

Controlul expunerii mediului
Evitaţi dispersarea în mediu. Autorităţile locale trebuie avizate dacă nu pot fi izolate deversările semnificative.

6.3 Metode şi material pentru izolarea incendiilor şi pentru curaţenie

Metode pentru izolare
Împiedicaţi scurgerea sau deversarea în continuare, dacă o puteţi face în siguranţă. Preveniţi formarea norului de praf.

Metode pentru curăţenie
Evitaţi generarea sau inhalarea prafului. Măturaţi şi puneţi cu lopata în containere corespunzătoare în vederea eliminării. După curăţare, spălaţi urmele cu apă.

6.4 Trimiteri către alte secţiuni

Vezi Secţiunea 13 pentru informaţii suplimentare.

7. Manipularea şi depozitarea

7.1 Precauţii pentru manipularea în condiţii de securitate

Manipularea
A se manipula în conformitate cu practicile de igienă industrială şi de siguranţă. Evitaţi contactul cu pielea şi ochii. Se va evita formarea de praf.

Măsuri de igienă
Utilizaţi bune practici de lucru şi de igienă personală, pentru a evita expunerea. Când utilizaţi nu fumeze, sa manânce sau sa bea. Spalaţi-va pe mâini şi pe faţa înainte de pauze şi imediat dupa manipularea produsului.

7.2 Condiţii de depozitare în condiţii de securitate, inclusiv eventuale incompatibilităţi

Măsuri tehnice/Măsuri de prevedere Asiguraţi o ventilaţie adecvată. Mentineti concentratiile din aer sub limitele de expunere. Se va prevedea o ventilaţie prin evacuare corespunzătoare în locurile unde se formează praf.

Depozitarea Păstraţi containerele închise ermetic, într-un loc uscat, răcoros şi bine ventilat Se va ţine departe de lumina directă a soarelui Căldură A se proteja de umiditate Depozitaţi departe de incompatibile, Acizi Aluminiu sub formă de pulbere Agenţi oxidanţi

Clasă de depozitare Depozit chimic.

Material de ambalare Folositi doar containere construite special. Ambalaj anti-umezeala

7.3 Utilizari finale specifice

Vezi de asemenea sectiunea 1.2.

8. Controale ale expunerii/protecţia personală

8.1 Parametri de control

Componentă	EU OEL	Austria	Australia	Danemarca
Portland Cement Clinker	Nedeterminat	Nedeterminat	10 mg/m³ TWA	Nedeterminat
Cuart	Nedeterminat	Nedeterminat	0.1 mg/m³ TWA	0.3 mg/m³ TWA 0.1 mg/m³ TWA K
Sulfuric acid, calcium salt	Nedeterminat	Nedeterminat	10 mg/m³ TWA (containing no asbestos and <1% crystalline silica, inspirable dust)	Nedeterminat

Componentă	Finlanda	Franţa	Germania	Ungaria
Portland Cement Clinker	Nedeterminat	Nedeterminat	5 mg/m³ MAK	Nedeterminat
Cuart	Nedeterminat	0.1 mg/m³	Nedeterminat	Nedeterminat

Sulfuric acid, calcium salt	Nedeterminat	10 mg/m³	1.5 mg/m³ MAK 4 mg/m³ MAK	Nedeterminat

Componentă	Noua Zeelandă	Italia	Olanda	Norvegia
Portland Cement Clinker	10 mg/m³ TWA	Nedeterminat	Nedeterminat	Nedeterminat
Cuart	0.2 mg/m³ TWA Known or presumed human carcinogen	0.05 mg/m³	0.075 mg/m³ GW	0.1mg/m³
Sulfuric acid, calcium salt	10 mg/m³ TWA	Nedeterminat	Nedeterminat	Nedeterminat

Componentă	Polonia	Portugalia	România	Rusia
Portland Cement Clinker	6.0 mg/m³ TWA total inhalable dust 2.0 mg/m³ respirable dust	10 mg/m³ TWA	Nedeterminat	Nedeterminat
Cuart	2 mg/m³ TWA >50% free crystalline silica total inhalable dust 0.3 mg/m³ TWA >50% free crystalline silica respirable dust 4.0 mg/m³ TWA 2% to 50% free crystalline silica total inhalable dust 1.0 mg/m³ TWA 2% to 50% free crystalline silica respirable dust	0.025 mg/m³ TWA respirable fraction	Nedeterminat	1 mg/m³ MAC 3 mg/m³ STEL 1 mg/m³ TWA aerosol Fibrogenic substance
Sulfuric acid, calcium salt	10.0 mg/m³ TWA <2% free crystalline silica and containing no asbestos total inhalable dust	10 mg/m³ TWA inhalable fraction	Nedeterminat	Nedeterminat

Componentă	Spania	Elveţia	Turcia	UK
Portland Cement Clinker	10 mg/m³ VLA-ED	Nedeterminat	Nedeterminat	30 mg/m³ STEL calculated inhalable dust 12mg/m³ STEL calculated respirable dust 10 mg/m³ TWA inhalable dust 4mg/m³ TWA respirable dust
Cuart	0.1 mg/m³ VLA-ED respirable fraction	0.15 mg/m³ MAK respirable	Nedeterminat	0.3 mg/m³ STEL calculated respirable 0.1 mg/m³ TWA respirable
Sulfuric acid, calcium salt	10 mg/m³ VLA-ED this value is for the particulated matter that is free from Asbestos and contains less than 1% of Crystalline silica	3 mg/m³ MAK respirable	Nedeterminat	Nedeterminat

8.2 Controale ale expunerii

Întregul echipament de protecţie personală (EPP) chimic trebuie selectat pe baza unei evaluări care să ia în considerare atât pericolele chimice prezente cât şi riscul de expunere la acele pericole. Recomandările de mai jos privind EPP se bazează pe o evaluare a pericolelor chimice asociate cu acest produs. În cazul în care acest produs este utilizat în amestec cu alte produse sau lichide, pot fi create pericole suplimentare şi pot fi necesare evaluări suplimentare ale riscului. Riscul de expunere şi necesitatea de protecţie respiratorie variază de la un loc de muncă la altul şi trebuie evaluat de către utilizator în fiecare situaţie.

Masuri inginerice pentru a reduce expunerea
Asiguraţi o ventilaţie adecvată, mai ales în zonele închise. Mentineti concentratiile din aer sub limitele de expunere.

Echipament personal de protecţie

Protecţia ochilor	Ochelari de protecţie perfect adecvaţi.
Protecţia mâinilor	Cauciuc, Neopren, PNC.
Protecţia respiraţiei	Aparatului respirator trebuie să fi purtat dacă este expus la praf, Măşti adecvate conţinând filtre de particule P3 (Normele Europene 143).
Protecţia pielii şi a corpului	Purtaţi echipamentul adecvat de protecţie personală pentru a preveni contactul cu pielea, De spălare a ochilor şi duş de urgenţă trebuie să fie disponibile la locul de muncă.



9. Proprietăţile fizice şi chimice

9.1 Informaţii privind proprietăţile fizice şi chimice de bază

Stare fizică	Solidă
Aspect	Pulbere
Miros	Niciunul
Culoare	Gri
Pragul de acceptare a mirosului	Nu se aplică

Proprietate	**Valori**	**Observaţii**
pH	Nu se aplică	
Agent de reglare a pH-ului		
Punct de topire/înghet		Nu se aplică
Punct/domeniu de fierbere	Nu se aplică	
Punctul de aprindere	nu străluceşte	
Rata de Evaporare	Nu se aplică	
Inflamabilitatea (solid, gaz)	Nu se aplică	
Limita de inflamabilitate în aer		
Limită superioară de inflamabilitate	Nu se aplică	
Limită inferioară de inflamabilitate	Nu se aplică	
Presiunea de vapori	Nu se aplică	
Densitatea vaporilor	Nu se aplică	
Greutate specifică	1.92	
Densitate în vrac	Nu există informaţii disponibile	
Densitatea relativă	Nu există informaţii disponibile	
Solubilitate în apă	Dispersabil	
Solubilitate în alţi solvenţi	Nu există informaţii disponibile	
Temperatura de autoaprindere	Nu se aplică	

Temperatura de descompunere	Nu există informaţii disponibile	
Vâscozitate cinematică	Nu se aplică	
Vâscozitate dinamică	Nu există informaţii disponibile	Nu se aplică
Log pow	Nu există informaţii disponibile	

Proprietăţi explozive	Niciuna cunoscută
Proprietăţi oxidante	Niciuna cunoscută

9.2 Alte informaţii

Punct de curgere	Nu există informaţii disponibile
Greutate moleculară	Nu există informaţii disponibile
Continutul în substante organice volatile (%)	Niciunul
Densitate	Nu există informaţii disponibile

10. Stabilitate şi reactivitate

10.1 Reactivitate

Reactioneaza cu acidul hidroforic (HF) formand gaz toxic (SiF4).

10.2 Stabilitate chimică

Stabil în conditii de temperatura normala si utilizare conform recomandarilor.

10.3 Posibilitate de Reacţii Periculoase

Polimerizare periculoasă
Nu apare polimerizarea periculoasă.

10.4 Condiţii de evitat

A se proteja de umiditate. Evitaţi lumina soarelui puternic.

10.5 Materiale incompatibile

Acizi. Aluminiu sub formă de pulbere. Agenţi oxidanţi.

10.6 Produşi de descompunere periculoşi

Vedeţi de asemenea secţiunea 5.2.

11. Informaţii toxicologice

11.1 Informaţii privind efectele toxicologice

Toxicitate acută

Inhalare	Poate fi nociv în caz de inhalare. Iritant pentru sistemul respirator. Poate provoca simptome de alergie sau astm sau dificultăţi de respiraţie în caz de inhalare. Inhalarea repetata sau prelungita a prafului de siliciu cristalin poate provoca rani intarziate ale plamanului, si alte boli inclusiv silicoza si cancer la plamani.
Contact cu ochii	Risc de leziuni oculare grave.
Contact cu pielea	Iritant pentru piele. Contactul repetat sau prelungit cu pielea poate provoca reacţii alergice la persoanele susceptibile.

Ingerare Iritant, poate provoca durere sau disconfort la gura, gât şi stomac. Ingestia poate cauza iritaţie gastrointestinală, greaţă, vomă şi diaree.

Toxicitate acută .

Componentă	LD50 Oral	LD50 Dermic	LC50 Inhalare
Portland Cement Clinker	Nu există date disponibile	Nu există date disponibile	Nu există date disponibile
Cuart	= 500 mg/kg (Rat)	Nu există date disponibile	Nu există date disponibile
Sulfuric acid, calcium salt	> 3000 mg/kg (Rat)	Nu există date disponibile	Nu există date disponibile

Sensibilizare Poate provoca sensibizare la persoanele susceptibile.

Efecte mutagene Acest produs nu conţine nici mutagene cunoscute sau suspectate.

Cancerogenitatea Praful cu bioxid de siliciu cristalin este mentionat de IARC in Grupul 1 cunoscut drept cauza a cancerului de plamani la oameni, daca este inhalat.

Toxicitate pentru reproducere Niciuna cunoscută.

Caile de expunere Inhalare. Contact cu pielea. Contact cu ochii.

Caile de intrare Inhalare.

Toxicitate asupra unui organ ţinta specific (o singura expunere) Categoria 3

Toxicitate asupra unui organ ţintă specific (expunere repetată) Neclasificat.

Efecte asupra unui organ ţintă Plămâni.

Pericol prin aspirare Nici un risc de produs ca furnizat.

12. Informaţii ecologice

12.1 Toxicitate

Componentele produsului nu sunt clasificate drept periculoase pentru mediul înconjurator. Totusi, acest lucru nu exclude posibilitatea ca deversari frecvente sau în cantitati mari sa aiba un efect nociv asupra mediului înconjurator.

Toxicitatea pentru alge
Vezi informaţiile componenta de mai jos.

Toxicitatea pentru peşti
Vezi informaţiile componenta de mai jos.

Toxicitatea faţă de dafnia şi alte nevertebrate acvatice
Vezi informaţiile componenta de mai jos.

Componentă	Toxicitatea pentru peşti	Toxicitatea pentru alge	Toxicitatea faţă de dafnia şi alte nevertebrate acvatice
Portland Cement Clinker	Nu există informaţii disponibile	Nu există informaţii disponibile	Nu există informaţii disponibile
Cuart	Nu există informaţii disponibile	Nu există informaţii disponibile	Nu există informaţii disponibile
Sulfuric acid, calcium salt	2980 mg/L LC50 (Lepomis macrochirus) = 96 h 1970 mg/L LC50 (Pimephales promelas) = 96 h	Nu există informaţii disponibile	3200 mg/L EC50 (Nitscheria linearis) = 120 h

12.2 Persistenţă şi degradabilitate

Nu este cazul - Produs chimic anorganic.

12.3 Potenţial de bioacumulare

Nu este cazul - Produs chimic anorganic.

12.4 Mobilitate în sol

Mobilitate
Nu există informaţii disponibile.

12.5 Rezultatele evaluării PBT şi vPvB

Neclasificata drept PBT/vPvB dupa criteriile UE actuale.

12.6 Alte efecte adverse.

Niciuna cunoscută.

13. Consideraţii privind eliminarea

13.1 Metode de tratare a deşeurilor

Deşeuri provenind de la reziduuri / produse neutilizate Se va elimina în conformitate cu reglementările locale.

Ambalaje contaminate Containerele goale trebuie puse la dispozitia uzinelor de reciclare locale pentru a fi reciclate, recuperate sau eliminate.

De eliminare a deşeurilor EWC Nu În conformitate cu Catalogul european al deşeurilor, codurile deşeurilor nu sunt specifice produsului, dar aplicaţii specifice. Codurile de deşeuri trebuie atribuite de către utilizator pe baza aplicaţiei pentru care a fost utilizat produsul Următoarele coduri ale deşurilor sunt numai sugestii: Numărul deşeului conform cu CED: 16 03 03

14. Informaţii referitoare la transport

14.1 Numărul ONU
Nereglementat

14.2 Denumirea expediţiei
Nereglementat

14.3 Clasa de pericol (ES)

Clasa de pericol	Nereglementat
Pagina din Codul International Maritim al Bunurilor Periculoase (IMDG)	Nereglementat
Clasa de pericol ICAO/divizare	Nereglementat

14.4 Grupul de ambalare

Grup de ambalaje	Nereglementat
Grup de ambalaje	Nereglementat
Grupul de ambalare ICAO	Nereglementat

14.5 Pericol pentru mediu
Nu

14.6 Precauţii speciale
Nu se aplică

14.7 Transport în vrac, în conformitate cu anexa II la MARPOL 73/78 şi Codul IBC
Nu se aplică Va rugam sa contactaţi SDS@slb.com pentru informaţii cu privire la transportul în vrac.

15. Informaţii de reglementare

15.1 Regulamente/legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză

Standard Australian pentru programarea uniforme de droguri si otravuri
Standard australian pentru programarea uniforme de droguri si otravuri (SUSDP)

Portland Cement Clinker
Schedule 4
Schedule 6
Schedule 5

Regulamentul (UE) nr 453/2010 din 20 mai 2010 de modificare a Regulamentului (CE) nr 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH). Regulamentul (CE) nr 1907/2006 al Parlamentului European şi al Consiliului din 18 decembrie 2006 privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/EC şi de abrogare a Regulamentului (CEE) nr 793/93 şi a Regulamentului (CE) nr 1488/94, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000 / 21/EC, inclusiv modificările.

Aceasta fişa tehnica de siguranţa în conformitate cu cerinţele Regulamentului (CE) nr 1272/2008.

Inventarieri internationale

Statele Unite (TSCA)	Este conform
Uniunea Europeana - EINECS şi ELINCS	Este conform
Canada (DSL)	Este conform
Filipine (PICCS)	Nu este conform(a) cu
Japonia (ENCS)	Nu este conform(a) cu
China (IECSC)	Este conform
Australia (AICS)	Este conform
Coreea (KECL)	Este conform
Noua Zeelanda (NZIoC)	Este conform

15.2 Raport privind Securitatea Chimică

Nu există informaţii disponibile

16. Alte informaţii

Preparat de către	Global Chemical Regulatory Compliance (GCRC) , Beilin Li
Data revizuirii	08/Sep/2014
Versiune	1

Textul frazelor R mentionate la articolul 3
R41 - Risc de leziuni oculare grave
R43 - Poate provoca o sensibilizare în contact cu pielea

R37/38 - Iritant pentru sistemul respirator şi pentru piele
R48/20 - Nociv: pericol de efecte grave asupra sănătăţii la expunere prelungită prin inhalare

Textul complet al Frazelor H la care se face referire în secţiunile 2 şi 3

H315 - Provoacă iritarea pielii
H318 - Provoacă leziuni oculare grave
H335 - Poate provoca iritarea căilor respiratorii
H317 - Poate provoca o reacţie alergică a pielii

Clauză de exonerare
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Schlumberger

FISA TEHNICA DE SECURITATE

(Generic EU)

în conformitate cu Reglementarile UE No. 1907/2006

Versiune: 3 *Data revizuirii: 06 iunie 2012*

1.IDENTIFICAREA SUBSTANTEI / PREPARARII SI A SOCIETATII / INTREPRINDERII

Denumirea produsului: **GASBLOK* LT D500**

Codul produsului: **D500**

Identificarea Companiei/Intermediarului

Schlumberger Technical Services
1, Rue Henri Becquerel
92142 Clamart, France
Tel: +33 1 4537 2123
Email:SDS@slb.com

Telefon în caz de urgență: USA: +1-281-595-3518 (24hr)

Folosirea substanței/preparare: Folosit ca aditiv de betonare in aplicatiile pe baza de ulei.

2. IDENTIFICAREA PERICOLELOR

Indicații de pericol: Xi - Iritant.

Cele mai importante riscuri
Riscuri de sanatate: Poate cauza sensibilizare prin contact cu pielea.

Pericol pentru mediu înconjurător: Necunoscut.

3. COMPOZIȚIA/INFORMAȚII DESPRE INGREDIENTE

Componente	Nr. CAS	Nr.CE.	Greutate % - Categorie	Clasificare
Organic polymer		Listed	1 - 5	-
Amine polymer		Listed	1 - 5	-
Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine	4719-04-4	225-208-0	0.1 - 1	T;R23 Xn;R22-R43

Pentru textul complet al frazelor R mentionate în acest paragraf, se va consulta paragraful 16

4. MĂSURI DE PRIM AJUTOR

Inhalare: Nu este un mijloc de expunere. Se va ieşi la aer curat.

Contact cu pielea: Se vor scoate imediat hainele şi încălțămintea contaminate. Se va spăla imediat cu apă şi săpun. Apelati la ingrijire medicala daca apare iritatie.

Contact cu ochii: Clatiti imediat ochii cu apa timp de 5 minute tinand ploapele deschise. Apelati la ingrijire medicala daca apare iritatie.

Ingerare: Se va clăti gura. Apelati la ingrijire medicala daca apare iritatie.

5. MĂSURI DE COMBATERE A INCENDIILOR

Produse recomandate pentru stingerea incendiului: Folositi mijloace de stingere corespunzatoare pentru materialul inconjurator.

Produse pentru stingerea incendiului ce nu pot fi folosite din motive de securitate: Necunoscut.

Echipament de protectie special pentru pompieri: Purtati haine de protectie in caz de incendiu si evitati sa inhalati vapori. Folositi masca de respiratie in spatiile inchise.

Riscuri speciale de expunere apar chiar de la substanță sau preparat, produşii lui de ardere sau gazele eliberate: Cand sunt incalziti puternic sau arsi, oxizii de carbon si aburii organici daunatori sunt eliberati.

6. MĂSURI IMPOTRIVA PIERDERILOR ACCIDENTALE

Măsuri de prevedere individuale: Se va purta echipament de protecție corespunzător. Vezi de asemenea secțiunea 8.

Măsuri de prevedere pentru mediu: Nu va fi eliberat in mediul înconjurător.

Metode de curățire: Se va absorbi scurgerea cu ajutorul unui material inert (spre exemplu nisip sau pamânt) si apoi se va pune într-un container de deseuri chimice. După curățire se vor elimina urmele folosind apă.

7. MANIPULARE ŞI DEPOZITARE

Manipulare:

Măsuri tehnice/Măsuri de prevedere: Nu sunt necesare precauții speciale.
Măsuri de prevedere la manipulare: Nu sunt necesare precauții speciale.

Depozitare:

Măsuri tehnice/Condiții de depozitare: Nu se va îngheța. Se va pastra la temperaturi între 1°C si 1°C.

Cerinte ambalare: Cutie sau bidon din polipropilena de densitate ridicata (HDPE).

Produse incompatibile: Agenți oxidanți

8. CONTROLUL EXPUNERII / PROTECȚIE PERSONALA

Întregul echipament de protecție personală (EPP) chimic trebuie selectat pe baza unei evaluări care să ia în considerare atât pericolele chimice prezente cât şi riscul de expunere la acele pericole. Recomandările de mai jos privind EPP se bazează pe o evaluare a pericolelor chimice asociate cu acest produs. În cazul în care acest produs este utilizat în amestec cu alte produse sau lichide, pot fi create pericole suplimentare şi pot fi necesare evaluări suplimentare ale riscului. Riscul de expunere şi necesitatea de protecție respiratorie variază de la un loc de muncă la altul şi trebuie evaluat de către utilizator în fiecare situație.

Masuri inginerice pentru a reduce expunerea: Se va asigura ventilație adecvată

Protectie respiratorie: Nu este necesar în mod normal nici un fel de echipament respirator individual.

Protecția mâinilor: Manusi impermeabile fabricate din, Cauciuc

Protecția ochilor: Se recomanda sa se poarte ochelari cand se folosesc substante chimice.

Protecția pielii şi a corpului: Curatati hainele.

Control al expunerii referitoare la protecția mediului înconjurător

Limita(e) de expunere profesională(e)

	SUA			EU	
Componente	**TWA / C**	**STEL**	**Piele**	**8 Hour TWA**	**STEL**
Organic polymer	nici unul	nici unul		nici unul	nici unul
Amine polymer	nici unul	nici unul		nici unul	nici unul
Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine	nici unul	nici unul		nici unul	nici unul

9. PROPRIETĂȚI FIZICO-CHIMICE

Informații generale

Formă: lichid
Miros: nici unul
Culoare: verde

Informatii importante despre securitatea sanatatii si a mediului

pH: 7
Punct/domeniu de fierbere: 100 °C
Punct de aprindere: nu străluceşte.
Caracteristici explozive:
Informatii explozie - sensibilitatea la impactul mecanic: Nu se aplică
Informatii explozie - sensibilitatea la descarcarea statica Nu se aplică
Limita de inflamabilitate în aer:
inferioară: Nu se aplică

superioară:	Nu se aplică
Proprietăți de întreținere a arderii:	nici unul
Densitate relativă:	1 (@ 20°C)
Solubilitate:	
Solubilitate în apă:	solubil.
Solubilitate în grăsimi:	insolubil.
Distribuire coeficient (n-octanol/apa):	Vezi de asemenea secțiunea 12
Vâscozitate:	3000 mPa.s
Densitatea de vapori:	> 1 (Aer = 1.0)
Presiune de vapori:	2.3 kPa (@ 20°C)
Viteză de evaporare:	Nu există informații disponibile.

Informații suplimentare

Punct/categorie de topire:	nu există date.

10. STABILITATE ŞI REACTIVITATE

Stabilitate:	Stabil.
Condiții de evitat:	înghețare.
Materiale de evitat:	Agenți oxidanți
Produşi de descompunere potențial periculoşi:	Cand sunt incalziti puternic sau arsi, oxizii de carbon, oxizii de sulf, oxizii de nitrogen , amoniacul si aburii organici daunatori sunt eliberati.
Polimerizare riscanta:	nici unul.

11. INFORMAŢII TOXICOLOGICE

Efecte locale

Piele:	Poate cauza sensibilizare prin contact cu pielea.
Ochii:	Poate fi usor iritant.
Inhalare:	Nu se asteapta niciun efect.
Ingerare:	Nu este un mijloc de expunere. Nu se asteapta niciun efect.
Sensubilizare - piele	Poate cauza sensibilizare prin contact cu pielea.

Pericol cronic pentru sănătate

efecte cancerigene:	Necunoscut.
efecte mutagene:	Nu se stie daca provoaca daune genetice transmisibile.
teratogen:	Nu se stie daca provoaca defecte la nastere sau daca are efect daunator asupra dezvoltarii fatului.

Toxicitate în ceea ce priveşte reproducerea: Nu se stie daca afecteaza negativ functiile sau organele de reproducere.

Componente	LD50 / LC50
Amine polymer	- = 100 g/kg (Oral LD50; Rat)
Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine	- > 2 g/kg (Dermal LD50; Rat) = 763 mg/kg (Oral LD50; Rat)

12. INFORMAŢII ECOLOGICE

Ecotoxivitate

Informatii legate de componente

Organic polymer

Bioacumulare: log Pow = -0.2
Persistenta / degradabilitate: 25 % (28d; OECD306)
Toxicitate alge: 72h EC50= 300 mg/l (Skeletonema costatum)

Amine polymer

Bioacumulare: Nu poate bioacumula datorita greutatii moleculare ridicate
Persistenta / degradabilitate: 0 % (28d; OECD306)

Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine

Bioacumulare: log Pow = 2.5
Persistenta / degradabilitate: 80 % (28d; OECD306)

13. CONSIDERAŢII RELATIVE LA ELIMINARE

Deşeuri provenind de la reziduuri / produse neutilizate: Se va evacua drept deşeu special în conformitate cu reglementările locale şi naționale.

Ambalaje contaminate: Containerele goale trebuie puse la dispozitia uzinelor de reciclare locale pentru a fi reciclate, recuperate sau eliminate

Numărul deşeului conform cu CED: Conform codului europeen de deşeuri (CED), codul deşeului nu se refera la produs ca atare, ci la modul de aplicație al acestuia
Următoarele coduri ale deşurilor sunt numai sugestii:
16 03 05 - deseuri organice care contin substante periculoase
07 07 99 - deseuri neprevazute in

14. INFORMAŢII PRIVIND TRANSPORTUL

Numar UN nici unul
Nume corect de expediere: nu este reglementat.

ADR/RID

14. INFORMAŢII PRIVIND TRANSPORTUL

Clasa: nu este reglementat

IMDG/IMO

Clasa de pericol: nu este reglementat

ICAO/IATA

Clasa de pericol: nu este reglementat

15. INFORMAŢII PRIVIND REGLEMENTĂRILE SPECIFICE APLICABILE

în conformitate cu legislatia în vigoare

conține: Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine .

Indicații de pericol:
- Xi - Iritant



Fraza(e) indicând R (risc):
R43 - Poate cauza sensibilizare prin contact cu pielea.

Frază(e) S:
- S24 - A se evita contactul cu pielea.
- S37 - A se purta manusi corespunzatoare.

Inventarieri internationale

Acest produs respecta cerintele EINECS/ELINCS.

Împreună cu această scrisoare primiţi şi noile versiuni ale fişelor de protecţia şi securitatea muncii care vor înlocui versiunile precedente

Textul frazelor R mentionate la articolul 3
- R43 - Poate cauza sensibilizare prin contact cu pielea.
- R22 - Nociv în caz de înghițire.

Cauza reviziei:
1.IDENTIFICAREA SUBSTANTEI / PREPARARII SI A SOCIETATII / INTREPRINDERII

Această scrisoare a fost tipărită electronic şi de aceea nu este semnată: Well Services Safety & Environment

Informatiile si recomandarile cuprinse in prezenta se bazeaza pe teste considerate fiabile. Insa, Schlumberger nu garanteaza acuratetea sau integritatea lor IAR ACESTE INFORMATII NU CONSTITUIE O GARANTIE, EXPRESA SAU IMPLICITA, CU PRIVIRE LA SIGURANTA PRODUSELOR,COMERCIALIZAREA PRODUSELOR, SAU CONFORMITATEA PRODUSELOR PENTRU UN ANUMIT SCOP. Se poate solicita adaptarea la conditiile propriu-zise de folosire. Schlumberger nu isi anuma nicio raspundere pentru rezultatele obtinute sau pentru daunele incidente sau consecventiale, inclusiv pierderile de profit generate de folosirea acestor informatii. Nu exista nicio garantie cu privire la incalcarea unui brevet, copyright sau marca inregistrata.

Sfârşitul Normelor de Tehnica şi Securitatea Muncii

Schlumberger

FISA TEHNICA DE SECURITATE

(Generic EU)

în conformitate cu Reglementarile UE No. 1907/2006

Versiune: 4 *Data revizuirii: 12 martie 2012*

1.IDENTIFICAREA SUBSTANTEI / PREPARARII SI A SOCIETATII / INTREPRINDERII

Denumirea produsului: **Cement Class G D907**

Codul produsului: **D907**

Identificarea Companiei/Intermediarului

Schlumberger Technical Services
1, Rue Henri Becquerel
92142 Clamart, France
Tel: +33 1 4537 2123
Email:SDS@slb.com

Telefon în caz de urgență: USA: +1-281-595-3518 (24hr)

Folosirea substanței/preparare: Folosit ca aditiv de betonare in aplicatiile pe baza de ulei.

2. IDENTIFICAREA PERICOLELOR

Indicații de pericol: Xi - Iritant.

Cele mai importante riscuri
Fraza(e) indicând R (risc): Risc de leziuni oculare grave.Iritant pentru sistemul respirator şi pentru piele.

Pericol pentru mediu înconjurător: Necunoscut.

Principalele riscuri fizice: praf.

3. COMPOZIŢIA/INFORMAŢII DESPRE INGREDIENTE

Componente	Nr. CAS	Nr.CE.	Greutate % - Categorie	Clasificare
Portland cement	65997-15-1	266-043-4	60-100	Xi;R37/38 R43 R41

Pentru textul complet al frazelor R mentionate în acest paragraf, se va consulta paragraful 16

4. MĂSURI DE PRIM AJUTOR

Inhalare: Se va ieşi la aer curat. Apelati la ingrijire medicala daca apare iritatie. În caz de indispoziție.

Contact cu pielea: Se va spala imediat cu sapun si multa apa, scotând toate hainele si încaltamintea contaminate. Apelati la ingrijire medicala daca apare iritatie.

Contact cu ochii: Clatiti imediat ochii cu apa timp de 15 minute tinand ploapele deschise. Apelati la ingrijire medicala.

Ingerare: Se va clăti gura. Apelati la ingrijire medicala.

5. MĂSURI DE COMBATERE A INCENDIILOR

Produse recomandate pentru stingerea incendiului: Produsul în sine nu arde. Folositi mijloace de stingere corespunzatoare pentru materialul inconjurator.

Produse pentru stingerea incendiului ce nu pot fi folosite din motive de securitate: Necunoscut.

Echipament de protectie special pentru pompieri: Se vor folosi metode de stingere adecvate condițiilor locale şi mediului înconjurător.

Riscuri speciale de expunere apar chiar de la substanță sau preparat, produşii lui de ardere sau gazele eliberate: Necunoscut.

6. MĂSURI IMPOTRIVA PIERDERILOR ACCIDENTALE

Măsuri de prevedere individuale: Nu atingeti de piele sau haine. Spalati cu apa din abundenta dupa folosire. Se va purta echipament de protecție corespunzător. Vezi de asemenea secțiunea 8.

Măsuri de prevedere pentru mediu: Se va preveni deversarea produsului în sistemul de canalizare. Prevenirea patrunderii in canalizari.

Metode de curățire: Se va mătura şi se va introduce folosind un făraş în containere adecvate pentru a fi eliminat. Vezi de asemenea secțiunea 13.

7. MANIPULARE ŞI DEPOZITARE

Manipulare:

Măsuri tehnice/Măsuri de prevedere: Se va asigura ventilație adecvată. Se va prevedea o ventilație prin evacuare corespunzătoare în locurile unde se formează praf.

Măsuri de prevedere la manipulare: Se va evita formarea de praf. Se va purta echipament de protecție corespunzător. Vezi de asemenea secțiunea 8.

Depozitare:

Măsuri tehnice/Condiții de depozitare: Pastrati materialul uscat.

Cerinte ambalare: Sacosa de hartie (minimum 3 straturi), sau alte containere industriale realizate pentru pudra si materiale granulate.

Produse incompatibile: Acizi

8. CONTROLUL EXPUNERII / PROTECȚIE PERSONALA

Masuri inginerice pentru a reduce expunerea: Ventilare locala, Mentineti concentratiile din aer sub limitele de expunere

Protectie respiratorie: Măşti adecvate conținând filtre de particule P3 (Normele Europene 143).

Protecția mâinilor: Mănuşi impermeabile, Mănuşi din cauciuc.

Protecția ochilor: Ochelari de protecție perfect adecvați.

Protecția pielii şi a corpului: Curatati hainele.

Control al expunerii referitoare la protecția mediului înconjurător

Limita(e) de expunere profesională(e)

	SUA			EU	
Componente	**TWA / C**	**STEL**	**Piele**	**8 Hour TWA**	**STEL**
Portland cement	1 mg/m³	nici unul		nici unul	nici unul

9. PROPRIETĂȚI FIZICO-CHIMICE

Informații generale

Formă: pulbere
Miros: nici unul
Culoare: gri

Informatii importante despre securitatea sanatatii si a mediului

pH: 11 - 13
concentratie pH (10% solutie)
Punct/domeniu de fierbere: Nu se aplică.
Punct de aprindere: Nu se aplică.
Caracteristici explozive:
Informatii explozie - sensibilitatea la impactul mecanic: nici unul
Informatii explozie - sensibilitatea la descarcarea statica nici unul
Limita de inflamabilitate în aer:
inferioară: Nu se aplică

superioară:	Nu se aplică
Proprietăți de întreținere a arderii:	nu există date
Densitate relativă:	~ 3
Greutate volumetrică:	nedeterminat.
Solubilitate:	
Solubilitate în apă:	Miscible cu apa.
Solubilitate în grăsimi:	insolubil.
Distribuire coeficient (n-octanol/apa):	Nu se aplică.
Vâscozitate:	Nu se aplică.
Densitatea de vapori:	Nu se aplică.
Presiune de vapori:	Nu se aplică.
Viteză de evaporare:	Nu se aplică.
Informații suplimentare	
Punct/categorie de topire:	Nu se aplică.

10. STABILITATE ŞI REACTIVITATE

Stabilitate:	Stabil în condițiile de depozitare recomandate
Condiții de evitat:	Se va proteja de umezeală.
Materiale de evitat:	Acizi
Produşi de descompunere potențial periculoşi:	Necunoscut.
Polimerizare riscanta:	Nu se produce o polimerizare periculoasa.

11. INFORMAŢII TOXICOLOGICE

Efecte locale

Piele:	Iritant; poate provoca durere, roseata, dermatita.
Ochii:	Risc de leziuni oculare grave. Iritație gravă a ochilor.
Inhalare:	Iritant. Inhalarea de praf poate provoca sufocări, o senzație de apăsare în piept, dureri în gât şi tuse.
Ingerare:	Nu este un mijloc de expunere. Poate provoca o usoara iritatie.
Sensubilizare - piele	Nu se stie daca provoaca reactii alergice.
Sensubilizare - plaman	Nu se stie daca provoaca reactii alergice

Pericol cronic pentru sănătate

efecte cancerigene:	Necunoscut.
efecte mutagene:	Nu se stie daca provoaca daune genetice transmisibile.

teratogen: Nu se stie daca provoaca defecte la nastere sau daca are efect daunator asupra dezvoltarii fatului.

Toxicitate în ceea ce priveşte reproducerea: Nu se stie daca afecteaza negativ functiile sau organele de reproducere.

Efectul substantei asupra unui organ (tinta): Ochii. Piele. Aparatul respirator.

12. INFORMAŢII ECOLOGICE

Ecotoxivitate

Informatii legate de componente

Portland cement

Bioacumulare: Nu se aplică
Persistenta / degradabilitate: Nu se aplică
Informații suplimentare: Indicat in lista PLONOR laOSPAR

13. CONSIDERAŢII RELATIVE LA ELIMINARE

Deşeuri provenind de la reziduuri / produse neutilizate: Conform cu reglementările locale şi naționale

Ambalaje contaminate: Trimiteti sacose goale pentru pamant sanitar. Transmiteti alte tipuri de containere nefolosibile datorita gauririi sau deteriorarii si pamant sanitar daca regulamentele locale nu interzic acest lucru.

Numărul deşeului conform cu CED: Conform codului european de deşeuri (CED), codul deşeului nu se refera la produs ca atare, ci la modul de aplicație al acestuia
Următoarele coduri ale deşurilor sunt numai sugestii:
16 03 03 - deseuri anorganice care contin substance periculoase

14. INFORMAŢII PRIVIND TRANSPORTUL

Numar UN nici unul
Nume corect de expediere: nu este reglementat.

ADR/RID
Clasa: nu este reglementat

IMDG/IMO
Clasa de pericol: nu este reglementat

ICAO/IATA

14. INFORMAŢII PRIVIND TRANSPORTUL

Clasa de pericol: nu este reglementat

15. INFORMAŢII PRIVIND REGLEMENTĂRILE SPECIFICE APLICABILE

în conformitate cu legislatia în vigoare

conține: Portland cement.

Indicații de pericol:
- Xi - Iritant



Fraza(e) indicând R (risc):
R41 - Risc de leziuni oculare grave.
R37/38 - Iritant pentru sistemul respirator şi pentru piele.

Frază(e) S:
- S22 - A nu inspira praful.
- S26 - În cazul contactului cu ochii, se spala imediat cu multă apă şi se consulta un specialist.
- S46 - În caz de înghițire, a se consulta imediat medicul şi a i se arăta ambalajul sau eticheta.
- S24/25 - Evitati contactul cu pielea şi ochii.
- S36/37/39 - Purtati echipament de protecție corespunzator, manusi şi masca de protecție pentru ochi/față.

Inventarieri internationale

Acest produs respecta cerintele EINECS/ELINCS.

Împreună cu această scrisoare primiţi şi noile versiuni ale fişelor de protecţia şi securitatea muncii care vor înlocui versiunile precedente

Textul frazelor R mentionate la articolul 3
- R41 - Risc de leziuni oculare grave.
- R43 - Poate cauza sensibilizare prin contact cu pielea.
- R37/38 - Iritant pentru sistemul respirator şi pentru piele.

Cauza reviziei:
8. CONTROLUL EXPUNERII/PROTECȚIE PERSONALA

Această scrisoare a fost tipărită electronic şi de aceea nu este semnată: Conformitate reglementare chimica

Informatiile si recomandarile cuprinse in prezenta se bazeaza pe teste considerate fiabile. Insa, Schlumberger nu garanteaza acuratetea sau integritatea lor IAR ACESTE INFORMATII NU CONSTITUIE O GARANTIE, EXPRESA SAU IMPLICITA, CU PRIVIRE LA SIGURANTA PRODUSELOR,COMERCIALIZAREA PRODUSELOR, SAU CONFORMITATEA PRODUSELOR PENTRU UN ANUMIT SCOP. Se poate solicita adaptarea la conditiile propriu-zise de folosire. Schlumberger nu isi anuma nicio raspundere pentru rezultatele obtinute sau pentru daunele incidente sau consecventiale, inclusiv pierderile de profit generate de folosirea acestor informatii. Nu exista nicio garantie cu privire la incalcarea unui brevet, copyright sau marca inregistrata.

Sfârşitul Normelor de Tehnica şi Securitatea Muncii

HALLIBURTON

FISA TEHNICA DE SECURITATE

in conformitate cu Regulamentul (CE) Nr. 453/2010

Halliburton Aqualinear Fluid

Data Reviziei: 24-apr.-2014 **Numarul Reviziei:** 4

1. Identificarea substantei/amestecului ti a societatii/întreprinderii

1.1 Element de identificare a produsului

Product Name Halliburton Aqualinear Fluid

1.2 Utilizari relevante identificate ale substantei sau amestecului si utilizari contraindicate

Utilizari Recomandate	Fluid de Foraj
Domeniu de aplicare	SU2 - Minerit (inclusiv exploatare maritima)
Categorie de produs	PC20 - Produse cum ar fi agenti de control pH, floculanti, agenti de precipitare, agenti de neutralizare, altele nespecifice
Categorii de proces	PROC4 - Utilizare in proces discontinuu si alte procese (sinteze) in care apare posibilitatea expunerii

1.3 Detalii privind furnizorul fisei cu date de securitate

Halliburton Energy Services
Halliburton House, Howemoss Place
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
Marea Britanie

Numar Telefon de Urgenta: +44 1224 795277 sau +1 281 575 5000

www.halliburton.com

Pentru informatii suplimentare, va rugam contactati

Adresa de E-Mail: fdunexchem@halliburton.com

1.4 Numar de telefon care poate fi apelat în caz de urgenta

+44 1224 795277 or +1 281 575 5000

Telefon de urgenta - §45 - (CE)1272/2008	
Europa	**112**
Danemarca	Linia de Urgenta pentru Controlul Otravirilor (DK): +45 82 12 12 12
Franta	ORFILA (FR): + 01 45 42 59 59
Germania	Centrul pentru Otraviri Berlin (DE): +49 030 30686 790
Italia	Centrul pentru Otraviri, Milan (IT): +39 02 6610 1029
Olanda	Centrul National de Informatii in caz de Otravir (NL): +31 30 274 88 88 (NB: acest serviciu este disponibil numai pentru specialisti in sanatate)
Norvegia	Informatii in caz de Otraviri (NO):+ 47 22 591300
Polonia	Centrul de Control si Informatii in caz de Otravire, Varsovia (PL): +48 22 619 66 54; +48 22 619 08 97
Spania	Serviciul de Informatii in caz de Otravire (ES): +34 91 562 04 20
Marea Britanie	Directia NHS (UK): +44 0845 46 47

2. Identificarea pericolelor

2.1 Clasificarea substantei sau a amestecului

REGULAMENT (CE) Nr. 1272/2009

Vatamarea Severa a Ochilor / Iritarea Ochilor	Categoria 2 - H319

Clasificare conform Directivelor UE 67/548/CEE sau 1999/45/CE.

Pentru textul complet al Frazelor R mentionte in aceasta Sectiune, vezi Sectiunea 16

Clasificare Xi - Iritant.

Fraze de Risc R36 Iritant pentru ochi.

2.2 Elemente pentru eticheta

Pictograme de Pericol



Cuvant de Semnal **Avertisment**

Propozitii de Pericol
H319 - Cauzeaza iritarea serioasa a ochilor

Propozitii de Atentionare - UE (§28, 1272/2008)
P264 - Spalati bine fata, manile si orice piele expusa dupa manipulare
P280 - Purtati protectie pentru ochi/protectie pentru fata
P305 + P351 + P338 - LA CONTACT CU OCHII: Clatiti cu atentie cu apa timp de mai multe minute. Scoateti lentilele de contact, daca exista si este usor de facut. Continuati clatirea
P337 + P313 - Daca iritatia ochilor persista: Cereti asistenta/ingrijiri medicale

Contine

Substante	**Numar CAS**
Clorura de amoniu	12125-02-9

2.3 Alte pericole
Nu se cunoaste nimic.

3. Compozitie/informatii privind componentii

Substante	EINECS	Numar CAS	Procentul	Clasificare CEE	Clasificarea Substantelor conform UE - CLP	Nr. REACH
Clorura de amoniu	235-186-4	12125-02-9	5 - 10%	Xn; R22 Xi; R36	Acute Tox. 4 (H302) Eye Irrit. 2 (H319)	Nu sunt date disponibile

Pentru textul complet al Frazelor R mentionte in aceasta Sectiune, vezi Sectiunea 16

4. Masuri de prim ajutor

4.1 Descrierea masurilor de prim ajutor

Inhalare La inhalare, mutati persoana la aer proaspat. Cereti asistenta medicala daca apare iritatia respiratorie sau respiratia devine dificila.

Ochi In caz de contact, sau este suspectat contactul, spalati ochii imediat cu multa apa timp de cel putin 15 minute si cereti ingrijiri medicale imediat dupa spalare.

Piele In caz de contact, spalati imediat pielea cu mult sapun si apa timp de cel putin 15 minute. Cereti ingrijiri medicale.

Inghitire Nu induceti voma. Diluati incet cu 1-2 pahare de apa sau lapte si cereti asistenta medicala. Niciodata nu administrati ceva pe gura unei persoane inconstiente.

4.2 Cele mai importante simptome si efecte, atât acute, cât si întârziate
Poate provoca iritatia ochilor

4.3 Indicatii privind orice fel de asistenta medicala imediata si tratamentele speciale necesare
Notes to Physician Treat symptomatically

5. Masuri de combatere a incendiilor

5.1 Mijloace de stingere a incendiilor
Mijloace Adecvate de Stingere a Incendiilor
Apa sub forma de ceata, dioxid de carbon, spuma, substanta chimica uscata.
Mijloace de combatere a incendiilor ce nu trebuie folosite, din motive de siguranta.
Nimic cunoscut

5.2 Pericole speciale cauzate de substanta sau amestecul în cauza
Pericole de Expunere Speciale
Descompunerea in foc poate produce gaze toxice.

5.3 Recomandari destinate pompierilor
Echipament Special de Protectie pentru Pompieri
Echipament complet de protectie si aparat respirator autonom necesar pentru pompieri.

6. Masuri de luat în caz de dispersie accidentala

6.1 Precautii personale, echipament de protectie si proceduri de urgenta
Utilizati echipament de protectie corespunzator.
Consultati Sectiunea 8 pentru informatii suplimentare

6.2 Precautii pentru mediul înconjurator
Preveniti intrarea in canalizari, canale navigabile sau zone joase.

6.3 Metode si material pentru izolarea incendiilor si pentru curatenie
Izolati deversarea si opriti scurgerea unde este posibil in siguranta. Izolati deversarea cu nisip sau alte materiale inerte. Strangeti si indepartati.

6.4 Trimiteri catre alte sectiuni
Consultati Sectiunea 8 si 13 pentru informatii suplimentare

7. Manipularea ti Depozitarea

7.1 Precautii pentru manipularea în conditii de securitate
Evitati inspirarea vaporilor. Spalati mainile dupa utilizare. Evitati contactul cu ochii, pielea sau imbracamintea. Spalati imbracamintea contaminata inainte de reutilizare
Hygiene Measures
Se va manipula conform normelor de igiena industriale ?i a normelor de securitate

7.2 Conditii de depozitare în conditii de securitate, inclusiv eventuale incompatibilitati
Depozitati departe de substante bazice. Depozitati in spatii reci, bine aerisite. Pastrati recipientul inchis cand nu este folosit.

7.3 Utilizare finala specifica (utilizari finale specifice)
Scenariu de Expunere Nu sunt informatii disponibile
Alte Instructiuni Nu sunt informatii disponibile

8. Controale ale expunerii/protectia personala

8.1 Parametri de control
Exposure Limits

Substante	Numar CAS	UE	UK	Olanda	Franta OEL
Clorura de amoniu	12125-02-9	Nu este cazul	STEL: 20 mg/m³ TWA: 10 mg/m³	Nu este cazul	10 mg/m³

Substante	Numar CAS	Germania MAK/TRK	Spania	Portugalia	Finlanda
Clorura de amoniu	12125-02-9	Nu este cazul	20 mg/m³ VLA-EC (fume) VLA-ED: 10 mg/m³	STEL: 20 mg/m³ TWA: 10 mg/m³	Nu este cazul

Substante	Numar CAS	Austria	Irlanda	Elvetia	Norvegia
Clorura de amoniu	12125-02-9	Nu este cazul	Nu este cazul	Nu este cazul	STEL: 20 mg/m³ TWA: 10 mg/m³

Substante	Numar CAS	Italia	Polonia	Ungaria	Republica Ceha
Clorura de amoniu	12125-02-9	Nu este cazul	NDSCh: 20 mg/m³ NDS: 10 mg/m³	Nu este cazul	TWA: 5 mg/m³

Substante	Numar CAS	Danemarca
Clorura de amoniu	12125-02-9	TWA: 10 mg/m³

Nivel Calculat Fara Efect (DNEL) Nu sunt informatii disponibile

Muncitor

General Population

Concentratia Predictibila Fara Efect (PNEC) Nu sunt informatii disponibile.

8.2 Controale ale expunerii

Controlul Procesului Utilizati intr-o zona bine ventilata. Trebuie utilizata ventilatie de evacuare locala in zone fara o buna ventilatie transversala.

Echipament de protectie personala

Protectie Respiratorie Masca de gaze pentru vapori organici/gaze acide cu filtru praf/ceata.

Protectia Mainilor. Manusi de cauciuc impermeabil.

Protectia Pielii Sort de cauciuc.

Protectia Ochilor Ochelari de protectie chimica; purtati deasemenea aparatoare pentru fata daca exista pericolul stropirii.

Alte Masuri de Precautie Spalatoarele pentru ochi si dusurile de siguranta trebuie sa fie usor accesibile.

Environmental Exposure Controls Nu sunt informatii disponibile

9. Proprietatile fizice ti chimice

9.1 Informatii privind proprietatile fizice si chimice de baza

Stare Fizica: Lichid **Culoare:** Galben deschis transparent

Miros: Slab aminic **Limita de Prag a Mirosului:** Nu sunt informatii disponibile

Proprietate Observatii/ - Metoda	Valori
pH:	3.4
Punct/Interval de Congelare	-19 °C
Punct/Interval de Topire	Nu sunt date disponibile
Punct/Interval de Fierbere	100 °C
Punct de Aprindere	Nu sunt date disponibile
Viteza de Evaporare	Nu sunt informatii disponibile.
Presiunea Vaporilor	Nu sunt date disponibile
Densitatea Vaporilor	Nu sunt date disponibile
Densitate Specifica	1.08
Solubilitate in Apa	Solubil in apa
Solubilitate in alti solventi	Nu sunt date disponibile
Coeficient de repartitie: n-octanol/apa	Nu sunt date disponibile
Temperatura de Autoaprindere	Nu sunt date disponibile
Temperatura de Descompunere	Nu sunt date disponibile
Vascozitate	Nu sunt date disponibile
Proprietati Explozive	Nu sunt informatii disponibile
Proprietati Oxidante	Nu sunt informatii disponibile

9.2 Alte informatii

Continut VOC (substante volatile) (%) Nu sunt date disponibile

10. Stabilitate ti reactivitate

10.1 Reactivitate

Neaplicabil

10.2 Stabilitate chimica

Stabil

10.3 Posibilitatea de reactii periculoase

Nu se va produce

10.4 Conditii de evitat

Nu s-a anticipat nimic.

10.5 Materiale incompatibile

Baze tari.

10.6 Produsi de descompunere periculosi

Oxizi de azot. Monoxid de carbon si dioxid de carbon.

11. Informatii toxicologice

11.1 Informatii privind efectele toxicologice

Toxicitate Acuta

Inhalarea	Poate cauza iritarea cailor respiratorii.
Contactul cu Ochii	Poate cauza iritarea severa a ochilor.
Contact cu Pielea	Poate cauza iritarea pielii.
Inghitire	Cauzeaza arsuri ale gurii, gatului si stomacului.

Efecte Cronice/Carcinogenicitate Nu sunt date disponibile care sa indice ca produsul sau componentele prezente in concentratie mai mare de 1% sunt pericole cronice pentru sanatate.

Date toxicologice pentru componentele

Substante	Numar CAS	LD50 Oral	LD50 Dermal	LC50 la Inhalare
Clorura de amoniu	12125-02-9	1410 mg/kg (Rat) 1220 mg/kg (Rat) 1630 mg/kg (Rat) 1300 mg/kg (Mouse)	> 2000 mg/kg (Rat)	Nu sunt date disponibile

Substante	Numar CAS	Corodare/iritare a pielii
Clorura de amoniu	12125-02-9	Ne-iritant pentru piele (iepure)

Substante	Numar CAS	Vatamarea/iritarea ochilor
Clorura de amoniu	12125-02-9	Cauzeaza iritarea moderata a ochilor (iepure)

Substante	Numar CAS	Sensibilizarea Pielii
Clorura de amoniu	12125-02-9	Nu cauzeaza sensibilizarea animalelor de laborator (Porcusor de Guineea)

Substante	Numar CAS	Sensibilizarea Cailor Respiratorii
Clorura de amoniu	12125-02-9	Nu sunt informatii disponibile

Substante	Numar CAS	Efecte Mutagenice
Clorura de amoniu	12125-02-9	Testele in vitro nu au aratat efecte mutagenice Testele in vivo nu au aratat efecte mutagenice

Substante	Numar CAS	Efecte Cancerigene
Clorura de amoniu	12125-02-9	Nu s-au constatat efecte cancerigene la animalele supuse experimentelor

Substante	Numar CAS	Toxicitate pentru reproducere
Clorura de amoniu	12125-02-9	Testarea pe animale nu a dovedit nici un efect asupra fertilitatii Nu a evidentiat efecte teratogene la experimentele pe animale. (substanta similara)

Substante	Numar CAS	STOT - o singura expunere
Clorura de amoniu	12125-02-9	Nu sunt informatii disponibile

Substante	Numar CAS	STOT - expunere repetata
Clorura de amoniu	12125-02-9	La studiile pe animale cu concentratii care necesita clasificarea nu s-a observat o toxicitate semnificativa.

Substante	Numar CAS	Pericol de aspiratie
Clorura de amoniu	12125-02-9	Nu este cazul

12. Informatii ecologice

12.1 Toxicitate
Ecotoxicity Effects

Substante	Numar CAS	Toxicitate pentru Alge	Toxicitate asupra Pestilor	Toxicitate pentru Microorganisme	Toxicitate la nevertebratele
Clorura de amoniu	12125-02-9	EC50: 40-70 mg/l (Skeletonema costatum) EC50(10d): 90.4 mg/L (Navicula sp.) NOEC(10d): 26.8 mg/L (growth rate) (Navicula sp.) EC50(5d): 1300 mg/L (growth rate) (Chlorella vulgaris)	LC50(96h): 275 mg/L (Cyprinus carpio) LC50(96h): 163 mg/L (Pimephales promelas) LC50(96h): 218 mg/L (Lepomis cyanellus) LC50(96h): 34 mg/L (Oncorhynchus mykiss) NOEC(28d): 11.8 mg/L (Pimephales promelas)	EC50(30m): 1618 mg/L (activated sludge, domestic)	TLM96: 16 mg/l (Crangon crangon) EC50(48h): 101 mg/L (Daphnia magna) NOEC(21d): 14.6 mg/L (Daphnia magna)

12.2 Persistenta si degradabilitate

Substante	Numar CAS	Persistence and Degradability
Clorura de amoniu	12125-02-9	The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Potential de bioacumulare

Substante	Numar CAS	Log Pow
Clorura de amoniu	12125-02-9	Nu exista informatii disponibile

12.4 Mobilitate în sol
No information available

12.5 Rezultatele evaluarii PBT si vPvB
Nu sunt informatii disponibile

12.6 Alte efecte adverse
Informatii despre Efectele asupra Sistemului Endocrin
Acest produs nu contine nicio substanta cunoscuta sau suspectata a avea efecte asupra sistemului endocrin.

13. Consideratii privind eliminarea

13.1 Metode de tratare a deseurilor
Metoda de Eliminare a Deseurilor Eliminarea deseurilor se va face in conformitate cu reglementarile federale, statale si locale.
Ambalaje Contaminate Respectati toate reglementarile nationale sau locale.

14. Informatii referitoare la transport

IMDG/IMO
Numar UN: Nerestrictionat.
Denumire Adecvat de Transport pe Mare conform UN: Nerestrictionat
Clasa(e) de Pericol pentru Transport: Nu este cazul
Grupa de Ambalare: Nu este cazul
Pericole pentru Mediul Inconjurator: Nu este cazul

RID
Numar UN: Nerestrictionat.
Denumire Adecvat de Transport pe Mare conform UN: Nerestrictionat

Clasa(e) de Pericol pentru Transport:	Nu este cazul
Grupa de Ambalare:	Nu este cazul
Pericol pentru mediul inconjurator	Nu este cazul

ADR

Numar UN:	Nerestrictionat.
Denumire Adecvat de Transport pe Mare conform UN:	Nerestrictionat
Clasa(e) de Pericol pentru Transport:	Nu este cazul
Grupa de Ambalare:	Nu este cazul
Pericol pentru mediul inconjurator	Nu este cazul

IATA/ICAO

Numar UN:	Nerestrictionat.
Denumire Adecvat de Transport pe Mare conform UN:	Nerestrictionat
Clasa(e) de Pericol pentru Transport:	Nu este cazul
Grupa de Ambalare:	Nu este cazul
Pericol pentru mediul inconjurator	Nu este cazul

Precautii Speciale pentru Utilizator Nimic

Transportul in vrac conform Anexei II a MARPOL 73/78 si Codului IBC. Nu este cazul

15. Informatii de reglementare

15.1 Regulamente/legislatie în domeniul securitatii, sanatatii si al mediului specifice (specifica) pentru substanta sau amestecul în cauza

Inventare Internationale

Inventarul EINECS	Acest produs si toate componentele sale, respecta EINECS
Inventarul TSCA (Legea pentru Controlul Substantelor Toxice) al SUA	Toate componentele sunt listate in inventar sunt scutite.
Inventar Canadian DSL (Lista de Substante Indigene)	Toate componentele sunt listate pe inventar sau scutite.

Legenda

TSCA - Inventarul din Sectiunea 8(b) din Legea Statelor Unite privind Controlului Substantelor Toxice
EINECS/ELINCS - Inventarul European al Substantelor Chimice Comerciale Existente / Lista UE a Substantelor Chimice Notificate
DSL/NDSL - Lista Canadiana a Substantelor Domestice / Lista Substantelor Non-Domestice

Germania, Clase de Pericol pentru Apa (WGK) WGK 1: Pericol redus pentru ape.

15.2 Evaluarea securitatii chimice

Nu sunt informatii disponibile

16. Alte informatii

Textul integral al Frazelor R la care se face referire in Sectiunile 2 si 3

R22 Nociv prin inghitire.
R36 Iritant pentru ochi.

Referinte cheie din literatura si surse de date
www.ChemADVISOR.com/

Data Reviziei: 24-apr.-2014
Nota Revizuire
Nu este cazul

This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010

Declaratie de Limitare a Responsabilitatii
Aceste informatii sunt furnizate fara garantie, exprimata sau implicita, in ceea ce priveste precizia sau completitudinea. Informatiile sunt obtinute din diverse surse ce includ fabricantul si alte terte parti. S-ar putea ca informatiile sa nu fie valabile in toate conditiile si nici daca acest material este utilizat in combinatie cu alte materiale sau in orice proces. Determinarea finala a oportunitatii oricarui material este doar responsabilitatea utilizatorului.

Sfarsitul Fisei Tehnice de Securitate

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

AVAPOLY PGL

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**AVAPOLY PGL**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Stabilizator de șist pentru fluide de foraj**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C. AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR		
2.1. Clasificarea substanţei sau a amestecului		
Indicarea de pericole specifice pentru om şi mediul înconjurător:		
SUBSTANŢA / AMESTECUL NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI		
Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)		
---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
---	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
2: IDENTIFICAREA PERICOLELOR		
2.2. Elemente pentru etichetă		
Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)		
Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Fraze de precauție:	**P261:** Evitaţi să inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	
Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.		
Identificarea pericolelor:	---	*NU ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI*
Sfaturi de siguranță::	**S23:** A nu se inspira praful/fumul/gazul/ceaţa/vaporii/spray-ul/aburii. **S24/25:** Evitaţi contactul cu pielea şi ochii.	
Eliminarea:		
2.3. Alte pericole		
- - -		

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	In conformitate cu tabelul următor:
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Acid Acetic 80 % REACH No. 01-2119475328-30-XXXX	64-19-7	200-580-7	1% - 3%	**Inflam. Lich. 3**	 **GHS02**	**H226**
				Cor. Cutanat 1A	 **GHS05**	**H314**
Nume	**Nr. CAS**	**Nr. EC**	**Cantitate**	**Clasificare**	**Simbol**	**Fraze de pericol**
Acid Acetic 80 % REACH No. 01-2119475328-30-XXXX	64-19-7	200-580-7	1% - 3%	**Fara pictograma**		**R10**
				C - coroziv		**R35**

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Mutați victima la aer și mențineți-o la-caldura și în stare de repaus. Dacă vă simțiți rău solicitați medicul imediat
După contactul cu pielea:	Spălaţi cu multă apă şi săpun
După contactul cu ochii:	În cazul contactului cu ochii, clatiti imediat cu multă apă și adresați-vă unui medic.
După înghiţire:	Nu induceti voma. SOLICITATI EXAMINARE MEDICALA IMEDIAT.
Alte informaţii:	N.a.

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	Niciuna

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultaţi imediat un medic şi arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenţie:	N.a.

5. MĂSURI DE COMBATERE A INCENDIILOR	
5.1. Mijloace de stingere a incendiilor	
Măsuri de precauție în caz de incendiu:	În caz de incendiu, respectaţi instrucțiunile.
Mijloace de stingere corespunzătoare:	Utilizati: apa, dioxid de carbon
Mijloace de stingere necorespunzătoare:	Niciunul in mod special
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Nu respirati gazele de explozie si de ardere
Echipamente speciale de stingere a incendiilor	Folositi aparat de respirat adecvat. Colectati separat apa contaminată folosită pentru a stinge focul. Aceasta nu va fi deversata în sistemul de canalizare. Dacă posibil din punct de vedere al sigurantei, mutati containere intacte din zona de pericol imediat.
Recomandări destinate pompierilor:	N.a.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ	
6.1. Precauţii personale, echipament de protecție și proceduri de urgență	
Echipament de protecţie:	Purtati echipament de protective adecvat PPE (manusi, ochelari, imbracaminte de protective)
Proceduri de urgență:	Mutati persoanele neprotejate intr-o zona sigura.
6.2. Precauţii pentru mediul înconjurător	
Medii de izolare:	Nu permiteți să intre în sol / subsol. Preveniti scurgerile în apele de suprafață sau în sistemul de canalizare. Colectati apa de spălare contaminată și eliminati-o. In cazul scurgerilor/patrunderilor în cursurile de apă, sol sau canalizare, informatin autoritatile responsabile. Materiale adecvate pentru preluare, absorbire: material absorbant, organic, nisip
Metode de limitare a poluarii	Spalati cu apa din abundenta
Informatii suplimentare:	N.a.

7. MANIPULARE ŞI DEPOZITARE	
7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitați contactul cu pielea și ochii, inhalarea de vapori și ceață. In timpul manipularii nu mancati sau beti.
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Ventilatie corespunzatoare.Pastrati ambalajul ermetic inchis. Pastrati la distantade alimente, bautura si hrana pentru animale.
Specificaţiile zonei de depozitare:	A se păstra in locuri răcoroase și uscate
Specificaţiile recipienţilor:	Pastrati recipientul ermetic inchis .
Incompatibilități:	Acizi tari și agenți oxidanți
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Stabilizator de șist pentru fluide de foraj**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control (Limite de expunere)

Substanta		***Acetic acid 80% CAS No. 64-19-7***
TLV_{Celing}:		- - -
TLV_{TWA}:		10 ppm
TLV_{STEL}:		15 ppm
Limita biologică:		- - -

8.2. Controale ale expunerii profesionale

8.2.1. Controale tehnice corespunzătoare		Asigurati ventilaţie adecvata
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Este necesara ventilatie generala
Protecţia individuală	Respiratorie:	In general nu este necesara.
	Ochi	In general nu este necesara. Manipulati in conformitate cu regulile de buna practica de lucru.
	Maini	Manusi
	Corp	In general nu este necesara.

8.3. Controlul expunerii mediului

Variante de expunere	N.a.

9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1. Informaţii generale

Forma:	Lichid vascos
Aspect:	Lichid
Culoare:	Maro
Miros:	Nu este relevant
Prag olfactiv:	N.a.

9.2. Informaţii pentru sănătate, siguranţă şi mediu

pH (10 g/l) 25°C:	8,5-10,5
Punct de topire:	N.d.
Punct de fierbere:	>90°C
Punct de aprindere:	150°C
Inflamabilitate (solid, gaz):	N.d.
Temperatura de autoaprindere:	N.d.
Temperatura de descompunere:	N.d.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C:	N.d.
Densitatea aparentă (20°C):	N.d.
Densitatea relativă:	De la 1,15 la 1,25 gr/cm3
Densitatea de vapori:	N.d.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	Miscibil
Coeficientul de distribuție (n-	N.a.

octanol):	
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE	
10.1. Reactivitate	
Condiții care trebuie evitate:	Stabil in conditii normale.
10.2. Stabilitate chimică	
Materiale incompatibile:	Acizi tari si agenti de oxidare puternici
Posibilitatea de reacții periculoase:	Niciuna
10.3. Produși de descompunere periculoși	
Alte informaţii:	În caz de incendiu CO și CO2

11. INFORMAŢII TOXICOLOGICE	
11.1. Toxicitate Acută	
Toxicitatea substantei	***Acetic acid 80% CAS No. 64-19-7***
Toxicitate orală acută:	LD50 (Sobolan): 3310 mg/Kg
Toxicitate inhalatorie acută:	N.d.
Toxicitate cutanată acută:	LD50 (Iepure): 1060 mg/kg
11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Substanta	***Acetic acid 80% CAS No. 64-19-7***
Toxicitate în apă:	LC50 (Pesti) 96h: 75 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	Biodegradabil
12.3. Potențial de Bioacumulare	
Alte informații:	N.a.
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	Niciunul
vPvB:	Niciunul

12.6. Alte efecte adverse	
Alte informații:	Niciuna

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	Recuperati dacă este posibil. Consultati un centru autorizat pentru eliminare
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	Recuperati dacă este posibil. Consultati un centru autorizat pentru eliminare
Alte recomandări:	N.a.

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Normele de transport ONU:	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementările aplicate în transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului

substanţelor chimice.
Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.
REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;
HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;
REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:
Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este

folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose - doză letală medie

NOEC: no observable effect concentration – concentraţia fără efect observat

PNEC: predicted no-effect concentration - concentrația fără efect prevăzut

PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice

vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative

TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore

TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt

TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H226: - Lichid şi vapori inflamabili.
H314: Provoacă arsuri grave ale pielii şi lezarea ochilor

R10: Inflamabil
R 35: Provoacă arsuri grave

Fraze de precautie / siguranta utilizate în secţiunile anterioare

P261: Evitaţi să inspiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

S23: A nu se inspira praful/fumul/gazul/ceaţa/vaporii/spray-ul/aburii.
S24/25: Evitaţi contactul cu pielea şi ochii.

HALLIBURTON

FISA TEHNICA DE SECURITATE

in conformitate cu Regulamentul (CE) Nr. 453/2010

FR-66

Data Reviziei: 14-feb.-2013 **Numarul Reviziei:** 6

1. IDENTIFICAREA SUBSTANTEI/PREPARATULUI SI A COMPANIEI/INTREPRINDERII

Identificare Produs

Denumire Produs FR-66

Utilizari identificate relevante ale substantei sau amestecului si utilizari nerecomandate

Utilizari Recomandate Reducator de Frecare

Domeniu de aplicare SU2 - Minerit (inclusiv exploatare maritima)

Categorie de produs PC20 - Produse cum ar fi agenti de control pH, floculanti, agenti de precipitare, agenti de neutralizare, altele nespecifice

Categorii de proces PROC4 - Utilizare in proces discontinuu si alte procese (sinteze) in care apare posibilitatea expunerii

Utilizari Nerecomandate Nu sunt informatii disponibile

Detalii ale furnizorului fisei tehnice de securitate

Halliburton Energy Services
Halliburton House, Howemoss Place
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
Marea Britanie

Numar Telefon de Urgenta: +44 1224 795277 sau +1 281 575 5000

www.halliburton.com

Pentru informatii suplimentare, va rugam contactati

Adresa de E-Mail: fdunexchem@halliburton.com

Numar telefon de urgenta

+44 1224 795277 or +1 281 575 5000

Telefon de urgenta §45 - (CE)1272/2008	
Europa	**112**
Danemarca	Linia de Urgenta pentru Controlul Otravirilor (DK): +45 82 12 12 12
Franta	ORFILA (FR): + 01 45 42 59 59
Germania	Centrul pentru Otraviri Berlin (DE): +49 030 30686 790
Italia	Centrul pentru Otraviri, Milan (IT): +39 02 6610 1029
Olanda	Centrul National de Informatii in caz de Otravir (NL): +31 30 274 88 88 (NB: acest serviciu este disponibil numai pentru specialisti in sanatate)
Norvegia	Informatii in caz de Otraviri (NO):+ 47 22 591300
Polonia	Centrul de Control si Informatii in caz de Otravire, Varsovia (PL): +48 22 619 66 54; +48 22 619 08 97
Spania	Serviciul de Informatii in caz de Otravire (ES): +34 91 562 04 20
Marea Britanie	Directia NHS (UK): +44 0845 46 47

2. IDENTIFICAREA PERICOLELOR

Clasificarea substantei sau amestecului

Clasificare conform Directivelor UE 67/548/CEE sau 1999/45/CE.
Pentru textul complet al Frazelor R mentionte in aceasta Sectiune, vezi Sectiunea 16

Simbol(uri)



Clasificare Xi - Iritant.

Fraze de Risc R36 Iritant pentru ochi.

Fraze de Siguranta S26 In cazul contactului cu ochii, clatiti imediat cu apa din abundenta si cereti ingrijiri medicale.
S24/25 Evitati contactul cu pielea si ochii.

Consideratii asupra Pericolelor Poate cauza iritarea ochilor. Poate fi daunator daca este inghitit.

3. COMPOZITIE / INFORMATII DESPRE INGREDIENTE

Substante	EINECS	Numar CAS	Procentul	Clasificare CEE	Clasificarea Substantelor conform UE - CLP	Nr. REACH
Distilate petroliere usoare, hidrotratate	265-149-8	64742-47-8	10 - 30%	Xn; R65, R66	Asp. Tox. 1 (H304) EUH066	01-2119484819-18

Pentru textul complet al Frazelor R mentionte in aceasta Sectiune, vezi Sectiunea 16

4. MASURI DE PRIM AJUTOR

Descrierea masurilor de prim ajutor

Inhalare La inhalare, mutati persoana la aer proaspat. Daca nu respira, faceti respiratie artificiala, de preferat gura-la-gura. Daca respiratia este dificila, administrati oxigen. Cereti asistenta medicala.

Ochi In caz de contact, sau este suspectat contactul, spalati ochii imediat cu multa apa timp de cel putin 15 minute si cereti ingrijiri medicale imediat dupa spalare.

Piele Spalati cu sapun si apa. Cereti asistenta medicala daca iritatia persista Scoateti imbracamintea contaminat si spalati-o inainte de refolosire.

Inghitire Cereti asistenta medicala! Daca se produce voma, tineti capul victimei mai jos decat coapsele pentru a preveni aspiratia.

Cele mai importante simptome si efecte, atat acute cat si intarziate
Poate cauza iritarea ochilor. Poate fi daunator daca este inghitit.

Indicarea oricarei asistente medicale imediate si tratamentul special necesar
Note pentru Medic Tratati simptomatic

5. MASURI DE STINGERE A INCENDIILOR

Medii de stingere a incendiilor
Mijloace Adecvate de Stingere a Incendiilor
Apa sub forma de ceata, dioxid de carbon, spuma, substanta chimica uscata.
Mijloace de combatere a incendiilor ce nu trebuie folosite, din motive de siguranta.
Nimic cunoscut

Pericole specifice ce deriva din substanta sau amestec
Pericole de Expunere Speciale
Descompunerea in foc poate produce gaze toxice. Folositi apa pulverizata pentru a raci suprafetele expuse la foc.

Sfaturi pentru pompieri
Echipament Special de Protectie pentru Pompieri
Echipament complet de protectie si aparat respirator autonom necesar pentru pompieri.

6. MASURI IN CAZ DE SCURGERI ACCIDENTALE

Precautii personale, echipament de protectie si proceduri de urgenta
Utilizati echipament de protectie corespunzator.
Vezi Sectiunea 12 pentru informatii suplimentare

Precautii legate de mediul inconjurator
Preveniti intrarea in canalizari, canale navigabile sau zone joase.

Metode si materiale pentru izolare si curatire
Izolati deversarea si opriti scurgerea unde este posibil in siguranta. Izolati deversarea cu nisip sau alte materiale inerte. Strangeti si indepartati.

Referinta la alte sectiuni
Vezi Sectiunea 12 pentru informatii suplimentare

7. MANEVRARE SI DEPOZITARE

Masuri de Precautie pentru Manevrarea in Siguranta
Evitati contactul cu ochii, pielea sau imbracamintea. Evitati inspirarea vaporilor. Spalati mainile dupa utilizare. Spalati imbracamintea contaminata inainte de reutilizare Materialul este alunecos sub picior. Evitati inspirarea cetii.
Masuri de Igiena
Manipulati in concordanta cu bunele practici de igiena si siguranta industriala

Conditii pentru depozitarea in siguranta, incluzind orice incompatibilitati
Depozitati departe de agenti oxidanti. Pastrati recipientul inchis cand nu este folosit. Depozitati in locuri reci si uscate. Depozitati in spatii bine aericite. Nu lasati sa inghete. Perioada maxima de stocare a produsului este de 6 luni.

Utilizare(i) finala specifica
Scenariu de Expunere Nu sunt informatii disponibile
Alte Instructiuni Nu sunt informatii disponibile

8. CONTROLUL EXPUNERII/PROTECTIE PERSONALA

Parametri de control

Substante	UE	UK	Olanda	Franta OEL	Germania MAK/TRK
Distilate petroliere usoare, hidrotratate	Nu este cazul	5 mg/m^3	Nu este cazul	Nu este cazul	Nu este cazul

Substante	Italia	Polonia	Ungaria	Republica Ceha	Danemarca
Distilate petroliere usoare, hidrotratate	Nu este cazul	Nu este cazul	Nu este cazul	Nu este cazul	Nu este cazul

Nivel Calculat Fara Efect (DNEL)	Nu sunt informatii disponibile
Concentratia Predictibila Fara Efect (PNEC)	Nu sunt informatii disponibile.

Controlul expunerii

Controlul Procesului	Utilizati intr-o zona bine ventilata. Trebuie utilizata ventilatie de evacuare locala in zone fara o buna ventilatie transversala.

Echipament de protectie personala

Protectie Respiratorie	Nu este necesar in mod normal. Dar daca sunt posibile expuneri semnificative, atunci este recomand urmatorul tip de aparat respirator: Masca de gaze pentru vapori organici.
Protectia Mainilor.	Manusi de cauciuc impermeabil.
Protectia Pielii	Sort de cauciuc.
Protectia Ochilor	Ochelari de protectie chimica; purtati deasemenea aparatoare pentru fata daca exista pericolul stropirii.
Alte Masuri de Precautie	Spalatoarele pentru ochi si dusurile de siguranta trebuie sa fie usor accesibile.
Controlul Expunerii Mediului Inconjurator	Nu sunt informatii disponibile

9. PROPRIETATI FIZICE SI CHIMICE

Informatii privind proprietatile fizice si chimice de baza

Stare Fizica:	Lichid	**Culoare:**	Alb
Miros:	Dulce hidrocarbonat	**Limita de Prag a Mirosului:**	Nu sunt informatii disponibile

Proprietate Observatii/ Metoda	Valori
Punct/Interval de Topire	Nu sunt date disponibile
Punct/Interval de Congelare (°C):	< -10
Punct/Interval de Aprindere (C):	> 93
Metoda Punctului de Aprindere:	Nedeterminat
Temperatura de Autoaprindere (C):	> 215
Viteza de Evaporare (Butil Acetat=1):	Nedeterminat
Presiunea Vaporilor @ 20 C (mmHg):	Nedeterminat
Densitatea Vaporilor (Aer=1):	Nedeterminat
Greutate Specifica @ 20 C (Apa=1):	1.06
Densitate @ 20 C (kg/l):	1.05
Solubilitate in Apa (g/100ml):	Partial solubil
Solubilitate in alti solventi	Nu sunt date disponibile
Coeficient de Repartitie n-Octano/Apa:	Nedeterminat
Temperatura de Descompunere (C):	Nedeterminat
Vascozitate	Nu sunt date disponibile
Proprietati Explozive	Nu sunt informatii disponibile
Proprietati Oxidante	Nu sunt informatii disponibile

Alte informatii

Greutatea Moleculara (g/mol):	Nedeterminata
Continut VOC (substante volatile) (%)	Nu sunt date disponibile

10. STABILITATE SI REACTIVITATE

Reactivitate
Neaplicabil
Stabilitate Chimica
Stabil
Posibilitate de Reactii Periculoase

10. STABILITATE SI REACTIVITATE

Nu se va produce

Conditii de Evitat

Nu s-a anticipat nimic.

Materiale Incompatibile

Oxidanti puternici.

Produse de Descompunere Periculoase

Oxizi de azot. Monoxid de carbon si dioxid de carbon. Clor.

11. INFORMATII TOXICILOGICE

Informatii asupra Efectelor Toxicologice

Toxicitate Acuta

Inhalarea	Inhalarea de ceata sau vapori incalziti poate cauza iritarea cailor respiratorii.
Contactul cu Ochii	Poate cauza iritarea moderata a ochilor.
Contact cu Pielea	Poate cauza degresarea pielii la expunere prelungita.
Inghitire	Aspirarea in plamani poate cauza pneumonie chimica incluzand tuse, respiratie dificila, respiratie asmatica, tuse cu sange si pneumonie care poate fi fatala.

Efecte Cronice/Carcinogenicitate Nu sunt date disponibile care sa indice ca produsul sau componentele prezente in concentratie mai mare de 1% sunt pericole cronice pentru sanatate.

Substante	LD50 Oral	LD50 Dermal	LC50 la Inhalare
Distilate petroliere usoare, hidrotratate	LD50: > 5000 mg/kg	LD50: >2 000 mg/kg	LC50: > 5.2 mg/L 4 h

12. INFORMATII ECOLOGICE

Toxicitate

Efectele Ecotoxicitatii

Substante	Toxicitate pentru Alge	Toxicitate asupra Pestilor	Toxicitate pentru Microorganisme	Daphnia Magna (Purice de apa)
Distilate petroliere usoare, hidrotratate	Nu sunt informatii disponibile	LC50: 2.4 mg/L (Oncorhynchus mykiss)	Nu sunt informatii disponibile	LC50: 4720 mg/L (Dendronereides heteropoda)

Persistenta si Degradabilitate

Nu sunt informatii disponibile

Potential de bioacumulare

Nu sunt informatii disponibile

Mobilitate in sol

Nu sunt informatii disponibile

Rezultatele evaluarii PBT (persistent, bioacumulativ si toxic) si vPvB (foarte persistent si foarte bioacumulativ)

Nu sunt informatii disponibile

Alte efecte adverse

Informatii despre Efectele asupra Sistemului Endocrin

Acest produs nu contine nicio substanta cunoscuta sau suspectata a avea efecte asupra sistemului endocrin.

13. CONSIDERATII PRIVIND ELIMINAREA DESEURILOR

Metode de tratare a deseurilor

Metoda de Eliminare a Deseurilor	Eliminarea deseurilor se va face in conformitate cu reglementarile federale, statale si locale.
Ambalaje Contaminate	Respectati toate reglementarile nationale sau locale.

14. INFORMATII DESPRE TRANSPORT

IMDG/IMO

Numar UN:	Nerestrictionat.
Denumire Adecvat de Transport pe Mare conform UN:	Nerestrictionat
Clasa(e) de Pericol pentru Transport:	Nu este cazul

RID

Numar UN:	Nerestrictionat.
Denumire Adecvat de Transport pe Mare conform UN:	Nerestrictionat
Clasa(e) de Pericol pentru Transport:	Nu este cazul

ADR

Numar UN:	Nerestrictionat.
Denumire Adecvat de Transport pe Mare conform UN:	Nerestrictionat
Clasa(e) de Pericol pentru Transport:	Nu este cazul

IATA/ICAO

Numar UN:	Nerestrictionat.
Denumire Adecvat de Transport pe Mare conform UN:	Nerestrictionat
Clasa(e) de Pericol pentru Transport:	Nu este cazul

Precautii Speciale pentru Utilizator Nimic

Transportul in vrac conform Anexei II a MARPOL 73/78 si Codului IBC. Nu este cazul

15. INFORMATII DESPRE REGULAMENTE

Reglementari/legislatie referitoare la siguranta, sanatate si mediul inconjurator specifice pentru substanta sau amestec.

Inventare Internationale

Inventarul EINECS	Acest produs si toate componentele sale, respecta EINECS
Inventarul TSCA (Legea pentru Controlul Substantelor Toxice) al SUA	Toate componentele sunt listate in inventar sunt scutite.
Inventar Canadian DSL (Lista de Substante Indigene)	Toate componentele sunt listate pe inventar sau scutite.

Legenda
TSCA - Inventarul din Sectiunea 8(b) din Legea Statelor Unite privind Controlului Substantelor Toxice
EINECS/ELINCS - Inventarul European al Substantelor Chimice Comerciale Existente / Lista UE a Substantelor Chimice Notificate
DSL/NDSL - Lista Canadiana a Substantelor Domestice / Lista Substantelor Non-Domestice

Germania, Clase de Pericol pentru Apa (WGK) WGK 2: Pericol pentru ape.

Evaluarea Sigurantei Chimice
Nu sunt informatii disponibile

Clasificarea substantei sau amestecului

Clasificare conform Directivelor UE 67/548/CEE sau 1999/45/CE.
Pentru textul complet al Frazelor R mentionte in aceasta Sectiune, vezi Sectiunea 16

Simbol(uri)



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Fraze de Siguranta S26 In cazul contactului cu ochii, clatiti imediat cu apa din abundenta si cereti ingrijiri medicale.
S24/25 Evitati contactul cu pielea si ochii.

Consideratii asupra Pericolelor Poate cauza iritarea ochilor. Poate fi daunator daca este inghitit.

16. ALTE INFORMATII

Textul integral al Frazelor R la care se face referire in Sectiunile 2 si 3
Xn - Nociv.
R65 Nociv: poate cauza vatamarea plamanilor daca este inghitit.

Referinte cheie din literatura si surse de date
www.ChemADVISOR.com/

Data Reviziei: 14-feb.-2013
Nota Revizuire Nu este cazul

Aceasta Fisa Tehnica de Securitate respecta cerintele Regulamentului (CE) Nr. 453/2010

Declaratie de Limitare a Responsabilitatii
Aceste informatii sunt furnizate fara garantie, exprimata sau implicita, in ceea ce priveste precizia sau completitudinea. Informatiile sunt obtinute din diverse surse ce includ fabricantul si alte terte parti. S-ar putea ca informatiile sa nu fie valabile in toate conditiile si nici daca acest material este utilizat in combinatie cu alte materiale sau in orice proces. Determinarea finala a oportunitatii oricarui material este doar responsabilitatea utilizatorului.

16. ALTE INFORMATII

Sfarsitul Fisei Tehnice de Securitate

HALLIBURTON

FISA TEHNICA DE SECURITATE

in conformitate cu Regulamentul (CE) Nr. 453/2010

HAI-303

Data Reviziei: 01-apr.-2013 **Numarul Reviziei:** 9

1. IDENTIFICAREA SUBSTANTEI/PREPARATULUI SI A COMPANIEI/INTREPRINDERII

Identificare Produs

Denumire Produs HAI-303

Utilizari identificate relevante ale substantei sau amestecului si utilizari nerecomandate

Utilizari Recomandate Inhibitor de Coroziune

Domeniu de aplicare SU2 - Minerit (inclusiv exploatare maritima)

Categorie de produs PC20 - Produse cum ar fi agenti de control pH, floculanti, agenti de precipitare, agenti de neutralizare, altele nespecifice

Categorii de proces PROC4 - Utilizare in proces discontinuu si alte procese (sinteze) in care apare posibilitatea expunerii

Utilizari Nerecomandate Nu sunt informatii disponibile

Detalii ale furnizorului fisei tehnice de securitate

Halliburton Energy Services
Halliburton House, Howemoss Place
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
Marea Britanie

Numar Telefon de Urgenta: +44 1224 795277 sau +1 281 575 5000

www.halliburton.com

Pentru informatii suplimentare, va rugam contactati

Adresa de E-Mail: fdunexchem@halliburton.com

Numar telefon de urgenta

+44 1224 795277 or +1 281 575 5000

Telefon de urgenta §45 - (CE)1272/2008	
Europa	**112**
Danemarca	Linia de Urgenta pentru Controlul Otravirilor (DK): +45 82 12 12 12
Franta	ORFILA (FR): + 01 45 42 59 59
Germania	Centrul pentru Otraviri Berlin (DE): +49 030 30686 790
Italia	Centrul pentru Otraviri, Milan (IT): +39 02 6610 1029
Olanda	Centrul National de Informatii in caz de Otravir (NL): +31 30 274 88 88 (NB: acest serviciu este disponibil numai pentru specialisti in sanatate)
Norvegia	Informatii in caz de Otraviri (NO):+ 47 22 591300
Polonia	Centrul de Control si Informatii in caz de Otravire, Varsovia (PL): +48 22 619 66 54; +48 22 619 08 97
Spania	Serviciul de Informatii in caz de Otravire (ES): +34 91 562 04 20
Marea Britanie	Directia NHS (UK): +44 0845 46 47

2. IDENTIFICAREA PERICOLELOR

Clasificarea substantei sau amestecului

Clasificare conform Directivelor UE 67/548/CEE sau 1999/45/CE.
Pentru textul complet al Frazelor R mentionte in aceasta Sectiune, vezi Sectiunea 16

Simbol(uri)





Clasificare

F - Foarte inflamabil.
T - Toxic.

Fraze de Risc

R20/21/22 Nociv prin inhalare, contact cu pielea si inghitire.
R39/23/24/25 Toxic: pericol de efecte ireversibile foarte serioase prin inhalare, contact cu pielea si inghitire.
R36/37/38 Iritant pentru ochi, sistemul respirator si piele.

Fraze de Siguranta

S7 Pastrati containerul inchis etans.
S16 Tineti departe de surse de aprindere - Fumatul interzis.
S26 In cazul contactului cu ochii, clatiti imediat cu apa din abundenta si cereti ingrijiri medicale.
S45 In caz de accident sau daca va simtiti rau, cereti imediat ingrijiri medicale.
S36/37 Purtati imbracaminte de protectie adecvata si manusi.

Consideratii asupra Pericolelor

Poate cauza iritarea ochilor, pielii si cailor respiratorii. Poate cauza dureri de cap, ameteala si alte efecte asupra sistemului nervos central. Poate fi fatal daca este inghitit. Poate cauza orbire. Poate fi absorbit prin piele. Supraexpunerea repetata poate cauza efecte asupra ficatului sau rinichilor. Inflamabil.

3. COMPOZITIE / INFORMATII DESPRE INGREDIENTE

Substante	EINECS	Numar CAS	Procentul	Clasificare CEE	Clasificarea Substantelor conform UE - CLP	Nr. REACH
Dietilen glicol	203-872-2	111-46-6	30 - 60%	Xn; R22	Acute Tox. 4 (H302)	Nu sunt date disponibile
Aldehida cinamica	203-213-9	104-55-2	30 - 60%	Xn; R22 Xi; R36/37/38-43 R52/53	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Skin Sens. 1 (H317) Acute Tox. 4 (H302)	Nu sunt date disponibile
Metanol	200-659-6	67-56-1	10 - 30%	F; R11 T; R23/24/25- 39/23/24/25	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 3 (H331) STOT SE 1 (H370) Flam. Liq. 2 (H225)	01-2119433307-44

Pentru textul complet al Frazelor R mentionte in aceasta Sectiune, vezi Sectiunea 16

4. MASURI DE PRIM AJUTOR

Descrierea masurilor de prim ajutor

Inhalare	La inhalare, mutati persoana la aer proaspat. Daca nu respira, faceti respiratie artificiala, de preferat gura-la-gura. Daca respiratia este dificila, administrati oxigen. Cereti asistenta medicala.
Ochi	In caz de contact, sau este suspectat contactul, spalati ochii imediat cu multa apa timp de cel putin 15 minute si cereti ingrijiri medicale imediat dupa spalare.
Piele	In caz de contact, spalati imediat pielea cu mult sapun si apa timp de cel putin 15 minute. Cereti ingrijiri medicale. Scoateti imbracamintea contaminat si spalati-o inainte de refolosire.
Inghitire	Nu induceti voma. Diluati incet cu 1-2 pahare de apa sau lapte si cereti asistenta medicala. Niciodata nu administrati ceva pe gura unei persoane inconstiente.

Cele mai importante simptome si efecte, atat acute cat si intarziate

Poate cauza iritarea ochilor, pielii si cailor respiratorii. Poate cauza dureri de cap, ameteala si alte efecte asupra sistemului nervos central. Poate fi fatal daca este inghitit. Poate cauza orbire. Poate fi absorbit prin piele. Supraexpunerea repetata poate cauza efecte asupra ficatului sau rinichilor. Inflamabil.

Indicarea oricarei asistente medicale imediate si tratamentul special necesar

Note pentru Medic Tratati simptomatic

5. MASURI DE STINGERE A INCENDIILOR

Medii de stingere a incendiilor

Mijloace Adecvate de Stingere a Incendiilor

Dioxid de carbon, substanta chimica uscata, spuma.

Mijloace de combatere a incendiilor ce nu trebuie folosite, din motive de siguranta.

Nimic cunoscut

Pericole specifice ce deriva din substanta sau amestec

Pericole de Expunere Speciale

Se poate prinde de la caldura, scantei sau flacari. Folositi apa pulverizata pentru a raci suprafetele expuse la foc. Containerele inchise pot exploda in foc. Descompunerea in foc poate produce gaze toxice. Scurgerile catre canalizari pot cauza pericol de incendiu sau de explozie.

Sfaturi pentru pompieri

Echipament Special de Protectie pentru Pompieri

Echipament complet de protectie si aparat respirator autonom necesar pentru pompieri.

6. MASURI IN CAZ DE SCURGERI ACCIDENTALE

Precautii personale, echipament de protectie si proceduri de urgenta

Utilizati echipament de protectie corespunzator. Purtati aparat autonom de respiratie in zonele inchise.
Vezi Sectiunea 12 pentru informatii suplimentare

Precautii legate de mediul inconjurator

Preveniti intrarea in canalizari, canale navigabile sau zone joase.

Metode si materiale pentru izolare si curatire

Izolati deversarea si opriti scurgerea unde este posibil in siguranta. Indepartati sursele de aprindere si lucrati cu unelte anti-scanteie. Izolati deversarea cu nisip sau alte materiale inerte. Strangeti si indepartati.

Referinta la alte sectiuni

Vezi Sectiunea 12 pentru informatii suplimentare

7. MANEVRARE SI DEPOZITARE

Masuri de Precautie pentru Manevrarea in Siguranta
Evitati contactul cu ochii, pielea sau imbracamintea. Evitati inspirarea vaporilor. Spalati mainile dupa utilizare. Spalati imbracamintea contaminata inainte de reutilizare Legati la pamant si fixati containerele la transferarea dintr-un container in celalalt.
Masuri de Igiena
Manipulati in concordanta cu bunele practici de igiena si siguranta industriala

Conditii pentru depozitarea in siguranta, incluzind orice incompatibilitati
Depozitati departe de agenti oxidanti. Tineti departe de caldura, scantei si flacara deschisa. Pastrati recipientul inchis cand nu este folosit. Perioada maxima de stocare a produsului este de 60 luni.

Utilizare(i) finala specifica
Scenariu de Expunere Nu sunt informatii disponibile
Alte Instructiuni Nu sunt informatii disponibile

8. CONTROLUL EXPUNERII/PROTECTIE PERSONALA

Parametri de control

Substante	UE	UK	Olanda	Franta OEL	Germania MAK/TRK
Dietilen glicol	Nu este cazul	23 ppm	Nu este cazul	Nu este cazul	10 ppm
Aldehida cinamica	Nu este cazul	Nu este cazul	Nu este cazul	Nu este cazul	Nu este cazul
Metanol	Nu este cazul	200 ppm	133 mg/m^3	200 ppm	200 ppm

Substante	Italia	Polonia	Ungaria	Republica Ceha	Danemarca
Dietilen glicol	Nu este cazul	10 mg/m^3	Nu este cazul	Nu este cazul	Nu este cazul
Aldehida cinamica	Nu este cazul	Nu este cazul	Nu este cazul	Nu este cazul	Nu este cazul
Metanol	200 ppm	100 mg/m^3	260 mg/m^3	250 mg/m^3	Nu este cazul

Nivel Calculat Fara Efect (DNEL) Nu sunt informatii disponibile
Concentratia Predictibila Fara Efect (PNEC) Nu sunt informatii disponibile.

Controlul expunerii
Controlul Procesului Utilizati intr-o zona bine ventilata. Trebuie utilizata ventilatie de evacuare locala in zone fara o buna ventilatie transversala.

Echipament de protectie personala
Protectie Respiratorie Aparat respirator autonom cu presiune pozitiva, daca este prezent metanolul.
Protectia Mainilor. Manusi de cauciuc impermeabil.
Protectia Pielii Sort de cauciuc.
Protectia Ochilor Ochelari de protectie chimica; purtati deasemenea aparatoare pentru fata daca exista pericolul stropirii.
Alte Masuri de Precautie Spalatoarele pentru ochi si dusurile de siguranta trebuie sa fie usor accesibile.
Controlul Expunerii Mediului Inconjurator Nu sunt informatii disponibile

9. PROPRIETATI FIZICE SI CHIMICE

Informatii privind proprietatile fizice si chimice de baza
Stare Fizica: Lichid
Miros: Scortisoara
Culoare: Galben-portocaliu
Limita de Prag a Mirosului: Nu sunt informatii disponibile

Proprietate / Observatii/ Metoda	Valori
Punct/Interval de Topire	Nu sunt date disponibile

9. PROPRIETATI FIZICE SI CHIMICE

Punct/Interval de Congelare (°C):	-21
Punct/Interval de Aprindere (C):	28.9°C
Metoda Punctului de Aprindere:	Nedeterminat
Temperatura de Autoaprindere (C):	Nederminata
Viteza de Evaporare (Butil Acetat=1):	Nedeterminat
Presiunea Vaporilor @ 20 C (mmHg):	Nedeterminat
Densitatea Vaporilor (Aer=1):	Nedeterminat
Greutate Specifica @ 20 C (Apa=1):	1.015
Densitate @ 20 C (kg/l):	0.979
Solubilitate in Apa (g/100ml):	Solubil
Solubilitate in alti solventi	Nu sunt date disponibile
Coeficient de Repartitie n-Octano/Apa:	Nedeterminat
Temperatura de Descompunere (C):	Nedeterminat
Vascozitate	Nu sunt date disponibile
Proprietati Explozive	Nu sunt informatii disponibile
Proprietati Oxidante	Nu sunt informatii disponibile

Alte informatii

Greutatea Moleculara (g/mol):	Nedeterminata
Continut VOC (substante volatile) (%)	Nu sunt date disponibile

10. STABILITATE SI REACTIVITATE

Reactivitate
Neaplicabil
Stabilitate Chimica
Stabil
Posibilitate de Reactii Periculoase
Nu se va produce
Conditii de Evitat
Tineti departe de caldura, scantei si flacara.
Materiale Incompatibile
Oxidanti puternici.
Produse de Descompunere Periculoase
Amoniu. Oxizi de azot. Hidrocarburi. Monoxid de carbon si dioxid de carbon.

11. INFORMATII TOXICILOGICE

Informatii asupra Efectelor Toxicologice
Toxicitate Acuta

Product Information	Based on the collective toxicity of product ingredients, the mixture should be considered to cause the following:
Inhalarea	Poate cauza iritarea cailor respiratorii. Poate cauza depresia sistemului nervos central incluzand dureri de cap, ameteala, somnolenta, lipsa de coordonare, timp de reactie incetinit, vorbire incoerenta, vartej si inconstienta.
Contactul cu Ochii	Cauzeaza iritarea severa a ochilor care poate distruge tesutul.
Contact cu Pielea	Poate cauza iritarea pielii. Poate fi absorbit prin piele si produce efecte similare cu cele cauzate prin inhalare si/sau inghitire. Poate cauza o reactie alergica a pielii.
Inghitire	Poate fi fatal sau cauza orbire daca este inghitit. Poate cauza depresia sistemului nervos central incluzand dureri de cap, ameteala, somnolenta, slabiciune musculara, lipsa de coordonare, timp de reactie incetinit, vedere incetosata, vorbire incoerenta, vartej, tremor si convulsii. Poate cauza leziuni ale ficatului si rinichilor.

Efecte Cronice/Carcinogenicitate Expunerea prelungita sau repetata poate cauza tulburari ale ochilor, sangelui, plamanilor, ficatului, rinichilor, inimii, sistemului nervos central si splinei.

11. INFORMATII TOXICILOGICE

Substante	LD50 Oral	LD50 Dermal	LC50 la Inhalare
Dietilen glicol	12565 mg/kg (Rat)	11890 mg/kg (Rabbit)	Nu sunt date disponibile
Aldehida cinamica	2200 mg/kg (Rat)	2000 mg/kg (Rabbit) 2000 mg/kg (Rat)	Nu sunt date disponibile
Metanol	5628 mg/kg (Rat)	15800 mg/kg (Rabbit)	64000 ppm (Rat) 4 h 83.2 mg/L (Rat) 4 h

12. INFORMATII ECOLOGICE

Toxicitate
Efectele Ecotoxicitatii

Substante	Toxicitate pentru Alge	Toxicitate asupra Pestilor	Toxicitate pentru Microorganisme	Daphnia Magna (Purice de apa)
Dietilen glicol	Nu sunt informatii disponibile	LC50: 75200 mg/L (Pimephales promelas)	Nu sunt informatii disponibile	EC50:84000 mg/L (Daphnia magna)
Aldehida cinamica	Nu sunt informatii disponibile	Nu sunt informatii disponibile	Nu sunt informatii disponibile	Nu sunt informatii disponibile
Metanol	Nu sunt informatii disponibile	LC50: 28200 mg/l (Pimephales promelas)	Nu sunt informatii disponibile	Nu sunt informatii disponibile

Persistenta si Degradabilitate
Nu este rapid biodegradabil

Potential de bioacumulare
Nu sunt informatii disponibile

Substante	Log Pow
Metanol	-0.77

Mobilitate in sol
Nu sunt informatii disponibile

Rezultatele evaluarii PBT (persistent, bioacumulativ si toxic) si vPvB (foarte persistent si foarte bioacumulativ)
Nu sunt informatii disponibile

Alte efecte adverse
Informatii despre Efectele asupra Sistemului Endocrin
Acest produs nu contine nicio substanta cunoscuta sau suspectata a avea efecte asupra sistemului endocrin.

13. CONSIDERATII PRIVIND ELIMINAREA DESEURILOR

Metode de tratare a deseurilor
Metoda de Eliminare a Deseurilor Se recomanda incinerarea in incineratoare apobate, in conformitate cu reglementarile federale, statale si locale. Substance should NOT be deposited into a sewage facility.
Ambalaje Contaminate Respectati toate reglementarile nationale sau locale.

14. INFORMATII DESPRE TRANSPORT

IMDG/IMO
Numar UN: UN1993,

14. INFORMATII DESPRE TRANSPORT

Denumire Adecvat de Transport pe Mare conform UN:	Lichid Inflamabil, fara alta specificatie
Clasa(e) de Pericol pentru Transport:	, 3
Grupa de Ambalare:	, III
EMS:	EmS F-E, S-E

RID

Numar UN:	UN1993,
Denumire Adecvat de Transport pe Mare conform UN:	Lichid Inflamabil, fara alta specificatie
Clasa(e) de Pericol pentru Transport:	, 3
Grupa de Ambalare:	, III

ADR

Numar UN:	UN1993,
Denumire Adecvat de Transport pe Mare conform UN:	Lichid Inflamabil, fara alta specificatie
Clasa(e) de Pericol pentru Transport:	, 3
Grupa de Ambalare:	, III

IATA/ICAO

Numar UN:	UN1993,
Denumire Adecvat de Transport pe Mare conform UN:	Lichid Inflamabil, fara alta specificatie
Clasa(e) de Pericol pentru Transport:	, 3
Grupa de Ambalare:	, III

Precautii Speciale pentru Utilizator Nimic

Transportul in vrac conform Anexei II a MARPOL 73/78 si Codului IBC. Nu este cazul

15. INFORMATII DESPRE REGULAMENTE

Reglementari/legislatie referitoare la siguranta, sanatate si mediul inconjurator specifice pentru substanta sau amestec.

Inventare Internationale

Inventarul EINECS	Acest produs si toate componentele sale, respecta EINECS
Inventarul TSCA (Legea pentru Controlul Substantelor Toxice) al SUA	Toate componentele sunt listate in inventar sunt scutite.
Inventar Canadian DSL (Lista de Substante Indigene)	Toate componentele sunt listate pe inventar sau scutite.

Legenda

TSCA - Inventarul din Sectiunea 8(b) din Legea Statelor Unite privind Controlului Substantelor Toxice
EINECS/ELINCS - Inventarul European al Substantelor Chimice Comerciale Existente / Lista UE a Substantelor Chimice Notificate
DSL/NDSL - Lista Canadiana a Substantelor Domestice / Lista Substantelor Non-Domestice

Germania, Clase de Pericol pentru Apa (WGK) WGK 1: Pericol redus pentru ape.

Evaluarea Sigurantei Chimice
Nu sunt informatii disponibile

Clasificarea substantei sau amestecului

Clasificare conform Directivelor UE 67/548/CEE sau 1999/45/CE.
Pentru textul complet al Frazelor R mentionte in aceasta Sectiune, vezi Sectiunea 16

Simbol(uri)




Clasificare

F - Foarte inflamabil.
T - Toxic.

Fraze de Risc

R20/21/22 Nociv prin inhalare, contact cu pielea si inghitire.
R39/23/24/25 Toxic: pericol de efecte ireversibile foarte serioase prin inhalare, contact cu pielea si inghitire.
R36/37/38 Iritant pentru ochi, sistemul respirator si piele.

Fraze de Siguranta

S7 Pastrati containerul inchis etans.
S16 Tineti departe de surse de aprindere - Fumatul interzis.
S26 In cazul contactului cu ochii, clatiti imediat cu apa din abundenta si cereti ingrijiri medicale.
S45 In caz de accident sau daca va simtiti rau, cereti imediat ingrijiri medicale.
S36/37 Purtati imbracaminte de protectie adecvata si manusi.

Consideratii asupra Pericolelor

Poate cauza iritarea ochilor, pielii si cailor respiratorii. Poate cauza dureri de cap, ameteala si alte efecte asupra sistemului nervos central. Poate fi fatal daca este inghitit. Poate cauza orbire. Poate fi absorbit prin piele. Supraexpunerea repetata poate cauza efecte asupra ficatului sau rinichilor. Inflamabil.

16. ALTE INFORMATII

Textul integral al Frazelor R la care se face referire in Sectiunile 2 si 3

F - Foarte inflamabil.
T - Toxic.
Xn - Nociv.
Xi - Iritant.
R11 Foarte inflamabil.
R22 Nociv prin inghitire.
R23/24/25 Toxic prin inhalare, contact cu pielea si inghitire.
R36/37/38 Iritant pentru ochi, sistemul respirator si piele.
R39/23/24 Toxic: pericol de efecte ireversibile foarte serioase prin inhalare si contact cu pielea.

Referinte cheie din literatura si surse de date
www.ChemADVISOR.com/

16. ALTE INFORMATII

Data Reviziei: 01-apr.-2013
Nota Revizuire Nu este cazul

Aceasta Fisa Tehnica de Securitate respecta cerintele Regulamentului (CE) Nr. 453/2010

Declaratie de Limitare a Responsabilitatii
Aceste informatii sunt furnizate fara garantie, exprimata sau implicita, in ceea ce priveste precizia sau completitudinea. Informatiile sunt obtinute din diverse surse ce includ fabricantul si alte terte parti. S-ar putea ca informatiile sa nu fie valabile in toate conditiile si nici daca acest material este utilizat in combinatie cu alte materiale sau in orice proces. Determinarea finala a oportunitatii oricarui material este doar responsabilitatea utilizatorului.

Sfarsitul Fisei Tehnice de Securitate

HALLIBURTON

FISA TEHNICA DE SECURITATE

in conformitate cu Regulamentul (CE) Nr. 453/2010

15% HYDROCHLORIC ACID

Data Reviziei: 21-dec.-2012 **Numarul Reviziei:** 5

1. IDENTIFICAREA SUBSTANTEI/PREPARATULUI SI A COMPANIEI/INTREPRINDERII

Identificare Produs

Denumire Produs 15% HYDROCHLORIC ACID

Utilizari identificate relevante ale substantei sau amestecului si utilizari nerecomandate

Utilizari Recomandate Solvent

Utilizari Nerecomandate Nu sunt informatii disponibile

Detalii ale furnizorului fisei tehnice de securitate

Halliburton Energy Services
Halliburton House, Howemoss Place
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
Marea Britanie

Numar Telefon de Urgenta: +44 1224 795277 sau +1 281 575 5000

www.halliburton.com

Pentru informatii suplimentare, va rugam contactati

Adresa de E-Mail: fdunexchem@halliburton.com

Numar telefon de urgenta

+44 1224 795277 or +1 281 575 5000

Telefon de urgenta §45 - (CE)1272/2008	
Europa	**112**
Danemarca	Linia de Urgenta pentru Controlul Otravirilor (DK): +45 82 12 12 12
Franta	ORFILA (FR): + 01 45 42 59 59
Germania	Centrul pentru Otraviri Berlin (DE): +49 030 30686 790
Italia	Centrul pentru Otraviri, Milan (IT): +39 02 6610 1029
Olanda	Centrul National de Informatii in caz de Otravir (NL): +31 30 274 88 88 (NB: acest serviciu este disponibil numai pentru specialisti in sanatate)
Norvegia	Informatii in caz de Otraviri (NO):+ 47 22 591300
Polonia	Centrul de Control si Informatii in caz de Otravire, Varsovia (PL): +48 22 619 66 54; +48 22 619 08 97
Spania	Serviciul de Informatii in caz de Otravire (ES): +34 91 562 04 20
Marea Britanie	Directia NHS (UK): +44 0845 46 47

2. IDENTIFICAREA PERICOLELOR

Clasificarea substantei sau amestecului

Clasificare conform Directivelor UE 67/548/CEE sau 1999/45/CE.
Pentru textul complet al Frazelor R mentionte in aceasta Sectiune, vezi Sectiunea 16

2. IDENTIFICAREA PERICOLELOR

Simbol(uri)



Clasificare Xi - Iritant.

Fraze de Risc

R36/37/38 Iritant pentru ochi, sistemul respirator si piele.

Fraze de Siguranta

S26 In cazul contactului cu ochii, clatiti imediat cu apa din abundenta si cereti ingrijiri medicale.
S45 In caz de accident sau daca va simtiti rau, cereti imediat ingrijiri medicale.
S1/2 Pastrati sub cheie si departe de accesul copiilor.
S36/37/39 Purtati imbracaminte de protectie adecvata, manusi si protectie pentru ochi/fata.

Consideratii asupra Pericolelor Poate cauza arsuri ale ochilor, pielii si cailor respiratorii. Poate fi daunator daca este inghitit.

3. COMPOZITIE / INFORMATII DESPRE INGREDIENTE

Substante	EINECS	Numar CAS	Procentul	Clasificare CEE	Clasificarea Substantelor conform UE - CLP	Nr. REACH
Acid clorhidric	231-595-7	7647-01-0	10 - 30%	C; R34 Xi; R37	Skin Corr. 1B (H314) STOT SE 3 (H335)	Nu sunt date disponibile

Pentru textul complet al Frazelor R mentionte in aceasta Sectiune, vezi Sectiunea 16

4. MASURI DE PRIM AJUTOR

Descrierea masurilor de prim ajutor

Inhalare La inhalare, mutati persoana la aer proaspat. Daca nu respira, faceti respiratie artificiala, de preferat gura-la-gura. Daca respiratia este dificila, administrati oxigen. Cereti asistenta medicala.

Ochi In caz de contact, sau este suspectat contactul, spalati ochii imediat cu multa apa timp de cel putin 15 minute si cereti ingrijiri medicale imediat dupa spalare.

Piele In caz de contact, spalati imediat pielea cu mult sapun si apa timp de cel putin 15 minute. Cereti ingrijiri medicale. Scoateti imbracamintea contaminat si spalati-o inainte de refolosire.

Inghitire Nu induceti voma. Diluati incet cu 1-2 pahare de apa sau lapte si cereti asistenta medicala. Niciodata nu administrati ceva pe gura unei persoane inconstiente.

Cele mai importante simptome si efecte, atat acute cat si intarziate

Poate cauza arsuri ale ochilor, pielii si cailor respiratorii. Poate fi daunator daca este inghitit.

Indicarea oricarei asistente medicale imediate si tratamentul special necesar

Note pentru Medic Tratati simptomatic

5. MASURI DE STINGERE A INCENDIILOR

Medii de stingere a incendiilor
Mijloace Adecvate de Stingere a Incendiilor
Apa sub forma de ceata, dioxid de carbon, spuma, substanta chimica uscata.
Mijloace de combatere a incendiilor ce nu trebuie folosite, din motive de siguranta.
Nimic cunoscut

Pericole specifice ce deriva din substanta sau amestec
Pericole de Expunere Speciale
Poate forma amestecuri explozive cu baze tari. Descompunerea in foc poate produce gaze toxice. Reactia cu otelul sau alte anumite metale genereaza hidrogem gazos inflamabil. Nu permiteti scurgerilor sa patrunda in cursurile de apa.

Sfaturi pentru pompieri
Echipament Special de Protectie pentru Pompieri
Echipament complet de protectie si aparat respirator autonom necesar pentru pompieri.

6. MASURI IN CAZ DE SCURGERI ACCIDENTALE

Precautii personale, echipament de protectie si proceduri de urgenta
Utilizati echipament de protectie corespunzator.
Vezi Sectiunea 12 pentru informatii suplimentare

Precautii legate de mediul inconjurator
Preveniti intrarea in canalizari, canale navigabile sau zone joase.

Metode si materiale pentru izolare si curatire
Izolati deversarea si opriti scurgerea unde este posibil in siguranta. Izolati deversarea cu nisip sau alte materiale inerte. Neutralizati la pH de 6-8. Strangeti si indepartati.

Referinta la alte sectiuni
Vezi Sectiunea 12 pentru informatii suplimentare

7. MANEVRARE SI DEPOZITARE

Masuri de Precautie pentru Manevrarea in Siguranta
Spalati mainile dupa utilizare. Evitati contactul cu ochii, pielea sau imbracamintea. Evitati inspirarea vaporilor. Spalati imbracamintea contaminata inainte de reutilizare
Masuri de Igiena
Manipulati in concordanta cu bunele practici de igiena si siguranta industriala

Conditii pentru depozitarea in siguranta, incluzind orice incompatibilitati
Depozitati departe de substante bazice. Depozitati in spatii reci, bine aerisite. Pastrati recipientul inchis cand nu este folosit.

Utilizare(i) finala specifica
Scenariu de Expunere Nu sunt informatii disponibile
Alte Instructiuni Nu sunt informatii disponibile

8. CONTROLUL EXPUNERII/PROTECTIE PERSONALA

Parametri de control

Substante	UE	UK	Olanda	Franta OEL	Germania MAK/TRK
Acid clorhidric	Nu este cazul	1 ppm	8 mg/m^3	Nu este cazul	2 ppm

Substante	Italia	Polonia	Ungaria	Republica Ceha	Danemarca
Acid clorhidric	5 ppm	5 mg/m^3	8 mg/m^3	8 mg/m^3	Nu este cazul

Nivel Calculat Fara Efect (DNEL) Nu sunt informatii disponibile

Concentratia Predictibila Fara Efect (PNEC)	Nu sunt informatii disponibile.

Controlul expunerii

Controlul Procesului	Utilizati intr-o zona bine ventilata. Trebuie utilizata ventilatie de evacuare locala in zone fara o buna ventilatie transversala.

Echipament de protectie personala

Protectie Respiratorie	Masca de gaze pentru gaze acide.
Protectia Mainilor.	Manusi de cauciuc impermeabil.
Protectia Pielii	Imbracaminte de protectie completa rezistenta chimic. Cizme de cauciuc.
Protectia Ochilor	Ochelari de protectie chimica; purtati deasemenea aparatoare pentru fata daca exista pericolul stropirii.
Alte Masuri de Precautie	Spalatoarele pentru ochi si dusurile de siguranta trebuie sa fie usor accesibile.
Controlul Expunerii Mediului Inconjurator	Nu sunt informatii disponibile

9. PROPRIETATI FIZICE SI CHIMICE

Informatii privind proprietatile fizice si chimice de baza

Stare Fizica:	Lichid	**Culoare:**	Incolor transparent
Miros:	Intepator piscator	**Limita de Prag a Mirosului:**	Nu sunt informatii disponibile

Proprietate Observatii/ Metoda	Valori
Punct/Interval de Topire	Nu sunt date disponibile
Punct/Interval de Congelare (°C):	-46
Punct/Interval de Fierbere (C):	110
Punct/Interval de Aprindere (C):	Nedeterminat
Metoda Punctului de Aprindere:	Nedeterminat
Temperatura de Autoaprindere (C):	Nederminata
Viteza de Evaporare (Butil Acetat=1):	Nedeterminat
Presiunea Vaporilor @ 20 C (mmHg):	26
Densitatea Vaporilor (Aer=1):	Nedeterminat
Greutate Specifica @ 20 C (Apa=1):	1.16
Densitate @ 20 C (kg/l):	1.16
Solubilitate in Apa (g/100ml):	Solubil
Solubilitate in alti solventi	Nu sunt date disponibile
Coeficient de Repartitie n-Octano/Apa:	Nedeterminat
Temperatura de Descompunere (C):	Nedeterminat
Vascozitate	Nu sunt date disponibile
Proprietati Explozive	Nu sunt informatii disponibile
Proprietati Oxidante	Nu sunt informatii disponibile

Alte informatii

Greutatea Moleculara (g/mol):	36.5
Continut VOC (substante volatile) (%)	Nu sunt date disponibile

10. STABILITATE SI REACTIVITATE

Reactivitate
Neaplicabil
Stabilitate Chimica
Stabil
Posibilitate de Reactii Periculoase
Nu se va produce

10. STABILITATE SI REACTIVITATE

Conditii de Evitat
Nu s-a anticipat nimic.
Materiale Incompatibile
Baze tari.
Produse de Descompunere Periculoase
Hidrogen gazos inflamabil Clor. Hidrogen sulfurat.

11. INFORMATII TOXICILOGICE

Informatii asupra Efectelor Toxicologice
Toxicitate Acuta

Inhalarea	Cauzeaza iritarea severa a cailor respiratorii.
Contactul cu Ochii	Poate cauza arsuri ale ochilor.
Contact cu Pielea	Poate cauza arsuri ale pielii.
Inghitire	Cauzeaza arsuri ale gurii, gatului si stomacului.

Efecte Cronice/Carcinogenicitate Expunerea excesiva, prelungita poate cauza eroziunea dintilor.

Substante	LD50 Oral	LD50 Dermal	LC50 la Inhalare
Acid clorhidric	LD50: 700 mg/kg	LD50: >5010 mg/kg	LC50: 3124 ppm 1h

12. INFORMATII ECOLOGICE

Toxicitate
Efectele Ecotoxicitatii

Substante	Toxicitate pentru Alge	Toxicitate asupra Pestilor	Toxicitate pentru Microorganisme	Daphnia Magna (Purice de apa)
Acid clorhidric	Nu sunt informatii disponibile	LC50: 282 mg/L (Gambusia affinis)	Nu sunt informatii disponibile	Nu sunt informatii disponibile

Persistenta si Degradabilitate
Nu sunt informatii disponibile

Potential de bioacumulare
Nu sunt informatii disponibile

Mobilitate in sol
Nu sunt informatii disponibile

Rezultatele evaluarii PBT (persistent, bioacumulativ si toxic) si vPvB (foarte persistent si foarte bioacumulativ)
Nu sunt informatii disponibile

Alte efecte adverse
Informatii despre Efectele asupra Sistemului Endocrin
Acest produs nu contine nicio substanta cunoscuta sau suspectata a avea efecte asupra sistemului endocrin.

13. CONSIDERATII PRIVIND ELIMINAREA DESEURILOR

Metode de tratare a deseurilor
Metoda de Eliminare a Deseurilor Eliminarea deseurilor se va face in conformitate cu reglementarile federale, statale si locale.

13. CONSIDERATII PRIVIND ELIMINAREA DESEURILOR

Ambalaje Contaminate Respectati toate reglementarile nationale sau locale.

14. INFORMATII DESPRE TRANSPORT

IMDG/IMO

Numar UN:	UN1789,
Denumire Adecvat de Transport pe Mare conform UN:	Solutie de Acid Clorhidric
Clasa(e) de Pericol pentru Transport:	, 8
Grupa de Ambalare:	, II
EMS:	EmS F-A, S-B

RID

Numar UN:	UN1789,
Denumire Adecvat de Transport pe Mare conform UN:	Solutie de Acid Clorhidric
Clasa(e) de Pericol pentru Transport:	, 8
Grupa de Ambalare:	, II

ADR

Numar UN:	UN1789,
Denumire Adecvat de Transport pe Mare conform UN:	Solutie de Acid Clorhidric
Clasa(e) de Pericol pentru Transport:	, 8
Grupa de Ambalare:	, II

IATA/ICAO

Numar UN:	UN1789,
Denumire Adecvat de Transport pe Mare conform UN:	Solutie de Acid Clorhidric
Clasa(e) de Pericol pentru Transport:	, 8
Grupa de Ambalare:	, II

Precautii Speciale pentru Utilizator Nimic

Transportul in vrac conform Anexei II a MARPOL 73/78 si Codului IBC. Nu este cazul

15. INFORMATII DESPRE REGULAMENTE

Reglementari/legislatie referitoare la siguranta, sanatate si mediul inconjurator specifice pentru substanta sau amestec.

Inventare Internationale

Inventarul EINECS	Acest produs si toate componentele sale, respecta EINECS
Inventarul TSCA (Legea pentru Controlul Substantelor Toxice) al SUA	Toate componentele sunt listate in inventar sunt scutite.

15. INFORMATII DESPRE REGULAMENTE

Inventar Canadian DSL (Lista de Substante Indigene) Toate componentele sunt listate pe inventar sau scutite.

Legenda
TSCA - Inventarul din Sectiunea 8(b) din Legea Statelor Unite privind Controlului Substantelor Toxice
EINECS/ELINCS - Inventarul European al Substantelor Chimice Comerciale Existente / Lista UE a Substantelor Chimice Notificate
DSL/NDSL - Lista Canadiana a Substantelor Domestice / Lista Substantelor Non-Domestice

Germania, Clase de Pericol pentru Apa (WGK) WGK 1: Pericol redus pentru ape.

Evaluarea Sigurantei Chimice
Nu sunt informatii disponibile

Clasificarea substantei sau amestecului

Clasificare conform Directivelor UE 67/548/CEE sau 1999/45/CE.
Pentru textul complet al Frazelor R mentionte in aceasta Sectiune, vezi Sectiunea 16

Simbol(uri)



Clasificare Xi - Iritant.

Fraze de Risc
R36/37/38 Iritant pentru ochi, sistemul respirator si piele.

Fraze de Siguranta
S26 In cazul contactului cu ochii, clatiti imediat cu apa din abundenta si cereti ingrijiri medicale.
S45 In caz de accident sau daca va simtiti rau, cereti imediat ingrijiri medicale.
S1/2 Pastrati sub cheie si departe de accesul copiilor.
S36/37/39 Purtati imbracaminte de protectie adecvata, manusi si protectie pentru ochi/fata.

Consideratii asupra Pericolelor Poate cauza arsuri ale ochilor, pielii si cailor respiratorii. Poate fi daunator daca este inghitit.

16. ALTE INFORMATII

Textul integral al Frazelor R la care se face referire in Sectiunile 2 si 3
C - Coroziv.
R34 Produce arsuri.
R37 Iritant pentru sistemul respirator.

Textul complet al Propozitiilor de pericol H la care se face referire in sectiunile 2 si 3
H314 - Cauzeaza arsuri severe ale pielii si leziuni ale ochilor
H335 - Poate cauza iritarea cailor respiratorii

16. ALTE INFORMATII

Referinte cheie din literatura si surse de date
www.ChemADVISOR.com/

Data Reviziei: 21-dec.-2012
Nota Revizuire Nu este cazul

Aceasta Fisa Tehnica de Securitate respecta cerintele Regulamentului (CE) Nr. 1907/2006

Declaratie de Limitare a Responsabilitatii
Aceste informatii sunt furnizate fara garantie, exprimata sau implicita, in ceea ce priveste precizia sau completitudinea. Informatiile sunt obtinute din diverse surse ce includ fabricantul si alte terte parti. S-ar putea ca informatiile sa nu fie valabile in toate conditiile si nici daca acest material este utilizat in combinatie cu alte materiale sau in orice proces. Determinarea finala a oportunitatii oricarui material este doar responsabilitatea utilizatorului.

Sfarsitul Fisei Tehnice de Securitate

NALCO Champion
An Ecolab Company

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

METHANOL

Section: 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier: **METHANOL**

Substance name:	Methanol
Index-No.:	603-001-00-X
EC-No.:	200-659-6
CAS-No.:	67-56-1
REACH Registration Number:	01-2119433307-44

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Use of the Substance/Mixture : SOLVENT

Recommended restrictions on use : Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet:

COMPANY IDENTIFICATION
NALCO EUROPE B.V.
Postbus 627
2300 AP Leiden, The Netherlands
TEL: 0031 71 5241100

LOCAL COMPANY IDENTIFICATION
Nalco Ltd.
P.O. BOX 11, WINNINGTON AVENUE
NORTHWICH, CHESHIRE, U.K. CW8 4DX
TEL: +44 (0)1606 74488

For Product Safety information please contact: msdseame@nalco.com

1.4 Emergency telephone number: +32-(0)3-575-5555 Trans-European

Date of Compilation/Revision:	02.05.2016
Version Number:	1.1

Section: 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquid, Category 2	H225
Acute toxicity, Category 3	H331
Acute toxicity, Category 3	H311
Acute toxicity, Category 3	H301
Specific target organ toxicity - single exposure, Category 1	H370

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H225 Highly flammable liquid and vapour.
H331 Toxic if inhaled.

		H311	Toxic in contact with skin.
		H301	Toxic if swallowed.
		H370	Causes damage to organs.
Supplemental Hazard Statements	:	EUH031	Contact with acids liberates toxic gas.
Precautionary Statements	:	**Prevention:**	
		P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
		P260	Do not breathe dust/fume/gas/mist/vapours/spray.
		Response:	
		P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
		P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
		P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
		Storage:	
		P405	Store locked up.

2.3 Other hazards

None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	CAS-No. EC-No. REACH No.	Concentration: [%]
Methanol	67-56-1 200-659-6 01-2119433307-44	90 - 100

Section: 4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled : Remove to fresh air.
Treat symptomatically.
Get medical attention immediately.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.
Use a mild soap if available.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.
Get medical attention.

In case of eye contact : Rinse with plenty of water.
Get medical attention if symptoms occur.

If swallowed : Rinse mouth with water.

Do NOT induce vomiting.
Never give anything by mouth to an unconscious person.
Get medical attention immediately.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders.Use personal protective equipment as required.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Indication of immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

Section: 5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media : Foam
Carbon dioxide
Dry powder
Other extinguishing agent suitable for Class B fires
For large fires, use water spray or fog, thoroughly drenching the burning material.

Unsuitable extinguishing media : Do NOT use water jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Exposure to decomposition products may be a hazard to health.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Hazardous combustion products : Decomposition products may include the following materials:
Carbon oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : Use personal protective equipment.

Further information : Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel : Ensure adequate ventilation.
Remove all sources of ignition.

Keep people away from and upwind of spill/leak.
Avoid inhalation, ingestion and contact with skin and eyes.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Ensure clean-up is conducted by trained personnel only.
Refer to protective measures listed in sections 7 and 8.

Advice for emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

6.2 Environmental precautions

Environmental precautions : Do not allow contact with soil, surface or ground water.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : Eliminate all ignition sources if safe to do so.
Stop leak if safe to do so.
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Flush away traces with water.
For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

6.4 Reference to other sections

See Section 1 for emergency contact information.
For personal protection see section 8.
See Section 13 for additional waste treatment information.

Section: 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling : Open drum carefully as content may be under pressure. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Do not ingest. Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.

Suitable material	:	The following compatibility data is suggested based on similar product data and/or industry experience: HDPE (high density polyethylene), Natural rubber, Carbon Steel C1018, Stainless Steel 304, Stainless Steel 316L
Unsuitable material	:	The following compatibility data is suggested based on similar product data and/or industry experience: Aluminum

7.3 Specific end uses

Specific use(s)	:	SOLVENT

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure guidelines have not been established for this product. However there may be exposure limits for the substance(s) for your country listed below.

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Methanol	67-56-1	TWA	200 ppm 266 mg/m3	UKCOSSTD
		STEL	250 ppm 333 mg/m3	UKCOSSTD

DNEL

Methanol	:	End Use: Workers Exposure routes: Dermal Potential health effects: short-term - systemic 40 mg/kg
		End Use: Workers Exposure routes: Dermal Potential health effects: Acute systemic effects Value: 40 mg/cm2
		End Use: Workers Exposure routes: Inhalation Potential health effects: Acute systemic effects Value: 260 mg/m3
		End Use: Workers Exposure routes: Inhalation Potential health effects: Acute local effects Value: 260 mg/m3
		End Use: Workers Exposure routes: Dermal Potential health effects: Long-term systemic effects Value: 40 mg/cm2
		End Use: Workers Exposure routes: Inhalation Potential health effects: Long-term systemic effects Value: 260 mg/m3
		End Use: Workers Exposure routes: Inhalation Potential health effects: Long-term local effects Value: 260 mg/m3

PNEC

Methanol	:	Fresh water Value: 154 mg/l
		Marine water Value: 15.4 mg/l
		Intermittent use/release Value: 1540 mg/l
		Sediment Value: 570.4 mg/kg
		Soil Value: 23.5 mg/kg
		Sewage treatment plant Value: 100 mg/l

8.2 Exposure controls

Appropriate engineering controls

Effective exhaust ventilation system.
Maintain air concentrations below occupational exposure standards.

Individual protection measures

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.Remove and wash contaminated clothing before re-use.Wash face, hands and any exposed skin thoroughly after handling.

Eye/face protection (EN 166) : Safety goggles
Face-shield

Hand protection (EN 374) : Recommended preventive skin protection
Gloves
Viton
butyl-rubber
Breakthrough time: 1 – 4 hours
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin and body protection (EN 14605) : Wear suitable protective clothing.

Respiratory protection (EN 143, 14387) : When respiratory risks cannot be avoided or sufficiently limited by technical means of collective protection or by measures, methods or procedures of work organization, consider the use of certified respiratory protection equipment meeting EU requirements (89/656/EEC, 89/686/EEC), or equivalent, with filter type:AX

Environmental exposure controls

General advice : Consider the provision of containment around storage vessels.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	:	Liquid
Colour	:	Colorless Clear
Odour	:	Alcoholic
Flash point	:	14 °C Method: ASTM D 1310, open cup
pH	:	no data available
Odour Threshold	:	no data available
Melting point/freezing point	:	FREEZING POINT: -23 °C, <
Initial boiling point and boiling range	:	64 °C (760 mm Hg) Method: ASTM D 86
Evaporation rate	:	5.9 (ether = 1)
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	36 V%
Lower explosion limit	:	7.3 V%
Vapour pressure	:	97 mm Hg (16 °C)
Relative vapour density	:	1.1 (Air = 1)
Relative density	:	0.79 (16 °C) ASTM D-1298
Density	:	0.79 g/cm3
Solubility(ies)		
Water solubility	:	completely soluble
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	464 °C
Thermal decomposition temperature	:	no data available
Viscosity		
Viscosity, dynamic	:	0.6 mPa.s (20 °C)
Viscosity, kinematic	:	no data available
Explosive properties	:	no data available
Oxidizing properties	:	no data available

9.2 Other information

no data available

Section: 10. STABILITY AND REACTIVITY

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Strong oxidizing agents
Strong acids
Alkali metals

10.6 Hazardous decomposition products

Hazardous decomposition products : Decomposition products may include the following materials:
Carbon oxides

Section: 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Toxicity

Product

Acute oral toxicity	:	There is no data available for this product.
Acute inhalation toxicity	:	There is no data available for this product.
Acute dermal toxicity	:	There is no data available for this product.
Skin corrosion/irritation	:	There is no data available for this product.
Serious eye damage/eye irritation	:	Result: Mild eye irritation
Respiratory or skin sensitization	:	There is no data available for this product.
Carcinogenicity	:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible

or confirmed human carcinogen by IARC.

Reproductive effects	:	No toxicity to reproduction
Germ cell mutagenicity	:	Contains no ingredient listed as a mutagen
Teratogenicity	:	There is no data available for this product.
STOT - single exposure	:	Causes damage to organs.
STOT - repeated exposure	:	There is no data available for this product.
Aspiration toxicity	:	No aspiration toxicity classification

Potential Health Effects

Eyes	:	Health injuries are not known or expected under normal use.
Skin	:	Toxic in contact with skin.
Ingestion	:	May cause blindness if swallowed. Toxic if swallowed.
Inhalation	:	Toxic if inhaled.
Chronic Exposure	:	Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact	:	No information available.
Skin contact	:	No information available.
Ingestion	:	No information available.
Inhalation	:	Respiratory irritation, Cough
Further information	:	no data available

Section: 12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Product

Environmental Effects	:	This product has no known ecotoxicological effects.
Environmental Effects - Acute aquatic toxicity Assessment	:	This product has no known ecotoxicological effects.
Environmental Effects - Chronic aquatic toxicity Assessment	:	This product has no known ecotoxicological effects.
Toxicity to fish	:	no data available
Toxicity to daphnia and other	:	no data available

aquatic invertebrates

Toxicity to algae : no data available

Components

Toxicity to fish : Methanol
96 h LC50: 15,400 mg/l

Components

Toxicity to daphnia and other aquatic invertebrates : Methanol
48 h EC50: > 10,000 mg/l

Components

Toxicity to algae : Methanol
72 h EC50: 22,000 mg/l

Components

Toxicity to bacteria : Methanol
> 1,000 mg/l
Method: OECD Test Guideline 209

Components

Toxicity to fish (Chronic toxicity) : Methanol
8.3 d NOEC: 7,900 mg/l

12.2 Persistence and degradability

Product

Biodegradability : The organic portion of this preparation is expected to be readily biodegradable.

Biodegradation Assessment : The organic portion of this preparation is expected to be readily biodegradable.

Components

Biodegradability : Methanol
Result: Readily biodegradable.

12.3 Bioaccumulative potential

Product

Bioaccumulation : This preparation or material is not expected to bioaccumulate.

Components

Bioaccumulation : Methanol
Carp, Exposure time: 72 d, Bioconcentration factor (BCF): 1 - 4.5, Bioaccumulation is unlikely.

12.4 Mobility in soil

Product

The portion in water is expected to be soluble or dispersible.

12.5 Results of PBT and vPvB assessment

Product

Assessment	:	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)., This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Other adverse effects

No adverse effects expected.

Section: 13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with the European Directives on waste and hazardous waste.Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

13.1 Waste treatment methods

Product	:	Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
Contaminated packaging	:	Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.
Guidance for Waste Code selection	:	16 03 05*- OFF SPECIFICATION BATCHES AND UNUSED PRODUCTS - Organic wastes containing dangerous substances. If this product is used in any further processes, the final user must redefine and assign the most appropriate European Waste Catalogue Code.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (ADR/ADN/RID)

14.1 UN number:	UN 1230
14.2 UN proper shipping name:	METHANOL
14.3 Transport hazard class(es):	3, 6.1
14.4 Packing group:	II
14.5 Environmental hazards:	No
14.6 Special precautions for user:	Not applicable.

Air transport (IATA)

14.1 UN number:	UN 1230
14.2 UN proper shipping name:	METHANOL
14.3 Transport hazard class(es):	3 , 6.1
14.4 Packing group:	II

14.5 Environmental hazards: No
14.6 Special precautions for user: Not applicable.

Sea transport (IMDG/IMO)
14.1 UN number: UN 1230
14.2 UN proper shipping name: METHANOL
14.3 Transport hazard class(es): 3 , 6.1
14.4 Packing group: II
14.5 Environmental hazards: No
14.6 Special precautions for user: Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.

Section: 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture **:**

INTERNATIONAL CHEMICAL CONTROL LAWS

CANADA
The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

UNITED STATES
The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

NATIONAL REGULATIONS GERMANY
Water contaminating class (Germany) : WGK 1
Classification according VwVwS, Annex 4.

15.2 Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out.

Section: 16. OTHER INFORMATION

Full text of H-Statements

H225	Highly flammable liquid and vapour.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H370	Causes damage to organs.

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute

for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Sources of key data used to compile the Safety Data Sheet	:	IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer. The possible key literature references and data sources which may have been used in conjunction with the consideration of expert judgment to compile this Safety Data Sheet: European regulations/directives (including (EC) No. 1907/2006, (EC) No. 1272/2008, 67/548/EEC, 1999/45/EC), supplier data, inter-net, ESIS, IUCLID, ERIcards, Non European official regulatory data and other data sources.
Prepared By	:	Regulatory Affairs

Numbers quoted in the MSDS are given in the format: 1,000,000 = 1 million and 1,000 = 1 thousand. 0.1 = 1 tenth and 0.001 = 1 thousandth

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

SODIUM CARBONATE – SODA ASH

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**SODIUM CARBONATE – SODA ASH**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Stabilizator de PH si eliminator de calciu pentru fluidele de foraj**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

	**GHS07**	**Irit. Oc. 2** **H 319:** Provoacă o iritare gravă a ochilor.

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

	**Xi - Iritant**	**R 36:** Iritant pentru ochi

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	 **GHS07**	**Irit. Oc. 2** **H 319:** Provoacă o iritare gravă a ochilor.
Fraze de precauţie:	**P264:** Spălaţi-vă vine după utilizare. **P280:** Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei. **P337+P313:** Dacă iritarea ochilor persist: consultaţi medical. **P305 + P351 + P338:** ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.	
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.	

Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

Identificarea pericolelor:		**Xi - Iritant** **R 36:** Iritant pentru ochi
Sfaturi de siguranţă::	**S 25:** Evitaţi contactul cu ochii. **S26:** În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul.	
Eliminarea:	**S60:** Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.	

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Substanţa
Conţinut:	În conformitate cu tabelul de mai jos
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul INDEX:	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
Carbonat de sodium **Sodium Carbonate** REACH No. 01-2119485498-19-XXXX	497-19-8	207-838-8	100%	**Irit. Oc. 2**	 **GHS07**	**H319**
Nume	**Nr. CAS**	**Nr. EC**	**Cantitate**	**Clasificare**	**Simbol**	**Fraze de pericol**
Carbonat de sodiu	497-19-8	207-838-8	100%	**Xi – Iritant**		**R36**

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistenţă medicală. Arătaţi medicului această Fişă cu Date de Securitate.
După inhalare:	Mutați persoana afectată la aer curat. Dacă simptomele persistă, consultați un medic.
După contactul cu pielea:	Se vor scoate imediat hainele contaminate și se va face un duș. Consultați un medic.
După contactul cu ochii:	Clătiți imediat cu multă apă pentru cel puțin 15 de minute și se va solicita ajutor medical imediat.
După înghiţire:	Se va clăti gura cu apă. Se va administra pacientului să bea multă apă în cazul în care pacientul este conștient. Sunați imediat medicul dumneavoastră. Nu provocați voma.
Alte informaţii:	- - -

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	N.a.

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fişă cu Date de Securitate.
Mijloace speciale de intervenție:	- - -

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	În caz de incendiu respectaţi, urmați instrucțiunile.
Mijloace de stingere corespunzătoare:	Utilizați dioxid de carbon, spumă și pulbere.
Mijloace de stingere necorespunzătoare:	Niciunul
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Se pot emite vapori de monoxid de carbon
Echipamente speciale de stingere a incendiilor	Aparat de respirație și de îmbrăcăminte de protecție
Altele:	N.a.

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ	
6.1. Precauţii personale, echipament de protecţie şi proceduri de urgenţă	
Echipament de protecţie:	Purtați echipament de protecție (mănuși, ochelari de protecție și îmbrăcăminte). În cazul în care exista praf din aer adoptati protecție respiratorie
Proceduri de urgență:	N.a.
6.2. Precauţii pentru mediul înconjurător	
Medii de izolare:	Colectati mecanic. Pentru pulberi fine folosiți un aspirator
Metode de limitare a poluarii	Eliminati restul de praf folosind jeturi de apă. Evitați formarea de praf. Asigurati ventilatie corespunzătoare a zonei afectate
Informatii suplimentare:	Împiedicați patrunderea produsului in sistemul de canalizare, apele de suprafață, în apele subterane și in zonele învecinate

7. MANIPULARE ŞI DEPOZITARE	
7.1. Precauţii pentru manipularea în condiţii de securitate	
Precauţii pentru manipulare în condiţii de securitate:	Evitați formarea de praf. Asigurați ventilarea adecvată / aspirare la locul de locul de muncă în cazul în care se poate produce praf. Folositi echipament de protecție
7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi	
Condiţii de depozitare:	Condiții normale de depozitare fără incompatibilități speciale
Specificaţiile zonei de depozitare:	Depozitați într-un loc uscat si bine ventilat
Specificaţiile recipienţilor:	Păstra containerele ermetic închise, la temperatura camerei. Polietilena, plastic + PE
Incompatibilități:	Depozitați la distanta de agenti de oxidare, acizi, halogeni
7.3. Utilizare finală specifică:	
Utilizări finale specifice:	**Stabilizator de PH si eliminator de calciu pentru fluidele de foraj**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ		
8.1. Parametri de control		
Substanta		***Carbonat de sodiu CAS No. 497-19-8***
TLV_{Celing}:		- - -
TLV_{TWA}:		TWA = 10mg/m^3
TLV_{STEL}:		- - -
Limita biologică:		- - -
8.2. Controale ale expunerii profesionale		
8.2.1. Controale tehnice corespunzătoare		Asigirati ventilatie adecvata
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Ventilație recomandată
Protecţia individuală	Respiratorie:	Folosiți protecție respiratorie adecvată
	Ochi	Ochelari de protecție cu ecrane laterale
	Maini	Purtați mănuși de protecție, PVC
	Corp	Echipament de protectie individual
8.3. Controlul expunerii mediului		
Variante de expunere		- - -

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Forma:	Pulbere cristalină
Aspect:	Solid
Culoare:	Alb, incolor
Miros:	Inodor
Prag olfactiv:	Nu este disponibil
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH (100 g/l) la 25 °C:	11,4
Punct de topire:	851°C
Punct de fierbere:	N.a.
Temperatura de descompunere :	N.a.
Punct de aprindere:	N.a.
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Greutate specifică:	500-600 Kg/m3
Densitatea la 20 °C:	N.a.
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	N.a.
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	212 g/l
Solubilitatea:	N.a.
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea:	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE	
10.1. Reactivitate	
Condiții care trebuie evitate:	În cazul expunerii la temperaturi ridicate poate produce produse de descompunere periculoase. În general stabil timp de 2 ani atunci când este păstrat la temperaturi care nu depasesc 25 ° C Evitați căldura și umiditatea
10.2. Stabilitate chimică	
Materiale incompatibile:	Acizi tari
Posibilitatea de reacții periculoase:	În condiții normale de utilizare și depozitare nu sunt previzibile reacții periculoase
10.3. Produși de descompunere periculoși	
Alte informaţii:	Descompunerea termică sau în caz de incendiu poate duce la produse periculoase de descompunere

11. INFORMAŢII TOXICOLOGICE	
11.1. Toxicitate Acută	
Toxicitatea Substanţei	***Carbonat de sodiu CAS No. 497-19-8***
Toxicitate orală acută:	DL50 (Şobolan): 2800 mg/kg
Toxicitate inhalatorie acută:	CL50 (Şobolan): 2300 mg/m^3
Toxicitate cutanată acută:	DL50 (Iepure): > 2000 mg/kg
11.2. Corozivitate	
Piele:	Nu este iritant
Ochi:	Nu este iritant
11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE	
12.1. Toxicitate	
Toxicitate în apă:	CL50 (Pești, 96h): 300 mg/l EC50 (Nevertebrate) 48h: 265 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Degradare abiotică:	N.a.
Degradare biologică:	N.a.
12.3. Potența Bioacumulativ	
Alte informații:	N.a.
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	N.a.
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA	
13.1. Metode de eliminare a produsului	
Sfaturi:	Recuperati dacă este posibil. Manipulati în conformitate cu reglementările locale și naționale
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	N.a.
Alte recomandări:	Manipulati în conformitate cu reglementările locale și naționale

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)	
Număr ONU	Nu este reglementat ca și un material periculos pentru transport.
Norme de transport ONU	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Pericol pentru mediu	N.a.
14.2. Transport Maritim (IMDG)	
Clasa IMDG:	Nu este reglementat ca și un material periculos pentru transport.
Poluant marin:	N.a.
14.3. Transport Aerian (ICAO-TI si IATA-DGR)	
Clasa ICAO	Nu este reglementat ca și un material periculos pentru transport.
Clasa IATA	N.a.
14.4. Transport în vrac	
Anexa II a MARPOL73/78:	Nu este reglementat ca și un material periculos pentru transport.
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.

Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.

REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor și a amestecurilor

HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;

HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;

REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanțelor și a amestecurilor, de modificare și de abrogare a Directivelor 67/548/CEE și 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic și ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European și al Consiliului privind clasificarea, etichetarea și ambalarea substanţelor și a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase

HG 735/2006 privind limitarea emisiei de compuşi organici volatili.

HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de

compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:
Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei

fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate
GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice
EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente
CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanțe chimice (divizie a Societății Americane de Chimicale)
CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice
ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică
EC50: median effective concentration - concentrația efectivă medie
LC50: median lethal concentration - concentrația letală medie
LD50: median lethal dose **-** doză letală medie
NOEC: no observable effect concentration – concentraţia fără efect observat
PNEC: predicted no-effect concentration - concentrația fără efect prevăzut
PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice
vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative
TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore
TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt
TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H 319: Provoacă o iritare gravă a ochilor

R 36: Iritant pentru ochi

Fraze de precauţie / siguranta utilizate în secţiunile anterioare

P264: Spălaţi-vă vine după utilizare.
P280: Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei.
P337+P313: Dacă iritarea ochilor persist: consultaţi medical.
P305 + P351 + P338: ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

S25: Evitați contactul cu ochii.
S26: În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul.
S60: Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.

Defoamer AF340

1. Identificarea substanței/ amestecului şi a societății/ întreprinderii

1.1 Element de identificare a produsului

Nume produs Defoamer AF340

1.2 Utilizări relevante identificate ale substanței sau amestecului şi utilizări contraindicate

Utilizarea produsului Agent de despumare

1.3 Detalii privind furnizorul fişei cu date de securitate

Societatea	:	Champion Technologies Minto Avenue Altens Industrial Estate Aberdeen, UK AB12 3JZ
Telefon	:	00 44 1224 879022 (Champion)
Fax	:	
Adresa electronică (e-mail)	:	eh.productstewardship@champ-tech.com
Persoana responsabilă/emitentă		

1.4 Număr de telefon care poate fi apelat în caz de urgență

00 44 1224 879022

2. Identificarea pericolelor

2.1 Clasificarea substanței sau a amestecului

Clasificare (REGULAMENTUL (CE) NR. 1272/2008)

Pericol prin aspirare, Categoria 1	H304: Poate fi mortal în caz de înghițire şi de pătrundere în căile respiratorii.

Clasificare (67/548/CEE, 1999/45/CE)

Nociv.	R65: Nociv: poate provoca afecțiuni pulmonare în caz de înghițire.

2.2 Elemente pentru etichetă

Etichetare (REGULAMENTUL (CE) NR. 1272/2008)

Pictograme de pericol :



Cuvânt de avertizare	:	Pericol	
Fraze de pericol	:	H304	Poate fi mortal în caz de înghițire şi de pătrundere în căile respiratorii.
Fraze de precauție	:	**Răspuns:**	
		P301 + P310	ÎN CAZ DE ÎNGHIȚIRE: sunați imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic.
		P331	NU provocați voma.
		Depozitare:	
		P405	A se depozita sub cheie.
		Eliminare:	

P501 Aruncați conținutul/ containerul la o instalație de eliminare a deşeurilor aprobată.

Componente potențial periculoase ce trebuie să fie specificate pe etichetă:

Hydrotreated light distillates

2.3 Alte pericole

Neclasiticatš cirept PBTNPVB dup criteriile UE actuale.

3. Compoziție/ informații privind componenții

3.2 Amestecuri

Componente potențial periculoase

Denumire chimică	Nr. CAS Nr.CE Număr de înregistrare REACH	Clasificare (REGULAMENTUL (CE) NR. 1272/2008)	Clasificare (67/548/CEE)	Concentrație [%]
Hydrotreated light distillates	64742-47-8 265-149-8 01-2119457736-27-0001	Asp. Tox. 1; H304	Xn; R65	>= 60 - <= 100

Pentru textul complet al frazelor R menționate în acest paragraf, se va consulta paragraful 16.
Pentru textul complet al acestor fraze H menționate în această secțiune, se va consulta Secțiunea 16.

4. Măsuri de prim ajutor

4.1 Descrierea măsurilor de prim ajutor

Dacă se inhalează : Se va avea grije ca persoana să aibă aer proaspăt.
Este necesară respirație artificială sau oxigen.
Dacă simptomele persistă se va chema un medic.

În caz de contact cu pielea : In caz de contact se va clăti imediat pielea cu multă apă.
Se vor scoate hainele şi încălțămintea contaminate.
Se va chema un medic dacă iritația creşte sau persistă.

În caz de contact cu ochii : Se vor clăti imediat ochii timp de cel puțin 15 minute. Se va da asistență medicală.
Se va îndepăra lentila de contact.

Dacă este ingerat : Niciodată nu se va încerca să se forțeze o persoană inconstientă să înghită.
Se va curăța gura cu apă si se va bea apoi multă apă.
NU se va induce stare de vomă.
Se va chema un medic.
În caz de apariție a vomei, capul trebuie ținut în jos, pentru ca voma să nu pătrundă în plămâni.

4.2 Cele mai importante simptome şi efecte, atât acute, cât şi întârziate

Riscuri : Dacă vă simțiți rău, consultați un medic (îi arătați dacă este posibil eticheta).

4.3 Indicații privind orice fel de asistență medicală imediată şi tratamentele speciale necesare

Tratament	:	Nu s-au fšcut recomandri, dar primul ajutor poate ti totusi necesarmn cazul expunerii, inhalšrii sau ingestiei accidentale la acest agent chimic. Dacŕ ave!i Indoieli,SOLICITATI IMEDIAT ASISTENTA MEDICALA!

5. Măsuri de combatere a incendiilor

5.1 Mijloace de stingere a incendiilor

Mijloace de stingere corespunzătoare	:	Se vor folosi metode de stingere adecvate condițiilor locale şi mediului înconjurător. Spumă rezistentă la alcooli Bioxid de carbon (CO2) Produs chimic uscat Spumă ce formează un film apos (AFFF).

5.2 Pericole speciale cauzate de substanța sau amestecul în cauză

Riscuri specifice în timpul luptei împotriva incendiilor	:	Inflamabil sau combustibil, poate fi aprins de căldură, scântei sau flăcări.
Produşi de descompunere periculoşi	:	În caz de incendiu se pot forma produşi de descompunere periculoşi, cum ar fi: Oxizi de carbon.

5.3 Recomandări destinate pompierilor

echipamentelor speciale de protecție pentru pompieri	:	Se va folosi echipament de protecție individual. În cazul unui incendiu, se va purta un aparat respirator autonom.
Informații suplimentare	:	În cazul unui incendiu şi/sau explozie nu se va inhala fumul. Se va sta într-un loc situat împotriva vântului/ se va sta la distanță de sursă. Jetul de apă poate fi folosit pentru a răci containerele nedeschise. Se va evita ca apa de extincție contaminată să intre în sistemul de canalizare şi în apele curgătoare.

6. Măsuri de luat în caz de dispersie accidentală

6.1 Precauții personale, echipament de protecție şi proceduri de urgență

Măsurile de precauție pentru protecția personală	:	A se vedea măsurile de protecție din capitolele 7 şi 8. Se va asigura ventilație adecvată. Se va folosi protecția respiratorie indicată în caz că limita de expunere profesională este depăşită şi/sau în caz de eliberare de produs (praf). Se va evita inhalarea, ingerarea şi contactul cu pielea şi ochii. Se va îndepărta orice sursă de aprindere.

6.2 Precauții pentru mediul înconjurător

Precauții pentru mediul înconjurător	:	Nu se va permite să intre în contact cu contact cu solul, apele de suprafață sau freatice.

6.3 Metode şi material pentru izolarea incendiilor şi pentru curățenie

Metodele de curățare	:	Opriți scurgerea, dacă acest lucru se poate face în siguranță. Eliminați toate sursele de aprindere, dacă acest lucru se poate face în siguranță. Se va strânge şi se va colecta materialul împrăştiat cu ajutorul

unui material absorbant necombustibil, (spre exemplu nisip, pământ, kieselgur, vermiculit) şi va fi depozitat într-un container pentru eliminare conform cu reglementările locale-naționale în vigoare (a se vedea capitolul 13).
Se va culege şi se va transfera în containere etichetate corespunzător.
Nu se va deversa în apele de suprafață sau în sistemul de canalizare.

6.4 Trimiteri către alte secțiuni

Pentru protecția individuală a se vedea paragraful 8.
A se vedea secțiunea 13 pentru informații despre eliminarea deşeurilor.

7. Manipularea şi depozitarea

7.1 Precauții pentru manipularea în condiții de securitate

Sfaturi de manipulare în condiții de securitate	:	Se va evita inhalarea, ingerarea şi contactul cu pielea şi ochii. Se va folosi numai cu o ventilație adecvată/protecție personală adecvată. În cazul unei ventilații insuficiente, a se purta un echipament de respirație corespunzător. Se va verifica faptul că locurile de spălare a ochilor şi duşurile de protecție sunt amplasate în apropierea locului de muncă. Fumatul, mâncatul şi băutul sunt interzise în spațiul de utilizare.
Măsuri de protecție împotriva incendiului şi a exploziei	:	Se va ține departe de flăcări neprotejate, suprafețe fierbinți sau surse de aprindere. Se vor lua măsurile necesare pentru a evita descărcările statice de electricitate (ce pot provoca aprinderea vaporilor organici). Se va folosi numai echipament antideflagrant.

7.2 Condiții de depozitare în condiții de securitate, inclusiv eventuale incompatibilități

Cerințe pentru spațiile de depozitare şi containere	:	Se va păstra containerul ermetic închis, într-un loc uscat şi bine ventilat.

7.3 Utilizare finală specifică (utilizări finale specifice)

Utilizările identificate ale acestui produs sunt menționate la Secțiunea 1.2.

8. Controale ale expunerii/ protecția personală

8.1 Parametri de control

Componente	Nr. CAS	Tipul valorii	Parametri de control	Adus la zi	Bază
*** Common Name Missing ***	63148-62-9	TWA	60 mg/m3	2006-10-13	RO OEL
		STEL	80 mg/m3	2006-10-13	RO OEL

8.2 Controale ale expunerii

Măsuri de ordin tehnic

Sistem de ventilație de evacuare eficient

Echipamentul individual de protecție

Protecția respirației	:	În cazul unei ventilații insuficiente, a se purta un echipament de respirație corespunzător. Aparat respirator cu filtru pentru vapori organici
Protecția mâinilor	:	Purtați mănuşi de protecție. Mănuşi din neopren. Vă rugăm să respectați instrucțiunile referitoare la permeabilitatea şi timpul de străpungere ce sunt furnizate de către fabricantul de mănuşi. Se vor lua de asemenea în considerație condițiile locale specifice în care produsul este folosit, cum ar fi pericolul de tăiere, erodare, precum şi timpul de contact. Timpul de penetrare prin mănuşă nu este determinat pentru acest produs. Se vor schimba des mănuşile. Se va folosi o cremă protectoare foarte grasă după curățarea pielii.
Protecția ochilor	:	Ochelari de protecție cu ecrane laterale. Ochelari de protecție.
Protecția pielii şi a corpului	:	Îmbrăcăminte de pretecție.
Măsuri de igienă	:	Se va evita contactul cu pielea, ochii şi îmbrăcămintea. Se vor spăla mâinile înainte de pauze şi la sfârşitul programului de lucru. Se vor spăla mâinile înainte de a mânca, bea sau fuma. Se va manipula conform normelor de igienă industriale şi a normelor de securitate.

Controlul expunerii mediului

Indicații generale	:	Nu se va permite să intre în contact cu contact cu solul, apele de suprafață sau freatice.

9. Proprietățile fizice şi chimice

9.1 Informații privind proprietățile fizice şi chimice de bază

Aspect	:	lichid
Culoare	:	Transparent.
Miros	:	nedeterminat
Pragul de acceptare a mirosului	:	nedeterminat
pH	:	6 - 8
unctul de topire	:	nedeterminat
Punctul de fierbere	:	nedeterminat
Punctul de aprindere	:	ca. 71 °C, Pensky-Martens.
Viteza de evaporare	:	nedeterminat
Inflamabilitatea (solid, gaz)	:	nedeterminat

Limită inferioară de explozie	:	< 0,01 %(V)
Limită superioară de explozie	:	7 %(V)
Presiunea de vapori	:	< 0,1 hPa, 20 °C
Densitatea de vapori relativă	:	ca. 1, Air = 1
Densitatea relativă	:	0,8 - 0,83, 20 °C
Solubilitatea	:	ulei
Coeficientul de partiție: n-octanol/apă	:	log Pow: > 3
Temperatura de autoaprindere	:	ca. 230 °C
Descompunere termică	:	nedeterminat
Vâscozitate dinamică	:	< 25 mPa.s, 20 °C
Vâscozitate cinematică	:	nedeterminat
Proprietăți explozive	:	nu se aplică
Proprietăți oxidante	:	nedeterminat

9.2 Alte informații

Punct de curgere	:	< -22 °C

10. Stabilitate şi reactivitate

10.1 Reactivitate

Nu se conoaşte nici o reacție periculoasă în condiții normale de folosire.

10.2 Stabilitate chimică

Stabil în condiții normale.

10.3 Posibilitatea de reacții periculoase

Reacții potențial periculoase	:	Irelevant

10.4 Condiții de evitat

Condiții de evitat	:	Căldură, flăcări şi scântei.

10.5 Materiale incompatibile

Materiale de evitat	:	Acizi tari. Baze tari. Agenți oxidanți puternici.

10.6 Produşi de descompunere periculoşi

Produşi de descompunere periculoşi	:	În caz de incendiu se pot forma produşi de descompunere periculoşi, cum ar fi: Oxizi de carbon.

11. Informații toxicologice

11.1 Informații privind efectele toxicologice

Informații suplimentare	:	nu există date

Componente:
Hydrotreated light distillates :

Toxicitate acută orală	:	LD50: > 15.000 mg/kg, şobolan
Informații suplimentare	:	Afecțiunile deja existente ale pielii pot fi agravate prin supraexpunerea la acest produs.

12. Informații ecologice

12.1 Toxicitate

Produs:

Toxicitate pentru peşti	:	nu există date

12.2 Persistență şi degradabilitate

Produs:

Biodegradare	:	Dificil biodagradabil.
Eliminare fizico-chimică	:	Acest produs este insolubil şi pluteşte pe apă.

12.3 Potențial de bioacumulare

Produs:

Biocumulare	:	nu există date

12.4 Mobilitate în sol

nu există date

12.5 Rezultatele evaluării PBT şi vPvB

Neclasiticatš cirept PBTNPVB dup criteriile UE actuale.

12.6 Alte efecte adverse

Produs:

Informații ecologice adiționale	:	nu se aplică

13. Considerații privind eliminarea

13.1 Metode de tratare a deşeurilor

Produs	:	În cazul în care este posibilă reciclarea, aceasta este preferată eliminării sau incinerării. Dacă reciclarea nu este posibilă, se va elimina în conformitate cu reglementările locale. Codul deşeului trebuie atribuit de către utilizator, de preferat în acord cu autoritățile responsabile pentru eliminarea deşeurilor.

14. Informații referitoare la transport

14.1 Numărul ONU

ADR

Bunuri nepericuloase

IMDG

Bunuri nepericuloase

IATA

Bunuri nepericuloase

14.2 Denumirea corectă ONU pentru expediție

ADR

Bunuri nepericuloase

IMDG

Bunuri nepericuloase

IATA

Bunuri nepericuloase

14.3 Clasa (clasele) de pericol pentru transport

ADR

Bunuri nepericuloase

IMDG

Bunuri nepericuloase

IATA

Bunuri nepericuloase

14.4 Grupul de ambalare

ADR

Bunuri nepericuloase

IMDG

Bunuri nepericuloase

IATA

Bunuri nepericuloase

14.5 Pericole pentru mediul înconjurător

ADR

Bunuri nepericuloase

IMDG

Bunuri nepericuloase

IATA

Bunuri nepericuloase

14.6 Precauții speciale pentru utilizatori

Irelevant

14.7 Transport în vrac, în conformitate cu anexa II la MARPOL 73/78 şi Codul IBC

Acest material poate necesita un cod IBC daca se efectueaza în conformitate cu "Codul interna?ional pentru construc?ia ?i echiparea navelor care transporta produse chimice periculoase în Buik. Va rugam sa contacta?i Champion Technologies Stewardship produse Echipa daca ave?i nevoie de informa?ii suplimentare.

15. Informații de reglementare

15.1 Regulamente/legislație în domeniul securității, sănătății şi al mediului specifice (specifică) pentru substanța sau amestecul în cauză

REGULAMENTUL (CE) NR. 1272/2008

Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricționarea substanțelor chimice (REACH). ANEXA IV: EXCEPTĂRI DE LA OBLIGAȚIA DE ÎNREGISTRARE ÎN CONFORMITATE CU ARTICOLUL 2 ALINEATUL (7) LITERA (a)

15.2 Evaluarea securității chimice

Nu a fost etectuată evaluarea securității chimice.

16. Alte informații

Text format din fraze R ce se referă la subtitlurile 2 şi 3

R65	Nociv: poate provoca afecțiuni pulmonare în caz de înghițire.

Textul complet al frazelor H referit în secțiunile 2 şi 3.

H304	Poate fi mortal în caz de înghițire şi de pătrundere în căile respiratorii.

Informațiile conținute în această fişă tehnică de securitate au fost stabilite pe baza conoştiințelor, informațiilor şi presupunerilor noastre la data publicării acestui document.

FIŞA TEHNICA DE SECURITATE
EB-8796

1 IDENTIFICAREA SUBSTANŢEI/PREPARATULUI ŞI A COMPANIEI/ÎNTREPRINDERII

APLICARE: Demulsifiant

FURNIZOR:
M-I SWACO
A Schlumberger Company
Koppholen 23
4313 Sandnes
NORWAY
Tel.: +47 51 57 73 00
Fax.: +47 51 57 73 98
SDS@miswaco.com

PERSOANA DE CONTACT: Ingrid Helland, telephone: +47 51 57 74 24

TELEFON PENTRU URGENŢE: (24 Hour) Europe +44 (0) 1235 239 670, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Middle East and Africa +44 (0) 1235 239 671, Australia +61 2801 44558.

2 IDENTIFICAREA PERICOLELOR SUBSTANŢEI/PREPARATULUI CHIMIC PERICULOS

Expunerea repetată poate provoca uscarea sau crăparea pielii. Inhalarea vaporilor poate provoca somnolenţă şi ameţeală. Nociv: poate provoca afecţiuni pulmonare prin înghiţire. Iritant pentru ochi. Posibil efect cancerigen, dovezi insuficiente. Toxic pentru organismele acvatice, poate provoca efecte adverse pe termen lung asupra mediului acvatic.

CLASIFICAREA (1999/45): Xn;R65. Carc. Cat. 3;R40. Xi;R36. N;R51/53. R66, R67.

3 COMPOZIŢIA/INFORMAŢII DESPRE INGREDIENTE

Denumire	Nr. CE	Nr. CAS	Conţinut %	Clasificare (67/548/CEE)
Solvent naphta (petroleum), heavy arom.	265-198-5	64742-94-5	30-60%	Xn;R65. N;R51/53. R66,R67.
Formaldehyde, polymer with methyloxirane, 4-nonylphenol and oxirane		63428-92-2	10-30%	Xi;R36.
NAPHTHALENE	202-049-5	91-20-3	5-10%	Carc. Cat. 3;R40 Xn;R22 N;R50/53

Textul integral pentru toate frazele R este prezentat în secţiunea 16

COMENTARII PRIVIND COMPOZIŢIA

Datele sunt prezentate conform cu ultimele directive ale CE. This product is not allowed for use in North Sea

4 MĂSURI DE PRIM AJUTOR

INHALARE

Mutaţi imediat persoana expusă la aer. Dacă există probleme de respiraţie, asiguraţi respiraţia artificială/oxigen. Solicitaţi asistenţă medicală dacă orice stare de disconfort persistă.

INGERARE

NU INDUCEŢI VOMA! Daţi imediat de băut câteva pahare de apă sau lapte dacă victima este complet conştientă. Nu daţi nimic de băut victimei dacă este în stare de inconştienţă. În caz de vomă, menţineţi capul sub nivelul trunchiului astfel încât conţinutul stomacului să nu pătrundă în plămâni. Solicitaţi asistenţă medicală.

CONTACT CU PIELEA

Îndepărtaţi imediat îmbrăcămintea contaminată şi spălaţi pielea cu apă şi săpun. Solicitaţi imediat asistenţă medicală dacă simptomele apar după spălare.

CONTACTUL CU OCHII

Asiguraţi-vă că aţi îndepărtat lentilele de contact din ochi înainte clătire. Spălaţi imediat ochii cu multă apă în timp ce ridicaţi pleoapele. Continuaţi să clătiţi pentru cel puţin 15 minute. Solicitaţi asistenţă medicală dacă orice stare de disconfort persistă.

5 MĂSURI DE STINGERE A INCENDIILOR

MIJLOACE DE STINGERE A INCENDIILOR

Jet de apă pulverizată, pulbere uscată sau dioxid de carbon. Nu folosiţi jetul de apă drept material de stingere pentru că acesta va extinde focul.

PROCEDURI SPECIALE DE URMAT ÎN CAZ DE INCENDIU

Containerele aflate în apropierea focului trebuie îndepărtate imediat și răcite cu apă. Păstrați apa scursă din sistemul de canalizare și din surse de apă. Îndiguiți pentru a asigura controlul apei.

PERICOLELE SPECIALE

Incendiul sau temperaturile ridicate duc la: Monoxid de carbon (CO). Dioxid de carbon (CO2).

ECHIPAMENTUL DE PROTECȚIE ÎN CAZ DE INCENDIU:

În caz de incendiu folosiți aparate de respirat independente și îmbrăcăminte de protecție completă.

6 MĂSURI ÎN CAZUL PIERDERILOR ACCIDENTALE

MĂSURILE DE PRECAUȚIE PERSONALE

Evitați contactul cu pielea și ochii. Evitați inhalarea de vapori și aerosoli pulverizați. Purtați îmbrăcăminte de protecție precum este descris în secțiunea 8 din fișa tehnică de securitate.

MĂSURILE DE PRECAUȚIE PENTRU MEDIU

Nu permiteți NICI o contaminare a mediului înconjurător. Nu deversați în sistemele de canalizare, cursurile de apă sau în pământ. Scurgerile sau deversările necontrolate în apele curgătoare trebuie anunțate IMEDIAT Agenției pentru Mediu sau altor organisme abilitate.

METODELE DE CURĂȚARE

Stingeți toate sursele de combustie. Evitați scânteile, flăcările, căldura și fumatul.Ventilați. Absorbiți în vermiculită, nisip uscat sau pământ și depozitați în containere. Colectați materialul deversat în containere, sigilați bine și trimiteți pentru evacuare în comformitate cu reglementările locale.

7 MANIPULARE ȘI DEPOZITARE

MĂSURI DE PRECAUȚIE LA UTILIZARE

EVITAȚI ORICE FEL DE CONTACT! Evitați inhalarea de vapori și aburi de pulverizare. Evitați scurgerile, contactul cu pielea și cu ochii.

MĂSURI DE PRECAUȚIE LA DEPOZITARE

Depozitați în containerul original bine închis, într-un loc uscat, răcoros și bine ventilat. Evitați contactul cu agenți oxidanți. A se feri de căldură, scântei și flacără deschisă. A se proteja de lumină, inclusiv de acțiunea directă a razelor soarelui.

8 CONTROLUL EXPUNERII/PROTECȚIE PERSONALĂ'

Denumire	STD	8 ore		Termen Scurt - 15 Min		Observații
1,2,4-TRIMETHYLBENZENE		20 ppm	100 mg/m3			
NAPHTHALENE		9,5 ppm	50 mg/m3			

ECHIPAMENT DE PROTECȚIE






MĂSURI TEHNICE

Asigurati ventilatie locala sau generala pentru o evacuare adecvata.

PROTECȚIA RESPIRAȚIEI

Se recomandă folosirea echipamentului de respirație cu filtru combinat de tip A2/P2. Container cu gaz (gaze acide). La lucrul în spații închise sau prost ventilate, trebuie folosită protecția respiratorie cu aducție de aer.

PROTECȚIA MÂINILOR

Folosiți mănuși de protecție confecționate din: Nitril. Se va avea în vedere faptul că lichidul poate penetra mănușile. Se recomandă schimbarea frecventă.

PROTECTIA OCHILOR

Purtați ochelari de protecție ficși, omologați, dacă există probabilitate de împroșcare.

ALTE MĂSURI DE PROTECȚIE

Purtați îmbrăcăminte corespunzătoare pentru a preveni orice posibilitate de contact cu pielea. Asigurați facilități pentru spălarea ochilor și dușuri de siguranță.

MĂSURI DE IGIENĂ

Îndepărtați imediat orice îmbrăcăminte care se udă sau se contaminează. Schimbați zilnic îmbrăcămintea de lucru dacă există orice posibilitate de contaminare Spălați-vă pe mâini după manipulare. Spălați-vă la sfârșitul fiecărei ture și înainte de a mânca, fuma sau utiliza toaleta.

9 PROPRIETĂȚI FIZICE ȘI CHIMICE

EB-8796

ASPECT	Lichid clar
CULOAREA	Maro deschis
MIROS	hidrocarburi aromatice
SOLUBILITATEA	Insolubil în apă
DENSITATEA RELATIVĂ	0,923 g/ml 20 °C
VÂSCOZITATEA	5 - 25 cps 20 °C
PUNCTUL DE APRINDERE (°C)	66 °c RI (recipient închis)

10 STABILITATE ŞI REACTIVITATE

STABILITATE

Stabil în condiții de temperatură normală și utilizare conform recomandărilor.

CONDIȚII DE EVITAT

Evitați căldura, flăcările și alte surse de combustie. Evitați expunerea la temperaturi ridicate sau la lumina solară directă.

MATERIALE DE EVITAT

Substanțe puternic oxidante.

11 INFORMAŢII TOXICOLOGICE

INHALARE

Inhalarea vaporilor poate provoca somnolență și amețeală.

INGERARE

Nociv: poate provoca leziuni pulmonare prin înghițire. Dacă materialul vomat conținând solvenți ajunge în plămâni, poate provoca pneumonie.

CONTACT CU PIELEA

Expunerea repetată poate provoca uscarea sau crăparea pielii. Acționează ca agent degresiv asupra pielii. Poate provoca fisurarea pielii și eczeme.

CONTACTUL CU OCHII

Iritant pentru ochi. Pulverizarea și vaporii în ochi pot provoca iritare și senzații de usturime.

ALTE EFECTE ASUPRA SĂNĂTĂȚII

Carcinogen Categoria 3. Risc potențial de cancer.

CALEA DE INTRARE

Inhalare: Ingerare. Contact cu pielea și/sau ochii.

12 INFORMAŢII ECOLOGICE

ECOTOXICITATEA

Toxic pentru organismele acvatice, poate provoca efecte adverse pe termen lung asupra mediului acvatic.

MOBILITATEA

Produsul este insolubil în apă și se va împrăștia pe suprafața apei.

POTENȚIALUL BIOACUMULATOR

Produsul conține substanțe potențial bio-acumulante.

DEGRADABILITATEA

Produsul este biodegradabil.

13 CONSIDERAŢII PRIVIND ELIMINAREA

METODE DE ELIMINARE

Recuperați sau reciclați, dacă este util. Evacuarea deșeurilor se face în conformitate cu cerințele autorităților locale.

CLASA DE REZIDUURI

Codul European definitiv pentru acest produs depinde de utilizarea finală a acestuia. Cod EWC: 07 01 04. Deșeu cu numărul: 7152. Deșeu organic fără halogen.

14 INFORMAŢII PRIVIND TRANSPORTUL





DENUMIREA CORESPUNZĂTOARE TRANSPORTULUI	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Solvent naphta (petroleum), heavy arom.,)
NR. ONU RUTIER	3082
CLASA ADR NR.	9
CLASA ADR	Clasa 9: Diferite substanțe și articole periculoase.
GRUPA DE AMBALARE ADR	III
TUNNEL RESTRICTION CODE	(E)
HAZARD No. (ADR)	90
ETICHETA ADR NR.	9
CODUL HAZCHEM	•3Z
NR. ONU MARITIM	3082
CLASA IMDG	9
COLETUL IMDG NR.	III
EMS	F-A, S-F
NR. ONU, AERIAN	3082
CLASA ICAO	9
GRUPA DE AMBALARE AERIAN	III

15 INFORMAŢII PRIVIND REGLEMENTAREA

ETICHETAREA



Nociv



Periculos pentru mediu

CONȚINE

Solvent naphta (petroleum), heavy arom.

NAPHTHALENE

TEXTUL INTEGRAL AL FRAZELOR DE RISC

R36	Iritant pentru ochi.
R40	Posibil efect cancerigen, dovezi insuficiente.
R51/53	Toxic pentru organismele acvatice, poate provoca efecte adverse pe termen lung asupra mediului acvatic.
R65	Nociv: poate provoca afecțiuni pulmonare prin înghițire.
R66	Expunerea repetată poate provoca uscarea sau crăparea pielii.
R67	Inhalarea vaporilor poate provoca somnolență și amețeală.

FRAZE SECURITATE

S25	A se evita contactul cu ochii.
S26	La contactul cu ochii, se spală imediat cu multă apă și se consultă medicul.
S36/37	A se purta echipament de protecție și mănuși de protecție corespunzătoare.
S57	A se utiliza un ambalaj (recipient) corespunzător pentru evitarea contaminării mediului.
S60	A se elimina produsul și ambalajul (recipientul) ca deșeu periculos.
S61	A se evita dispersarea în mediu. A se consulta instrucțiunile speciale/fișa tehnică de securitate.
S62	În caz de înghițire, a nu se provoca voma; se consultă imediat medicul și i se arată ambalajul (recipientul) sau eticheta.

DIRECTIVE UE

Regulamentului (CE) nr. 1907/2006/CE al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH), de înființare a Agenției Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE și de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului și a Regulamentului (CE) nr. 1488/94 al Comisiei, precum și a Directivei 76/769/CEE a Consiliului și a Directivelor 93/155/CEE, 93/67/CEE, 93/105/CE și 2000/21/CE ale Comisiei.

INVENTARE INTERNATIONALE PENTRU CHIMICALE

European Union REACH - Toate componentele indeplinesc reglementarile invigoare REACH. Contactati REACH@miswaco.com pentru informații suplimentare, dacă este necesar.

16 ALTE INFORMAŢII

EB-8796

SURSE DE INFORMAȚII

Informațiile despre acest produs sunt preluate de la furnizor(i). Ghidul fișei tehnice de securitate, diverşi producători. LOLI. Biroul european pentru substanțe chimice - ESIS (European Chemical Substances Information System- Sistemul informatic european pentru substanțe chimice).

OBSERVAȚII LA REVIZUIRE

Clasificare actualizate. Revised by Nina Ovrehus

EMIS DE

Bente K. Sando

DATA ULTIMEI REVIZII	09.02.2011
REVIZIE NR./ RĂSPUNS FTS GENERAT	5/01.08.2010

FIȘA TEHNICĂ DE SECURITATE - STATUS

Aprobat.

DATA	20.10.2006
SEMNĂTURA	Bente K. Sando
SEMNĂTURA 2	Ingrid Helland

TEXTUL INTEGRAL AL FRAZELOR DE RISC

R66	Expunerea repetată poate provoca uscarea sau crăparea pielii.
R50/53	Foarte toxic pentru organismele acvatice, poate provoca efecte adverse pe termen lung asupra mediului acvatic.
R67	Inhalarea vaporilor poate provoca somnolență și amețeală.
R36	Iritant pentru ochi.
R22	Nociv prin înghițire.
R65	Nociv: poate provoca afecțiuni pulmonare prin înghițire.
R40	Posibil efect cancerigen, dovezi insuficiente.
R51/53	Toxic pentru organismele acvatice, poate provoca efecte adverse pe termen lung asupra mediului acvatic.

DECLARAȚIE

Fișa tehnică de securitate se distribuie independent de vânzarea produsului. Deşi s-au depus toate eforturile pentru descrierea cât mai corectă a acestui produs, anumite date au fost obținute din surse dincolo de supravegherea noastră directă. Nu putem face afirmații categorice privind certitudinea sau deplinătatea acesteea; prin urmare, clientul o poate consulta pe propria raspundere. Nu s-a facut nici un efort pentru a cenzura sau ascunde aspectele nefavorabile legate de acest produs. Deoarece nu putem anticipa sau controla condițiile în care acest produs poate fi utilizat, nu aducem nici o garanție că măsurile de precauție pe care le-am sugerat vor fi adecvate pentru toate persoanele şi/sau toate situațiile. Este de datoria fiecărui utilizator al acestui produs să respecte prevederile legilor aplicabile privind folosirea şI eliminarea acestui produs. Se pot oferi informații suplimentare, la cerere, pentru a veni in ajutorul utilizatorului; totuşi, nu oferim garanție exprimată sau implicită şi nici nu ne luăm vreo responsabilitate legată de acest produs sau datele incluse aici.

HALLIBURTON

FISA CU DATE DE SECURITATE

in conformitate cu Regulamentul (CE) Nr. 453/2010

DFS-XFL

Data Reviziei: 23-sep.-2015 **Numarul Reviziei:** 2

SECTIUNEA 1: Identificarea substantei/amestecului si a societatii/întreprinderii

1.1. Element de Identificare a Produsului

Product Name DFS-XFL
Cod de identificare interna HM008124

1.2. Utilizari relevante identificate ale substantei sau amestecului si utilizari contraindicate

Utilizari Recomandate Aditiv
Sector de utilizare SU2 - Minerit (inclusiv exploatare maritima)
Categorii de proces PROC4 - Utilizare in proces discontinuu si alte procese (sinteze) in care apare posibilitatea expunerii
PROC8b - Transfer de substanta sau preparate (încarcare/descarcare) din/în vase recipiente/mari în cadrul unitatilor specializate
PROC15 - Utilizare ca reactiv de laborator
Categorie/categorii de eliberare în mediul înconjurator ERC2 - Formularea preparatelor (amestecuri) ERC4 - Utilizarea industriala a auxiliarelor de procesare în cadrul proceselor si produselor, care nu devin componente ale articolelor ERC6a - Utilizare industriala ce are ca rezultat fabricarea altei substante (utilizarea intermediarilor) ERC6b - Utilizarea industriala a auxiliarelor de procesare reactive ERC6d - Utilizarea industriala a regulatorilor de proces pentru procesele de polimerizare din productia rasinilor, cauciucurilor si polimerilor

1.3. Detalii privind furnizorul fisei cu date de securitate

Halliburton Energy Services
Halliburton House, Howemoss Place
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
Marea Britanie

www.halliburton.com

Pentru informatii suplimentare, va rugam contactati
Adresa de e-mail: fdunexchem@halliburton.com

1.4. Numar de telefon care poate fi apelat în caz de urgenta

+44 8 08 189 0979 / 1-760-476-3962
Cod de acces pentru raspuns la incidente globale: 334305
Numar contract: 14012

Telefon de urgenta - §45 - (CE)1272/2008	
Europa	**112**
Bulgaria	Bulgarian poison centre: +359 2 915-44-09 or +359 2 915-43-46
Croatia	Centar za kontrolu otrovanja (CKO): (+385 1) 23-48-342 (Poison Control Center (PCC) - Institute for Medical Research and Occupational Health)
Cipru	+210 7793777
Danemarca	Linia de Urgenta pentru Controlul Otravirilor (DK): +45 82 12 12 12
Franta	ORFILA (FR): + 01 45 42 59 59
Germania	Centrul pentru Otraviri Berlin (DE): +49 030 30686 790
Italia	Centrul pentru Otraviri, Milan (IT): +39 02 6610 1029
Olanda	Centrul National de Informatii in caz de Otravir (NL): +31 30 274 88 88 (NB: acest serviciu este disponibil numai pentru specialisti in sanatate)
Norvegia	Informatii in caz de Otraviri (NO):+ 47 22 591300
Polonia	Centrul de Control si Informatii in caz de Otravire, Varsovia (PL): +48 22 619 66 54; +48 22 619 08 97
Portugalia	Centrul de Informatii in caz de Otravire (PT): + 351 213 303 271

Romania	+40 21 318 36 06
Spania	Serviciul de Informatii in caz de Otravire (ES): +34 91 562 04 20
Marea Britanie	Directia NHS (UK): +44 0845 46 47

SECTIUNEA 2: Identificarea pericolelor

2.1. Clasificarea substantei sau a amestecului

Regulamentul (CE) nr. 1272/2008

Lezarea grava/iritarea ochilor	Categoria 2 - H319

2.2. Elemente pentru eticheta

Pictograme de pericol



Cuvant de Semnal **Avertisment**

Fraze de Pericol
H319 - Provoaca o iritare grava a ochilor

Propozitii de Atentionare
P264 - Spalati bine fata, manile si orice piele expusa dupa manipulare
P280 - Purtati manusi de protectie/imbracaminte de protectie/protectie pentru ochi/protectie pentru fata
P305 + P351 + P338 - LA CONTACT CU OCHII: Clatiti cu atentie cu apa timp de mai multe minute. Scoateti lentilele de contact, daca exista si este usor de facut. Continuati clatirea.
P337 + P313 - Daca iritatia ochilor persista: Cereti asistenta/ingrijiri medicale

Contine

Substante	**Numar CAS**
Persulfat de sodiu	7775-27-1
Clorura de calciu, dihidrat	10035-04-8
Tiosulfat de sodiu	7772-98-7

2.3. Alte pericole

Acest amestec nu contine nicio substanta considerata a fi persistenta, bioacumulatoare, nici toxica (PBT).
Acest amestec nu contine nicio substanta considerata a fi foarte persistenta, nici foarte bioacumulatoare (vPvB).

SECTIUNEA 3: Compozitie/informatii privind componentii

3.2. Amestecuri Amestec

Substante	EINECS	Numar CAS	Procentul	Clasificarea Substantelor conform UE - CLP	Nr. înreg. REACH
Persulfat de sodiu	231-892-1	7775-27-1	0.1 - 1%	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Resp. Sens. 1 (H334) Skin Sens. 1 (H317) STOT SE 3 (H335) Ox. Sol. 3 (H272)	01-2119495975-15
Clorura de calciu, dihidrat	233-140-8	10035-04-8	30 - 60%	Eye Irrit. 2 (H319)	01-2119494219-28
Tiosulfat de sodiu	231-867-5	7772-98-7	1 - 5%	Nu este cazul	Nu exista date disponibile

Pentru textul complet al Frazelor H mentionte in aceasta Sectiune, vezi Sectiunea 16

SECTIUNEA 4: Masuri de prim ajutor

4.1. Descrierea masurilor de prim ajutor

Inhalare	La inhalare, mutati persoana la aer proaspat. Cereti asistenta medicala daca apare iritatia respiratorie sau respiratia devine dificila.
Ochi	In caz de contact, spalati ochii imediat cu multa apa timp de cel putin 15 minute si cereti ingrijiri medicale daca iritatia persista.
Piele	Spalati cu sapun si apa.
Inghitire	In conditii normale, nu sunt necesare procedurile de prim ajutor.

4.2. Cele mai importante simptome si efecte, atât acute cât si întârziate

Cauzeaza iritarea ochilor.

4.3. Indicatii privind orice fel de asistenta medicala imediata si tratamentele speciale necesare

Indicatii pentru medici Se va trata simptomatologic

SECTIUNEA 5: Masuri de combatere a incendiilor

5.1. Mijloace de stingere a incendiilor

Mijloace Adecvate de Stingere a Incendiilor

Toate mijloacele standard de stingere a incendiilor

Mijloace de combatere a incendiilor ce nu trebuie folosite, din motive de siguranta.

Nimic cunoscut

5.2. Pericole speciale cauzate de substanta sau amestecul în cauza

Pericole speciale de expunere în caz de incendiu

Nu se aplica

5.3. Recomandari destinate pompierilor

Echipament special de protectie pentru pompieri

Echipament complet de protectie si aparat respirator autonom necesar pentru pompieri.

SECTIUNEA 6: Masuri de luat în caz de dispersie accidentala

6.1. Precautii personale, echipament de protectie si proceduri de urgenta

Utilizati echipament de protectie corespunzator. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Consultati Sectiunea 8 pentru informatii suplimentare

6.2.Precautii pentru mediul înconjurator

Preveniti intrarea in canalizari, canale navigabile sau zone joase.

6.3. Metode si material pentru izolarea incendiilor si pentru curatenie

Izolati deversarea si opriti scurgerea unde este posibil in siguranta. Izolati deversarea cu nisip sau alte materiale inerte. Strangeti si indepartati.

6.4. Trimiteri catre alte sectiuni

Consultati Sectiunea 8 si 13 pentru informatii suplimentare

SECTIUNEA 7: Manipularea si depozitarea

7.1. Precautii pentru manipularea în conditii de securitate

Evitati contactul cu ochii, pielea sau imbracamintea. Evitati inspirarea vaporilor. Asigurati o ventilatie adecvata. Utilizati echipament de protectie corespunzator. Spalati mainile dupa utilizare. Spalati imbracamintea contaminata inainte de reutilizare

Masuri de igiena

Se va manipula conform normelor de igiena industriale si a normelor de securitate

7.2. Conditii de depozitare în conditii de securitate, inclusiv eventuale incompatibilitati

Depozitati departe de agenti oxidanti. Depozitati in spatii reci, bine aerisite. Pastrati recipientul inchis cand nu este folosit. Perioada maxima de stocare a produsului este de 24 luni.

7.3. Utilizare finala specifica (utilizari finale specifice)

Scenariu de expunere	Nu exista informatii disponibile
Alte Instructiuni	Nu exista informatii disponibile

SECTIUNEA 8: Controale ale expunerii/protectia personala

8.1. Parametri de control

Limite de expunere

Substante	Numar CAS	UE	UK	Olanda	Franta

Persulfat de sodiu	7775-27-1	Nu este cazul	2 mg/m³	1 mg/m³	Nu este cazul
Clorura de calciu, dihidrat	10035-04-8	Nu este cazul	10 mg/m³	Nu este cazul	Nu este cazul
Tiosulfat de sodiu	7772-98-7	Nu este cazul	Nu este cazul	Nu este cazul	Nu este cazul

Substante	**Numar CAS**	**Germania**	**Spania**	**Portugalia**	**Finlanda**
Persulfat de sodiu	7775-27-1	Nu este cazul	TWA: 0.1 mg/m³	TWA: 0.1 mg/m³	Nu este cazul
Clorura de calciu, dihidrat	10035-04-8	Nu este cazul	Nu este cazul	Nu este cazul	Nu este cazul
Tiosulfat de sodiu	7772-98-7	Nu este cazul	Nu este cazul	Nu este cazul	Nu este cazul

Substante	**Numar CAS**	**Austria**	**Irlanda**	**Elvetia**	**Norvegia**
Persulfat de sodiu	7775-27-1	Nu este cazul	0.1 mg/m³ TWA 0.3 mg/m³ STEL (calculated)	Nu este cazul	TWA: 2 mg/m³ STEL: 4 mg/m³
Clorura de calciu, dihidrat	10035-04-8	Nu este cazul	Nu este cazul	Nu este cazul	Nu este cazul
Tiosulfat de sodiu	7772-98-7	Nu este cazul	Nu este cazul	Nu este cazul	Nu este cazul

Substante	**Numar CAS**	**Italia**	**Polonia**	**Ungaria**	**Republica Ceha**
Persulfat de sodiu	7775-27-1	Nu este cazul	Nu este cazul	Nu este cazul	Nu este cazul
Clorura de calciu, dihidrat	10035-04-8	Nu este cazul	Nu este cazul	Nu este cazul	TWA: 5 mg/m³
Tiosulfat de sodiu	7772-98-7	Nu este cazul	Nu este cazul	Nu este cazul	Nu este cazul

Substante	**Numar CAS**	**Danemarca**	**Romania**	**Croatia**	**Cipru**
Persulfat de sodiu	7775-27-1	TWA: 2 mg/m³	Nu este cazul	Nu este cazul	Nu este cazul
Clorura de calciu, dihidrat	10035-04-8	Nu este cazul	Nu este cazul	Nu este cazul	Nu este cazul
Tiosulfat de sodiu	7772-98-7	Nu este cazul	Nu este cazul	Nu este cazul	Nu este cazul

Nivel Calculat Fara Efect (DNEL) Nu exista informatii disponibile

lucrator

Substante	Expunere pe termen lung - efecte sistemice, Inhalare	Expunere acuta / pe termen scurt - efecte sistemice, Inhalare	Expunere pe termen lung - efecte locale, Inhalare	Expunere acuta / pe termen scurt - efecte locale, Inhalare	Expunere pe termen lung - efecte sistemice, Cutanat	Expunere acuta / pe termen scurt - efecte sistemice, Cutanat	Expunere pe termen lung - efecte locale, Cutanat	Expunere acuta / pe termen scurt - efecte locale, Cutanat	Periculos pentru ochi - efecte locale
Persulfat de sodiu	2.06 mg/m³	590 mg/m³	2.06 mg/m³	Nu este disponibil	18.2 mg/kg bw/day	400 mg/kg bw/day	0.102 mg/cm2	2.248 mg/cm2	Nu este disponibil
Clorura de calciu, dihidrat	Nu este disponibil	Nu este disponibil	5 mg/m³	10 mg/m³	Nu este disponibil	Nu este disponibil	Nu este disponibil	Nu este disponibil	Nu este disponibil

Populatia generala

Substante	Expunere pe termen lung - efecte sistemice, Inhalare	Expunere acuta / pe termen scurt - efecte sistemice, Inhalare	Expunere pe termen lung - efecte locale, Inhalare	Expunere acuta / pe termen scurt - efecte locale, Inhalare	Expunere pe termen lung - efecte sistemice, Cutanat	Expunere acuta / pe termen scurt - efecte sistemice, Cutanat	Expunere pe termen lung - efecte locale, Cutanat	Expunere acuta / pe termen scurt - efecte locale, Cutanat	Expunere pe termen lung - efecte sistemice, Oral	Expunere acuta / pe termen scurt - efecte locale, Oral	Periculos pentru ochi - efecte locale
Persulfat de sodiu	1.03 mg/m³	295 mg/m³	1.03 mg/m³	295 mg/m³	9.1 mg/kg bw/day	200 mg/kg bw/day	0.051 mg/cm2	1.124 mg/cm2	9.1 mg/kg bw/day	30 mg/kg bw/day	Nu este disponibil
Clorura de calciu, dihidrat	Nu este disponibil	Nu este disponibil	2.5 mg/m³	5 mg/m³	Nu este disponibil	Nu este disponibil	Nu este disponibil	Nu este disponibil	Nu este disponibil	Nu este disponibil	Nu este disponibil

Concentratia Predictibila Fara Efect (PNEC) Nu sunt informatii disponibile.

Substante	Apa dulce	Apa sarata	Eliberare intermitenta	Instala?ie de tratare a apelor reziduale	Sediment (apa dulce)	Sediment (apa sarata)	Aer	Sol	Intoxica?ie secundara
Persulfat de sodiu	0.0763 mg/L	0.011 mg/L	0.763 mg/L	3.6 mg/L	0.275 mg/kg sediment dw	0.0396 mg/kg sediment dw	Nu este disponibil	0.015 mg/kg soil dw	No potential for bio-accumulation

8.2. Controale ale expunerii

Controlul Procesului Utilizati intr-o zona bine ventilata.

Echipament de protectie personala Daca masurile de control tehnic si practicile de lucru nu pot preveni expunerea excesiva, alegerea si utilizarea adecvata a echipamentului de protectie personala ar trebui realizate de catre un igienist industrial sau alt specialist, în functie de aplicatia specifica a acestui produs.

Protectie Respiratorie In mod normal nu e necesar.

Protectia Mainilor. Manusi de nitril.

Protectia Pielii	Nu este necesar in mod normal.
Protectia Ochilor	Purtati ochelari de siguranta sau ochelari de protectie impotriva expunerii.
Alte Masuri de Precautie	Nimic cunoscut.

Controlul expunerii mediului Do not allow material to contaminate ground water system

SECTIUNEA 9: Proprietatile fizice si chimice

9.1. Informatii privind proprietatile fizice si chimice de baza

Stare Fizica:	Lichid	**Culoare:**	De la alb la galben pai
Miros:	Caracteristic	**Limita de Prag a Mirosului:**	Nu sunt informatii disponibile

Proprietate Observatii/ - Metoda	Valori
pH:	9
Punctul de înghetare	Nu exista date disponibile
Punct de topire / Interval de topire	Nu exista date disponibile
Punctul de fierbere / intervalul de fierbere	Nu exista date disponibile
Punct de Aprindere	Nu exista date disponibile
Inflamabilitate (solid, gaz)	Nu exista date disponibile
Limita superioara de inflamabilitate	Nu exista date disponibile
Limita inferioara de inflamabilitate	Nu exista date disponibile
Viteza de Evaporare	Nu sunt informatii disponibile.
Presiunea Vaporilor	Nu sunt date disponibile
Densitatea Vaporilor	Nu sunt date disponibile
Densitate Specifica	1
Solubilitate in Apa	Solubil in apa
Solubilitate in alti solventi	Nu sunt date disponibile
Coeficient de repartitie: n-octanol/apa	Nu exista date disponibile
Temperatura de Autoaprindere	Nu exista date disponibile
Temperatura de Descompunere	Nu exista date disponibile
Vascozitate	Nu exista date disponibile
Proprietati Explozive	Nu sunt informatii disponibile
Proprietati Oxidante	Nu sunt informatii disponibile

9.2. Alte informatii

Continut VOC (substante volatile) (%) Nu sunt date disponibile

SECTIUNEA 10: Stabilitate si reactivitate

10.1. Reactivitate

Nu se estimeaza ca este reactive.

10.2. Stabilitate chimica

Stabil

10.3. Posibilitatea de reactii periculoase

Nu se va produce

10.4. Conditii de evitat

Nu s-a anticipat nimic.

10.5. Materiale incompatibile

Oxidanti puternici.

10.6. Produsi de descompunere periculosi

Oxizi de azot. Oxizi de fosfor. Monoxid de carbon si dioxid de carbon.

SECTIUNEA 11: Informatii toxicologice

11.1. Informatii privind efectele toxicologice

Toxicitate Acuta

Inhalarea	Poate cauza iritarea cailor respiratorii.
Contactul cu Ochii	Cauzeaza iritarea ochilor.
Contact cu Pielea	Poate cauza iritarea slaba a pielii.
Inghitire	Iritarea gurii, gatului si stomacului.

Efecte Cronice/Carcinogenicitate Nu sunt date disponibile care sa indice ca produsul sau componentele prezente in concentratie mai mare de 0.1% sunt pericole cronice pentru sanatate.

Date toxicologice pentru componentele

Substante	Numar CAS	LD50 oral	LD50 cutanat	LC50 Inhalare
Persulfat de sodiu	7775-27-1	895 mg/kg (Rat) 1200 mg/kg 930 mg/kg 1000 mg/kg 920 mg/kg	> 10000 mg/kg (Rat)	19.0 mg/L (Rat) 4h > 5.1 mg/L (Rat) 4h
Clorura de calciu, dihidrat	10035-04-8	2301 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	Nu exista date disponibile
Tiosulfat de sodiu	7772-98-7	> 2000 mg/kg bw (rat) (similar substance)	> 2000 mg/kg (rat, similar substance)	> 2.6 mg/L (Rat, 4 hr, aerosol, similar substance)

Substante	Numar CAS	Corodare/iritare a pielii
Persulfat de sodiu	7775-27-1	Cauzeaza iritarea pielii. (iepure)
Clorura de calciu, dihidrat	10035-04-8	Cauzeaza iritarea usoara a pielii (iepure)
Tiosulfat de sodiu	7772-98-7	Ne-iritant pentru piele (iepure) (substan?e similare) Neiritant pentru piele la iepuri.

Substante	Numar CAS	Lezarea grava/iritarea ochilor
Persulfat de sodiu	7775-27-1	Provoaca iritatia severa a ochilor (iepure)
Clorura de calciu, dihidrat	10035-04-8	Poate cauza iritarea moderata spre severa a ochilor. (iepure)
Tiosulfat de sodiu	7772-98-7	Nu irita ochii (iepure) (substan?e similare) Ne-iritant pentru ochii iepurelui.

Substante	Numar CAS	Sensibilizarea Pielii
Persulfat de sodiu	7775-27-1	Sensibilizator al pielii la cobai
Clorura de calciu, dihidrat	10035-04-8	Nu sunt disponibile date de calitate satisfacatoare.
Tiosulfat de sodiu	7772-98-7	Nu cauzeaza sensibilizarea animalelor de laborator (?oarece) (substan?e similare)

Substante	Numar CAS	Sensibilizarea Cailor Respiratorii
Persulfat de sodiu	7775-27-1	Poate cauza sensibilizare in urma inhalarii
Clorura de calciu, dihidrat	10035-04-8	Nu sunt informatii disponibile
Tiosulfat de sodiu	7772-98-7	Nu sunt informatii disponibile

Substante	Numar CAS	Efecte Mutagenice
Persulfat de sodiu	7775-27-1	Testele in vitro nu au aratat efecte mutagenice Testele in vivo nu au aratat efecte mutagenice
Clorura de calciu, dihidrat	10035-04-8	Testele in vitro nu au aratat efecte mutagenice
Tiosulfat de sodiu	7772-98-7	Testele in vitro nu au aratat efecte mutagenice Testele in vivo nu au aratat efecte mutagenice (substan?e similare)

Substante	Numar CAS	Efecte Cancerigene
Persulfat de sodiu	7775-27-1	Nu s-au constatat efecte cancerigene la animalele supuse experimentelor (substan?e similare)
Clorura de calciu, dihidrat	10035-04-8	Nu exista informatii disponibile
Tiosulfat de sodiu	7772-98-7	Nu s-au constatat efecte cancerigene la animalele supuse experimentelor (substan?e similare)

Substante	Numar CAS	Toxicitate pentru reproducere
Persulfat de sodiu	7775-27-1	Testarea pe animale nu a dovedit nici un efect asupra fertilitatii Nu a evidentiat efecte teratogene la experimentele pe animale. (substan?e similare)
Clorura de calciu, dihidrat	10035-04-8	Testarea pe animale nu a dovedit nici un efect asupra fertilitatii Nu a evidentiat efecte teratogene la experimentele pe animale.
Tiosulfat de sodiu	7772-98-7	Testarea pe animale nu a dovedit nici un efect asupra fertilitatii Nu a evidentiat efecte teratogene la experimentele pe animale. (substan?e similare)

Substante	Numar CAS	STOT - o singura expunere
Persulfat de sodiu	7775-27-1	Poate cauza iritarea cailor respiratorii.
Clorura de calciu, dihidrat	10035-04-8	La studiile pe animale cu concentratii care necesita clasificarea nu s-a observat o toxicitate semnificativa.
Tiosulfat de sodiu	7772-98-7	La studiile pe animale cu concentratii care necesita clasificarea nu s-a observat o toxicitate semnificativa. (substan?e similare)

Substante	Numar CAS	STOT - expunere repetata
Persulfat de sodiu	7775-27-1	La studiile pe animale cu concentratii care necesita clasificarea nu s-a observat o toxicitate semnificativa.
Clorura de calciu, dihidrat	10035-04-8	La studiile pe animale cu concentratii care necesita clasificarea nu s-a observat o toxicitate semnificativa.
Tiosulfat de sodiu	7772-98-7	La studiile pe animale cu concentratii care necesita clasificarea nu s-a observat o toxicitate semnificativa. (substan?e similare)

Substante	Numar CAS	Pericol de aspiratie
Persulfat de sodiu	7775-27-1	Nu se aplica
Clorura de calciu, dihidrat	10035-04-8	Nu se aplica
Tiosulfat de sodiu	7772-98-7	Nu se aplica

SECTIUNEA 12: Informatii ecologice

12.1. Toxicitate

Substante	Numar CAS	Toxicitate pentru Alge	Toxicitate asupra Pestilor	Toxicitate pentru Microorganisme	Toxicitate la nevertebratele
Persulfat de sodiu	7775-27-1	EC50 (72h) 116 mg/L (biomass) (Pseudokirchnerella subcapitata)	LC50 (96h) 163 mg/L (Oncorhynchus mykiss)	EC10 (18h) 36 mg/L (Pseudomonas putida)	EC50 (48h) 133 mg/L (Daphnia magna)
Clorura de calciu, dihidrat	10035-04-8	EC50 (72h) 2900 mg/L (Pseudokirchnerella subcapitata) EC50 (72h) >4000 mg/L (Pseudokirchnerella subcapitata)	LC50 (96h) 4630 mg/L (Pimephales promelas)	NOEC 2000 mg/L (Activated sludge, industrial)	EC50 (48h) 1285 mg/L (Daphnia magna) EC16 (21d) 320 mg/L (Daphnia magna) ErC50 (21d) 610 mg/L (Daphnia magna) LC50 (48h) 1285 mg/L (Daphnia magna) LC50 (48h) 2400 mg/L (Daphia magna)
Tiosulfat de sodiu	7772-98-7	EC50 (72 h) >100 mg/L (Pseudokirchnerella subcapitata)	LC50 (96 h) =510 mg/L (Lepomis macrochirus)	Nu sunt informatii disponibile	LC50 (96 h) =80 mg/L (Mysidopsis bahia) EC50 (48 h) =230 mg/L (Daphnia magna) NOEC (21 d) >10 mg/L (Daphnia magna)

12.2. Persistenta si degradabilitate

Substante	Numar CAS	Persistenta si degradabilitate
Persulfat de sodiu	7775-27-1	The methods for determining biodegradability are not applicable to inorganic substances.
Clorura de calciu, dihidrat	10035-04-8	The methods for determining biodegradability are not applicable to inorganic substances.
Tiosulfat de sodiu	7772-98-7	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Potential de bioacumulare

Substante	Numar CAS	Log Pow
Persulfat de sodiu	7775-27-1	Nu exista informatii disponibile
Clorura de calciu, dihidrat	10035-04-8	Nu exista informatii disponibile
Tiosulfat de sodiu	7772-98-7	Nu exista informatii disponibile

12.4. Mobilitate în sol

Substante	Numar CAS	Mobilitate în sol
Persulfat de sodiu	7775-27-1	Nu sunt informatii disponibile
Clorura de calciu, dihidrat	10035-04-8	Nu sunt informatii disponibile
Tiosulfat de sodiu	7772-98-7	Nu sunt informatii disponibile

12.5. Rezultatele evaluarii PBT si vPvB

Acest amestec nu contine nicio substanta considerata a fi persistenta, bioacumulatoare, nici toxica (PBT). Acest amestec nu contine nicio substanta considerata a fi foarte persistenta, nici foarte bioacumulatoare (vPvB).

Substante	Evaluare PBT si vPvB
Persulfat de sodiu	Nu se aplica
Clorura de calciu, dihidrat	Nu se aplica
Tiosulfat de sodiu	Nu se aplica

12.6. Alte efecte adverse

Informatii despre Efectele asupra Sistemului Endocrin

Acest produs nu contine nicio substanta cunoscuta sau suspectata a avea efecte asupra sistemului endocrin.

SECTIUNEA 13: Consideratii privind eliminarea

13.1. Metode de tratare a deseurilor

Metode de eliminare Eliminarea deseurilor se va face in conformitate cu reglementarile federale, statale si locale.

Ambalaje Contaminate Respectati toate reglementarile nationale sau locale.

SECTIUNEA 14: Informatii referitoare la transport

IMDG/IMO

Numarul ONU	Nerestrictionat
Denumirea corecta ONU pentru expeditie	Nerestrictionat
Clasa(e) de pericol la transport	Nu se aplica
Grupa de Ambalare:	Nu se aplica
Pericole pentru Mediul Înconjurator	Nu se aplica

RID

Numarul ONU	Nerestrictionat
Denumirea corecta ONU pentru expeditie	Nerestrictionat
Clasa(e) de pericol la transport	Nu se aplica
Grupa de Ambalare:	Nu se aplica
Pericole pentru Mediul Înconjurator	Nu se aplica

ADR

Numarul ONU	Nerestrictionat
Denumirea corecta ONU pentru expeditie	Nerestrictionat
Clasa(e) de pericol la transport	Nu se aplica
Grupa de Ambalare:	Nu se aplica
Pericole pentru Mediul Înconjurator	Nu se aplica

IATA/ICAO

Numarul ONU	Nerestrictionat
Denumirea corecta ONU pentru expeditie	Nerestrictionat
Clasa(e) de pericol la transport	Nu se aplica
Grupa de Ambalare:	Nu se aplica
Pericole pentru Mediul Înconjurator	Nu se aplica

14.1. Numarul ONU	Nerestrictionat
14.2. Denumirea corecta ONU pentru expeditie	Nerestrictionat
14.3. Clasa(e) de pericol la transport	Nu se aplica
14.4. Grupa de Ambalare:	Nu se aplica
14.5. Pericole pentru Mediul Înconjurator	Nu se aplica
14.6. Precautii speciale pentru utilizatori	Niciunul

14.7. Transport în vrac, în conformitate cu anexa II la MARPOL 73/78 si Codul IBC Nu se aplica

SECTIUNEA 15: Informatii de reglementare

15.1. Regulamente/legislatie în domeniul securitatii, sanatatii si al mediului specifice (specifica) pentru substanta sau amestecul în cauza

Inventare Internationale

EINECS (Inventarul European al Substantelor Chimice Existente Introduse pe Piata)	Acest produs nu respecta EINECS
Inventarul TSCA (Legea pentru Controlul Substantelor Toxice) al SUA	Toate componentele sunt listate in inventar sunt scutite.
Lista substantelor indigene în Canada (DSL)	Produsul contine unul sau mai multe componente nelistate in inventar.

Legenda
TSCA - Inventarul din Sectiunea 8(b) din Legea Statelor Unite privind Controlului Substantelor Toxice
EINECS/ELINCS - Inventarul European al Substantelor Chimice Comerciale Existente / Lista UE a Substantelor Chimice Notificate
DSL/NDSL - Lista Canadiana a Substantelor Domestice / Lista Substantelor Non-Domestice

Clasa de pericol pentru apa (WGK) Nedeterminat

15.2. Evaluarea securitatii chimice
Nu sunt informatii disponibile

SEC?IUNEA 16: Alte informa?ii

Textul complet al Propozitiilor de pericol H la care se face referire in sectiunile 2 si 3
H272 - Poate intensifica un incendiu; oxidant
H302 - Nociv daca este inghitit
H315 - Cauzeaza iritarea pielii
H317 - Poate cauza o reactie alergica a pielii
H319 - Cauzeaza iritarea serioasa a ochilor
H334 - Poate cauza alergie sau simptome de astm sau dificultati in respiratie daca este inhalat
H335 - Poate cauza iritarea cailor respiratorii

Cheia sau legenda abrevierilor si acronimelor utilizate în fisa cu date de securitate
bw – greutate corporala
CAS – Serviciul de catalogare a substan?elor chimice
CLP – REGULAMENTUL (CE) nr. 1272/2008 AL PARLAMENTULUI EUROPEAN ?I AL CONSILIULUI privind clasificarea, etichetarea ?i ambalarea substan?elor ?i a amestecurilor
CE – Comisia Europeana
EC10 – Concentra?ie efectiva 10%
EC50 – Concentra?ie efectiva 50%
CEE – Comunitatea Economica Europeana
ErC50 – Rata de cre?tere a concentra?iei efective 50%
Cod IBC – Codul interna?ional pentru construc?ia ?i echiparea navelor care transporta produse chimice periculoase în vrac
LC50 – Concentra?ie letala 50%
LD50 – Doza letala 50%
LL0 – Lethal Loading 0%
LL50 – Lethal Loading 50%
MARPOL – International Convention for the Prevention of Pollution from Ships
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NOEC – No Observed Effect Concentration
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
PC – Chemical Product category
PEL – Permissible Exposure Limit
ppm – parts per million
PROC – Process category
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
STEL – Short Term Exposure Limit
SU – Sector of Use category

Referinte cheie din literatura si surse de date
www.ChemADVISOR.com/

Data Reviziei: 23-sep.-2015
Nota Revizuire
Sectiuni actualizate ale FTS:
1

This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010

Clauza de exonerare
Aceste informatii sunt furnizate fara garantie, exprimata sau implicita, in ceea ce priveste precizia sau completitudinea. Informatiile sunt obtinute din diverse surse ce includ fabricantul si alte terte parti. S-ar putea ca informatiile sa nu fie valabile in toate conditiile si nici daca acest material este utilizat in combinatie cu alte materiale sau in orice proces. Determinarea finala

a oportunitatii oricarui material este doar responsabilitatea utilizatorului.

Sfarsitul Fisei Tehnice de Securitate

Annex to SDS					
Substante	**Numar CAS**	**Categorii de proces**	**Categoria de deversari in mediul inconjurator**	**Categorie/categorii de produse**	**Sector de utilizare**
Persulfat de sodiu	7775-27-1	PROC4; PROC8b; PROC15	ERC6a; ERC6b; ERC6d	-	SU2a; SU2b; SU3
Clorura de calciu, dihidrat	10035-04-8	PROC4; PROC8b; PROC15	ERC2; ERC4	-	SU2a; SU2b; SU3

Scenariu de expunere
Aplicarea de substante lichide în câmpuri petrolifere terestre/marine sau de substante solide/sub forma de pulbere în vrac.

1. Title Section

Utilizare

A se utiliza în procese discontinue, când apar situatii de posibila expunere.
Transfer de la nava de sprijin la instalatie.
Transfer din vrac/IBC (container de material în vrac)/butoi în depozitul de la amplasament, transfer în vederea prelucrarii.
Transfer din canistra/bidon/conducta catre prelucrare. Esantionare si testare în interiorul amplasamentului, de ex. QC

Sector de utilizare

SU2a - Minerit (exclusiv exploatare maritima)
SU2b - Industrii offshore
SU3 - Utilizari industriale

lucrator

Categorii de proces

PROC4 - Utilizare in proces discontinuu si alte procese (sinteze) in care apare posibilitatea expunerii
PROC8b - Transfer de substanta sau preparate (încarcare/descarcare) din/în vase recipiente/mari în cadrul unitatilor specializate
PROC15 - Utilizare ca reactiv de laborator

Categorie/categorii de produse
Nu se aplica

Categorii de articole
Nu se aplica

De mediu

Categorie/categorii de eliberare în mediul înconjurator

ERC2 - Formularea preparatelor (amestecuri)
ERC4 - Utilizarea industriala a auxiliarelor de procesare în cadrul proceselor si produselor, care nu devin componente ale articolelor
ERC6a - Utilizare industriala ce are ca rezultat fabricarea altei substante (utilizarea intermediarilor)
ERC6b - Utilizarea industriala a auxiliarelor de procesare reactive
ERC6d - Utilizarea industriala a regulatorilor de proces pentru procesele de polimerizare din productia rasinilor, cauciucurilor si polimerilor

2. Conditions of use affecting exposure

Controlul expunerii mediului

Substante	Controlul expunerii mediului
Clorura de calciu, dihidrat	Substanta nu este periculoasa pentru mediu.

Cantitate utilizata, frecventa si durata utilizarii (sau de la durata de exploatare)

Substante	Cantitatea zilnica pentru fiecare locatie	Tonaj anual la nivel de amplasament	Frecventa	Durata utilizarii
Persulfat de sodiu	-	40000	Eliberare continua.	300 d/y
Clorura de calciu, dihidrat	-	-	-	-

Conditii si masuri tehnice si organizatorice

Substante	Conditii si masuri tehnice si organizatorice
Persulfat de sodiu	Eliberarea substantei poate fi, practic, exclusa. Substanta este consumata complet în timpul reactiei chimice. În produsul final nu ramâne substanta nereactionata.
Clorura de calciu, dihidrat	Preveniti patrunderea în cursuri de ape, canalizari, subsoluri sau spatii închise.

Conditii si masuri referitoare la statia de tratare a apelor reziduale

Substante	Conditii si masuri referitoare la statia de tratare a apelor reziduale
Clorura de calciu, dihidrat	Nu este cazul

Substante	Debit prevazut în statia de tratare a apelor reziduale m3/zi	Eficienta de îndepartare a emisiilor aferente apelor uzate	Nivelul estimat de eliminare a produsului din apele uzate prin tratarea apelor reziduale municipale
Persulfat de sodiu	2000	-	-

Conditii si masuri referitoare la tratarea deseurilor (inclusiv deseurile acestui articol)

Substante	Conditii si masuri referitoare la tratarea deseurilor (inclusiv deseurile acestui articol)
Persulfat de sodiu	În mod normal, nu exista deseuri. Nu ramâne persulfat nereactionat.
Clorura de calciu, dihidrat	Eliminati continutul/recipientul, în conformitate cu reglementarile locale/regionale/nationale/internationale.

Alte conditii care afecteaza expunerea mediului

Substante	Alte conditii care afecteaza expunerea mediului
Persulfat de sodiu	Substanta este consumata complet în timpul utilizarii si, prin urmare, nu exista eliberare în apele uzate si în sol.
Clorura de calciu, dihidrat	Nu exista informatii disponibile

Controlul expunerii lucratorului

Caracteristicile produsului (articolului)

Stare Fizica: Lichid
Presiunea Vaporilor: Nu exista informatii disponibile
Grad de prafuire: Nu se aplica

Substante	Limitati continutul de substanta în produs la
Persulfat de sodiu	100%
Clorura de calciu, dihidrat	100%

Cantitatea utilizata (sau continuta în articole), frecventa si durata utilizarii/expunerii

Substante	Cantitati utilizate (zilnic)	Acopera expuneri zilnice de pâna la (ore/zi)	Frecventa (zile/an)
Persulfat de sodiu	-	8	300
Clorura de calciu, dihidrat	-	8	-

Conditii si masuri tehnice si organizatorice

Substante	Conditii si masuri tehnice si organizatorice
Persulfat de sodiu	Utilizati cu un sistem local de ventilatie prin aspiratie. Ventilatie locala prin aspiratie - eficienta de minimum 90 %. Pastrati recipientul închis etans. Pastrati într-un loc uscat. Evitati contactul cu baze. Protejati de umiditate. A se pastra departe de materiale combustibile. Depozitati departe de alimente. Depozitati departe de metale grele. Depozitati departe de agenti reducatori.
Clorura de calciu, dihidrat	Asigurati-va ca transferurile de material se efectueaza în conditii de izolare sau de ventilatie prin aspiratie. Asigurati o ventilatie adecvata.

Conditii si masuri referitoare la protectia personala, igiena si evaluarea sanatatii

Substante	Conditii si masuri referitoare la protectia personala, igiena si evaluarea sanatatii
Persulfat de sodiu	Utilizati echipament adecvat de protectie a ochilor. Purtati manusi adecvate, testate în conformitate cu standardul EN374. Consultati sectiunea 8 a fisei cu date de securitate.
Clorura de calciu, dihidrat	Utilizati echipament adecvat de protectie a ochilor. Purtati manusi adecvate, testate în conformitate cu standardul EN374. Consultati sectiunea 8 a fisei cu date de securitate.

Alte conditii care afecteaza expunerea lucratorilor

Substante	Alte conditii care afecteaza expunerea lucratorilor
Persulfat de sodiu	Asigurati instruirea de baza a angajatilor pentru a preveni/reduce expunerile. Evitati contactul cu pielea si îmbracamintea. Volumul respirator în conditiile de utilizare: 10 m3/8 ore pe zi Suprafata de contact potential cu pielea în conditii de utilizare: ambele mâini si fata (480 cm2).
Clorura de calciu, dihidrat	Presupune o temperatura a procesului de pâna la 20 °C. PROC4 + PROC8b: Utilizare în spatii interioare si exterioare. PROC15: Utilizare în spatii interioare.

Recomandari suplimentare de bune practici. Obligatiile prevazute de articolul 37(4) din REACH nu se aplica

Substante	Recomandari suplimentare de bune practici. Obligatiile prevazute de articolul 37(4) din REACH nu se aplica
Persulfat de sodiu	Spalati mainile dupa utilizare. Spalati imbracamintea contaminata inainte de refolosire. Mentineti o buna curatenie in zonele de depozitare si lucru pentru a preveni acumularea de praf. Inchideti recipientul, cand nu este folosit.
Clorura de calciu, dihidrat	Spalati mainile dupa utilizare. Spalati imbracamintea contaminata inainte de refolosire. Trebuie aplicate masuri personale numai în caz de posibila expunere.

3. Exposure estimation and reference to its source

Eliberare în mediu si expunerea mediului

Substante	Eliberare în mediu si expunerea mediului
Clorura de calciu, dihidrat	Nu se aplica Substanta nu este periculoasa pentru mediu.

Substante	Deversare în apa	Eliberare în aer	Scurgeri în sol	Metoda de estimare a eliberarii	Factor de dilutie locala în apa dulce	Factor de dilutie locala în apa marina
Persulfat de sodiu	0	ERC6a: 54.8 kg/d ERC6b: 11 kg/d ERC6d: 38.4 kg/d	0	EUSES	10	100

Substante	Obiectiv de protectie	Estimare expunere (pe baza: EUSES 2.1.2)	Unitate	RCR
Persulfat de sodiu	Instala?ie de tratare a apelor reziduale	0	mg/kg dw	<1
	Apa dulce	0.0104	mg/L	<1
	Apa sarata	9.66E-04	mg/L	<1
	Sediment (apa dulce)	8.82E-03	mg/kg dw	<1
	Sediment (apa sarata)	8.22E-04	mg/kg dw	<1
	Sol agricol	ERC6a: 0.0103	mg/kg greutate corporala/zi	<1
	Pasuni si fânete	ERC6b: 2.62E-03 ERC6d: 7.39E-03		

Expunerea lucratorului

Substante	Cale de expunere si tipuri de efecte	Estimare a expunerii PROC4	Metoda de evaluare	RCR
Persulfat de sodiu	Expunere pe termen lung - efecte sistemice, inhalare mg/m³	0.3500	ECETOC TRA	0.17
	Expunere pe termen lung - efecte sistemice, cutanat mg / kg greutate corporala/zi	0.4799		0.026
	Cai combinate, sistemice, pe termen lung mg/kg greutate corporala/zi	0.0757		<1
Clorura de calciu, dihidrat	Expunere pe termen lung - efecte locale, Inhalare mg / m³	1.00	Nu exista informatii disponibile	0.20
	Expunere pe termen scurt - efecte locale, Inhalare mg/m³	2.00		0.20

Substante	Cale de expunere si tipuri de efecte	Estimare a expunerii PROC8b	Metoda de evaluare	RCR
Persulfat de sodiu	Expunere pe termen lung - efecte sistemice, inhalare mg/m³	0.0250	ECETOC TRA	0.012
	Expunere pe termen lung - efecte sistemice, cutanat mg / kg greutate corporala/zi	0.0342		0.0019
	Cai combinate, sistemice, pe termen lung mg/kg greutate corporala/zi	0.0378		<1
Clorura de calciu, dihidrat	Expunere pe termen lung - efecte locale, Inhalare mg / m³	0.35	Nu sunt informatii disponibile	0.70
	Expunere pe termen scurt - efecte locale, Inhalare mg/m³	0.70		0.70

Substante	Cale de expunere si tipuri de efecte	Estimare a	Metoda de evaluare	RCR

		expunerii PROC15		
Persulfat de sodiu	Expunere pe termen lung - efecte sistemice, inhalare mg/m³ Expunere pe termen lung - efecte sistemice, cutanat mg / kg greutate corporala/zi Cai combinate, sistemice, pe termen lung mg/kg greutate corporala/zi	=<0.5 =<1.92 =<1.9251	ECETOC TRA	=<0.24 =<0.105 <1
Clorura de calciu, dihidrat	Expunere pe termen lung - efecte locale, Inhalare mg / m³ Expunere pe termen scurt - efecte locale, Inhalare mg/m³	1.00 2.00	Nu exista informatii disponibile	0.20 0.20

4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Metoda de scalare: Pentru scalare, consultati: http://www.ecetoc.org/tra, ECETOC TRA worker v2.3, versiunea modificata.

Parametri de scalare: Un DU (Utilizator din aval) lucreaza în limitele stabilite de ES (scenariul de expunere) în cazul în care masurile propuse de gestionare a riscurilor, asa cum sunt descrise mai sus, sunt îndeplinite sau daca utilizatorul din aval poate demonstra pe cont propriu ca masurile implementate de gestionare a riscurilor sunt adecvate.

Schlumberger

MATERIAL SAFETY DATA SHEET

(USA)

(Complies with USA OSHA 29 CFR 1910.1200 and ANSI Z 400.1)

Version: 3 *Revision date:* 10 August 2010

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product Code: **L058**

Product Name: **Iron Stabilizer L58**

Company Identification: **Schlumberger Technology Corporation**
110 Schlumberger Drive
Sugar Land, Texas 77478, USA
Telephone: 1-281-285-7873

Emergency Telephone Number: **USA: +1-281-595-3518 (24hr)**

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Main physical hazards:	No classified physical hazards.
Main health hazards:	May cause mechanical irritation to eyes. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.
Other Information:	Agitation may generate some dust. Suspended dust may present a dust explosion hazard.
Precautions:	Avoid dust formation.
HMIS classification:	Health: **0** Flammability: **1** Physical hazard: **0**

Form: Powder **Color:** White **Odor:** None

Principle routes of exposure:
Eye contact. Skin contact. Respiratory system.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %- Range
Sodium erythorbate	6381-77-7	60 - 100

4. FIRST AID MEASURES

Eye contact:	Rinse with plenty of water. Seek medical attention if irritation occurs.
Skin contact:	Rinse with water.
Ingestion:	Obtain medical attention. Never give anything by mouth to an unconscious person.
Inhalation:	Move to fresh air. Consult a physician if necessary.

5. FIRE-FIGHTING MEASURES

Fire hazard: Combustible material. Dust may form explosive mixture in air.

Flash point: Not applicable.
Autoignition temperature: No data available.
Flammability limits in air:
Lower: No information available.
Upper: No information available.
Oxidizing properties: None.

Suitable extinguishing media:
Water Fog, Alcohol Foam, CO2, Dry Chemical.

Extinguishing media which must not be used for safety reasons:
None known.

Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases:
When heated strongly or burned, oxides of carbon and harmful organic chemical fumes are released.

Special protective equipment for firefighters:
Wear protective fire fighting clothing and avoid breathing vapors. Use self-contained breathing apparatus in closed areas.

NFPA rating:
Health: **0**
Flammability: **1**
Instability: **0**
Special: **None**

6. ACCIDENTAL RELEASE MEASURES

Main physical hazards: No classified physical hazards.
Other Information: Agitation may generate some dust. Suspended dust may present a dust explosion hazard.
Personal precautions: Wear suitable protective equipment.
Methods for cleaning up: Shovel into suitable container for disposal. After cleaning, flush away traces with water.
Environmental precautions: Prevent further leakage or spillage.

7. HANDLING AND STORAGE

Handling:
Precautions: Avoid dust formation.
Safe handling advice: Provide appropriate exhaust ventilation at places where dust is formed.
Technical measures/ storage conditions: Keep containers tightly closed in a dry, cool and well-ventilated place.
Packaging requirements: Polyethylene bag or drum with polyethylene liner.
Incompatible products: Oxidizing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure: Enclosure of the process. Ensure adequate ventilation. Other suitable methods.
Hygiene measures: Exercise reasonable care and cleanliness.

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment. If dust or mist is generated use NIOSH approved respirator with dust and mist protection (3M 8210).
Eye protection: Tightly fitting safety goggles.
Hand protection: Rubber or plastic gloves.
Skin and body protection: Clean, body-covering clothing.

Occupational Exposure Limits

	ACGIH - TLVs			OSHA - PELs		
Component	**TWA / Ceiling**	**STEL**	**ACGIH - Skin**	**TWA / C**	**STEL**	**Final PELs - Skin**
Sodium erythorbate	-	-	-	-	-	-

Particles Not Otherwise Regulated/Specified [PNOR or PNOS] (insoluble or poorly soluble):
- OSHA PEL's for Inert or Nuisance Dust are covered by PNOR limits: respirable fraction: 5 mg/m³; total dust 15 mg/m³.
- ACGIH PNOS Recommendations: airborne concentrations should be kept below 3 mg/m³, respirable particulate, and 10 mg/m³, inhalable particles.

9. PHYSICAL AND CHEMICAL PROPERTIES

Chemical characterization: Reducer
Fire hazard: Combustible material. Dust may form explosive mixture in air.
Form: Powder
Color: White
Odor: None
Odor threshold: Not applicable.
pH: 5.0 - 8.0
pH concentration: @ 50 g/l
Boiling point/range: Decomposes 200°C / 392 °F
Flash point: Not applicable.
Flammability limits in air:
Lower: No information available.
Upper: No information available.
Bulk density: No information available.
Melting point/range: No data available.
Decomposition temperature: 200 °C / 392 °F
Solubility:
Water solubility: 153 g/l (@ 25°C)
Fat solubility: Insoluble.
Partition coefficient (n-octanol/water): See also SECTION 12
Relative density: No information available
Vapor pressure: Not applicable.
Vapor density: Not applicable.
Viscosity: Not applicable.
Evaporation rate: Not applicable.
% Volatile (VOC): None.

10. STABILITY AND REACTIVITY

Stability:
Stable at normal conditions.

Conditions to avoid:
None known.

Incompatibility with other substances:
Oxidizers.

Hazardous decomposition products:
When heated strongly or burned, oxides of carbon and harmful organic chemical fumes are released.

Hazardous polymerization:
Hazardous polymerization does not occur.

Other Information:
Agitation may generate some dust. Suspended dust may present a dust explosion hazard.

11. TOXICOLOGICAL INFORMATION

PRODUCT TOXICOLOGICAL INFORMATION

Acute Health Hazard

Eye contact: May cause mechanical irritation.
Skin contact: No effect expected. Prolonged or repeated contact may cause mild irritation.
Ingestion: Accidental ingestion of small amounts is not expected to cause adverse effects. Swallowing large amounts may be harmful.
Inhalation: Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.
Sensitization - lung: Not known to cause allergic reaction.
Sensitization - skin: Not known to cause allergic reaction.

Chronic Health Hazard

Carcinogenic effects: None known.
Mutagenic effects: None known.
Teratogenic effects: None known.
Reproductive toxicity: None known.
Target organ effects: No information available.

COMPONENT TOXICOLOGICAL INFORMATION

Component	Target Organ Effects	LD50 / LC50
Sodium erythorbate	-	> 5 g/kg (Oral LD50; Rat)

Component	IARC Group 1 or 2:	ACGIH - Carcinogens:	OSHA Listed Carcinogens	NTP:
Sodium erythorbate	-	-	-	-

12. ECOLOGICAL INFORMATION

PRODUCT INFORMATION

COMPONENT INFORMATION

Sodium erythorbate

Bioaccumulation: Does not bioaccumulate log Pow = <3
Persistence / degradability: 59 %. (28d; OECD306).
Crustacean toxicity: 48h LC50= 26 mg/l (Acartia tonsa)

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:
Dispose of by sanitary landfilling or other acceptable method in accordance with local regulations.

Contaminated packaging:
Send empty bags to sanitary landfill. Render other types of containers unuseable by puncturing or crushing and sanitary landfill unless prohibited by local regulations.

EPA RCRA Hazardous Waste Code:
None

14. TRANSPORT INFORMATION

DOT:

CERCLA RQ: None

Hazard class: Not regulated.
Proper shipping name: Not regulated
Label(s): None required.

IMDG/IMO

Shipping name: Not regulated.

UN number: None

ICAO/IATA

Shipping name: Not regulated.

UN number: None

TDG (Canada):

Shipping name: Not regulated.
PIN: None

Note 1:
For the applicable placard selection refer to the appropriate transport regulations; the selection may vary depending on the cargo size and categories of other hazardous materials in the cargo.

15. REGULATORY INFORMATION

International Chemical Inventories

USA, Toxic Substances Control Act inventory (TSCA):	This product complies with TSCA requirements.
IMPORTS, USA:	No import volume restrictions.
Canada, Domestic Substance List (DSL):	This product complies with DSL requirements.
IMPORTS, Canada:	No import volume restrictions.

U.S.A. Regulations

OSHA Hazard Communication Standard:
(Complies with USA OSHA 29 CFR 1910.1200 and ANSI Z 400.1)

EPA RCRA Hazardous Waste Code:
None

EPA, Sections 311 and 312 - Material Safety Data Sheet Requirements (40 CFR 370):

Immediate (Acute) Health Hazard:	None
Delayed (Chronic) Health Hazard:	None
Fire Hazard:	None
Sudden Release or Pressure Hazard:	None
Reactive Hazard:	None

EPA, Sections 313 - List of Toxic Chemicals (40 CFR 372):
This product contains the following substance(s), which appear(s) on the List of Toxic Chemicals:

Additional Regulatory Information

Sodium erythorbate

EPA, CERCLA Section 102a/103 Hazardous Substances (40 CFR 302.4): None
CERCLA/SARA - Hazardous Substances and their RQs: None
EPA, SARA TITLE III Section 304, Extremely Hazardous Substances (40 CFR 355.40): None
California Proposition 65: None

International Hazard Class

WHMIS Hazard Class:
Non-controlled product.

16. OTHER INFORMATION

Current references:

1. Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices. *American Conference of Governmental Industrial Hygienists, Cincinnati OH.*
2. IARC Monograms on the Evaluation of the Carcinogenic Risk of Chemicals to Man. *World Health Organization, International Agency for Research on Cancer. Geneva, Switzerland.*
3. Annual Report on Carcinogens. National Toxicology Program. *U.S. Department of Heath and Human Services, Public Health Service.*
4. NIOSH Registry of Toxic Effects of Chemical Substances (RTECS). *National Institute for Occupational safety and Health. Cincinnati, OH.*
5. LOLI Database.

Explanation of terms:

ACGIH: American Conference of Governmental Industrial Hygienist
ACGIH-TL: Threshold Limit Value
DSL: Domestic Substance List
HMIRC: Hazardous Materials Information Review Commission
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program
NIOSH: National Institute of Occupational Safety & Health
NIOSH-REL: Recommended Exposure Limit
OSHA: Occupational Safety & Health Administration
OSHA-PEL: Permissible Exposure Limit
TSCA: Toxic Substance Control Act (Inventory)

Occupational Exposure Limits indicators: TWA - Time Weighted Average; STEL - Short Term Limit; C - Ceiling Limit;units: [mg/m^3]

ACGIH Notations:
"Skin" refers to the potential significant contribution to the overall exposure by the cutaneous route, including mucous membranes and the eyes, either by contact with vapors or by direct skin contact with the substance.
"A" notation indicates carcinogenicity as follows:
ACGIH classification: A1 - Confirmed Human Carcinogen; A2 - Suspected Human Carcinogen; A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans; A4 - Not Classifiable as a Human Carcinogen; A5 - Not suspected as a Human Carcinogen.
"SEN" refers to the potential for an agent to product sensitization as confirmed by human and animal data.

Section(s) revised: 18

Prepared by: Chemical Regulatory Compliance (CRC)

Revision date: 10 August 2010

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End of the Material Safety Data Sheet

Schlumberger

Safety Data Sheet

(Compatible with ANSI Z400.1)

Version: 4 *Revision date* 07/Jun/2013

1. Identification of the substance/preparation and the company/undertaking

Product code **U066**

Product name **Mutual Solvent U66**

Use of the substance/preparation For industrial use only. Solvent in oilfield applications.

Company identification

Schlumberger Technology Corporation
110 Schlumberger Drive
Sugar Land, Texas 77478, USA
Telephone: 1-281-285-7873

Emergency telephone number **USA: +1-281-595-3518 (24hr)**

2. Hazards identification

Emergency Overview

Warning

Main physical hazards	combustible liquid.
Main health hazards:	Irritating to eyes and skin. Toxic by inhalation and in contact with skin. Toxic by ingestion. (Based on tests with laboratory animals). Inhalation of high vapor concentrations can cause CNS-depression and narcosis. aspiration hazard. Aspiration may cause pulmonary edema and pneumonitis.
Precautions	Keep away from heat, sparks, and flame. Keep container tightly closed. Avoid contact with the skin and the eyes. Do not breathe vapors or spray mist.
HMIS classification	Health 3 Flammability 2 Physical hazard 0

Physical State Liquid **Color** Colorless **Odor** Ether-like

Principle routes of exposure
Skin contact. Eye contact. Inhalation.

3. Composition/information on ingredients

Component	CAS-No	Weight % - range
2-butoxyethanol	111-76-2	60-100

4. First aid measures

Eye contact	Immediately flush eyes with water for 15 minutes while holding eyelids open. If symptoms persist, call a physician.
Skin contact	After contact with skin, wash immediately with plenty of soap and water for at least 15 minutes. If symptoms persist, call a physician.
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, minimize the risk of aspiration by properly positioning the affected person.
Inhalation	Move to fresh air. Obtain medical attention. If breathing has stopped, begin artificial respiration. Call a physician or Poison Control Centre immediately.

5. Fire-fighting measures

Fire hazard	combustible liquid.
Flash point	66 °C / 151 °F
Method	Pensky-Martens CC
Autoignition temperature	~ 240 °C / 464 °F
Flammability limits in air:	
Lower	1.1%
Upper	10.6%
Oxidizing properties	None.

Suitable extinguishing media
Extinguish with carbon dioxide, dry chemical, foam or waterspray.

Extinguishing media which must not be used for safety reasons
None known.

Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases
Combustible material. Thermal decomposition can lead to release of irritating gases and vapors.

Special protective equipment for firefighters
Wear protective fire fighting clothing and avoid breathing vapors. Use self-contained breathing apparatus in closed areas.

NFPA Rating

Health	**3**
Flammability	**2**
Instability	**0**
Special firefighting procedures	**Cool fire-exposed containers using water spray.**

6. Accidental release measures

Main physical hazards	combustible liquid.
Personal precautions	Keep away from heat, sparks, and flame. Do not breathe vapors or spray mist. Do not get on skin or clothing. Wash thoroughly after handling. Wear suitable protective equipment. See also section 8.

Methods for cleaning up Contain with dikes. Use explosion proof equipment to recover. Remove all sources of ignition. Soak up residual on inert absorbant (sand). Put in steel or plastic drum approved for flammables.

Environmental precautions Do not allow material to contaminate ground water system.

7. Handling and storage

Handling

Precautions Keep away from heat, sparks, and flame. Keep container tightly closed. Avoid contact with the skin and the eyes. Do not breathe vapors or spray mist.

Safe handling advice Wear suitable protective equipment.

Technical measures/ storage conditions Keep away from direct sunlight.

Packaging requirements Steel or high density polyethylene (HDPE) container approved for flammables. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Incompatible products Oxidizing agents.

8. Exposure controls/personal protection

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure Control the source. Enclosure of the process. Other suitable methods.

Hygiene measures Avoid contact with the skin and the eyes. Do not breathe vapors or spray mist. Keep airborne concentrations below exposure limits.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Use respirator with organic vapor protection (A, brown).

Eye protection Tightly fitting safety goggles.

Hand protection Impervious gloves. Neoprene. PVC.

Skin and body protection Chemical resistant apron.

Occupational exposure limits

	ACGIH - TLVs			OSHA - PELs		
Component	ACGIH TLV	STEL	Skin Notation	OSHA PEL	STEL	Final PELs - Skin

2-butoxyethanol	20 ppm	-	-	50 ppm TWA 240 mg/m³ TWA	-	Listed

Particles Not Otherwise Regulated/Specified [PNOR or PNOS] (insoluble or poorly soluble):
- OSHA PEL's for Inert or Nuisance Dust are covered by PNOR limits: respirable fraction: 5 mg/m³; total dust 15 mg/m³.
- ACGIH PNOS Recommendations: airborne concentrations should be kept below 3 mg/m³, respirable particulate, and 10 mg/m³, inhalable particles.

9. Physical and chemical properties

Chemical characterization	solvent.
Fire hazard	combustible liquid.
Physical State	Liquid
Color	Colorless
Odor	Ether-like
Odor threshold	No information available
pH	Not applicable
Boiling point/range	~ 170 °C / 338 °F
Flash point	66 °C / 151 °F
Method	Pensky-Martens CC.
Flammability limits in air:	
Lower	1.1%
Upper	10.6%
Bulk density	Not Applicable
Melting point/range	-70 °C / -94 °F
Decomposition temperature	> 242 °C / 468 °F
Solubility:	
Water solubility	Miscible with water.
Fat solubility	No information available
Partition coefficient (n-octanol/water)	See also section 12
Relative density	0.9 (@ 25°C)
Vapor pressure	0.1 kPa (@ 25°C)
Vapor density	4.1 (air = 1)
Viscosity	3 mPa.s (@ 25 °C)
Evaporation rate	No data available
% Volatile (VOC)	None

10. Stability and reactivity

Stability
Stable under recommended storage conditions.

Conditions to avoid
Keep away from heat, sparks, and flame.

Incompatibility with other substances
Oxidizers.

Hazardous decomposition products
When heated strongly or burned, oxides of carbon and harmful organic chemical fumes are released.

Hazardous polymerization
Hazardous polymerization does not occur.

11. Toxicological information

PRODUCT TOXICOLOGICAL INFORMATION

LD50/oral/rat = 470 mg/kg

Acute health hazard

Eye contact Irritant. May cause pain, redness, discomfort.

Skin contact Irritant; may cause pain, redness, dermatitis. Toxic in contact with skin. (Based on tests with laboratory animals).

Ingestion Toxic by ingestion. (Based on tests with laboratory animals). aspiration hazard. Aspiration may cause pulmonary edema and pneumonitis.

Inhalation Toxic by inhalation. (Based on tests with laboratory animals). May cause Central Nervous System (CNS) depression.

Sensitization - lung Not known to cause allergic reaction.

Sensitization - skin Not known to cause allergic reaction.

Toxicologically synergistic products More severe effects if alcohol is consumed.

Chronic health hazard

Carcinogenic effects Not known to cause cancer in humans.

Mutagenic effects See COMPONENT TOXICOLOGICAL INFORMATION below.

Teratogenic effects Not known to cause birth defects or have a deleterious effect on a developing fetus.

Reproductive toxicity Not known to adversely affect reproductive functions and organs.

Target organ effects See COMPONENT TOXICOLOGICAL INFORMATION below.

COMPONENT TOXICOLOGICAL INFORMATION

Component	Target organ effects	LD50 / LC50
2-butoxyethanol	liver, kidneys, lymphoid system, skin, blood, eyes, respiratory system, CNS, hematopoietic system	= 470 mg/kg (Oral LD50; Rat) = 2.21 mg/L (Inhalation LC50; Rat) 4 h = 2270 mg/kg (Dermal LD50; Rat) = 450 ppm (Inhalation LC50; Rat) 4 h

Component	IARC Group 1 or 2	ACGIH - Carcinogens	OSHA listed carcinogens	NTP
2-butoxyethanol	-	A3 - Confirmed animal carcinogen with unknown relevance to humans	-	-

Component	OTHER TOXICOLOGICAL INFORMATION
2-butoxyethanol	RTECS - Based on animal studies: Toxic by ingestion, inhalation, skin absorption. Dermal exposure produces central nervous system effects in laboratory animals. Inhalation of this chemical have been shown to produce effects on central nervous and lungs in laboratory animals. Spleen and lung effects were observed in laboratory animals after acute dermal exposure. Chronic toxicity hazard: may cause blood and liver damage, based on animal evidence. Effects of hemolysis of red blood cells were observed in animal studies also after acute exposure to 2-butoxyethanol by ingestion, inhalation or dermal exposure.

12. Ecological information

Product information

Aquatic toxicity This product has no known eco-toxicological effects. See component information below.

Component information

2-butoxyethanol

Bioaccumulation	Does not bioaccumulate
Persistence / degradability	Biodegradable.
Crustacean toxicity	48h LC50= 530 mg/l (Acartia tonsa)
Freshwater fish species data	2950 mg/L LC50 (Lepomis macrochirus) = 96 h 1490 mg/L LC50 (Lepomis macrochirus) = 96 h
Water flea data	= 1698 - 1940 mg/L (LC50; Daphnia magna) = 1720 mg/L (EC50; water flea)

13. Disposal considerations

Waste from residues / unused products

Treat as hazardous waste. Dispose of in accordance with local regulations.

Contaminated packaging

Dispose of in accordance with local regulations. If reusable containers are used, send them back to the product supplier, after the required rinsing.

14. Transport information

DOT

CERCLA RQ	Not Established
Packing size	**< 119 gals**
Proper shipping name	Not regulated
Label(s)	None required
Packing size	**> 119 gals**
UN/NA Number	NA 1993
Hazard class	Combustible liquid
Proper shipping name	NA 1993, Combustible liquid, n.o.s. (contains 2-butoxyethanol), PG III
Label(s)	None required

IMDG/IMO:

Shipping name	Not regulated
UN number	None

ICAO/IATA:

Shipping name	Not regulated
UN number	None

TDG (Canada):

Shipping name	Not regulated
PIN	None

Note 1:
For the applicable placard selection refer to the appropriate transport regulations; the selection may vary depending on the cargo size and categories of other hazardous materials in the cargo.

15. Regulatory information

International inventories

USA (TSCA)	Complies
IMPORTS, USA	No import volume restrictions.
Canada (DSL)	Complies
IMPORTS, Canada	No import volume restrictions.

16. Other information

Current references

1. Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices. *American Conference of Governmental Industrial Hygienists, Cincinnati OH.*
2. IARC Monograms on the Evaluation of the Carcinogenic Risk of Chemicals to Man. *World Health Organization, International Agency for Research on Cancer. Geneva, Switzerland.*
3. Annual Report on Carcinogens. National Toxicology Program. *U.S. Department of Heath and Human Services, Public Health Service.*
4. NIOSH Registry of Toxic Effects of Chemical Substances (RTECS). *National Institute for Occupational safety and Health. Cincinnati, OH.*
5. LOLI Database.

Explanation of terms

ACGIH: American Conference of Governmental Industrial Hygienist
ACGIH-TL: Threshold Limit Value
DSL: Domestic Substance List
HMIRC: Hazardous Materials Information Review Commission
IARC: International Agency for Research on Cancer
NFPA: National Fire Protection Association
NTP: National Toxicology Program
NIOSH: National Institute of Occupational Safety & Health
NIOSH-REL: Recommended Exposure Limit
OSHA: Occupational Safety & Health Administration
OSHA-PEL: Permissible Exposure Limit
TSCA: Toxic Substance Control Act (Inventory)

Occupational Exposure Limits indicators: TWA - Time Weighted Average; STEL - Short Term Limit; C - Ceiling Limit;units: [mg/m^3]

ACGIH Notations:
"Skin" refers to the potential significant contribution to the overall exposure by the cutaneous route, including mucous membranes and the eyes, either by contact with vapors or by direct skin contact with the substance.
"A" notation indicates carcinogenicity as follows:
ACGIH classification: A1 - Confirmed Human Carcinogen; A2 - Suspected Human Carcinogen; A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans; A4 - Not Classifiable as a Human Carcinogen; A5 - Not suspected as a Human Carcinogen.
"SEN" refers to the potential for an agent to product sensitization as confirmed by human and animal data.

Section(s) revised	New
Prepared by	Global Chemical Regulatory Compliance (GCRC).
Revision date	07/Jun/2013

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End of the Material Safety Data Sheet

SDS no. J589
Version 3
Revision date 18-Oct-2017
Supersedes date 26-Jun-2017

Safety Data Sheet
Rheology Modifier J589

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name Rheology Modifier J589
Product code J589

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Rheology modifier.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

Italy	Centro Antiveleni Ospedale Niguarda Milan: +39 02 6610 1029
Norway	Poison information centre: +47 22 59 13 00
Malaysian	Local emergency number; +603 2161 7655

2. Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Health hazards

Serious eye damage/eye irritation	Category 2
Specific target organ toxicity - Single exposure	Category 3

Environmental hazards Not classified

Physical Hazards

Flammable Liquids	Category 3

2.2 Label elements



Signal word
WARNING

Hazard statements
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
H226 - Flammable liquid and vapor

Precautionary Statements - EU (§28, 1272/2008)
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Supplementary precautionary statements
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment
P242 - Use non-sparking tools
P243 - Take precautionary measures against static discharge
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing and eye/face protection
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P378 - Use extinguishing powder for extinction
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P403 + P235 - Store in a well-ventilated place. Keep cool

Contains
Propan-2-ol

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%	Regulation (EC) No 1272/2008	REACH registration number
Propan-2-ol	200-661-7	67-63-0	10-30	Flam. Liq. 2, (H225) STOT SE 3 (H336) Eye Irrit. 2 (H319)	01-2120063207-61-xxxx

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First aid measures

4.1 First aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Dry chemical, CO2, water spray or alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons
High volume water jet.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
FLAMMABLE LIQUID AND VAPOR. Vapors may travel to source of ignition and flash back.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Harmful organic chemical fumes.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

Hazchem code ADG
•3Y

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Remove all sources of ignition. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Take precautionary measures against static discharges. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Use clean non-sparking tools to collect absorbed material. Ground and bond containers when transferring material. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep away from direct sunlight. Avoid contact with: Strong acids. Strong bases Strong oxidizing agents Strong reducing agents.

Storage class Flammable liquid storage.

Packaging materials Use specially constructed containers only.

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits No biological limit allocated

Component Information

Chemical Name	EU OEL	Austria	Australia	Denmark
Propan-2-ol	Not determined	800 ppm STEL 2000 mg/m³ STEL 200 ppm TWA 500 mg/m³ TWA	500ppmSTEL 1230mg/m³STEL 400ppmTWA 983mg/m³TWA	200 ppm 490 mg/m³
Chemical Name	**Malaysia**	**France**	**Germany**	**Hungary**
Propan-2-ol	400 ppm TWA 983 mg/m³ TWA	400ppmSTEL 980mg/m³STEL	200 ppm TWA 500 mg/m³ TWA	500mg/m³TWA 2000mg/m³STEL
Chemical Name	**New Zealand**	**Italy**	**Netherlands**	**Norway**
Propan-2-ol	500 ppm STEL 1230 mg/m³ STEL 400 ppm TWA 983 mg/m³ TWA	Not determined	Not determined	100 ppm TWA 245 mg/m³ TWA 125 ppm STEL 306.25 mg/m³ STEL
Chemical Name	**Poland**	**Portugal**	**Romania**	**Russia**
Propan-2-ol	1200 mg/m³ STEL NDSCh 900 mg/m³ TWA NDS	400 ppm STEL VLE-CD 200 ppm TWA	203ppmSTEL 500mg/m³STEL 81ppmTWA 200mg/m³TWA	50 mg/m³ STEL 1721 vapor 10 mg/m³ TWA 1721
Chemical Name	**Spain**	**Switzerland**	**Turkey**	**UK**
Propan-2-ol	400 ppm STEL 1000 mg/m³ STEL 200 ppm TWA VLA-ED 500 mg/m³ TWA VLA-ED	400 ppm STEL 1000 mg/m³ STEL 200 ppm TWA MAK 500 mg/m³ TWA MAK	Not determined	500 ppm STEL 1250 mg/m³ STEL 400 ppm TWA 999 mg/m³ TWA

Derived No Effect Level (DNEL)

Long term exposure systemic effects
Propan-2-ol

Dermal	888 mg/kg bw/day
Inhalation	500 mg/m³

Predicted No Effect Concentration (PNEC)
Propan-2-ol

Fresh Water	140.9 mg/L
Sea Water	140.9 mg/L
Freshwater sediment	552 mg/kg sediment dw
Sea sediment	552 mg/kg sediment dw
Soil	28 mg/kg soil dw
Impact on sewage treatment	2 251 mg/L

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against liquid splashes. Tightly fitting safety goggles. Safety glasses with side-shields.
Hand protection	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves Nitrile Butyl Rubber Break through time >480 minutes Glove thickness >0.35 mm Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment, Use respirator with organic vapor protection (A, brown), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.
Hygiene Measures	Wash hands before breaks and immediately after handling the product, Remove and wash contaminated clothing before re-use.



9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Aqueous solution
Odor	Alcohol
Color	Colorless
Odor threshold	Not applicable

Property	Values	Remarks
pH	5.5 - 8.5	
pH @ dilution		
Melting / freezing point	- 15 °C / 5 °F	
Boiling point/range	No information available	
Flash point	25 °C / 77 °F	
Evaporation rate (BuAc =1)	< 1	

Flammability (solid, gas)	Not applicable	
Flammability Limit in Air		
Upper flammability limit	36%	
Lower flammability limit	2.5%	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	0.96 - 0.98 g/cm³	25 °C
Bulk density	No information available	
Relative density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
log Pow	No information available	

Explosive properties	No information available
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available
Density	No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and reactivity

10.1 Reactivity

Flammable liquid and vapor.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Keep away from direct sunlight. Take precautionary measures against static charges. Keep away from open flames, hot surfaces and sources of ignition.

10.5 Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents. Strong reducing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation May cause drowsiness or dizziness. Inhalation of vapors in high concentration may cause irritation of respiratory system.

Eye contact Causes serious eye irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Propan-2-ol	= 1870 mg/kg (Rat)	= 4059 mg/kg (Rabbit)	= 72600 mg/m³ (Rat) 4 h

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of exposure Inhalation. Skin contact. Eye contact.

Routes of entry Inhalation. Skin contact. Eye contact.

Specific target organ toxicity - Single exposure Category 3

Specific target organ toxicity - Repeated exposure Not classified.

Target organ effects Central nervous system.

Aspiration hazard Not applicable.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates

See component information below.

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Propan-2-ol	> 1400000 µg/L LC50 Lepomis macrochirus 96 h = 11130 mg/L LC50 Pimephales promelas 96 h = 9640 mg/L LC50 Pimephales promelas 96 h	> 1000 mg/L EC50 Desmodesmus subspicatus 96 h > 1000 mg/L EC50 Desmodesmus subspicatus 72 h	= 13299 mg/L EC50 Daphnia magna 48 h

12.2 Persistence and degradability

See component information below.

Chemical Name	Persistence and degradability
Propan-2-ol 67-63-0	Readily biodegradable

12.3 Bioaccumulative potential

See component information below.

Chemical Name	Bioaccumulation
Propan-2-ol 67-63-0	No bioaccumulation potential

12.4 Mobility in soil

Mobility
Soluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

EWC Waste Disposal No According to the European Waste Catalog, Waste Codes are not product specific, but application specific Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 16 05 08 16 10 01 - aqueous liquid wastes containing dangerous

substances 7152 Organic waste without halogen.

14. Transport information

14.1. UN number

UN/ID No. (ADR/RID/ADN/ADG)	UN1993
UN No. (IMDG/ANTAQ)	UN1993
UN No. (ICAO/ANAC)	UN1993

14.2. UN proper shipping name
FLAMMABLE LIQUID, N.O.S. (propan-2-ol)

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	3
IMDG/ANTAQ Hazard class	3
ICAO/ANAC Hazard class/division	3

14.4 Packing group

ADR/RID/ADN/ADG Packing group	III
IMDG/ANTAQ Packing group	III
ICAO/ANAC Packing group	III



14.5 Environmental hazard
No

14.6 Special precautions

Hazard identification no (ADR)	30
EmS (IMDG)	F-E, S-E
Emergency Action Code (EAC)	•3Y
Tunnel restriction code	(D/E)
Hazchem code ADG	•3Y

14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].
National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].
National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

ADG Code – Australian Dangerous Goods Code.

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)

The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International inventories

USA (TSCA)	Complies
European Union (EINECS and ELINCS)	Complies
Canada (DSL)	Does not comply
Philippines (PICCS)	Does not comply
Japan (ENCS)	Does not comply
China (IECSC)	Does not comply
Australia (AICS)	Complies
Korean (KECL)	Does not comply
New Zealand (NZIoC)	Does not comply

Europe - REACH
All products supplied from the European Economic Area (EEA) are compliant with the REACH Regulation EC 1907/2006.For products supplied from the EEA, Schlumberger and/or its suppliers have pre-registered and is registering all of the substances that it and/or its suppliers manufactures in or imports into the EEA that are subject to Title II of the REACH Regulation. All products supplied from outside the EEA are subject to REACH only if imported into the EEA. The importer of the products must comply with REACH for each imported substance. Contact REACH@slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel
Supersedes date	26-Jun-2017
Revision date	18-Oct-2017
Version	3
This SDS has been revised in the following section(s)	14, No changes with regard to classification have been made.

Full text of H-Statements referred to under sections 2 and 3

H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
H226 - Flammable liquid and vapor

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

MATERIAL SAFETY DATA SHEET

Issuing Date: 06-17-2013 **Revision Date:** 06-17-2013 **Version** 3

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Code(s) 42175
Product Name Stack-Magic ECO-F v2
Product Registration number
Denmark -
Norway 130020
Sweden -

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use Hydraulic Fluid, water based

Uses advised against Any other purpose.

1.3. Details of the supplier of the safety data sheet

Manufacturer, Importer, Supplier

Mento AS
Kontinentalveien
Postboks 44
4098 Tananger
Norway
Tel: +47 51 64 86 00
www.Mento.no

Houghton S.A.S.
604 Bd Albert Camus,
BP 60041
69652 Villefranche sur saone
France
Tel: (0) 4 74 65 65 00
Fax. (0) 4 74 60 08 44

Houghton Benelux
Meerpaal 12 A. NL - 4904.SK Oosterhout.
Telefoon: +31 162458400
Fax: +31 162 458205
Email:
Marielle.Goossens@nl.houghtonglobal.com

Houghton plc
Beacon Road
Trafford Park
Manchester
M17 1AF
Tel: +44 (0)161 874 5000
E-mail: MSDS@uk.houghtonglobal.com

1.4. Emergency telephone number

(+)1 760 476 3961 (Code 333938)

Poison Information Center telephone number

France	Numéro d'appel d'urgence +33 (0)1 45 42 5959
Netherlands	Telefoonnummer voor +31 30 274 88 88
Norway	Nødnummer +47 22 59 13 00

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

The preparation is classified as dangerous in accordance with Directive 1999/45/EC.

Symbol(s) Xn - Harmful

R43 - May cause sensitization by skin contact
R36/38 - Irritating to eyes and skin
R20/22 - Harmful by inhalation and if swallowed

2.2. Label Elements

Symbol(s)
Xn - Harmful
Contains 2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol



R-phrase(s)
R43 - May cause sensitization by skin contact
R36/38 - Irritating to eyes and skin
R20/22 - Harmful by inhalation and if swallowed

S-phrase(s)
S24 - Avoid contact with skin
S37 - Wear suitable gloves

2.3. Other hazards
None

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Chemical Name	EC-No	CAS-No	Weight %	Classification (67/548)	Classification (Reg. 1272/2008)	REACH Registration Number
Ethane-1,2-diol	203-473-3	107-21-1	10% - 25%	Xn;R22	Acute Tox. 4 (H302) STOT RE 2 (H373)	01-2119456816-28 -xxxx
2-Aminoethanol	205-483-3	141-43-5	2.5% - 10%	Xn;R20/21/22 C;R34	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Skin Corr. 1B (H314) Acute Tox. 4 (H332)	01-2119486455-28 -xxxx
2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	-	4719-04-4	2.5% - 10%	Xn;R22 R43 T;R23	Acute Tox. 4 (H302) Skin Sens. 1 (H317) Acute Tox. 3 (H330)	01-2119529226-41 -xxxx
Neutralised 2-Aminoethanol	205-483-3	141-43-5*	2.5% - 10%	Xn;R20/21/22	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332)	01-2119486455-28 -xxxx
2,2',2''-Nitrilotriethanol	203-049-8	102-71-6	1% - 2.5%	**	-	01-2119486482-31 -xxxx

For the full text of the R-phrases mentioned in this Section, see Section 16
For the full text of the H-Statements mentioned in this Section, see Section 16.

Additional information
** Substances for which there are Community workplace exposure limits

4. FIRST AID MEASURES

4.1. Description of first-aid measures

General advice Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. When symptoms persist or in all cases of doubt seek medical advice.

Inhalation Move to fresh air. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Consult a physician.

Skin contact Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. If symptoms persist, call a physician.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. If eye irritation persists, consult a specialist.

Ingestion Rinse mouth. Do not induce vomiting. If conscious, give 2 glasses of water. Get immediate medical attention.

Protection of First-aiders Use personal protective equipment.

4.2. Most important symptoms and effects, both acute and delayed

Main Symptoms Itching, rash, Redness, Eye damage/irritation, Breathing difficulties, Gastrointestinal discomfort

4.3. Indication of immediate medical attention and special treatment needed

Notes to physician May cause sensitization of susceptible persons. Treat symptomatically. Ingestion, depending on the dose, can cause i.a. abnormal behaviour, unconsciousness, convulsions, respiratory paralysis, pulmonary oedemas, as well as damages to liver and kidneys and can lead, in the worst case, to death. A quick treatment of an ethylene-glycol intoxication, when necessary with haemodialysis, may reduce the toxical effects. Intravenous ethyl alcohol in sodium bicarbonate solution is an approved antitoxin.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment:: Use CO2, dry chemical, or foam, Water spray or fog.

Extinguishing media which shall not be used for safety reasons
None

5.2. Special hazards arising from the substance or mixture

Special Hazard
Thermal decomposition can lead to release of irritating gases and vapors

Hazardous Decomposition Products
Thermal decomposition can lead to release of irritating gases and vapors

5.3. Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with skin, eyes and clothing. Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Advice for non-emergency personnel Material can create slippery conditions.

Advice for emergency responders For personal protection see section 8

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

6.3. Methods and materials for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Dike to collect large liquid spills.

6.4. Reference to other sections

See Section 8/12/13 for additional information

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Do not eat, drink or smoke when using this product. Wear personal protective equipment. Do not breathe vapors or spray mist. Use only in area provided with appropriate exhaust ventilation. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions
Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

Recommended Shelf Life
No information available.

Incompatible Materials
Strong oxidizing agents, Strong acids, Strong bases

7.3. Specific end uses

Specific use(s) Hydraulic Fluid, water based

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Chemical Name	European Union	The United Kingdom	France	Spain
Ethane-1,2-diol	S* TWA 20 ppm TWA 52 mg/m³ STEL 40 ppm STEL 104 mg/m³	STEL: 40 ppm STEL: 104 mg/m³ TWA: 20 ppm TWA: 52 mg/m³ TWA: 10 mg/m³ Skin	VME: 20 ppm VME: 52 mg/m³ VLCT: 40 ppm VLCT: 104 mg/m³	S* STEL: 40 ppm STEL: 104 mg/m³ TWA: 20 ppm TWA: 52 mg/m³
2-Aminoethanol	TWA: 1 ppm TWA: 2.5 mg/m³ Skin	STEL: 3 ppm STEL: 7.6 mg/m³ TWA: 1 ppm TWA: 2.5 mg/m³ Skin	TWA: 1 ppm TWA: 2.5 mg/m³ STEL: 3 ppm STEL: 7.6 mg/m³	S* STEL: 3 ppm STEL: 7.5 mg/m³ TWA: 1 ppm TWA: 2.5 mg/m³
Neutralised 2-Aminoethanol	TWA: 1 ppm TWA: 2.5 mg/m³ Skin	STEL: 3 ppm STEL: 7.6 mg/m³ TWA: 1 ppm TWA: 2.5 mg/m³ Skin	VME: 1 ppm VME: 2.5 mg/m³ VLCT: 3 ppm VLCT: 7.6 mg/m³	S* STEL: 3 ppm STEL: 7.5 mg/m³ TWA: 1 ppm TWA: 2.5 mg/m³
2,2',2''-Nitrilotriethanol				TWA: 5 mg/m³

Chemical Name	Germany	Italy	Portugal	The Netherlands

Ethane-1,2-diol	MAK: 10 ppm MAK: 26 mg/m³ Ceiling / Peak: 20 ppm Ceiling / Peak: 52 mg/m³ Skin TWA: 10 ppm TWA: 26 mg/m³	TWA: 20 ppm TWA: 52 mg/m³ STEL: 40 ppm STEL: 104 mg/m³ Skin	Ceiling: 100 mg/m³	Skin STEL: 104 mg/m³ TWA: 52 mg/m³ TWA: 10 mg/m³
2-Aminoethanol	TWA: 2 ppm TWA: 5.1 mg/m³ Ceiling / Peak: 4 ppm Ceiling / Peak: 10.2 mg/m³	TWA: 1 ppm TWA: 2.5 mg/m³ STEL: 3 ppm STEL: 7.6 mg/m³ Skin	STEL: 6 ppm TWA: 3 ppm	Skin STEL: 7.6 mg/m³ TWA: 2.5 mg/m³
Neutralised 2-Aminoethanol	MAK: 2 ppm MAK: 5.1 mg/m³ Ceiling / Peak: 4 ppm Ceiling / Peak: 10.2 mg/m³ TWA: 2 ppm TWA: 5.1 mg/m³	TWA: 1 ppm TWA: 2.5 mg/m³ STEL: 3 ppm STEL: 7.6 mg/m³ Skin	STEL: 6 ppm TWA: 3 ppm	Skin STEL: 7.6 mg/m³ TWA: 2.5 mg/m³
2,2',2''-Nitrilotriethanol	MAK: 5 mg/m³ Ceiling / Peak: 20 mg/m³		TWA: 5 mg/m³	

Chemical Name	Austria	Switzerland	Poland	Ireland
Ethane-1,2-diol	Skin STEL 20 ppm STEL 52 mg/m³ MAK: 10 ppm MAK: 26 mg/m³	Skin STEL: 20 ppm STEL: 52 mg/m³ MAK: 10 ppm MAK: 26 mg/m³	NDSCh: 50 mg/m³ NDS: 15 mg/m³	TWA: 10 mg/m³ TWA: 20 ppm STEL: 40 ppm STEL: 104 mg/m³ Skin
2-Aminoethanol	Skin STEL 3 ppm STEL 7.6 mg/m³ TWA: 1 ppm TWA: 2.5 mg/m³	STEL: 4 ppm STEL: 10 mg/m³ TWA: 2 ppm TWA: 5 mg/m³	STEL: 7.5 mg/m³ TWA: 2.5 mg/m³	TWA: 1 ppm TWA: 2.5 mg/m³ STEL: 3 ppm STEL: 7.6 mg/m³ Skin
Neutralised 2-Aminoethanol	Skin STEL 3 ppm STEL 7.6 mg/m³ MAK: 1 ppm MAK: 2.5 mg/m³	STEL: 4 ppm STEL: 10 mg/m³ MAK: 2 ppm MAK: 5 mg/m³	NDSCh: 7.5 mg/m³ NDS: 2.5 mg/m³	TWA: 3 ppm TWA: 8 mg/m³ STEL: 6 ppm STEL: 15 mg/m³
2,2',2''-Nitrilotriethanol	STEL 1.6 ppm STEL 10 mg/m³ MAK: 0.8 ppm MAK: 5 mg/m³			TWA: 5 mg/m³

Chemical Name	Finland	Denmark	Norway	Sweden
Ethane-1,2-diol	TWA: 20 ppm TWA: 50 mg/m³ STEL: 40 ppm STEL: 100 mg/m³ Skin	TWA: 10 ppm TWA: 26 mg/m³ TWA: 10 mg/m³ Skin	Skin Ceiling: 20 ppm 52 mg/m³ STEL: 40 ppm 104 mg/m³	LLV: 10 ppm LLV: 25 mg/m³ H STV: 20 ppm STV: 50 mg/m³
2-Aminoethanol	TWA: 1 ppm TWA: 2.5 mg/m³ STEL: 3 ppm STEL: 7.6 mg/m³ Skin	TWA: 1 ppm TWA: 2.5 mg/m³ Skin	TWA: 1 ppm TWA: 2.5 mg/m³ Skin STEL: 2 ppm STEL: 5 mg/m³	LLV: 3 ppm LLV: 8 mg/m³ H STV: 6 ppm STV: 15 mg/m³
Neutralised 2-Aminoethanol	TWA: 1 ppm TWA: 2.5 mg/m³ STEL: 3 ppm STEL: 7.6 mg/m³ Skin	TWA: 1 ppm TWA: 2.5 mg/m³ Skin	TWA: 1 ppm TWA: 2.5 mg/m³ Skin STEL: 2 ppm STEL: 5 mg/m³	LLV: 3 ppm LLV: 8 mg/m³ H STV: 6 ppm STV: 15 mg/m³
2,2',2''-Nitrilotriethanol	TWA: 5 ppm	TWA: 0.5 ppm TWA: 3.1 mg/m³	TWA: 5 mg/m³ STEL: 10 mg/m³	LLV: 5 mg/m³ STV: 10 mg/m³

Chemical Name	Czech Republic	Hungary	Bulgaria	Romania

Ethane-1,2-diol	Ceiling: 100 mg/m³ TWA: 50 mg/m³ Skin	STEL: 104 mg/m³ TWA: 52 mg/m³ Skin	STEL: 104.0 mg/m³ TWA: 52.0 mg/m³ Skin	TWA: 20 ppm TWA: 52 mg/m³ STEL: 40 ppm STEL: 104 mg/m³ Skin
2-Aminoethanol	Ceiling: 7.5 mg/m³ TWA: 5 mg/m³ Skin	STEL: 7.6 mg/m³ TWA: 2.5 mg/m³ Skin	STEL: 7.6 mg/m³ TWA: 2.5 mg/m³ Skin	TWA: 1 ppm TWA: 2.5 mg/m³ STEL: 3 ppm STEL: 7.6 mg/m³ Skin
2,2',2''-(Hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol				STEL: 3 mg/m³
Neutralised 2-Aminoethanol	Ceiling: 7.5 mg/m³ TWA: 5 mg/m³ Skin	STEL: 7.6 mg/m³ TWA: 2.5 mg/m³ Skin	STEL: 15.0 mg/m³ TWA: 8.0 mg/m³	TWA: 1 ppm TWA: 2.5 mg/m³ STEL: 3 ppm STEL: 7.6 mg/m³ Skin
2,2',2''-Nitrilotriethanol	Ceiling: 10 mg/m³ TWA: 5 mg/m³		TWA: 3.0 mg/m³	

Derived No Effect Level (DNEL)

Workers Systemic toxicity

Workers Local effects

Chemical Name	Long term - Oral exposure	Long term - Dermal exposure	Long term - Inhalation exposure	Short term - Oral Exposure	Short term - Dermal exposure	Short term - Inhalation exposure
Ethane-1,2-diol						35 mg/m³

Consumers Systemic toxicity

Consumers Local effects

Predicted No Effect Concentration (PNEC)

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye Protection Tightly fitting safety goggles

Hand Protection Protective gloves. Barrier cream. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Skin and body protection Lightweight protective clothing. Apron. Impervious gloves. Long sleeved clothing.

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene measures When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Avoid breathing vapors, mist or gas. Handle in accordance with good industrial hygiene and safety practice.

Environmental Exposure Controls	Do not allow material to contaminate ground water system.
Thermal hazards	None under normal use conditions

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state @20°C	liquid	**Appearance**	Red/Pink Fluorescent
Odor	amine-like	**Odor Threshold**	Not applicable

Property	Values	Note
pH	10	
Melting/freezing point	< -17 °C	
Boiling point/boiling range	No information available	
Flash Point	Not applicable	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limits in Air		
upper flammability limit	No information available	
lower flammability limit	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Relative density	1.05	@15.5C
Water Solubility	Miscible	
Solubility in other solvents	No information available	
Partition coefficient: n-octanol/water	Not applicable	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Viscosity, kinematic	2.5 cSt @ 40 °C	ISO 3104 ISO 3105
Explosive properties	Not applicable	
Oxidizing Properties	Not applicable	

Other information

Viscosity, kinematic (100°C)	No information available.
Pour point	No information available.

10. STABILITY AND REACTIVITY

10.1. Reactivity

None under normal use conditions

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

None under normal use conditions

10.4. Conditions to avoid

Do not freeze

10.5. Incompatible Materials

Strong oxidizing agents, Strong acids, Strong bases

10.6. Hazardous decomposition products

Thermal decomposition can lead to release of irritating gases and vapors

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information - Principle Routes of Exposure

Inhalation Harmful by inhalation

Eye contact Irritating to eyes; If the liquid is splashed into the eye, it can cause reversible irritation and damage

Skin contact Irritating to skin; May cause sensitization by skin contact. Avoid contact with skin and clothing

Ingestion Harmful if swallowed. Ingestion constitutes the main danger because of the toxicity of ethylene glycol. May cause adverse liver effects; May cause adverse kidney effects

Acute toxicity - Product Information

Harmful by inhalation; Harmful if swallowed.

Acute toxicity - Component Information

Chemical Name	LD50 Oral (Rat)	LD50 Dermal (Rat/Rabbit)	LC50 Inhalation
Ethane-1,2-diol	4000 mg/kg (Rat)	= 9530 µL/kg (Rabbit)	
2-Aminoethanol	1720 mg/kg (Rat)	= 1 mL/kg (Rabbit) = 1025 mg/kg (Rabbit)	
Neutralised 2-Aminoethanol	1720 mg/kg (Rat)		
2,2',2''-Nitrilotriethanol	4190 mg/kg (Rat)	> 16 mL/kg (Rat) > 2000 mg/kg (Rabbit)	

Irritation Irritating to eyes and skin.

Corrosivity None known.

Sensitization May cause sensitization by skin contact

Repeated Dose Toxicity None known

Carcinogenicity None known

Mutagenicity None known

Toxicity to Reproduction None known

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Ethane-1,2-diol	6500 - 13000: 96 h Pseudokirchneriella subcapitata mg/L EC50	41000: 96 h Oncorhynchus mykiss mg/L LC50 14-18: 96 h Oncorhynchus mykiss ml/L LC50 static 27540: 96 h Lepomis macrochirus mg/L LC50 static 40761: 96 h Oncorhynchus mykiss mg/L LC50 static 40000-60000: 96 h Pimephales promelas mg/L LC50 static 16000: 96 h Poecilia reticulata mg/L LC50 static		46300: 48 h Daphnia magna mg/L EC50
2-Aminoethanol	15: 72 h Desmodesmus subspicatus mg/L EC50	227: 96 h Pimephales promelas mg/L LC50 flow-through 3684: 96 h Brachydanio rerio mg/L LC50 static 300 - 1000: 96 h Lepomis macrochirus mg/L LC50 static 114 - 196: 96 h Oncorhynchus mykiss mg/L LC50 static 200: 96 h Oncorhynchus mykiss mg/L LC50 flow-through		65: 48 h Daphnia magna mg/L EC50
Neutralised 2-Aminoethanol	15: 72 h Desmodesmus subspicatus mg/L EC50	227: 96 h Pimephales promelas mg/L LC50 flow-through 3684: 96 h Brachydanio rerio mg/L LC50 static 300-1000: 96 h Lepomis macrochirus mg/L LC50 static 114-196: 96 h Oncorhynchus mykiss mg/L LC50 static 200: 96 h Oncorhynchus mykiss mg/L LC50 flow-through		65: 48 h Daphnia magna mg/L EC50
2,2',2''-Nitrilotriethanol	216: 72 h Desmodesmus subspicatus mg/L EC50 169: 96 h Desmodesmus subspicatus mg/L EC50	10600-13000: 96 h Pimephales promelas mg/L LC50 flow-through 1000: 96 h Pimephales promelas mg/L LC50 static 450-1000: 96 h Lepomis macrochirus mg/L LC50 static		1386: 24 h Daphnia magna mg/L EC50

12.2. Persistence and degradability

Expected to be biodegradable.

12.3. Bioaccumulative potential

Does not bioaccumulate

Chemical Name	log Pow
Ethane-1,2-diol	-1.93
2-Aminoethanol	-1.91
2,2',2''-Nitrilotriethanol	-2.53

12.4. Mobility in soil

No information available

12.5. Results of PBT and vPvB assessment

No information available.

12.6. Other adverse effects

None known

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues / Unused Products	Dispose of as hazardous waste in compliance with local and national regulations
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Observe all label precautions until container is cleaned, reconditioned or destroyed.
Other information	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

14. TRANSPORT INFORMATION

14.1. UN-Number

Not regulated

14.2. UN proper shipping name

Not regulated

14.3. Transport hazard class

Not regulated

14.4. Packing group

Not regulated

14.5. Environmental Hazards

None

14.6. Special precautions for users

None

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

IMDG/IMO Not regulated

ADR/RID Not regulated

ICAO/IATA Not regulated

15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values .

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Take note of Dir 94/33/EC on the protection of young people at work.
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This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 & (EC) No. 1272/2008 & (EC) 1999/45. The classification detailed on this Safety Data Sheet refers to the neat material only. Dilution of the product may reduce the classification.
The Carriage of Dangerous Goods Regulations 2011.
Statutory Instruments: Control of Substances Hazardous to Health Regulations 2002. Chemicals (Hazard Information and Packaging) Regulations 2009.
Acts of Parliament: The Health and Safety at Work etc. Act 1974. Environment Protection Act 1990.
Regulation on classification, labeling. of hazardous chemicals (2002 changing 2005).Appendix VI to Regulation on classification, labeling etc. of hazardous chemicals (2002 changing 2010), list of hazardous substances (as amended). Guidelines for submission and declaration of hazardous waste (2009).Transport of dangerous goods: ADR, RID, IMDG and IATA. Administrative norms for pollution of the atmosphere, 2009.
Workplace exposure limits (EH40)

15.2. Chemical Safety Assessment

No information available

16. OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet
T - Toxic
Xn - Harmful
C - Corrosive
Acute Tox. - Acute Toxicity
Skin Corr. - Skin Corrosion
Skin Sens. - Skin Sensitizer
STOT RE - Specific target organ systemic toxicity (repeated exposure)

Full text of R-phrases referred to under sections 2 and 3
R22 - Harmful if swallowed
R23 - Toxic by inhalation
R34 - Causes burns
R43 - May cause sensitization by skin contact
R20/22 - Harmful by inhalation and if swallowed
R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed
R36/38 - Irritating to eyes and skin

Full text of H-Statements referred to under sections 2 and 3
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H330 - Fatal if inhaled
H332 - Harmful if inhaled
H373 - May cause damage to organs through prolonged or repeated exposure if swallowed

Exposure scenario
No information available

Issuing Date:	06-17-2013
Revision Date:	06-17-2013
Revision Note	Not applicable.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SECTIUNEA 1. IDENTIFICAREA SUBSTANŢEI/AMESTECULUI ŞI A SOCIETĂŢII/ÎNTREPRINDERII

1.1 Element de identificare a produsului

Denumire comercială	:	Combustibil naval RMG 380 - max. 0,5% S

1.2 Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizări relevante identificate

Utilizări relevante	:	Utilizarea la motoare de nave autorizate în acest scop.
Utilizari identificate conform raportului de securitate chimică (CSR)	:	Producere 01-Producerea substanţei Formulare sau reambalare 02 Formularea şi (re)ambalarea substanţelor şi amestecurilor Utilizare în spaţii industriale 01a - Distribuţia substanţei 12a - Utilizare drept combustibil sau carburant: Industrial Utilizare larg răspândită de către lucrători profesionişti 12b - Utilizare drept combustibil sau carburant: Profesional

Pentru detalii privind utilizările, a se vedea Anexa

Restricţii recomandate privind utilizarea

Utilizări contraindicate	:	Sunt contraindicate utilizarile în scop profesional ale substantelor din categoria combustibili grei (HFO) în acoperiri, si aplicaţii rutiere si în constructii., Din motive care ţin de protecţia sănătăţii umane, aceste utilizări nu mai sunt susţinute în dosarele de înregistrare.

1.3 Detalii privind furnizorul fişei cu date de securitate

Adresă completă **Producător, importator, distribuitor**	:	OMV Petrom S.A. Strada Coralilor Nr. 22 Sector 1 013329 Bucureşti („Petrom City") Romania
Telefon	:	+40 (0) 725 16 16 16
Adresa de e-mail a persoanei competente	:	info.msds@petrom.com

1.4 Număr de telefon care poate fi apelat în caz de urgenţă

+40 (0) 725 16 16 16	Linia de urgenţă / tarif normal / 24/7 / română / engleză
+40 21 318 36 06	Biroul pentru Regulamentul Sanitar International si Informare Toxicologica / tarif normal; L-V; 8:00-15:00; limba română

SECTIUNEA 2. IDENTIFICAREA PERICOLELOR

2.1 Clasificarea substanţei sau a amestecului

Clasificare (Regulamentul (CE) Nr. 1272/2008)

Acute Tox. 4 H332, Carc. 1B H350, Repr. 2 H361d, STOT RE 2 H373, Aquatic Acute 1 H400, Aquatic Chronic 1 H410,
Pentru textul complet al frazelor de pericol H menţionate în această Secţiune şi metodele de clasificare, consultaţi Secţiunea 16.

2.2 Elemente pentru etichetă

Etichetare (Regulamentul (CE) Nr. 1272/2008)

Pictograme de pericol :



Cuvânt de avertizare : Pericol

Fraze de pericol :
H350 Poate provoca cancer.
H332 Nociv în caz de inhalare.
H361d Susceptibil de a dăuna fătului
H373 Poate provoca leziuni ale organelor (sânge, timus, ficat) în caz de expunere prelungită sau repetată.
H410 Foarte toxic pentru viața acvatică având efecte de lungă durată.

Fraze de precauţie :
Prevenire:
P201 Procuraţi instrucţiuni speciale înainte de utilizare.
P260 Nu inspiraţi vaporii.
P273 Evitaţi dispersarea în mediu.
P280 Purtaţi mănuşi de protecţie/îmbrăcăminte de protecţie/echipament de protecţie a ochilor/ echipament de protecţie a feţei.
Interventie:
P308 + P313 ÎN CAZ DE expunere sau de posibilă expunere: consultaţi medicul.
Eliminare:
P501 Eliminaţi conţinutul/recipientele conform prevederilor legale în vigoare

Etichetare suplimentară:

EUH 066 Expunerea repetată poate provoca uscarea sau crăparea pielii.
Restrictionat la utilizari profesionale din cauza clasificarii cancerigen, categoria 1B, cu exceptia utilizarilor drept carburant/combustibil.

2.3 Alte pericole

Note : De regulă, produsul este prelucrat în stare încălzită (până la 90 °C).
Produsul este livrat si transportat la temperatura mai mica de 60 °C
Contactul cu acesta poate provoca arsuri.
Pericol ridicat de alunecare ca urmare a deversării accidentale a produsului.
Produsul nu contine constituenti PBT inclusi în lista candidatelor SVHC în concentratii mai mari de 0,1%.

SECTIUNEA 3. COMPOZIŢIE/INFORMAŢII PRIVIND COMPONENŢII

3.1 Substanţe

Nu se aplică

3.2 Amestecuri

Natura chimică	hidrocarburi

Ingrediente periculoase

Denumirea substanţei chimice	Număr Index Nr. CAS Nr. EINECS/Nr. ELINCS (Lista Europeană a Substanţelor Chimice Notificate) Număr de înregistrare	Clasificare (Regulamentul (CE) Nr. 1272/2008)	Concentraţie [% m/m]
distilate sub vid (petrol), reziduuri de petrol	649-034-00-3 68955-27-1 273-263-4 01-2119489711-31-0030	Acute Tox. 4; H332 Repr. 2; H361d Carc. 1B; H350 STOT RE 2; H373 Aquatic Acute 1; Factor de multiplicare = 1; H400 Aquatic Chronic 1; Factor de multiplicare = 1; H410	30,00 - 100,00
motorină grea (petrol), distilare sub vid	649-009-00-7 64741-57-7 265-058-3 01-2119487294-29-0069	Acute Tox. 4; H332 Repr. 2; H361d Carc. 1B; H350 STOT RE 2; H373 Aquatic Acute 1; Factor de multiplicare = 1; H400 Aquatic Chronic 1; Factor de multiplicare = 1; H410	40,00 - 100,00
distilate grele (petrol), cracare catalitică	649-010-00-2 64741-61-3 265-063-0 01-2119486893-20-0009	Acute Tox. 4; H332 Asp. Tox. 1; H304 Repr. 2; H361d Carc. 1B; H350 STOT RE 2; H373 Aquatic Acute 1; Factor de multiplicare = 1; H400 Aquatic Chronic 1; Factor de multiplicare = 1; H410	0,00 - 10,00
distilate uşoare (petrol), cracare catalitică	649-435-00-3 64741-59-9 265-060-4 01-2119489734-23-0045	Acute Tox. 4; H332 Skin Irrit. 2; H315 Asp. Tox. 1; H304 Carc. 1B; H350 STOT RE 2; H373 Aquatic Acute 1; Factor de multiplicare = 1; H400 Aquatic Chronic 1; Factor de multiplicare = 1; H410 Flam. Liq. 3; H226	0,00 - 10,00

Nu reprezintă specificaţie a produsului / procente greutate max. posibile
Pentru textul complet al frazelor de pericol H menţionate în această Secţiune şi metodele de clasificare, consultaţi Secţiunea 16.

SECTIUNEA 4. MĂSURI DE PRIM AJUTOR

4.1 Descrierea măsurilor de prim ajutor

Indicaţii generale	:	Întotdeauna evaluaţi condiţiile de securitate de la faţa locului, înainte de a încerca să salvaţi victimele şi a acorda primul ajutor. Este necesară protecţia proprie a persoanelor care acordă măsurile de prim ajutor. Întotdeauna solicitaţi ajutor, înainte de a ajuta victima.
Inhalare	:	După inhalarea accidentală a vaporilor, persoana (persoanele) afectată (afectate) trebuie transportată (transportate) la aer curat. Menţineţi victima la căldură şi în poziţie de repaus. Dacă victima este conştientă, aşezaţi-o în poziţia de recuperare. (în poziție verticală sau înclinat ușor în față în poziție șezând). Dacă victima este inconştientă şi nu respiră: asiguraţi-vă că nu există obstrucţii ale respiraţiei şi dispuneţi administrarea respiraţiei artificiale de către personal instruit. Dacă este necesar, aplicaţi masaj cardiac extern şi cereţi sfatul medicului. Dacă victima este inconştientă şi respiră: aşezaţi-o în poziţia de recuperare. Administraţi oxigen dacă este necesar. Solicitaţi asistenţă medicală dacă respiraţia continuă să fie dificilă. Dacă se suspectează inhalarea de H2S (hidrogen sulfurat): Personalul salvator trebuie să poarte măşti de oxigen, centură şi frânghie de siguranţă şi să respecte procedurile de salvare. Transportaţi victima la aer curat cât mai repede posibil. Iniţiaţi imediat respiraţia artificială dacă respiraţia s-a oprit. Poate fi utilă administrarea de oxigen. Solicitaţi sfatul medicului pentru tratamentul ulterior.
Contact cu pielea	:	Îndepărtaţi îmbrăcămintea contaminată, încălţămintea contaminată şi eliminaţi-le în siguranţă. Spălaţi zona afectată cu apă şi săpun. (10 până la 15 minute). Nu utilizaţi niciodată benzină, kerosen sau alţi solvenţi pentru spălarea pielii contaminate. Solicitati ingrijire medicala daca apare iritatia, inflamarea sau inrosirea pielii. Atunci când utilizaţi echipamente de înaltă presiune, se poate produce injectarea produsului. Dacă se produc leziuni la presiuni mari, solicitaţi imediat asistenţă medicală profesionistă. Nu aşteptaţi să apară simptomele. În cazul arsurilor termice minore, răcoriţi arsura. Ţineţi zona arsă sub un jet de apă rece timp de cel puţin cinci minute sau până când durerea scade în intensitate. Trebuie evitată hipotermia corpului. Nu aplicaţi gheaţă pe arsură. Îndepărtaţi cu atenţie hainele neaderente. NU încercaţi să îndepărtaţi porţiuni de îmbrăcăminte lipite de pielea arsă, ci tăiaţi în jurul acestora. Cereţi sfatul medicului în toate cazurile de arsuri grave.
Contact cu ochii	:	După contactul cu ochii clătiţi timp de 10-15 minute, ţinând pleoapele deschise cu jet de apă sau cu soluţie din recipientul pentru spălarea ochilor. Îndepărtaţi lentilele de contact, dacă sunt prezente şi sunt uşor de scos. Continuaţi clătirea. Dacă se produc şi persistă iritaţii, vedere înceţoşată sau umflături, solicitaţi recomandări medicale de la un specialist. Dacă produsul fierbinte este împroşcat în ochi, acesta trebuie răcit imediat pentru a disipa căldura sub un jet de apă rece. Asiguraţi imediat un consult şi un tratament medical specializat pentru victimă.
Ingerare, Absorbţie substanţă în plămâni	:	Nu induceţi voma. Solicitaţi asistenţă medicala. Clătiţi gura cu apă dacă persoana este complet conştientă şi solicitaţi imediat asistenţă medicală. Nu administraţi nimic pe gură unei persoane inconştiente.

4.2 Cele mai importante simptome şi efecte, atât acute cât şi întârziate

Simptome	:	Iritarea căilor respiratorii din cauza expunerii excesive la fum, ceață sau expunerea la vapori. Piele uscată, iritație în cazul expunerii repetate sau prelungite. Uşoară iritaţie oculară (nespecific). Poate cauza arsuri în caz de contact cu produsul la temperaturi înalte. Prin ingestie se preconizează puţine simptome sau niciun simptom. În acest caz, s-ar putea produce greaţă şi diaree.
Efecte	:	Prin inhalare: iritația nasului și a tractului respirator. În caz de contact cu pielea: poate provoca iritatie usoară. În caz de contact cu ochii: poate provoca iritatie reversibilă usoară.

4.3 Indicaţii privind orice fel de asistenţă medicală imediată şi tratamente speciale necesare

Tratament	:	Dacă este necesar, solicitaţi spitalizarea persoanei. După înghiţirea unor cantităţi mai mari de 1-2 ml/kg greutate corporală este necesară administrarea de cărbune activ (aproximativ 50 g) şi spitalizarea persoanei. În cazul unei stări puternice de agitaţie, este necesară sedarea persoanei (la indicaţia medicului).

SECTIUNEA 5. MĂSURI DE COMBATERE A INCENDIILOR

5.1 Mijloace de stingere a incendiilor

Mijloace de stingere corespunzătoare	:	Dacă focarul de incendiu este mic: pulbere de stingere, spumă (numai personal special instruit) aeromecanică sau bioxid de carbon. Ceaţă de apă (numai personal special instruit); Alte gaze inerte (în conformitate cu reglementările); Nisip sau pământ. În cazul unui focar de incendiu extins: spumă
Mijloace de stingere necorespunzătoare	:	Nu utilizati jeturi de apă directe pe produsul ce arde; ar putea provoca împroscarea si răspândirea focului. Se va evita utilizarea simultană de spumă şi apă pe aceeaşi suprafaţă deoarece apa distruge spuma.

5.2 Pericole speciale cauzate de substanţa sau amestecul în cauză

Pericol specific din cauza substanței sau amestecului, din cauza produselor de combustie sau din cauza gazelor generate prin ardere.	:	Această substanţă pluteşte şi se poate reaprinde la suprafaţa apei. Produsul evaporat este mai greu decât aerul şi se acumulează la nivelul solului. În amestec cu aerul, vaporii pot forma un amestec exploziv. Prevenirea pătrunderii în canalizare şi în subsoluri. Prevenirea pătrunderii în sol şi în ape. Combustia incompletă poate genera un amestec complex un amestec complex de particule solide şi lichide aeropurtate şi gaze, inclusiv monoxid de carbon, H2S, SOx (oxizi de sulf) sau acid sulfuric şi compuşi organici şi anorganici neidentificati.

5.3 Recomandări destinate pompierilor

Echipament special de protecţie	:	În cazul unui incendiu de proporţii sau în spaţiile închise şi insuficient aerisite, purtaţi îmbrăcăminte de protecţie ignifugă şi chimică completă şi un aparat de respirat autonom (SCBA) cu o mască pentru întreaga faţă acţionat în modul de presiune pozitivă.

Informaţii suplimentare	:	Răcirea imediată a recipientelor şi a ambalajelor din apropiere cu apă pulverizată, şi, dacă este posibil, îndepărtarea acestora din zona de pericol. Reziduurile de ardere şi apa contaminată utilizată la stingerea incendiilor trebuie eliminate conform prevederilor impuse de autorităţile locale.

SECTIUNEA 6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1 Precauţii personale, echipament de protecţie şi proceduri de urgenţă

Precauţii pentru personal	:	Se acţionează din aceeaşi direcţie cu direcţia vântului (atenţie la schimbarea direcţiei vântului). Identificarea şi închiderea zonei de pericol. Atunci când se suspectează sau se demonstrează prezenţa unor cantităţi periculoase de H2S în jurul produsului vărsat, pot fi justificate acţiuni suplimentare sau speciale, inclusiv restricţionări ale accesului, utilizarea de echipamente speciale de protecţie, proceduri speciale şi instruirea personalului. Ţineţi personalul neimplicat la distanţă de zona deversării. Alertaţi personalul de urgenţă. Aerisirea corespunzătoare a încăperilor contaminate. Evitaţi contactul direct cu materialul eliberat. Exceptând deversările de mică amploare: Fezabilitatea oricăror acţiuni trebuie întotdeauna evaluată şi avizată, dacă este posibil, de o persoană competentă instruită responsabilă cu gestionarea situaţiei de urgenţă. În cazul unei emisii de amploare, alertaţi locuitorii aflaţi în direcţia de bătaie a vântului. Eliminaţi toate sursele de aprindere dacă acest lucru prezintă siguranţă (de exemplu, electricitate, scântei, incendii, flăcări intermitente). Echipament de protectie individuală pentru situatii de urgentă. Deversări de mică amploare: hainele de lucru antistatice normale sunt, de obicei, suficiente. Deversări de amploare: costum pentru întregul corp din material antistatic şi rezistent la substanţe chimice. dacă este necesar, termorezistent şi izolant termic. Mănuşi de lucru care asigură rezistenţă adecvată la substanţe chimice, în special la hidrocarburi aromatice. Notă: mănuşile din PVA (alcool polivinilic) nu sunt impermeabile şi nu sunt potrivite pentru utilizare în caz de urgenţă. Dacă este posibil sau se anticipează contactul cu produsul fierbinte, mănuşile trebuie să fie termorezistente şi izolate termic. Protecţie respiratorie: O mască de protecţie obişnuită sau pentru întreaga faţă cu filtru(e) de compuşi organici (şi, după caz, de H2S). se poate utiliza un aparat de respirat autonom (SCBA) în funcţie de extinderea deversării şi de gradul prognozat de expunere. Dacă situaţia nu poate fi evaluată complet sau dacă este posibilă lipsa oxigenului, trebuie utilizate doar aparate SCBA. Cască de protectie. Incăltăminte de protecţie antistatică nederapantă. Dacă este necesar, termorezistente. Ochelari de protecţie şi/sau mască de protecţie a feţei, dacă este posibil(ă) sau se anticipează stropirea sau contactul cu ochii.

6.2 Precauţii pentru mediul înconjurător

Precauţii pentru mediul înconjurător	:	Etanşarea punctului de scurgere. Prevenirea scurgerii în canalizare, în apele de suprafaţă şi în apa din pânza freatică prin realizarea unor diguri din nisip, respectiv pământ sau prin alte măsuri de îndiguire. În cazul unei scurgeri în apele de suprafaţă, în reţeaua de canalizare sau pe/în sol este necesară informarea autorităţilor competente. Lăsaţi produsul fierbinte să se răcească natural. Deversările de amploare pot fi acoperite atent cu spumă, dacă este disponibilă, pentru a limita riscul de incendiu. Nu utilizaţi jeturi directe. Asigurati ventilatia adecvata in interiorul cladirilor sau in spatii inchise. Absorbiţi produsul vărsat cu materiale necombustibile adecvate.

6.3 Metode şi materiale pentru izolarea incendiilor şi pentru curăţenie

Procedee adecvate pentru curăţare sau absorbţie sau izolare	:	Aspirarea /evacuarea prin pompare a cantităţilor mari. Colectarea cantităţilor reziduale cu materiale absorbante neinflamabile, de exemplu nisip, pământ sau liant pentru ulei, respectiv îndiguirea acestora. Colectarea deşeurilor în containere etichetate adecvat pentru deşeuri periculoase şi eliminarea ulterioară conform normelor şi legislaţiei în vigoare. În caz de contaminare a solului, îndepărtaţi solul contaminat şi trataţi în conformitate cu reglementările locale. Utilizarea agenţilor de dispersie trebuie avizată de un expert şi, dacă este necesar, aprobată de autorităţile locale.
Procedee neadecvate pentru curăţare sau absorbţie sau izolare	:	Fără date disponibile

6.4 Trimitere la alte secţiuni

A se vedea şi Secţiunea 8 (Controale ale expunerii/Protecţia personală) şi Secţiunea 13 (Consideraţii privind eliminarea).

SECTIUNEA 7. MANIPULARE ŞI DEPOZITARE

7.1 Precauţii pentru manipularea în condiţii de securitate

Recomandări pentru manipularea în condiţii de securitate	:	Procuraţi instrucţiuni speciale înainte de utilizare. Asiguraţi-vă că toate reglementările relevante privind facilităţile de manipulare şi depozitare a produselor inflamabile sunt respectate. Trebuie efectuată o evaluare specifică a riscurilor de inhalare cauzate de prezenţa H2S în spaţiile libere din rezervoare, spaţiile închise, reziduurile de produse, deşeurile din rezervoare şi apele reziduale, precum şi a diseminărilor accidentale pentru a putea determina măsurile de control potrivite situaţiei locale. Se va utiliza numai în echipamente închise. Aspirarea vaporilor la locul de emisie. În spaţiile libere ale rezervoarelor de depozitare a produsului se poate acumula hidrogen sulfurat (H2S), putând atinge concentraţii potenţial periculoase. Dacă este posibil, se va face aerisirea încăperii la nivelul solului. Evitarea contactului cu pielea, cu ochii şi cu îmbrăcămintea. Trebuie luate măsuri de protecţie pentru a evita arsurile cutanate în timpul manipulării produsului fierbinte. Utilizaţi echipamente individuale de protecţie adecvate după cum este necesar. Evitaţi scurgerea produsului. A se utiliza şi depozita doar în exterior sau într-un spaţiu bine aerisit.
Recomandări de prevenire a incendiului şi a exploziei	:	Produsul evaporat este mai greu decât aerul şi se acumulează la nivelul solului. Aveţi grijă la acumularea în puţuri şi spaţiile închise. A nu se inspira aburi/ceaţă/vapori. În amestec cu aerul, vaporii pot forma un amestec exploziv. Prevenirea pătrunderii în canalizare şi în subsoluri. Prevenirea pătrunderii în sol şi în ape. Adoptaţi măsuri împotriva încărcării electrostatice. Luaţi măsuri de precauţie împotriva electricităţii statice. Containere, rezervoare şi echipamente de transfer/colectare legate la pământ/fixate Legaţi la centura de împământare toate echipamentele de lucru utilizate. A se feri de sursele de aprindere.

A se vedea şi Secţiunea 8 (Controale ale expunerii/Protecţia personală) şi Secţiunea 13 (Consideraţii privind eliminarea).

7.2 Condiţii de depozitare în condiţii de securitate, inclusiv eventuale incompatibilităţi

Cerinţe pentru spaţiile de depozitare şi containere	:	Dispunerea zonei de depozitare, construcţia rezervoarelor, echipamentele şi procedurile de operare trebuie să respecte legislaţia europeană, naţională sau locală relevantă. Instalaţiile de depozitare trebuie proiectate cu împrejmuiri adecvate pentru a preveni poluarea solului şi apelor în caz de scurgeri sau deversări. Recipientele vor fi păstrate închise etanş şi într-un loc bine ventilat. Este permisă numai utilizarea unor recipiente staţionare autorizate. Toate rezervoarele şi echipamentele se vor lega la centura de împământare. Depozitaţi într-un spaţiu corespunzător. De regulă este necesară existenţa unui spaţiu de depozitare etanşat şi rezistent. Materiale recomandate: Pentru containere sau căptuşeala containerelor folosiţi oţel cu conţinut scăzut de carbon (moale) sau oţel inoxidabil. Materiale nepotrivite: Anumite materiale sintetice pot fi nepotrivite pentru containere sau căptuşeala containerelor, în funcţie de specificaţiile şi utilizarea materialului. Compatibilitatea trebuie verificată împreună cu producătorul. Containerele goale pot conţine reziduuri de produse combustibile. Nu sudaţi, lipiţi, perforaţi, tăiaţi sau incineraţi containerele goale, cu excepţia cazului în care au fost curăţate corespunzător.
Informaţii suplimentare asupra condiţiilor de depozitare	:	Evitarea efectului termic. A se feri de sursele de aprindere. Curăţarea, inspectarea şi întreţinerea structurii interne a rezervoarelor de depozitare trebuie efectuate doar de personal calificat şi echipat corespunzător, conform prevederilor din reglementările naţionale, locale sau ale companiei. În spaţiile libere ale rezervoarelor de depozitare a produsului se poate acumula hidrogen sulfurat (H2S), putând atinge concentraţii potenţial periculoase. Înainte de a pătrunde în rezervoarele de depozitare şi de a iniţia orice operaţiune într-o zonă închisă, verificaţi conţinutul de oxigen, nivelul de hidrogen sulfurat (H2S) şi inflamabilitatea din atmosferă.
Măsuri de protecţie în cazul depozitării în comun	:	A nu se depozita împreună cu substanţe periculoase explozive, gaze, alte substanţe periculoase potential explozive, substanţe periculoase puternic oxidante, azotat de amoniu şi produse care conţin azotat de amoniu, peroxizi organici şi substanţe periculoase auto-reactive, substanţe infecţioase sau substanţe radioactive. Restricţii la depozitarea împreună cu substanţe periculoase piroforice sau care se autoîncălzesc, substanţe periculoase care degajă gaze inflamabile în contact cu apa sau substanţe periculoase oxidante. Ca urmare a normelor specifice de depozitare şi din cauza caracteristicilor speciale ale substanţelor/amestecurilor dintr-un depozit, în urma evaluării riscurilor, pot rezulta şi alte limitări (restricţii).

7.3 Utilizare finală specifică (utilizări finale specifice)

Instrucţiuni legate de utilizări specifice	:	Se va utiliza numai în scopurile prevăzute/relevante. Pentru informaţii referitoare la aplicaţii specifice, consultaţi scenariile de expunere din anexă.

SECTIUNEA 8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1 Parametri de control

Valoare limită de expunere profesională pentru produs

Nu se cunosc date

Valoare limită de expunere profesională pentru componenţi

Componenţi: Impuritate

hidrogen sulfurat - Nr. CAS: 7783-06-4 - Nr. EINECS: 231-977-3

Tip	mg/m3	ppm	Coeficient de depasire	Notă	Sursă
Valoare limită maximă la locul de muncă (8 h)	7	5	-	-	Hotarâre Guvern 1/2012; Directiva 2009/161/UE
Valoare limită maximă la locul de muncă (15 min)	14	10	-	-	Hotarâre Guvern 1/2012; Directiva 2009/161/UE

Valori limită biologice pentru produs

Nu se cunosc date

Valori limită biologice pentru componenţi

Nu se cunosc date

DNEL/DMEL pentru produs

Utilizare finală: Muncitor, efecte sistemice la expunere acută
Rute de expunere: inhalare;
Valoare: 4716,8 mg/m3
DNEL, Cel mai sensibil criteriu: Toxicitate acută (inhalare)

Utilizare finală: Muncitor, efecte sistemice, pe termen lung
Rute de expunere: piele;
Valoare: 0,065 mg/kg/zi
DNEL, Cel mai sensibil criteriu: Dezvoltare / Toxicitate teratogenă

Utilizare finală: Muncitor, efecte sistemice la expunere pe termen lung
Rute de expunere: inhalare;
Valoare: 0,18 mg/m3
DNEL, Cel mai sensibil criteriu: Dezvoltare / Toxicitate teratogenă

PNEC pentru produs

apă, ape reziduale, sol, sediment
Nu pot fi atribuite valori unice PNEC, deoarece produsul este un amestec de substanţe UVCB constituite din hidrocarburi.

8.2 Controale ale expunerii

Se va utiliza numai în scopurile prevăzute/relevante., Pentru informaţii referitoare la aplicaţii specifice, consultaţi scenariile de expunere din anexă.

Măsuri generale de protecţie

Măsuri de igienă	:	Asiguraţi-vă că sunt instituite măsuri de administrare adecvate. Evitarea contactului cu ochii, cu pielea şi cu îmbrăcămintea. Hainele contaminate cu produs trebuie schimbate imediat şi curăţate înainte de reutilizare.

Echipament personal de protecţie

Protecţie respiratorie	:	Când se produc vapori: utilizaţi protecţie respiratorie cu filtru A pentru gaz, culoare caracteristică maro (A1 până la 0,1 vol%, A2 până la 0,5 vol%, A3 până la 1 vol%). În cazul unor concentraţii ridicate şi în situaţia în care nu există informaţii suficiente, se va utiliza numai aparat pentru protecţia respiraţiei autonom (izolant).
Protecţia mâinilor	:	În practică, durata de utilizare a mănuşilor recomandate pentru protecţia împotriva substanţelor chimice poate fi mai redusă decât timpul de penetrare determinat conform normelor EN 374 din cauza numărului mare de factori de influenţă (de exemplu temperatură, sarcină mecanică). În cazul unui posibil contact cu mâinile, a se purta mănuşi de protecţie rezistente împotriva pătrunderii lichidelor. Atenţie la alegerea mănuşilor potrivite când lucraţi cu produse, ţevi etc., fierbinţi! **Material: Nitril;** Timpul de penetrare: 480 min Grosimea materialului: 0,40 mm Metodă de verificare: EN 374 **Material: Viton;** Timpul de penetrare: 480 min Grosimea materialului: 0,70 mm Metodă de verificare: EN 374 **Material: Butil;** Timpul de penetrare: 120 min Grosimea materialului: 0,70 mm Metodă de verificare: EN 374 **Material: Policloropren;** Timpul de penetrare: 60 min Grosimea materialului: 0,60 mm Metodă de verificare: EN 374
Protecţia ochilor / feţei	:	În cazul în care există pericol de stropire se vor utiliza ochelari cu protecţie integrală sau mască de protecţie. În caz contrar, ochelari de siguranţă cu protecţie laterală.
Protecţia corpului	:	Utilizarea, în toate cazurile, de îmbrăcăminte rezistentă la foc şi antistatică pe termen lung. Cască de protectie. Incăltăminte de protecţie antistatică nederapantă.

Controlul expunerii mediului

Controlul expunerii mediului	:	Se va utiliza numai în echipamente închise. Dacă există risc de expunere, trebuie asigurată extracţia/ventilaţia adecvată. Respectarea valorilor limită cu privire la emisii, dacă este cazul, asigurând o ventilaţie cu evacuare a aerului (dacă este necesar). În cazul unui transport în recipiente care nu prezintă siguranţă împotriva fisurării, se recomandă utilizarea de containere exterioare corespunzătoare. A se vedea şi Secţiunea 6 " Măsuri de luat in caz de dispersie accidentala ".

8.3 Informaţii suplimentare

În situaţia concretă de utilizare, ca urmare a evaluării individuale de pericol poate fi necesară utilizarea de echipamente diferite de protecţie a persoanei.

SECTIUNEA 9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1 Informaţii privind proprietăţile fizice şi chimice de bază

Aspect	:	lichid
Stare de agregare	:	lichid
Culoare	:	maro-negru
Miros	:	tipic
Prag de acceptare a mirosului	:	Miros perceptibil

Caracteristica	Valori	Metodă	Notă
pH			nu se aplică
punct de topire/punct de congelare	<= 30 °C	ISO 3016	punct de curgere
interval de fierbere			Nedeterminat
Punct de inflamabilitate	> 60 °C	EN ISO 2719	
Viteză de evaporare			nu se aplică
Tranziţie de fază solid/gaz			---
Limită inferioară de explozie	cca. 0,6 %(V)		Date literatura
Limită superioară de explozie	cca. 6,5 %(V)		Date literatura
Presiune de vapori	< 10 hPa la 120 °C		Date literatura
Densitatea vaporilor			Nedeterminat
Densitate	970 - 991 kg/m3 la 15 °C	EN ISO 12185	
Densitate relativă			nu este relevant;
Solubilitate în apă			practic insolubil
solubilitate (solubilităţi)			Solubilitatea în grăsimi: Nedeterminat
Coeficient de partiţie (n-octanol/apă)			nu există date

Temperatură de autoaprindere			Nedeterminat
Temperatura de descompunere			Nedeterminat
Vâscozitate cinematică	181 - 380 mm2/s la 50 °C	EN ISO 3104	
Vâscozitate dinamică			Nedeterminat
Proprietăţi explozive		Derivaţie din structura chimică	nu este exploziv
Proprietăţi oxidante		Derivaţie din structura chimică	neoxidant

9.2 Alte informaţii

nu există date

SECTIUNEA 10. STABILITATE SI REACTIVITATE

10.1 Reactivitate

stabil chimic

10.2 Stabilitate chimică

stabil chimic

10.3 Posibilitatea de reacţii periculoase

Reacţii potenţial periculoase : nu sunt cunoscute

10.4 Condiţii de evitat

Condiţii de evitat : Nu sunt, dacă este utilizat corect.

10.5 Materiale incompatibile

Materiale de evitat : acizi tari şi agenţi oxidanţi;

10.6 Produşi de descompunere periculoşi

Produşi de descompunere periculoşi : Nedeterminat

SECTIUNEA 11. INFORMAŢII TOXICOLOGICE

11.1 Informaţii privind efectele toxicologice

Toxicitate acută

Efect oral acut	:	LD50 şobolan, mascul/femelă Doză: > 4.320 mg/kg Metodă: OECD 401 Substanţă de test: 64741-62-4
Efect acut la inhalare	:	LC50 şobolan, mascul/femelă Doză: 4100 mg/m3/ 4 o Metodă: EPA OTS 798.1150 Substanţă de test: 64741-62-4
Efect acut cutanat	:	LD50 iepure, mascul/femelă Doză: > 2.000 mg/kg Metodă: OECD 434 Substanţă de test: 64741-62-4
Alte efecte acute	:	Nu sunt disponibile date relevante
Alte efecte	:	Expunerea repetată poate provoca uscarea sau crăparea pielii.

Corodarea/iritarea pielii

Iritaţia pielii	:	Piele de iepure Rezultat: nu este iritant Metodă: EU Method B.4 Substanţă de test: 64741-57-7

Lezarea gravă/iritarea ochilor

Iritaţia ochilor	:	Ochi de iepure Rezultat: nu este iritant Metodă: EU Method B.5 Substanţă de test:64741-57-7

Sensibilizarea căilor respiratorii sau a pielii

sensibilizare	:	Test Buehler Piele de cobai Clasificare: nu provoacă sensibilizare Metodă: EU Method B.6 Substanţă de test: 64741-62-4

Mutagenitatea celulelor germinative

Genotoxicitate in vitro	:	Testul Ames modificat Rezultat: pozitiv Metodă: OECD 471 Substanţă de test: 64741-62-4
Genotoxicitate in vivo	:	încercare micronucleară (clastogenicitate) Substanţă de test: 64741-62-4 Metodă: EU Method B.12 Rezultat: negativ
Evaluare toxicologică / Mutagenitatea celulelor germinative	:	nu există criterii de clasificare pentru mutagenitate

Cancerogenitatea

Efect cancerigen	:	dermic, şoarece Substanţă de test: 64741-62-4 Metodă: OECD 451 NOAEL Doză: 0,1% (mascul)
Evaluare toxicologică / Cancerogenitatea	:	Poate cauza cancer.

Toxicitate pentru reproducere

Toxicitate pentru reproducere/fertilitate	:	Confom coloanei II din Anexa X REACH, studiul nu trebuie realizat daca substanta este cunoscuta a fi genotoxic-cancerigena si sunt adoptate masuri adecvate de management al riscurilor.
Toxicitate pentru dezvoltare/teratogenicitate	:	Mod de aplicare: piele; şobolan Substanţă de test: 64741-62-4 Metodă: EPA OTS 798.4900 NOAEL: Doză 0,05 mg/kg/zi
Evaluare toxicologică / Toxicitate pentru dezvoltare/teratogenicitate Toxicitate pentru reproducere/fertilitate	:	Pe baza componentelor, produsul este clasificat drept toxic pentru reproducere, Nu există criterii de clasificare pentru fertilitate Pe baza datelor disponibile, produsul este clasificat ca teratogen.

Toxicitate asupra unui organ ţintă specific - expunere unică

Toxicitate asupra unui organ ţintă specific - expunere unică	:	concludent, dar insuficient pentru clasificare

Toxicitate asupra unui organ ţintă specific - expunere repetată

Efecte în cazul expunerii repetate sau de lungă durată	:	Poate provoca leziuni ale organelor în caz de expunere prelungită sau repetată. Organe ţintă: sânge, timus, ficat

Pericol prin aspirare

Toxicitate prin aspirare	:	Fără risc de aspiraţie

Efecte neurologice

Efecte narcotice	:	nici unul cunoscut

Evaluare toxicologică /

Efecte acute	:	Produsul se clasifică ca fiind nociv la inhalare.
Sensibilizare	:	Conform datelor disponibile, produsul nu se clasifică ca fiind un produs cu efecte de sensibilizare.
Toxicitate la doză repetată	:	Poate provoca leziuni ale organelor (sânge, timus, ficat) în caz de expunere prelungită sau repetată.

11.2 Informaţii suplimentare

Alte informaţii	:	Expunerea repetată poate provoca uscarea sau crăparea pielii.

SECTIUNEA 12. INFORMAŢII ECOLOGICE

12.1 Toxicitatea

Toxicitate acută

Toxicitate acută la peşti	:	LL50 Specii: Oncorhynchus mykiss (pastrav curcubeu) Doză: 79 mg/l Durată de expunere: 96 o Substanţă de test: 68476-33-5 Metodă: OECD 203
Toxicitate acută în cazul nevertebratelor acvatice	:	EL50 Specii: Daphnia magna (Purici de apă mari) Doză: 0,22 mg/l Durată de expunere: 48 o Substanţă de test: 64741-61-3 Metodă: OECD 202
Toxicitatea pentru alge şi plantele acvatice	:	EL50 Specii: Pseudokirchneriella subcapitata Doză: 0,28 - 0,37 mg/l Durată de expunere: 72 o Substanţă de test: 64741-61-3 Metodă: OECD 201

Toxicitate la microorganisme	:	LL50 Specii: Tetrahymena pyriformis Doză: > 1.000 mg/l Durată de expunere: 72 o Substanţă de test: păcură grea Metodă: QSAR
Toxicitate pentru organismele edafice	:	nu există date
Toxicitate în cazul plantelor terestre	:	nu există date
Toxicitate asupra altor organisme terestre (care nu sunt mamifere)	:	NOAEL Specii: Anas platyrhynchos Doză: 20000 mg/kg/zi Durată de expunere: 22 Săpt. Substanţă de test: titei North Slope expus la intemperii (WEVC) Metodă: OECD 206

Toxicitate cronică

Toxicitate pentru peşti (Toxicitate cronică)	:	NOEL (mortalitate) Specii: Oncorhynchus mykiss (pastrav curcubeu) Doză: 0,1 mg/l Durată de expunere: 28 z Substanţă de test: păcură grea Metodă: QSAR
Toxicitate la daphnia şi alte nevertebrate acvatice. (Toxicitate cronică)	:	NOEL (Reproducere) Specii: Daphnia magna Doză: 0,27 mg/l Durată de expunere: 21 z Substanţă de test: păcură grea Metodă: QSAR
Acvatică acută	:	Conform datelor eco-toxicologice, produsul este clasificat ca fiind foarte toxic pentru organisme acvatice.
Acvatică cronică	:	Pe baza datelor ecotoxicologice, produsul este considerat periculos pentru mediu, cu efecte îndelungate.
Date de toxicitate în sol	:	nu există date
Alte organisme relevante din punct de vedere al mediului	:	nu există date

12.2 Persistenţă şi degradabilitate

Persistenţă,Biodegradare	:	Metodă: Model computerizat Petrorisk Combustibilii petrolieri grei sunt rezistenţi la hidroliză, deoarece nu conţin un grup funcţional reactiv din punct de vedere hidrolitic. Mai mult, aceştia nu suferă fotoliză în apă sau sol.

12.3 Potenţial de bioacumulare

Bioacumulare	:	Nu sunt disponibile date relevante, Produsul este un amestec de substanţe UVCB constituite din hidrocarburi. , Testele standard pentru acest efect sunt destinate pentru substante mono-component si nu sunt adecvate pentru aceasta substanta complexa. , Cu toate acestea, acest efect a fost calculat pentru structurile hidrocarburilor reprezentative (model PETRORISK). , Valorile estimate pentru BCF sunt in general supra-conservative, intrucat nu este luata in considerare biotransformarea. , Prin urmare, este posibil ca expunerile indirecte şi estimările de risc prognozate conform PETRORISK să fie supraestimate. Potenţial de bioacumulare (Coeficient de partiţie (n-octanol/apă)): nu există date

12.4 Mobilitate în sol

Mobilitate	:	Note: Nu lăsaţi produsul să fie eliberat necontrolat în mediu.
Transport între diferite medii	:	Nu sunt informaţii relevante disponibile. Produsul este un amestec de substanţe UVCB constituite din hidrocarburi. Testele standard pentru acest efect sunt destinate pentru substante mono-component si nu sunt adecvate pentru aceasta substanta complexa. Cu toate acestea, acest efect este caracterizat prin utilizarea relatiilor cantitative structura-activitate pentru structurile hidrocarburilor reprezentative (model PETRORISK).
Capacitate de eliminare fizico-chimică	:	Acest produs este insolubil în apă şi pluteşte la suprafaţa acesteia. Poate fi separat mecanic, în staţii de tratare a apelor uzate.

12.5 Rezultate ale evaluării PBT şi vPvB

Rezultate ale evaluării PBT şi vPvB	:	Produsul este un amestec de substanţe UVCB constituite din hidrocarburi., Informaţii suplimentare relevante pentru evaluarea PBT a acestei substanţe sunt necesare., Unele eşantioane ale acestei substanţe pentru care sunt disponibile date analitice, conţin constituenţi PBT/vPvB incluşi în lista candidatelor SVHC în concentraţii mai mari de 0,1%., Nu au fost identificate alte structuri de hidrocarburi representative care sa satisfaca criteriile PBT / vPvB.

12.6 Alte efecte adverse

Efecte asupra staţiilor de epurare	:	Conform datelor modelului QSAR referitor la categoria combustibililor petrolieri grei, produsul nu are efecte toxice acute faţă de microorganismele din instalaţiile de tratare a apelor reziduale (LL50>1000 mg/l). Cu toate acestea, există posibilitatea unor efecte cronice faţă de microorganisme (NOEL 15 mg/l).
Alte efecte adverse	:	Nu evacuaţi hidrocarburi lichide în sistemul de canalizare, cursuri de apă şi pe sol. În caz de accident, contactaţi echipele speciale de intervenţie şi anunţaţi autorităţile locale competente.

SECTIUNEA 13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1 Metode de tratare a deşeurilor

Instrucţiuni privind eliminarea deşeului de produs	:	Reziduurile de produs vor fi eliminate conform prevederilor legale.
Instrucţiuni privind eliminarea deşeului de ambalaj	:	În măsura în care produsul a fost livrat în ambalaj, de preferat, ambalajele goale vor fi refolosite sau, dacă nu există această posibilitate, vor fi transportate la un punct de valorificare / eliminare finală a deşeurilor periculoase.
Codul deşeului conform Catalogului european al deşeurilor în cazul utilizării conform Secţiunii 1:		
Cod deşeu de produs	:	13 07 03* alţi combustibili (inclusiv amestecuri)
Cod deşeu de ambalaj	:	15 01 10* ambalaje care conţin reziduuri de substanţe periculoase sau sunt contaminate cu substanţe periculoase

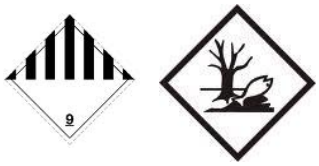
13.2 Informaţii suplimentare

Codul de deşeu depinde de originea deşeului şi, în situaţii individuale, poate diferi de informaţiile de mai sus.

Legislaţia privind eliminarea deşeurilor de produs:
Legea nr 211/2011 privind regimul deseurilor, cu modificarile si completarile ulterioare ;
HG 235/2007 privind gestionarea uleiurilor uzate;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 349/2005 privind depozitarea deşeurilor, cu modificarile si completarile ulterioare;
HG 856/2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase, cu modificarile si completarile ulterioare;
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase pe teritoriul României.

Legislaţia pentru deşeurile de ambalaje:
Ordinul nr. 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje;
Legea nr. 249/2015 privind modalitatea de gestionare a ambalajelor şi deşeurilor de ambalaje, cu modificările si completările ulterioare.

SECTIUNEA 14. INFORMATII REFERITOARE LA TRANSPORT



Transport rutier (ADR)

14.1	**Nr. ONU**	:	3082
14.2	**Denumirea corectă ONU pentru expediţie**	:	SUBSTANȚĂ PERICULOASĂ DIN PUNCT DE VEDERE AL MEDIULUI, LICHIDĂ, N.S.A. (HIDROCARBURI)
14.3	**Clasa (clasele) de pericol pentru transport**	:	9
14.4	**Grupa de ambalare**	:	III
14.5	**Pericole pentru mediul înconjurător**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.

Alte informaţii

Număr de marcare a pericolului	:	90
Etichete ADR/RID	:	9
Cod de clasificare	:	M6
Cod de restricţionare a accesului în tunel	:	(-)
Observaţii	:	Model etichetă de pericole nr. 9, Marcaj peşte şi copac pentru materiale periculoase pentru mediu

Transport feroviar (RID)

14.1	**Nr. ONU**	:	3082
14.2	**Denumirea corectă ONU pentru expediţie**	:	MATERIE PERICULOASĂ DIN PUNCT DE VEDERE AL MEDIULUI, LICHIDĂ, N.S.A. (HIDROCARBURI)
14.3	**Clasa (clasele) de pericol pentru transport**	:	9
14.4	**Grupa de ambalare**	:	III
14.5	**Pericole pentru mediul înconjurător**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.

Alte informaţii

Număr de marcare a pericolului	:	90
Etichete ADR/RID	:	9
Cod de clasificare	:	M6
Observaţii	:	Model etichetă de pericole nr. 9, Marcaj peşte şi copac pentru materiale periculoase pentru mediu

Navigaţie interioară cu barje-cisternă (ADN)

14.1	**Nr. ONU**	:	3082
14.2	**Denumirea corectă ONU pentru expediţie**	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (HIDROCARBURI)
14.3	**Clasa (clasele) de pericol pentru transport**	:	9
14.4	**Grupa de ambalare**	:	III
14.5	**Pericole pentru mediul înconjurător**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.

Alte informaţii

Observaţii	:	(N2+CMR+F)

Transport maritim (IMDG)

14.1	**Nr. ONU**	:	3082
14.2	**Denumirea corectă ONU pentru expediţie**	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (HYDROCARBONS)
14.3	**Clasa (clasele) de pericol pentru transport**	:	9
14.4	**Grupa de ambalare**	:	III
14.5	**Poluant marin**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.
14.7	**Transport în vrac, în conformitate cu anexa II la Conventia MARPOL si cu Codul IBC**	:	MARPOL Anexa 1

Alte informaţii

Etichete ale Organizaţiei Internaţionale de Aviaţie Civilă (ICAO)	:	9
Ghid de Urgenţă (EmS)	:	F-A, S-F

Transport aerian (ICAO-TI/IATA-DGR)

14.1	**Nr. ONU**	:	3082

14.2	**Denumirea corectă ONU pentru expediţie**	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(HYDROCARBONS)
14.3	**Clasa (clasele) de pericol pentru transport**	:	9
14.4	**Grupa de ambalare**	:	III
14.5	**Pericole pentru mediul înconjurător**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.

Alte informaţii

Etichete ale Organizaţiei Internaţionale de Aviaţie Civilă (ICAO)	:	9

Informaţii suplimentare

Produsul este transportat, depozitat si prelucrat la temperaturi mai mici de 100 °C.

La cerere, producătorul vă oferă informaţii suplimentare referitoare la clasificarea produsului pentru transport.

SECTIUNEA 15. INFORMAŢII DE REGLEMENTARE

15.1 Regulamente/legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză

Dispoziţii comunitare privind protecţia sănătăţii şi a mediului

Directiva 2010/75/UE privind emisiile industriale (prevenirea şi controlul integrat al poluării) - Capitolul V - Dispoziţii speciale aplicabile instalaţiilor şi activităţilor care utilizează solvenţi organici.	:	Produsul nu face obiectul directivei COV dacă se utilizează în scopurile prevăzute (vezi secţiunea 1.2).
Regulamentul (CE) nr. 1907/2006, Anexa XVII	:	nr. 28 Substanţe cancerigene din categoria 1A, respectiv 1 sau categoria 1B, respectiv 2;
Directiva 2012/18/UE a Parlamentului European şi a Consiliului din 4 iulie 2012 privind controlul pericolelor de accidente majore care implică substanţe periculoase, de modificare şi ulterior de abrogare a Directivei 96/82/CE a Consiliului (SEVESO III).	:	Anexă I, Partea 1: E1 Periculoase pentru mediul acvatic în categoria acut 1 sau cronic 1. Anexa I Partea 2: 34. Produse petroliere şi carburanţi alternativi. (d) păcură

Directiva 92/85/CEE a Consiliului din 19 octombrie 1992 privind introducerea de măsuri pentru promovarea îmbunătătirii securitătii si a sănătătii la locul de muncă în cazul lucrătoarelor gravide, care au născut de curând sau care alăptează [a zecea directivă specială în sensul articolului 16 alineatul (1) din Directiva 89/391/CEE]	:	Produsul face obiectul restrictiilor stabilite prin legislatia nationala de transpunere a Directivei.
Directiva 94/33/CE a Consiliului din 22 iunie 1994 privind protectia tinerilor la locul de muncă	:	Produsul face obiectul restrictiilor stabilite prin legislatia nationala de transpunere a Directivei.

Alte reglementări:
Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006, cu modificarile si completarile ulterioare.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase, cu modificările şi completările ulterioare;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă, cu modificarile si completarile ulterioare;
Regulamentul (CE) nr.1907/2006 privind înregistrarea, evaluarea, autorizarea si restrictionarea substantelor chimice (REACH), cu modificarile si completarile ulterioare.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006
Legea 319/2006 privind Securitatea şi sănătatea în muncă, cu modificările şi completările ulterioare;
HG 1218/2006 privind stabilirea cerinţelor minime de securitate şi sănătate în muncă pentru asigurarea protecţiei lucrătorilor împotriva riscurilor legate de prezenţa agenţilor chimici, cu modificarile si completarile ulterioare;
OUG 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) 1.907/2006, cu modificările şi completările ulterioare.
Legea nr.59/2016 privind controlul asupra pericolelor de accident major în care sunt implicate substanţe periculoase.
OUG 96/2003 privind protectia maternitatii la locul de munca, cu modificarile si completarile ulterioare.
HG 600/2007 privind protecţia tinerilor la locul de muncă, cu modificarile si completarile ulterioare
Hotarârea nr. 893/2006 pentru modificarea Hotarârii Guvernului nr. 1.593/2002 privind aprobarea Planului national de pregatire, raspuns si cooperare în caz de poluare marina cu hidrocarburi.

15.2 Evaluarea securităţii chimice

S-a efectuat evaluarea privind siguranţa chimică, în cadrul procesului de înregistrare REACH a substanţelor componente. S-a confirmat faptul, că în caz de controlare a componentei principale ca substanţă primară se poate asigura controlul corespunzător şi pentru celelalte componente ale amestecului. În consecinţă, în Anexă sunt listate scenariile de expunere elaborate pentru componenta principală. Pentru scenarii de expunere relevante, consultaţi Anexa.

SECTIUNEA 16. ALTE INFORMAŢII

Textul integral al frazelor de pericol H menţionate la Secţiunile 2 şi 3

Acute Tox.	Toxicitate acută
Aquatic Acute	Toxicitate acvatică acută
Aquatic Chronic	Toxicitate acvatică cronică
Asp. Tox.	Pericol de aspirare
Carc.	Carcinogenicitate
Flam. Liq.	Lichide inflamabile
Repr.	Toxicitate reproductivă
Skin Irrit.	Corodarea/Iritarea pielii
STOT RE	Toxicitate asupra unui organ ţintă specific - expunere repetată

H226	Lichid şi vapori inflamabili.
H304	Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii.
H315	Provoacă iritarea pielii.
H332	Nociv în caz de inhalare.
H350	Poate provoca cancer.
H361d	Susceptibil de a dăuna fătului
H373	Poate provoca leziuni ale organelor (sânge, timus, ficat) în caz de expunere prelungită sau repetată.
H400	Foarte toxic pentru viaţa acvatică.
H410	Foarte toxic pentru viaţa acvatică având efecte de lungă durată.

Alte informaţii

Alte Informaţii	:	Listă de acronime: (Q)SAR = relatie cantitativă structură-activitate ADN = Acordul european privind transportul international al mărfurilor periculoase pe căile navigabile interioare ADR = Acordul european privind transportul rutier international al mărfurilor periculoase ATE = Estimare a toxicităţii acute BCF = Factor de bioconcentrare CAS# = Numărul Chemical Abstracts Service CMR = Cancerigen, mutagen sau toxic pentru reproducere CSA = Evaluarea securităţii chimice CSR = Raport de securitate chimică DMEL = Nivel calculat cu efect minim DNEL = Nivel calculat fără efect EC50 = concentraţie efectivă 50% - concentraţia cu efect a substanţei asociată cu un raspuns de 50% ECHA = Agentia Europeană pentru Produse Chimice Număr CE = Număr EINECS si ELINCS (a se vedea, de asemenea, EINECS si ELINCS) EINECS = Inventarul european al substantelor chimice existente introduse pe piată EL50 = Nivel efectiv 50% ELINCS = Lista europeană a substantelor chimice notificate EPA = Agentia pentru Protectia Mediului (SUA) GES = Scenariu generic de expunere IATA = Asociatia Internatională pentru Transport Aerian IC50 = concentraţie de inhibare 50% ICAO-TI = Instrucţiuni tehnice privind siguranţa transportului aerian al bunurilor periculoase IMDG = Codul maritim international pentru mărfuri periculoase Kow = coeficient de partitie octanol / apă Koc = coeficient de partitie carbon organic din sol / apa LC50 = Concentratie letală până la 50 % din populatia-test LD50 = Doză letală până la 50 % din populatia-test (doză letală medie) LL50 = Incarcare letala 50% LOAEC = Concentratia cea mai scazuta cu efect advers observat

	LOAEL = Nivelul cel mai scazut cu efect advers observat NOAEC = Concentratie fara efect advers observat NOAEL = Nivel fara efect advers observat NOEC = Concentratie fara efect observat NOEL = Nivel fara efect observat OECD = Organizatia pentru cooperare si dezvoltare economică OSHA = Organizatia europeana pentru securitate si sanatate la locul de munca PBT = Substantă persistentă, bioacumulativă si toxică PEC = Concentratie predictibilă în mediu PNEC = Concentratie predictibilă fără efect RID = Regulamentele privind transportul international feroviar al mărfurilor periculoase RMM = Masuri de management al riscului SVHC = Substante care prezintă motive de îngrijorare deosebite TRA = Evaluare de risc directionata TLV = valoare limita maxima STEL = Limita de expunere de durata scurta TWA = Medie ponderata in timp UVCB = substanţă cu compoziţie necunoscută sau variabilă, produse de reacţie complexă sau materiale biologice vPvB = (substanta) foarte persistenta si foarte bioacumulativa LGK = Clasa de depozitare TRGS = Reguli tehnice pentru substante periculoase (Germania)

Surse de informaţii	:	Raport de securitate chimica (CSR)
		Procedura de clasificare: Acute Tox. 4 H332 - Metoda de calcul Repr. 2 H361d - Metoda de calcul Carc. 1B H350 - Metoda de calcul STOT RE 2 H373 - Metoda de calcul Aquatic Acute 1 H400 - Metoda de calcul; Factor de multiplicare = 1 Aquatic Chronic 1 H410 - Pe baza datelor colectate în timpul testului; factor de multiplicare= 1

Linia verticală (|) la capătul din stânga şi/sau textul de culoare roşie indică modificarea faţă de versiunea principală anterioară.
Aceste date sunt conforme informaţiilor şi experienţei de care dispunem la data menţionată a prelucrării fişei şi se referă exclusiv la produsul care poate fi identificat cu claritate în baza codului de produs, în starea de livrare a acestuia. În cazul utilizării diferite faţă de cele menţionate la secţiunea 1, sau dacă produsul este amestecat cu alte materiale ori este alterat în cursul procesului de producţie, există posibilitatea ca declaraţiile specificate în fişa cu date de securitate să nu fie valabile fără restricţii sau să nu mai fie valabile deloc. Informaţiile nu pot fi aplicate asupra altor produse cu denumiri identice sau similare. Această fişă nu scuteşte în niciun caz utilizatorul de cunoaşterea şi aplicarea tuturor textelor care reglementează activitatea sa.
Acest produs nu trebuie utilizat pentru altă aplicaţie sau aplicaţii decât cele specificate, fără consultarea prealabilă a furnizorului.
Este obligaţia utilizatorului să evalueze şi să folosească acest produs în siguranţă şi conform cu toate legile şi reglementările aplicabile.
Puteţi contacta furnizorul pentru a vă asigura că acest document este cea mai nouă versiune.
Modificarea acestui document este strict interzisă.

Anexă

Scenariile de expunere pentru cele mai frecvente utilizari sunt enumerate mai jos. Dacă este necesar, se pot furniza la cerere şi alte scenarii de expunere.

1. Titlu scurt al Scenariului de expunere: 01-Producerea substanţei

Stadiul ciclului de viață	:	**M:** Producere
Domeniu de utilizare	:	nu se aplică
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC15:** Utilizare ca reactiv de laborator
Categorie de eliberare în mediu	:	**ERC1:** Producerea substanței
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 1.1.v1
Procese, sarcini, activităţi acoperite	:	Producerea substanţei. Include transferurile de material, depozitarea, prelevarea de eşantioane, activităţile de laborator asociate, întreţinerea şi încărcarea (inclusiv în vapoare/barje, vehicule de transport combinat rutier/feroviar şi containere pentru materiale în vrac).

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC1, Producerea substanței

Cantitatea folosită

Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
Tonaj pentru utilizare regională	:	2,7 10E6 t/an
Fracţiune de tonaj UE utilizată în regiune:	:	0,2
Fracţiune din tonajul regional utilizat la nivel local:	:	1,0
Tonaj anual la amplasament (tone/an)	:	2,7 10E6
Tonaj zilnic maxim la amplasament	:	9,1 10E6 kg/zi
MSafe (tonaj maxim permis la amplasament)	:	1,17 10E7 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	300 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,001 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %
Factor de emisie sau de eliberare/degajare: Sol	:	0,010 %
Note	:	Toţi factorii de eliberare/degajare se referă la eliberarea/degajarea iniţială, inainte de aplicarea măsurilor de management al riscurilor (RMM). Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală. Factorul de emisie sau de eliberare/degajare în apă este < 0,001%.

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepărtare/eliminare de: 90,0 %
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de îndepărtare/eliminare de >= (%):: 89,2 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 0 %
Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de sedimentul din apa dulce. Preveniţi descărcarea substanţei nedizolvate în sau recuperaţi-o din apele reziduale de la amplasament. Dacă se evacuează la staţia de tratare a apelor menajere uzate, nu este necesară tratarea apelor reziduale de la amplasament.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Debitul efluentului in staţia de tratare a apelor reziduale	:	10.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	90,1 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	90,1 %
Tratarea nămolului	:	A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	În timpul producţiei nu sunt generate reziduuri/deşeuri de substanţă/material.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	În timpul producţiei nu sunt generate reziduuri/deşeuri de substanţă/material.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1	:	**Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.**
PROC2	:	**Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC3	:	**Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC8a	:	**Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate**
PROC8b	:	**Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate**
PROC15	:	**Utilizare ca reactiv de laborator**

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid
Presiune de vapori	:	Lichid, presiune de vapori la STP. < 0,5 kPa
Note	:	Operaţiunea se desfăşoară la temperatură ridicată (> 20°C peste temperatura ambiantă), Presupune implementarea unui standard de bază adecvat privind igiena profesională.

Cantitatea folosită

nu se aplică	:	

Frecvenţa şi durata folosirii

Note	:	Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel)

Condiţii tehnice şi măsuri

G18 Măsuri generale (carcinogeni).
Luaţi în considerare progresele tehnice şi modernizarea procesului (inclusiv automatizarea) pentru eliminarea degajărilor/eliberărilor/emisiilor. Minimizaţi expunerea folosind măsuri precum sistemele închise, unităţile specializate şi ventilaţia de evacuare generală / locală adecvată. Goliţi sistemele şi curăţaţi liniile/conductele de transfer înainte de a afecta etanşeitatea. Curăţaţi / spălaţi echipamentul, unde este posibil, înainte de efectuarea lucrărilor de întreţinere.
CS15 Expuneri generale (sisteme închise).
Manipulaţi substanţa în cadrul unui sistem închis.
CS2 Eşantionarea procesului + OC9 în aer liber
Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea.
CS85 Depozitare produse în vrac
Depozitaţi substanţa în cadrul unui sistem închis.
CS36 Activităţi de laborator.
Manipulaţi în interiorul unei hote de tiraj sau implementaţi metode echivalente adecvate pentru a reduce la minimum expunerea.
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
Transferaţi prin linii/conducte închise. Goliţi liniile/conductele de transfer înainte de decuplare. Păstraţi substanţele provenite din golire în spaţii de depozitare etanşe până la eliminarea sau reciclarea ulterioară.
CS511 Încărcarea autocisternelor/vagoanelor de cale ferată
Asiguraţi-vă că transferurile de material se efectuează în condiţii izolate sau sub ventilaţie cu extragerea aerului.
CS39 Curăţare şi întreţinere echipamente.
Păstraţi substanţele provenite din golire în spaţii de depozitare etanşe până la eliminarea sau reciclarea ulterioară. Goliţi şi spălaţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

G18 Măsuri generale (carcinogeni).
Inspectaţi, testaţi şi menţineţi cu regularitate toate măsurile de control. Aveţi în vedere necesitatea măsurilor de supraveghere a sănătăţii în funcţie de riscuri. Acolo unde există potenţial de expunere: permiteţi accesul doar pentru personalul autorizat; asiguraţi instruirea operatorilor pentru activitatea specifică pentru a minimiza expunerile. Asiguraţi-vă că există sisteme sigure de lucru sau mecanisme echivalente pentru gestionarea riscurilor.
CS2 Eşantionarea procesului + OC9 în aer liber
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 15 minute
CS85 Depozitare produse în vrac
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

G18 Măsuri generale (carcinogeni).
Acolo unde există potenţial de expunere: Purtaţi mănuşi corespunzătoare şi îmbrăcăminte de protecţie pentru a împiedica contaminarea pielii; purtaţi mască de protecţie respiratorie atunci când folosirea acesteia este identificată pentru anumite scenarii ajutătoare; curăţaţi imediat substanţele/materialele scurse/vărsate şi eliminaţi deşeurile în siguranţă.
CS15 Expuneri generale (sisteme închise).
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS2 Eşantionarea procesului + OC9 în aer liber
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS85 Depozitare produse în vrac
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS36 Activităţi de laborator.
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS511 Încărcarea autocisternelor/vagoanelor de cale ferată
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS39 Curăţare şi întreţinere echipamente.
Purtarea mănuşilor rezistente la produse chimice (testate conform EN374) corelată cu instruirea pentru activitatea specifică.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:
Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL)/fără efect derivat (DNEL) atunci când sunt implementate măsurile de management al riscurilor (RMM)/condiţiile operaţionale (OC) descrise la secţiunea 2. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efecte carcinogene. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.
4.2. Mediu înconjurător:

Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).

1. Titlu scurt al Scenariului de expunere: 01a - Distribuţia substanţei

Stadiul ciclului de viață	:	**IS:** Utilizare în spații industriale
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC15:** Utilizare ca reactiv de laborator
Categorie de eliberare în mediu	:	**ERC4:** Utilizarea unui aditiv de prelucrare nereactiv într-un spatiu industrial (fără includere în sau pe un articol) **ERC5:** Utilizare într-un spațiu industrial care conduce la includerea în sau pe un articol **ERC6a:** Utilizarea unui intermediar **ERC6b:** Utilizarea unui aditiv de prelucrare reactiv într-un spațiu industrial (fără includere în sau pe un articol) **ERC6c:** Utilizarea unui monomer în procese de polimerizare într-un spațiu industrial (cu sau fără includere în sau pe un articol) **ERC6d:** Utilizarea de regulatori de proces reactivi în procese de polimerizare într-un spaţiu industrial (cu sau fără includere în sau pe un articol) **ERC7:** Utilizarea unui fluid funcțional într-un spațiu industrial
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 1.1b.v1
Procese, sarcini, activităţi acoperite	:	Încărcarea în vrac (incluzând încărcarea în nave maritime/barje, vagoane de cale ferată/autocisterne şi containere intermediare de transport în vrac) şi reambalarea (incluzând canistre şi recipiente mici) a substanţei/materialului, inclusiv eşantionarea, depozitarea, descărcarea şi activităţile de laborator asociate. Nu include emisiile din timpul transportului.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC4, Utilizarea unui aditiv de prelucrare nereactiv într-un spatiu industrial (fără includere în sau pe un articol)

ERC5, Utilizare într-un spațiu industrial care conduce la includerea în sau pe un articol

ERC6a, Utilizarea unui intermediar

ERC6b, Utilizarea unui aditiv de prelucrare reactiv într-un spațiu industrial (fără includere în sau pe un articol)

ERC6c, Utilizarea unui monomer în procese de polimerizare într-un spațiu industrial (cu sau fără includere în sau pe un articol)

ERC6d, Utilizarea de regulatori de proces reactivi în procese de polimerizare într-un spaţiu industrial (cu sau fără includere în sau pe un articol)

ERC7, Utilizarea unui fluid funcțional într-un spațiu industrial

Cantitatea folosită

Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
Tonaj pentru utilizare regională	:	1,7 10E6 t/an
Fracţiune de tonaj UE utilizată în regiune:	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	0,002
Tonaj anual la amplasament (tone/an)	:	3,4 10E3
Tonaj zilnic maxim la amplasament (kg/zi):	:	3,4 10E4
MSafe (tonaj maxim permis la amplasament)	:	4,73 10E4 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	100 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,01 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %
Factor de emisie sau de eliberare/degajare: Sol	:	0,001 %
Note	:	Toţi factorii de eliberare/degajare se referă la eliberarea/degajarea iniţială, inainte de aplicarea măsurilor de management al riscurilor (RMM). Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală. Factorul de emisie sau de eliberare/degajare în apă este < 0,001%.

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepărtare/eliminare de: 90,0 %
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de îndepărtare/eliminare de >= (%):: 0 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 0 %
Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de toxicitatea secundară a elementului terestru. Nu este necesară tratarea secundară a apelor reziduale.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	90,1 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	90,1 %

Tratarea nămolului	:	A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Valorificarea şi reciclarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1 : Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.

PROC2 : Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente

PROC3 : Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente

PROC8a : Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate

PROC8b : Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate

PROC15 : Utilizare ca reactiv de laborator

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid
Presiune de vapori	:	Lichid, presiune de vapori la STP. < 0,5 kPa
Note	:	Presupune utilizarea la nu mai mult de 20°C peste temperatura ambiantă, dacă nu este menţionat altfel., Presupune implementarea unui standard de bază adecvat privind igiena profesională.

Cantitatea folosită

Neaplicabil	:	

Frecvenţa şi durata folosirii

Note	:	Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel)

Condiţii tehnice şi măsuri

G18 Măsuri generale (carcinogeni).
Luaţi în considerare progresele tehnice şi modernizarea procesului (inclusiv automatizarea) pentru eliminarea degajărilor/eliberărilor/emisiilor. Minimizaţi expunerea folosind măsuri precum sistemele închise, unităţile specializate şi ventilaţia de evacuare generală / locală adecvată. Goliţi sistemele şi curăţaţi liniile/conductele de transfer înainte de a afecta etanşeitatea. Curăţaţi / spălaţi echipamentul, unde este posibil, înainte de efectuarea lucrărilor de întreţinere.
CS15 Expuneri generale (sisteme închise).
Manipulaţi substanţa în cadrul unui sistem închis. Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea.
CS2 Eşantionarea procesului + OC9 în aer liber
Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea.
CS85 Depozitare produse în vrac
Depozitaţi substanţa în cadrul unui sistem închis.
CS137 Eşantionarea produselor
Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea.
CS36 Activităţi de laborator.
Manipulaţi în interiorul unei hote de tiraj sau implementaţi metode echivalente adecvate pentru a reduce la minimum expunerea.
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
Transferaţi prin linii/conducte închise. Goliţi liniile/conductele de transfer înainte de decuplare. Păstraţi substanţele provenite din golire în spaţii de depozitare etanşe până la eliminarea sau reciclarea ulterioară.
CS511 Încărcarea autocisternelor/vagoanelor de cale ferată
Asiguraţi-vă că transferurile de material se efectuează în condiţii izolate sau sub ventilaţie cu extragerea aerului.
CS39 Curăţare şi întreţinere echipamente.
Păstraţi substanţele provenite din golire în spaţii de depozitare etanşe până la eliminarea sau reciclarea ulterioară. Goliţi şi spălaţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

G18 Măsuri generale (carcinogeni).
Inspectaţi, testaţi şi menţineţi cu regularitate toate măsurile de control. Aveţi în vedere necesitatea măsurilor de supraveghere a sănătăţii în funcţie de riscuri. Acolo unde există potenţial de expunere: permiteţi accesul doar pentru personalul autorizat; asiguraţi instruirea operatorilor pentru activitatea specifică pentru a minimiza expunerile. Asiguraţi-vă că există sisteme sigure de lucru sau mecanisme echivalente pentru gestionarea riscurilor.
CS15 Expuneri generale (sisteme închise).
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS2 Eşantionarea procesului + OC9 în aer liber
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 15 minute
CS85 Depozitare produse în vrac
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS137 Eşantionarea produselor
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 15 minute
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

G18 Măsuri generale (carcinogeni).
Acolo unde există potenţial de expunere: Purtaţi mănuşi corespunzătoare şi îmbrăcăminte de protecţie pentru a împiedica contaminarea pielii; purtaţi mască de protecţie respiratorie atunci când folosirea acesteia este identificată pentru anumite scenarii ajutătoare; curăţaţi imediat substanţele/materialele scurse/vărsate şi eliminaţi deşeurile în siguranţă.
CS15 Expuneri generale (sisteme închise).
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS2 Eşantionarea procesului + OC9 în aer liber
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS85 Depozitare produse în vrac
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS137 Eşantionarea produselor
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS36 Activităţi de laborator.
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS511 Încărcarea autocisternelor/vagoanelor de cale ferată
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS39 Curăţare şi întreţinere echipamente.
Purtarea mănuşilor rezistente la produse chimice (testate conform EN374) corelată cu instruirea pentru activitatea specifică.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:
Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL)/fără efect derivat (DNEL) atunci când sunt implementate măsurile de management al riscurilor (RMM)/condiţiile operaţionale (OC) descrise la secţiunea 2. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efecte carcinogene. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.
4.2. Mediu înconjurător:
Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).

1. Titlu scurt al Scenariului de expunere: 02 Formularea şi (re)ambalarea substanţelor şi amestecurilor

Stadiul ciclului de viață	:	**F:** Formulare sau reambalare
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC15:** Utilizare ca reactiv de laborator
Categorie de eliberare în mediu	:	**ERC2:** Formulare în amestec
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 2.2.v1
Procese, sarcini, activităţi acoperite	:	Formularea, ambalarea şi reambalarea substanţei şi a amestecurilor sale în operaţiuni continue sau discontinue, inclusiv depozitarea, transferurile de materiale, amestecarea, tabletarea, comprimarea, peletizarea, extrudarea, ambalarea la scară mare şi mică, eşantionarea, întreţinerea şi activităţile de laborator asociate.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC2, Formulare în amestec

Cantitatea folosită

Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
Tonaj pentru utilizare regională	:	1,7 10E5 t/an
Fracţiune de tonaj UE utilizată în regiune:	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	0,18
Tonaj anual la amplasament (tone/an)	:	3 10E4
Tonaj zilnic maxim la amplasament (kg/zi):	:	1 10E5
MSafe (tonaj maxim permis la amplasament)	:	1,34 10E5 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	300 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,1 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %
Factor de emisie sau de eliberare/degajare: Sol	:	0,01 %
Note	:	Fracţie degajată din proces în aer (după măsuri tipice de management al riscurilor la amplasament în conformitate cu cerinţele Directivei UE privind emisiile de solvenţi) Factorii de eliberare/degajare in apă si sol se referă la eliberarea/degajarea iniţială, inainte de aplicarea măsurilor de management al riscurilor (RMM) Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală. Factorul de emisie sau de eliberare/degajare în apă este < 0,001%.

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepărtare/eliminare de: 0 %
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de eliminare: 82,9 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 0 %
Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de toxicitatea secundară a elementului terestru. Dacă se evacuează la staţia de tratare a apelor menajere uzate, nu este necesară tratarea apelor reziduale de la amplasament. Preveniţi descărcarea substanţei nedizolvate în sau recuperaţi-o din apele reziduale de la amplasament.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	90,1 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	90,1 %
Tratarea nămolului	:	A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Valorificarea şi reciclarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1 : Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.

PROC2	:	**Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC3	:	**Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC8a	:	**Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate**
PROC8b	:	**Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate**
PROC15	:	**Utilizare ca reactiv de laborator**

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid
Presiune de vapori	:	Lichid, presiune de vapori la STP. < 0,5 kPa
Note	:	Presupune utilizarea la nu mai mult de 20°C peste temperatura ambiantă, dacă nu este menţionat altfel., Presupune implementarea unui standard de bază adecvat privind igiena profesională.

Cantitatea folosită

Neaplicabil	:	

Frecvenţa şi durata folosirii

Note	:	Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel)

Condiţii tehnice şi măsuri

G18 Măsuri generale (carcinogeni).
Luaţi în considerare progresele tehnice şi modernizarea procesului (inclusiv automatizarea) pentru eliminarea degajărilor/eliberărilor/emisiilor. Minimizaţi expunerea folosind măsuri precum sistemele închise, unităţile specializate şi ventilaţia de evacuare generală / locală adecvată. Goliţi sistemele şi curăţaţi liniile/conductele de transfer înainte de a afecta etanşeitatea. Curăţaţi / spălaţi echipamentul, unde este posibil, înainte de efectuarea lucrărilor de întreţinere.
CS15 Expuneri generale (sisteme închise).
Manipulaţi substanţa în cadrul unui sistem închis. Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea.
CS15 Expuneri generale (sisteme închise).
CS2 Eşantionare a procesului
Manipulaţi substanţa în cadrul unui sistem închis. Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea.
CS85 Depozitare produse în vrac
Depozitaţi substanţa în cadrul unui sistem închis.
CS137 Eşantionarea produselor
Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea.
CS36 Activităţi de laborator.
Manipulaţi în interiorul unei hote de tiraj sau implementaţi metode echivalente adecvate pentru a reduce la minimum expunerea.
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
Transferaţi prin linii/conducte închise. Goliţi liniile/conductele de transfer înainte de decuplare. Păstraţi substanţele provenite din golire în spaţii de depozitare etanşe până la eliminarea sau reciclarea ulterioară.
CS511 Încărcarea autocisternelor/vagoanelor de cale ferată
Asiguraţi-vă că transferurile de material se efectuează în condiţii izolate sau sub ventilaţie cu extragerea aerului.
CS8 Transferuri în canistre/în loturi
Asiguraţi un standard adecvat de ventilaţie generală (nu mai puţin de 3 - 5 schimburi de aer pe oră) Asiguraţi-vă că transferurile de material se efectuează în condiţii izolate sau sub ventilaţie cu extragerea aerului. Asiguraţi-vă că operaţiunea este efectuată în spaţiul exterior (în aer liber).
CS39 Curăţare şi întreţinere echipamente.
Păstraţi substanţele provenite din golire în spaţii de depozitare etanşe până la eliminarea sau reciclarea ulterioară. Goliţi şi spălaţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

G18 Măsuri generale (carcinogeni).
Acolo unde există potenţial de expunere: permiteţi accesul doar pentru personalul autorizat; asiguraţi instruirea operatorilor pentru activitatea specifică pentru a minimiza expunerile. Asiguraţi-vă că există sisteme sigure de lucru sau mecanisme echivalente pentru gestionarea riscurilor. Inspectaţi, testaţi şi menţineţi cu regularitate toate măsurile de control. Aveţi în vedere necesitatea măsurilor de supraveghere a sănătăţii în funcţie de riscuri.
CS15 Expuneri generale (sisteme închise).
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS15 Expuneri generale (sisteme închise).
CS2 Eşantionare a procesului
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 15 minute
CS85 Depozitare produse în vrac
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS137 Eşantionarea produselor
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 15 minute
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS8 Transferuri în canistre/în loturi
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 1 oră

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

G18 Măsuri generale (carcinogeni).
Acolo unde există potenţial de expunere: Purtaţi mănuşi corespunzătoare şi îmbrăcăminte de protecţie pentru a împiedica contaminarea pielii; purtaţi mască de protecţie respiratorie atunci când folosirea acesteia este identificată pentru anumite scenarii ajutătoare; curăţaţi imediat substanţele/materialele scurse/vărsate şi eliminaţi deşeurile în siguranţă.
CS15 Expuneri generale (sisteme închise).
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS15 Expuneri generale (sisteme închise).
CS2 Eşantionare a procesului
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS85 Depozitare produse în vrac
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS137 Eşantionarea produselor
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS36 Activităţi de laborator.
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS511 Încărcarea autocisternelor/vagoanelor de cale ferată
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS8 Transferuri în canistre/în loturi
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS39 Curăţare şi întreţinere echipamente.
Purtarea mănuşilor rezistente la produse chimice (testate conform EN374) corelată cu instruirea pentru activitatea specifică.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:
Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL)/fără efect derivat (DNEL) atunci când sunt implementate măsurile de management al riscurilor (RMM)/condiţiile operaţionale (OC) descrise la secţiunea 2. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efecte carcinogene. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.
4.2. Mediu înconjurător:
Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).

1. Titlu scurt al Scenariului de expunere: 12a - Utilizare drept combustibil sau carburant: Industrial

Stadiul ciclului de viață	:	**IS:** Utilizare în spații industriale
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC16:** Utilizarea combustibililor
Categorie de eliberare în mediu	:	**ERC7:** Utilizarea unui fluid funcțional într-un spațiu industrial
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 7.12a.v1
Procese, sarcini, activităţi acoperite	:	Acoperă utilizarea ca şi / ori în combustibil sau carburant (sau aditivi sau componenţi de aditivi pentru combustibil sau carburant) şi include activităţi asociate cu transferul, utilizarea, întreţinerea echipamentelor şi manipularea deşeurilor acestora.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC7, Utilizarea unui fluid funcțional într-un spațiu industrial

Cantitatea folosită

Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
Tonaj pentru utilizare regională	:	1,3 10E5 t/an
Fracţiune de tonaj UE utilizată în regiune:	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	1
Tonaj anual la amplasament	:	1,3 10E5 t/an
Tonaj zilnic maxim la amplasament	:	4,4 10E5 kg/zi
MSafe (tonaj maxim permis la amplasament)	:	5,70 10E5 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	300 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,5 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %
Factor de emisie sau de eliberare/degajare: Sol	:	0 %
Note	:	Toţi factorii de eliberare/degajare se referă la eliberarea/degajarea iniţială, inainte de aplicarea măsurilor de management al riscurilor (RMM). Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală. Factorul de emisie sau de eliberare/degajare în apă este < 0,001%.

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepărtare/eliminare de: 95,0 %
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de îndepărtare/eliminare de >= (%):: 89,2 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 0 %
Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de sedimentul din apa dulce. Dacă se evacuează la staţia de tratare a apelor menajere uzate, nu este necesară tratarea apelor reziduale de la amplasament.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	90,1 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	90,1 %
Tratarea nămolului	:	A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Emisiile rezultate din ardere sunt limitate prin măsuri obligatorii de control al emisiilor de evacuare., Emisiile rezultate din ardere sunt avute în vedere în cadrul evaluării regionale a impactului., Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Această substanţă este consumată în timpul utilizării şi nu sunt generate deşeuri ale acesteia.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1 : Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.

PROC2	:	**Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC3	:	**Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC8a	:	**Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate**
PROC8b	:	**Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate**
PROC16	:	**Utilizarea combustibililor**

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid
Presiune de vapori	:	Lichid, presiune de vapori la STP. < 5 hPa
Note	:	Presupune utilizarea la nu mai mult de 20°C peste temperatura ambiantă, dacă nu este menţionat altfel., Presupune implementarea unui standard de bază adecvat privind igiena profesională.

Frecvenţa şi durata folosirii

Note	:	Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel)

Condiţii tehnice şi măsuri

G18 Măsuri generale (carcinogeni).
Luati în considerare progresele tehnice si modernizarea procesului(inclusiv automatizarea) pentru eliminarea degajărilor/eliberarilor/emisiilor. Reduceţi la minimum expunerea folosind măsuri precum sisteme închise, unităţi specializate şi ventilaţie de evacuare generală/locală adecvată. Goliţi sistemele şi curăţaţi liniile/conductele de transfer înainte de a afecta etanşeitatea. Curăţaţi/spălaţi echipamentele, acolo unde este posibil, înainte de efectuarea lucrărilor de întreţinere.
CS15 Expuneri generale (sisteme închise).
Manipulaţi substanţa în cadrul unui sistem închis. Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea.
CS15 Expuneri generale (sisteme închise).
CS137 Eşantionarea produselor
Manipulaţi substanţa în cadrul unui sistem închis. Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea. Asiguraţi un standard adecvat de ventilaţie controlată (10 - 15 schimburi de aer pe oră).
CS502 Descărcarea închisă a materialelor în vrac
OC9În exterior
Transferaţi prin linii/conducte închise.
CS8 Transferuri în canistre/în loturi
Asiguraţi un standard adecvat de ventilaţie generală (nu mai puţin de 3 - 5 schimburi de aer pe oră) Asiguraţi-vă că transferurile de material se efectuează în condiţii izolate sau sub ventilaţie cu extragerea aerului.
CS117 Utilizarea echipamentelor de filtrare a materialelor solide
Asiguraţi un standard adecvat de ventilaţie generală (nu mai puţin de 3 - 5 schimburi de aer pe oră)
CS85 Depozitare produse în vrac
Depozitaţi substanţa în cadrul unui sistem închis. Asiguraţi un standard adecvat de ventilaţie generală (nu mai puţin de 3 - 5 schimburi de aer pe oră)
CS39 Curăţare şi întreţinere echipamente.
Păstraţi substanţele provenite din golire în spaţii de depozitare etanşe până la eliminarea sau reciclarea ulterioară. Goliţi şi spălaţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

G18 Măsuri generale (carcinogeni).
Inspectaţi, testaţi şi menţineţi cu regularitate toate măsurile de control. Aveţi în vedere necesitatea măsurilor de supraveghere a sănătăţii în funcţie de riscuri. Acolo unde există potenţial de expunere: permiteţi accesul doar pentru personalul autorizat; asiguraţi instruirea operatorilor pentru activitatea specifică pentru a minimiza expunerile. Asiguraţi-vă că există sisteme sigure de lucru sau mecanisme echivalente pentru gestionarea riscurilor.
CS15 Expuneri generale (sisteme închise).
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS15 Expuneri generale (sisteme închise).
CS137 Eşantionarea produselor
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 1 oră
CS502 Descărcarea închisă a materialelor în vrac
OC9În exterior
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS8 Transferuri în canistre/în loturi
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 1 oră
CS117 Utilizarea echipamentelor de filtrare a materialelor solide
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS85 Depozitare produse în vrac
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

G18 Măsuri generale (carcinogeni).
Acolo unde există potenţial de expunere: Purtaţi mănuşi corespunzătoare şi îmbrăcăminte de protecţie pentru a împiedica contaminarea pielii; purtaţi mască de protecţie respiratorie atunci când folosirea acesteia este identificată pentru anumite scenarii ajutătoare; curăţaţi imediat substanţele/materialele scurse/vărsate şi eliminaţi deşeurile în siguranţă.
CS15 Expuneri generale (sisteme închise).
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS15 Expuneri generale (sisteme închise).
CS137 Eşantionarea produselor
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS502 Descărcarea închisă a materialelor în vrac
OC9În exterior
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS8 Transferuri în canistre/în loturi
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS117 Utilizarea echipamentelor de filtrare a materialelor solide
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS85 Depozitare produse în vrac
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
GEST_12l Utilizare drept combustibil/carburant, CS107 (sisteme închise)
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS39 Curăţare şi întreţinere echipamente.
Purtarea mănuşilor rezistente la produse chimice (testate conform EN374) corelată cu instruirea pentru activitatea specifică.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:
Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL)/fără efect derivat (DNEL) atunci când sunt implementate măsurile de management al riscurilor (RMM)/condiţiile operaţionale (OC) descrise la secţiunea 2. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efecte carcinogene. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.
4.2. Mediu înconjurător:
Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).

1. Titlu scurt al Scenariului de expunere: 12b - Utilizare drept combustibil sau carburant: Profesional

Stadiul ciclului de viață	:	**PW:** Utilizare larg răspândită de către lucrători profesioniști
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC16:** Utilizarea combustibililor
Categorie de eliberare în mediu	:	**ERC9a:** Utilizare larg răspândită a unui fluid funcțional (la interior) **ERC9b:** Utilizare larg răspândită a unui fluid funcțional (la exterior)
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 9.12b.v1
Procese, sarcini, activităţi acoperite	:	Acoperă utilizarea ca şi / ori în combustibil sau carburant (sau aditivi sau componenţi de aditivi pentru combustibil sau carburant) şi include activităţi asociate cu transferul, utilizarea, întreţinerea echipamentelor şi manipularea deşeurilor acestora.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC9a, Utilizare larg răspândită a unui fluid funcțional (la interior)
ERC9b, Utilizare larg răspândită a unui fluid funcțional (la exterior)

Cantitatea folosită

Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
Tonaj pentru utilizare regională (tone/an)	:	3,4 10E4
Fracţiune de tonaj UE utilizată în regiune:	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	0,0005
Tonaj anual la amplasament (tone/an)	:	17
Tonaj zilnic maxim la amplasament (kg/zi):	:	47
MSafe (tonaj maxim permis la amplasament)	:	789 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	365 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,01 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %
Factor de emisie sau de eliberare/degajare: Sol	:	0,001 %
Note	:	Toţi factorii de eliberare/degajare se referă la eliberare/degajare din proces de utilizare cu dispersie largă. Factorii de eliberare/degajare pentru aer şi sol se referă exclusiv la utilizarea regională.

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepartare/eliminare de: nu se aplică:
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de îndepărtare/eliminare de >= (%):: 0 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 0 %
Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de oameni prin expunere indirectă (în principal, ingerare). Dacă se evacuează la staţia de tratare a apelor menajere uzate, nu este necesară tratarea apelor reziduale de la amplasament.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	90,1 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	90,1 %
Tratarea nămolului	:	A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Emisiile rezultate din ardere sunt limitate prin măsuri obligatorii de control al emisiilor de evacuare., Emisiile rezultate din ardere sunt avute în vedere în cadrul evaluării regionale a impactului., Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Această substanţă este consumată în timpul utilizării şi nu sunt generate deşeuri ale acesteia.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1	:	**Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.**
PROC2	:	**Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC3	:	**Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC8a	:	**Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate**
PROC8b	:	**Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate**
PROC16	:	**Utilizarea combustibililor**

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid
Presiune de vapori	:	Presiunea vaporilor este dată la temperatură şi presiune standard (conditii STP). < 5 hPa
Note	:	Presupune utilizarea la nu mai mult de 20°C peste temperatura ambiantă, dacă nu este menţionat altfel., Presupune implementarea unui standard de bază adecvat privind igiena profesională.

Frecvenţa şi durata folosirii

Note	:	Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel)

Condiţii tehnice şi măsuri

G18 Măsuri generale (carcinogeni).
Luaţi în considerare progresele tehnice şi modernizarea procesului (inclusiv automatizarea) pentru eliminarea degajărilor/eliberărilor/emisiilor. Minimizaţi expunerea folosind măsuri precum sistemele închise, unităţile specializate şi ventilaţia de evacuare generală / locală adecvată. Goliţi sistemele şi curăţaţi liniile/conductele de transfer înainte de a afecta etanşeitatea. Curăţaţi / spălaţi echipamentul, unde este posibil, înainte de efectuarea lucrărilor de întreţinere.
CS15 Expuneri generale (sisteme închise).
CS137 Eşantionarea produselor
Manipulaţi substanţa în cadrul unui sistem închis. Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea. Asiguraţi un standard adecvat de ventilaţie controlată (10 - 15 schimburi de aer pe oră).
CS15 Expuneri generale (sisteme închise).
Manipulaţi substanţa în cadrul unui sistem închis. Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea. Asiguraţi un standard adecvat de ventilaţie controlată (10 - 15 schimburi de aer pe oră).
CS502 Descărcarea închisă a materialelor în vrac
Asiguraţi un standard adecvat de ventilaţie controlată (10 - 15 schimburi de aer pe oră). Asiguraţi-vă că transferurile de material se efectuează în condiţii izolate sau sub ventilaţie cu extragerea aerului.
CS8 Transferuri în canistre/în loturi
Asiguraţi un standard adecvat de ventilaţie controlată (10 - 15 schimburi de aer pe oră). Asiguraţi-vă că transferurile de material se efectuează în condiţii izolate sau sub ventilaţie cu extragerea aerului.
CS507 Alimentare cu carburanţi
Asiguraţi-vă că transferurile de material se efectuează în condiţii izolate sau sub ventilaţie cu extragerea aerului.
CS39 Curăţare şi întreţinere echipamente.
Asiguraţi un standard adecvat de ventilaţie generală (nu mai puţin de 3 - 5 schimburi de aer pe oră) Păstraţi substanţele provenite din golire în spaţii de depozitare etanşe până la eliminarea sau reciclarea ulterioară. Curăţaţi imediat substanţele/materialele scurse/vărsate. Goliţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

G18 Măsuri generale (carcinogeni).
Inspectaţi, testaţi şi menţineţi cu regularitate toate măsurile de control. Aveţi în vedere necesitatea măsurilor de supraveghere a sănătăţii în funcţie de riscuri. Acolo unde există potenţial de expunere: permiteţi accesul doar pentru personalul autorizat; asiguraţi instruirea operatorilor pentru activitatea specifică pentru a minimiza expunerile. Asiguraţi-vă că există sisteme sigure de lucru sau mecanisme echivalente pentru gestionarea riscurilor.
CS15 Expuneri generale (sisteme închise).
CS137 Eşantionarea produselor
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 1 oră
CS15 Expuneri generale (sisteme închise).
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 1 oră
CS502 Descărcarea închisă a materialelor în vrac
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 1 oră
CS8 Transferuri în canistre/în loturi
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 1 oră
CS507 Alimentare cu carburanţi
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 1 oră

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

G18 Măsuri generale (carcinogeni).
Acolo unde există potenţial de expunere: Purtaţi mănuşi corespunzătoare şi îmbrăcăminte de protecţie pentru a împiedica contaminarea pielii; purtaţi mască de protecţie respiratorie atunci când folosirea acesteia este identificată pentru anumite scenarii ajutătoare; curăţaţi imediat substanţele/materialele scurse/vărsate şi eliminaţi deşeurile în siguranţă.
CS15 Expuneri generale (sisteme închise).
CS137 Eşantionarea produselor
Purtarea mănuşilor rezistente la produse chimice (testate conform EN374) corelată cu instruirea pentru activitatea specifică.
CS15 Expuneri generale (sisteme închise).
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS502 Descărcarea închisă a materialelor în vrac
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS8 Transferuri în canistre/în loturi
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS507 Alimentare cu carburanţi
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
GEST_12I Utilizare drept combustibil/carburant, CS107 (sisteme închise)
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS39 Curăţare şi întreţinere echipamente.
Purtarea mănuşilor rezistente la produse chimice (testate conform EN374) corelată cu instruirea pentru activitatea specifică.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:

Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL)/fără efect derivat (DNEL) atunci când sunt implementate măsurile de management al riscurilor (RMM)/condiţiile operaţionale (OC) descrise la secţiunea 2. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efecte carcinogene. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.

4.2. Mediu înconjurător:

Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **EXXONMOBIL JET A-1**
Product Description: Hydrocarbons and Additives
Product Code: 708126-00
Intended Use: Aviation fuel

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
22777 Springwoods Village Parkway
Spring, TX 77389 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525
MSDS Internet Address	www.exxon.com, www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is hazardous according to regulatory guidelines (see (M)SDS Section 15).

CLASSIFICATION:

Flammable liquid: Category 3.
Skin irritation: Category 2. Specific target organ toxicant (central nervous system): Category 3. Aspiration toxicant: Category 1.

LABEL:
Pictogram:



Signal Word: Danger

Hazard Statements:

H226: Flammable liquid and vapor. H304: May be fatal if swallowed and enters airways. H315: Causes skin irritation. H336: May cause drowsiness or dizziness.

Precautionary Statements:
P210: Keep away from heat/sparks/open flames/hot surfaces. -- No smoking. P233: Keep container tightly closed. P240: Ground / bond container and receiving equipment. P241: Use explosion-proof electrical, ventilating, and lighting equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P261: Avoid breathing mist / vapours. P264: Wash skin thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves and eye / face protection.P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P312: Call a POISON CENTER or doctor/physician if you feel unwell. P331: Do NOT induce vomiting. P332 + P313: If skin irritation occurs: Get medical advice/ attention. P362 + P364: Take off contaminated clothing and wash it before reuse. P370 + P378: In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish. P391: Collect spillage.P403 + P235: Store in a well-ventilated place. Keep cool. P405: Store locked up.P501: Dispose of contents and container in accordance with local regulations.

Contains: Kerosine (petroleum)

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS
Material can accumulate static charges which may cause an ignition. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited.

HEALTH HAZARDS
High-pressure injection under skin may cause serious damage. May be irritating to the eyes, nose, throat, and lungs. Breathing of high vapor concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness.

ENVIRONMENTAL HAZARDS
Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

NFPA Hazard ID:	Health:	2	Flammability:	2	Reactivity:	0
HMIS Hazard ID:	Health:	2	Flammability:	2	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#		GHS Hazard Codes

		Concentration*	
Kerosine (petroleum)	8008-20-6	> 99 %	H226, H304, H336, H315, H401, H411

Hazardous Constituent(s) Contained in Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
ETHYL BENZENE	100-41-4	0.1 - 1%	H225, H304, H332, H373, H401, H412
NAPHTHALENE	91-20-3	< 1%	H228(2), H302, H351, H400(M factor 1), H410(M factor 1)

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION
Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device.

SKIN CONTACT
Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT
Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION
Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN
If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE
Contains hydrocarbon solvent/petroleum hydrocarbons; skin contact may aggravate an existing dermatitis.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Flammable. Hazardous material. Firefighters should consider protective equipment indicated in Section 8. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >38°C (100°F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: 0.7 UEL: 5.0
Autoignition Temperature: 250°C (482°F) [ASTM E659]

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H2S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to aromatic hydrocarbons are recommended. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

Water Spill: Stop leak if you can do it without risk. Eliminate sources of ignition. Warn other shipping. If the Flash Point exceeds the Ambient Temperature by 10 degrees C or more, use containment booms and remove from the surface by skimming or with suitable absorbents when conditions permit. If the Flash Point does not exceed the Ambient Air Temperature by at least 10C, use booms as a barrier to protect shorelines and allow material to evaporate. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Avoid all personal contact. Do not siphon by mouth. Do not use as a cleaning solvent or other non-motor fuel uses. For use as a motor fuel only. It is dangerous and/or unlawful to put fuel into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapors and cause fire. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices, etc.) during safety critical tasks, such as bulk fuel loading or unloading operations, or in storage areas where vapors may be present, unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be grounded and bonded. Fixed storage containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
ETHYL BENZENE		TWA	435 mg/m3	100 ppm	N/A	OSHA Z1
ETHYL BENZENE		TWA	20 ppm		N/A	ACGIH
Kerosine (petroleum)	Stable Aerosol.	TWA	5 mg/m3		Skin	ExxonMobil
Kerosine (petroleum)	Vapor.	TWA	200 mg/m3		Skin	ExxonMobil
Kerosine (petroleum) [as total hydrocarbon vapor]	Non-Aerosol	TWA	200 mg/m3		Skin	ACGIH
NAPHTHALENE		TWA	50 mg/m3	10 ppm	N/A	OSHA Z1
NAPHTHALENE		TWA	10 ppm		Skin	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

Biological limits

Substance	Specimen	Sampling Time	Limit	Determinant	Source
ETHYL BENZENE	Creatinine in urine	End of shift	0.15 g/g	Sum of mandelic acid and phenylglyoxylic acid	ACGIH BELs (BEIs)
NAPHTHALENE	No Biological Specimen provided	End of shift	Not Assigned	1-Naphthol, with hydrolysis + 2-Naphthol, with hydrolysis	ACGIH BELs (BEIs)

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Half-face filter respirator

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

Chemical/oil resistant clothing is recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Pale Yellow
Odor: Petroleum/Solvent
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.775 - 0.83
Density (at 15 ºC): 750 kg/m³ (6.26 lbs/gal, 0.75 kg/dm³) - 860 kg/m³ (7.18 lbs/gal, 0.86 kg/dm³) [ASTM D4052]
Flammability (Solid, Gas): N/A
Flash Point [Method]: >38°C (100°F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: 0.7 UEL: 5.0
Autoignition Temperature: 250°C (482°F) [ASTM E659]
Boiling Point / Range: > 200°C (392°F) [EN ISO 3405]
Decomposition Temperature: N/D
Vapor Density (Air = 1): N/D
Vapor Pressure: < 0.133 kPa (1 mm Hg) at 20 °C [EN 13016-1]
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible

Viscosity: 1.1 cSt (1.1 mm2/sec) at 40 °C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION
Freezing Point: -47°C (-53°F) - -40°C (-40°F)
Melting Point: N/A

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid heat, sparks, open flames and other ignition sources.

MATERIALS TO AVOID: Alkalies, Halogens, Strong Acids, Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: (Rat) 4 hour(s) LC50 > 5000 mg/m3 (Vapor)	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 403
Irritation: No end point data for material.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.
Ingestion	
Acute Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 420
Skin	
Acute Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 402
Skin Corrosion/Irritation (Rabbit): Data available.	Irritating to the skin. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 404
Eye	
Serious Eye Damage/Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 405
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: Data available.	Not expected to be a skin sensitizer. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 406
Aspiration: Data available.	May be fatal if swallowed and enters airways. Based on physico-chemical properties of the material.

Germ Cell Mutagenicity: Data available.	Not expected to be a germ cell mutagen. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 471 475 476 478 479
Carcinogenicity: Data available.	Not expected to cause cancer. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 451
Reproductive Toxicity: Data available.	Not expected to be a reproductive toxicant. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 414 421
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	May cause drowsiness or dizziness.
Repeated Exposure: Data available.	Not expected to cause organ damage from prolonged or repeated exposure. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 410 412

TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY
ETHYL BENZENE	Inhalation Lethality: 4 hour(s) LC50 17.8 mg/l (Vapor) (Rat); Oral Lethality: LD50 3.5 g/kg (Rat)
NAPHTHALENE	Inhalation Lethality: 4 hour(s) LC50 > 0.4 mg/l (Max attainable vapor conc.) (Rat); Oral Lethality: LD50 533 mg/kg (Mouse)

OTHER INFORMATION

For the product itself:

Vapor/aerosol concentrations above recommended exposure levels are irritating to the eyes and respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects including death.

Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema. Repeated co-exposure to monoaromatic hydrocarbons contained in this product in excess of recognized occupational exposure limits and noise levels in excess of 85 dB(A) may increase the risk of hearing impairment.

Jet fuel: Some jet fuels have potential in mice to suppress indicators of immune system functionality. The relevance of these effects to humans is uncertain.

Contains:

Kerosene: Carcinogenic in animal tests. Lifetime skin painting tests produced tumors, but the mechanism is due to repeated cycles of skin damage and restorative hyperplasia. This mechanism is considered unlikely in humans where such prolonged skin irritation would not be tolerated. Did not cause mutations In vitro. Inhalation of vapors did not result in reproductive or developmental effects in laboratory animals. Inhalation of high concentrations in animals resulted in respiratory tract irritation, lung changes and some reduction in lung function. Non-sensitizing in animal tests.

NAPHTHALENE: Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain.

ETHYLBENZENE: Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
ETHYL BENZENE	100-41-4	5
NAPHTHALENE	91-20-3	2, 5

--REGULATORY LISTS SEARCHED--

1 = NTP CARC
2 = NTP SUS
3 = IARC 1
4 = IARC 2A
5 = IARC 2B
6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY

Majority of components -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

Majority of components -- Low potential to migrate through soil.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be inherently biodegradable

Atmospheric Oxidation:

Majority of components -- Expected to degrade rapidly in air

BIOACCUMULATION POTENTIAL

Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

ECOLOGICAL DATA

Ecotoxicity

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	48 hour(s)	Daphnia magna	EL50 1 - 100 mg/l: data for similar materials
Aquatic - Acute Toxicity	96 hour(s)	Oncorhynchus mykiss	LL50 1 - 100 mg/l: data for similar materials
Aquatic - Acute Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	EL50 1 - 100 mg/l: data for similar materials

Aquatic - Chronic Toxicity	21 day(s)	Daphnia magna	NOELR 0.48 mg/l: data for similar materials
Aquatic - Chronic Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	NOELR 1 - 10 mg/l: data for similar materials

Persistence, Degradability and Bioaccumulation Potential

Media	Test Type	Duration	Test Results
Water	Ready Biodegradability	28 day(s)	Percent Degraded < 60 : similar material

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT)

Proper Shipping Name: FUEL, AVIATION, TURBINE ENGINE
Hazard Class & Division: 3
ID Number: 1863
Packing Group: III
Marine Pollutant: Yes
ERG Number: 128
Label(s): 3
Transport Document Name: UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, PG III, MARINE POLLUTANT (Kerosene)

Footnote: The flash point of this material is greater than 100 F. Regulatory classification of this material varies. DOT: Flammable liquid or combustible liquid. OSHA: Combustible liquid. IATA/IMO: Flammable liquid.

LAND (TDG)

Proper Shipping Name: FUEL, AVIATION, TURBINE ENGINE
Hazard Class & Division: 3
UN Number: 1863
Packing Group: III
Special Provisions: 17, 150

SEA (IMDG)

Proper Shipping Name: FUEL, AVIATION, TURBINE ENGINE
Hazard Class & Division: 3
EMS Number: F-E, S-E
UN Number: 1863
Packing Group: III
Marine Pollutant: Yes
Label(s): 3
Transport Document Name: UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, PG III, (38°C c.c.), MARINE POLLUTANT (Kerosene)

AIR (IATA)

Proper Shipping Name: FUEL, AVIATION, TURBINE ENGINE
Hazard Class & Division: 3
UN Number: 1863
Packing Group: III
Label(s) / Mark(s): 3
Transport Document Name: UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, PG III

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, IECSC, KECI, PICCS, TCSI, TSCA

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

CERCLA: This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

SARA (311/312) REPORTABLE GHS HAZARD CLASSES: Aspiration Hazard, Flammable (gases, aerosols, liquids, or solids), Skin Corrosion or Irritation, Specific Target Organ toxicity (single or repeated exposure)

SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value

ETHYL BENZENE	100-41-4	0.1 - 1%
NAPHTHALENE	91-20-3	< 1%

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
ETHYL BENZENE	100-41-4	1, 4, 10, 17, 19
Kerosine (petroleum)	8008-20-6	1, 18
NAPHTHALENE	91-20-3	1, 4, 10, 17, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

WARNING: Cancer - www.P65Warnings.ca.gov. Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product.

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights.

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H225: Highly flammable liquid and vapor; Flammable Liquid, Cat 2
H226: Flammable liquid and vapor; Flammable Liquid, Cat 3
H228(2): Flammable solid; Flammable Solid, Cat 2
H302: Harmful if swallowed; Acute Tox Oral, Cat 4
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
H332: Harmful if inhaled; Acute Tox Inh, Cat 4
H336: May cause drowsiness or dizziness; Target Organ Single, Narcotic
H351: Suspected of causing cancer; GHS Carcinogenicity, Cat 2
H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H401: Toxic to aquatic life; Acute Env Tox, Cat 2
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1
H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2
H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Composition: Component Table information was modified.

Section 04: First Aid Inhalation information was modified.
Section 06: Accidental Release - Spill Management - Land information was modified.
Section 07: Handling and Storage - Handling information was modified.
Section 12: information was modified.
Section 14: Special Provisions information was modified.
Section 16: HCode Key information was modified.

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HALLIBURTON

SAFETY DATA SHEET
NEA-96M

according to Regulation (EC) No. 453/2010

Revision Date: 28-Sep-2017 **Revision Number:** 15
Preparation Date 28-Sep-2017 **Internal ID Code** HM003212

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product Identifier

Product Name NEA-96M
Internal ID Code HM003212

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Surfactant
Process categories PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC15 - Use as a laboratory reagent
Environmental release category(ies) ERC2 - Formulation of preparations (mixtures) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

1.3. Details of the supplier of the safety data sheet

Halliburton Energy Services
Halliburton House, Howemoss Place
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
United Kingdom

www.halliburton.com

For further information, please contact
E-mail Address: fdunexchem@halliburton.com

1.4. Emergency telephone number

+44 8 08 189 0979 / 1-760-476-3961
Global Incident Response Access Code: 334305
Contract Number: 14012

Emergency telephone - §45 - (EC)1272/2008	
Turkey	Ulusal Zehir Danisma Merkezi (UZEM) :114 Acil Saglik Hizmetleri : 112
Europe	**112**
Bulgaria	Bulgarian poison centre: +359 2 915-44-09 or +359 2 915-43-46
Croatia	Centar za kontrolu otrovanja (CKO): (+385 1) 23-48-342 (Poison Control Center (PCC) - Institute for Medical Research and Occupational Health)
Cyprus	00357 22 88 7171
Denmark	Poison Control Hotline (DK): +45 82 12 12 12
France	ORFILA (FR): + 01 45 42 59 59
Germany	Poison Center Berlin (DE): +49 030 30686 790
Italy	Poison Center, Milan (IT): +39 02 6610 1029
Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
Norway	Poisons Information (NO):+ 47 22 591300
Poland	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
Portugal	CIAV - Centro de Informação Antivenenos (Portuguese Poison Centre): + 351 213 303 271
Romania	+40 21 318 36 06
Spain	Poison Information Service (ES): +34 91 562 04 20
United Kingdom	NHS Direct (UK): +44 0845 46 47

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Skin Corrosion/Irritation	Category 2 - H315
Serious Eye Damage/Irritation	Category 1 - H318
Acute Aquatic Toxicity	Acute 1 - H400
Chronic Aquatic Toxicity	Chronic 1 - H410
Flammable liquids.	Category 3 - H226

2.2. Label Elements

Hazard Pictograms



Signal Word: **Danger**

Hazard Statements:
H226 - Flammable liquid and vapor
H315 - Causes skin irritation
H318 - Causes serious eye damage
H410 - Very toxic to aquatic life with long lasting effects

Precautionary Statements:
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

Contains

Substances	**CAS Number**
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0
Hexylene glycol	107-41-5
Isopropanol	67-63-0

2.3. Other Hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Mixture

Substances	**EINECS**	**CAS Number**	**PERCENT (w/w)**	**EU - CLP Substance Classification**	**REACH Reg. No**
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated		119345-03-8	30 - 60%	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available
Benzene sulfonic acid, dodecyl-, sodium salt	246-680-4	25155-30-0	10 - 30%	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Corr. 1 (H318)	No data available

				Aquatic Chronic 3 (H412)	
Hexylene glycol	203-489-0	107-41-5	10 - 30%	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)	No data available
Isopropanol	200-661-7	67-63-0	10 - 30%	Eye Irrit. 2 (H319) STOT SE 3 (H336) Flam. Liq. 2 (H225)	01-2119457558-25

For the full text of the H-phrases mentioned in this Section, see Section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

Ingestion Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Causes severe eye irritation which may damage tissue. Causes skin irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

5.2. Special hazards arising from the substance or mixture

Special exposure hazards in a fire

May be ignited by heat, sparks or flames Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce harmful gases. Do not allow runoff to enter waterways.

5.3. Advice for firefighters

Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas. Remove sources of ignition. Avoid breathing vapors. Avoid contact with skin, eyes and clothing.
See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

6.4. Reference to other sections
See Section 8 and 13 for additional information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Use appropriate protective equipment. Remove sources of ignition. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities
Store away from oxidizers. Store away from acids. Store in a cool well ventilated area. Keep from heat, sparks, and open flames. Keep container closed when not in use. Product has a shelf life of 24 months.

7.3. Specific end use(s)
Exposure scenario No information available
Other Guidelines No information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
Exposure Limits

Substances	CAS Number	EU	UK	Netherlands	France
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	Not applicable	Not applicable	Not applicable	Not applicable
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	Not applicable	Not applicable	Not applicable	Not applicable
Hexylene glycol	107-41-5	Not applicable	TWA: 25 ppm TWA: 123 mg/m³ STEL: 25 ppm STEL: 123 mg/m³	Not applicable	STEL: 25 ppm STEL: 125 mg/m³
Isopropanol	67-63-0	Not applicable	TWA: 400 ppm TWA: 999 mg/m³ STEL: 500 ppm STEL: 1250 mg/m³	Not applicable	STEL: 400 ppm STEL: 980 mg/m³

Substances	CAS Number	Germany	Spain	Portugal	Finland
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	Not applicable	Not applicable	Not applicable	Not applicable
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	Not applicable	Not applicable	Not applicable	Not applicable
Hexylene glycol	107-41-5	TWA: 10 ppm TWA: 49 mg/m³ Peak: 20 ppm Peak: 98 mg/m³	25 ppm STEL [VLA-EC]; 123 mg/m³ STEL [VLA-EC]	Ceiling: 25 ppm	TWA: 25 ppm TWA: 120 mg/m³ STEL: 40 ppm STEL: 200 mg/m³
Isopropanol	67-63-0	TWA: 200 ppm TWA: 500 mg/m³ Peak: 400 ppm Peak: 1000 mg/m³	TWA: 200 ppm TWA: 500 mg/m³ 400 ppm STEL [VLA-EC]; 1000 mg/m³ STEL [VLA-EC]	TWA: 200 ppm STEL: 400 ppm	TWA: 200 ppm TWA: 500 mg/m³ STEL: 250 ppm STEL: 620 mg/m³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	Not applicable	Not applicable	Not applicable	Not applicable
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	Not applicable	Not applicable	Not applicable	Not applicable
Hexylene glycol	107-41-5	TWA: 10 ppm TWA: 49 mg/m³ STEL" 10 ppm STEL" 49 mg/m³ Ceiling: 10 ppm Ceiling: 49 mg/m³	25 ppm STEL; 125 mg/m³ STEL	TWA: 10 ppm TWA: 49 mg/m³ STEL: 20 ppm STEL: 98 mg/m³	Not applicable

Isopropanol	67-63-0	TWA: 200 ppm TWA: 500 mg/m³ STEL" 800 ppm STEL" 2000 mg/m³	200 ppm TWA 400 ppm STEL	TWA: 200 ppm TWA: 500 mg/m³ STEL: 400 ppm STEL: 1000 mg/m³	TWA: 100 ppm TWA: 245 mg/m³ STEL: 150 ppm STEL: 306.25 mg/m³

Substances	**CAS Number**	**Italy**	**Poland**	**Hungary**	**Czech Republic**
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	Not applicable	Not applicable	Not applicable	Not applicable
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	Not applicable	Not applicable	Not applicable	Not applicable
Hexylene glycol	107-41-5	Not applicable	Not applicable	Not applicable	Not applicable
Isopropanol	67-63-0	Not applicable	TWA: 900 mg/m³ STEL: 1200 mg/m³	TWA: 500 mg/m³ STEL: 2000 mg/m³	TWA: 500 mg/m³

Substances	**CAS Number**	**Denmark**	**Romania**	**Croatia**	**Cyprus**
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	Not applicable	Not applicable	Not applicable	Not applicable
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	Not applicable	Not applicable	Not applicable	Not applicable
Hexylene glycol	107-41-5	Ceiling: 25 ppm Ceiling: 125 mg/m³	Not applicable	TWA: 25 ppm TWA: 123 mg/m³ STEL: 25 ppm STEL: 123 mg/m³	Not applicable
Isopropanol	67-63-0	TWA: 200 ppm TWA: 490 mg/m³	TWA: 81 ppm TWA: 200 mg/m³ STEL: 203 ppm STEL: 500 mg/m³	TWA: 400 ppm TWA: 999 mg/m³ STEL: 500 ppm STEL: 1250 mg/m³	Not applicable

Substances	CAS Number	Bulgaria	Turkey
Isopropanol	67-63-0	TWA: 980.0 mg/m³ STEL: 1225.0 mg/m³	Not applicable

Derived No Effect Level (DNEL) No information available

Worker

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Hazards for the eyes - local effects
Isopropanol	500 mg/m³	Not available	Not available	Not available	888 mg/kg bw/day	Not available	Not available	Not available	Not available

General Population

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Long-term exposure - systemic effects, Oral	Acute / short term exposure - local effects, Oral	Hazards for the eyes - local effects
Isopropanol	89 mg/m³	Not available	Not available	Not available	319 mg/kg bw/day	Not available	Not available	Not available	26 mg/kg bw/day	Not available	Not available

Predicted No Effect Concentration (PNEC) No information available.

Substances	Freshwater	Marine water	Intermittent release	Sewage treatment plant	Sediment (freshwater)	Sediment (marine water)	Air	Soil	Secondary poisoning
Isopropanol	140.9 mg/L	140.9 mg/L	140.9 mg/L	2251 mg/L	552 mg/kg sediment dw	552 mg/kg sediment dw	Not available	28 mg/kg soil dw	160 mg/kg food

8.2. Exposure controls

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Personal protective equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this

product.

Respiratory Protection	Organic vapor respirator with a dust/mist filter. (A2P2/P3)
Hand Protection	Impervious rubber gloves.
Skin Protection	Full protective chemical resistant clothing.
Eye Protection	Chemical goggles; also wear a face shield if splashing hazard exists.
Other Precautions	Eyewash fountains and safety showers must be easily accessible.

Environmental Exposure Controls No information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid **Color:** Amber
Odor: Alcohol **Odor Threshold:** No information available

Property Remarks/ - Method	Values
pH:	7-9
Freezing Point / Range	No data available
Melting Point / Range	No data available
Boiling Point / Range	No data available
Flash Point	30 °C / 86 °F
Flammability (solid, gas)	No data available
Upper flammability limit	No data available
Lower flammability limit	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	1.04
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%) No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
Not expected to be reactive.
10.2. Chemical stability
Stable
10.3. Possibility of hazardous reactions
Will Not Occur
10.4. Conditions to avoid
None anticipated
10.5. Incompatible materials
Strong oxidizers. Strong acids.
10.6. Hazardous decomposition products
Oxides of sulfur. Carbon monoxide and carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute Toxicity

Inhalation May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech,

giddiness and unconsciousness.

Eye Contact Causes severe eye irritation

Skin Contact Causes skin irritation.

Ingestion May be harmful if swallowed. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	1000 > LD50 < 2000 mg/kg (Rat)	> 1000 mg/kg (Rabbit) (similar substance)	No data available
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	438 mg/kg (Rat) 1080 mg/kg (Rat) (similar substance)	No data available	No data available
Hexylene glycol	107-41-5	4700 mg/kg-bw (rat)	12,236 mg/kg-bw (rabbit)	LC50 > saturated vapour (rat, 8h)
Isopropanol	67-63-0	5840 mg/kg-bw (rat)	12870 mg/kg-bw (rabbit)	72.6 mg/L (Rat, 4h, vapor)

Substances	CAS Number	Skin corrosion/irritation
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	Skin, rabbit: Causes moderate skin irritation.
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	Causes moderate skin irritation. (similar substances)
Hexylene glycol	107-41-5	Causes mild skin irritation (Rabbit) Non-irritating to the skin
Isopropanol	67-63-0	Non-irritating to the skin (Rabbit)

Substances	CAS Number	Serious eye damage/irritation
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	Eye, rabbit: Causes moderate eye irritation
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	Causes severe eye irritation which may damage tissue. (similar substances)
Hexylene glycol	107-41-5	Causes eye irritation. (Rabbit)
Isopropanol	67-63-0	Causes moderate eye irritation (Rabbit)

Substances	CAS Number	Skin Sensitization
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	Did not cause sensitization on laboratory animals (guinea pig) (similar substances)
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	Did not cause sensitization on laboratory animals Patch test on human volunteers did not demonstrate sensitization properties (similar substances)
Hexylene glycol	107-41-5	Did not cause sensitization on laboratory animals (guinea pig)
Isopropanol	67-63-0	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	No information available
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	No information available
Hexylene glycol	107-41-5	No information available
Isopropanol	67-63-0	No information available

Substances	CAS Number	Mutagenic Effects
Benzene, 1,1`-oxybis, tetrapropylene derivatives,	119345-03-8	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances)

sulfonated		
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances)
Hexylene glycol	107-41-5	In vitro tests did not show mutagenic effects
Isopropanol	67-63-0	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects.

Substances	**CAS Number**	**Carcinogenic Effects**
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	Did not show carcinogenic effects in animal experiments (similar substances)
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	Did not show carcinogenic effects in animal experiments (similar substances)
Hexylene glycol	107-41-5	No information available
Isopropanol	67-63-0	Did not show carcinogenic effects in animal experiments

Substances	**CAS Number**	**Reproductive toxicity**
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)
Hexylene glycol	107-41-5	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Isopropanol	67-63-0	Animal testing did not show any effects on fertility.

Substances	**CAS Number**	**STOT - single exposure**
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	No information available
Hexylene glycol	107-41-5	No significant toxicity observed in animal studies at concentration requiring classification.
Isopropanol	67-63-0	May cause headache, dizziness, and other central nervous system effects.

Substances	**CAS Number**	**STOT - repeated exposure**
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Hexylene glycol	107-41-5	No significant toxicity observed in animal studies at concentration requiring classification.
Isopropanol	67-63-0	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	**CAS Number**	**Aspiration hazard**
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	No information available
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	Not applicable
Hexylene glycol	107-41-5	No information available Not applicable
Isopropanol	67-63-0	Not applicable

SECTION 12: Ecological information

12.1. Toxicity

Substances	**CAS Number**	**Toxicity to Algae**	**Toxicity to Fish**	**Toxicity to Microorganisms**	**Toxicity to Invertebrates**
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	EC50 (72h) > 100 mg/L (Pseudokirchnerella subcapitata) (similar	LC50 (96h) 0.47 mg/L (Pimphales promelas) (similar substance)	No information available	EC50 (48h) 2.3 mg/L (Daphnia magna) (similar substance)

		substance)	NOEC (32d) 0.0125 mg/L (Pimphales promelas) (similar substance)		
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	No information available	LC50 (96h) 10.8 mg/L (Oncorhynchus mykiss) LC50 (96h) 7.133 mg/L (Onocorhynchus kisutch) NOEC (28d) 1 mg/L (Lepomis macrochirus) (similar substance) NOEC (72d) 0.23 mg/L (Salmo gairdneri)	No information available	EC50 (48h) 6.3 - 7.5 mg/L (Daphnia magna) NOEC (21d) 1.18 mg/L (Daphnia magna) (similar substance)
Hexylene glycol	107-41-5	EC50 (72 h) 8682.73 mg/L (Skeletonema costatum)	LC50 (96 h) >1800 mg/L (Scophthalmus maximus)	Inhibitory Concentration (10d) > 1000 mg/L (Pseudomonas aeruginosa)	LC50 (48 h) 6615.38 mg/L (Acartia tonsa) EC50 (48 h) 2800 mg/L (Ceriodaphnia reticulata)
Isopropanol	67-63-0	EC50 (72h) > 1000 mg/L (Desmodesmus subspicatus) EC50 (7d) 1800 mg/L (Scenedesmus quadricauda)	LC50 (96h) 9640 mg/L (Pimephales promelas) LC50 (7d) 7060 mg/L (Poecilia reticulata)	TT (16h) 1050 mg/L (Pseudomonas putida)	EC50 (48h) 13,299 mg/L (Daphnia magna) EC50 (24h) > 10,000 mg/L (Daphnia magna)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	Not readily biodegradable
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	No information available
Hexylene glycol	107-41-5	Readily biodegradable (60% @ 14d)
Isopropanol	67-63-0	Readily biodegradable (53% @ 5d)

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	3.3
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	No information available
Hexylene glycol	107-41-5	Log Pow =0
Isopropanol	67-63-0	0.05

12.4. Mobility in soil

Substances	CAS Number	Mobility
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	119345-03-8	No information available
Benzene sulfonic acid, dodecyl-, sodium salt	25155-30-0	No information available
Hexylene glycol	107-41-5	No information available
Isopropanol	67-63-0	No information available

12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

Substances	PBT and vPvB assessment
Benzene, 1,1`-oxybis, tetrapropylene derivatives, sulfonated	Not PBT/vPvB
Benzene sulfonic acid, dodecyl-, sodium salt	Not PBT/vPvB
Hexylene glycol	Not PBT/vPvB
Isopropanol	Not PBT/vPvB

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods	Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

SECTION 14: Transport information

IMDG/IMO

UN Number	UN1993
UN proper shipping name:	Flammable Liquid, N.O.S. (Contains Isopropanol)
Transport Hazard Class(es):	3
Packing Group:	III
Environmental Hazards:	Marine Pollutant (Benzene, 1,1`-oxybis-, tetratpropylene derivs., sulfonated)

RID

UN Number	UN1993
UN proper shipping name:	Flammable Liquid, N.O.S. (Contains Isopropanol)
Transport Hazard Class(es):	3
Packing Group	III
Environmental Hazards:	Marine Pollutant

ADR

UN Number	UN1993
UN proper shipping name:	Flammable Liquid, N.O.S. (Contains Isopropanol)
Transport Hazard Class(es):	3
Packing Group	III
Environmental Hazards:	Marine Pollutant

IATA/ICAO

UN Number	UN1993
UN proper shipping name:	Flammable Liquid, N.O.S. (Contains Isopropanol)
Transport Hazard Class(es):	3
Packing Group:	III
Environmental Hazards:	Marine Pollutant (Benzene, 1,1`-oxybis-, tetratpropylene derivs., sulfonated)

14.1. UN Number UN1993

14.2. UN proper shipping name: Flammable Liquid, N.O.S. (Contains Isopropanol)

14.3. Transport Hazard Class(es): 3

14.4. Packing Group III

14.5. Environmental Hazards: Marine Pollutant

14.6. Special Precautions for User None

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

EINECS (European Inventory of Existing Chemical Substances)	This product does not comply with EINECS
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian Domestic Substances List (DSL)	All components listed on inventory or are exempt.

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

Germany, Water Endangering Classes (WGK) WGK 2: Hazard to waters.

15.2. Chemical safety assessment
No information available

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3
H225 - Highly flammable liquid and vapor
H226 - Flammable liquid and vapor
H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
H412 - Harmful to aquatic life with long lasting effects

Key or legend to abbreviations and acronyms used in the safety data sheet
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
ErC50 – Effective Concentration growth rate 50%
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL0 – Lethal Loading 0%
LL50 – Lethal Loading 50%
MARPOL – International Convention for the Prevention of Pollution from Ships
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NOEC – No Observed Effect Concentration
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
PC – Chemical Product category
PEL – Permissible Exposure Limit
ppm – parts per million
PROC – Process category
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
STEL – Short Term Exposure Limit
SU – Sector of Use category

Key literature references and sources for data
www.ChemADVISOR.com/
OSHA
ECHA C&L

Revision Date: 28-Sep-2017
Revision Note
SDS sections updated:
2

This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010

Disclaimer Statement
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End of Safety Data Sheet

Revision Number: 15
Revision Date: 28-Sep-2017
NEA-96M

Annex to SDS					
Substances	**CAS Number**	**Process categories**	**Environmental release category**	**Product category(ies)**	**Sector of uses**
Isopropanol	67-63-0	PROC4; PROC8b; PROC15	ERC2; ERC4	-	SU2a; SU2b

Exposure Scenario
Application of bulk onshore/offshore oilfield liquid or solid/powder.

1. Title Section

Use
Use in batch process where opportunities for exposure arise.
Transfer from support vessel to installation.
Transfer from bulk/ IBC/ drum to on-site storage, transfer to process.
Transfer from pot/tin/tube to process. On-site sampling and testing e.g. QC

Sector of uses
SU2a - Mining, (without offshore industries)
SU2b - Offshore industries

Worker

Process categories
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC15 - Use as a laboratory reagent

Product category(ies)
Not applicable

Article categories
Not applicable

Environmental

Environmental release category(ies)
ERC2 - Formulation of preparations (mixtures)
ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

2. Conditions of use affecting exposure

Control of environmental exposure

Amount used, frequency and duration of use (or from service life)

Substances	Daily Amount Per Site	Annual site tonnage	Frequency	Duration of use
Isopropanol	-	-	-	-

Technical and organisational conditions and measures

Substances	Technical and organisational conditions and measures
Isopropanol	Prevent entry into waterways, sewers, basements or confined areas.

Conditions and measures related to sewage treatment plant

Substances	Conditions and measures related to sewage treatment plant
Isopropanol	No information available

Conditions and measures related to treatment of waste (including article waste)

Substances	Conditions and measures related to treatment of waste (including article waste)
Isopropanol	Dispose of contents/container in accordance with local/regional/national/international regulations.

Other conditions affecting environmental exposure

Substances	Receiving surface water flow m3/d	Degradation
Isopropanol	-	53% @ 5d

Control of Worker Exposure

Product (article) characteristics

Physical State:	Liquid
Vapor Pressure	No information available
Dustiness	Not applicable

Substances	Limit the substance content in the product to
Isopropanol	100%

Amount used (or contained in articles), frequency and duration of use/exposure

Substances	Amounts used (daily)	Covers daily exposures up to (hours/day)	Frequency (days/year)
Isopropanol	-	8	-

Technical and organisational conditions and measures

Substances	Technical and organisational conditions and measures
Isopropanol	Use with local exhaust ventilation. PROC4: Avoid spillage when withdrawing pump. PROC8b: Use in closed batch process (synthesis or formulation).

Conditions and measures related to personal protection, hygiene and health evaluation

Substances	Conditions and measures related to personal protection, hygiene and health evaluation
Isopropanol	Use suitable eye protection. Wear suitable gloves tested to EN374. Refer to section 8 of the SDS.

Other conditions affecting workers exposure

Substances	Other conditions affecting workers exposure
Isopropanol	Assumes use at not more than 20°C above ambient temperature (unless stated differently).

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Substances	Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply
Isopropanol	Wash hands after use. Launder contaminated clothing before reuse.

3. Exposure estimation and reference to its source

Environmental release and exposure

Substances	Environmental release and exposure
Isopropanol	Not applicable

Worker exposure

Substances	Worker exposure
Isopropanol	No information available

4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Scaling method	For scaling see: http://www.ecetoc.org/tra, ECETOC TRA worker v2.3, modified version.
Scaling parameters	The DU works inside the boundaries set by the ES if either the proposed risk management measures as described above are met or the downstream user can demonstrate on his own that his implemented risk management measures are adequate.

HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

FE-1A ACIDIZING COMPOSITION

Revision Date: 04-Oct-2016 **Revision Number:** 43

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product Identifier

Product Name FE-1A ACIDIZING COMPOSITION
Internal ID Code HM000680

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Additive
Sector of uses Refer to the Annex for a listing of uses.
Process categories PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
PROC15 - Use as a laboratory reagent
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Environmental release category(ies) ERC1 - Manufacture of substances

1.3. Details of the supplier of the safety data sheet

Halliburton Energy Services
Halliburton House, Howemoss Place
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
United Kingdom

www.halliburton.com

For further information, please contact
E-mail Address: fdunexchem@halliburton.com

1.4. Emergency telephone number

+44 8 08 189 0979 / 1-760-476-3961
Global Incident Response Access Code: 334305
Contract Number: 14012

Emergency telephone - §45 - (EC)1272/2008	
Europe	**112**
Bulgaria	Bulgarian poison centre: +359 2 915-44-09 or +359 2 915-43-46
Croatia	Centar za kontrolu otrovanja (CKO): (+385 1) 23-48-342 (Poison Control Center (PCC) - Institute for Medical Research and Occupational Health)
Cyprus	+357 1401
Denmark	Poison Control Hotline (DK): +45 82 12 12 12
France	ORFILA (FR): + 01 45 42 59 59
Germany	Poison Center Berlin (DE): +49 030 30686 790
Italy	Poison Center, Milan (IT): +39 02 6610 1029
Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
Norway	Poisons Information (NO):+ 47 22 591300
Poland	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
Portugal	CIAV - Centro de Informação Antivenenos (Portuguese Poison Centre): + 351 213 303 271
Romania	+40 21 318 36 06
Spain	Poison Information Service (ES): +34 91 562 04 20
United Kingdom	NHS Direct (UK): +44 0845 46 47

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute Oral Toxicity	Category 4 - (H302)
Acute inhalation toxicity - vapor	Category 3 - (H331)
Skin Corrosion/Irritation	Category 1 A - (H314)
Serious Eye Damage/Irritation	Category 1 - (H318)
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - (H335)
Flammable liquids.	Category 3 - H226

2.2. Label Elements

Hazard Pictograms



Signal Word: **Danger**

Hazard Statements:
H226 - Flammable liquid and vapor
H314 - Causes severe skin burns and eye damage
H302 - Harmful if swallowed
H331 - Toxic if inhaled
H335 - May cause respiratory irritation

Precautionary Statements:
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Contains

Substances	**CAS Number**
Acetic anhydride	108-24-7
Acetic acid	64-19-7

2.3. Other Hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Mixture

Substances	EINECS	CAS Number	PERCENT (w/w)	EU - CLP Substance Classification	REACH Reg. No
Acetic anhydride	203-564-8	108-24-7	60 - 100%	Acute Tox. 4 (H302) Acute Tox. 3 (H331) Skin Corr. 1B (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Flam. Liq. 3 (H226)	01-2119486470-36
Acetic acid	200-580-7	64-19-7	30 - 60%	Skin Corr. 1A (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Flam. Liq. 3 (H226)	01-2119475328-30

For the full text of the H-phrases mentioned in this Section, see Section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation If inhaled, move victim to fresh air and seek medical attention.

Eyes Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately. Remove contaminated clothing and launder before reuse. Destroy or properly dispose of contaminated shoes.

Ingestion Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause respiratory irritation. Harmful if swallowed. Toxic if inhaled.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

Carbon dioxide, dry chemical, foam.

Extinguishing media which must not be used for safety reasons

Water must not be used with open containers.

5.2. Special hazards arising from the substance or mixture

Special exposure hazards in a fire

May be ignited by heat, sparks or flames Closed containers may explode in fire. Decomposition in fire may produce harmful gases. Reaction with water may be highly exothermic.

5.3. Advice for firefighters

Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove sources of ignition. Use appropriate protective equipment. Avoid breathing vapors. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Evacuate all persons from the area.
See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Neutralize to pH of 6-8. Scoop up and remove.

6.4. Reference to other sections

See Section 8 and 13 for additional information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Remove sources of ignition. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another. Use appropriate protective equipment.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Store away from alkalis. Store away from oxidizers. Store away from water. Keep from heat, sparks, and open flames. Keep

container closed when not in use. Store in a cool well ventilated area. Store locked up. Product has a shelf life of 60 months.

7.3. Specific end use(s)

Exposure scenario Please refer to the attached Annex for a listing of exposure scenarios.

Other Guidelines No information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Substances	CAS Number	EU	UK	Netherlands	France
Acetic anhydride	108-24-7	Not applicable	TWA: 0.5 ppm TWA: 2.5 mg/m³ STEL: 2 ppm STEL: 10 mg/m³	2,5 mg/m³	STEL: 5 ppm STEL: 20 mg/m³
Acetic acid	64-19-7	10 ppm	Not applicable	TWA: 25 mg/m³	10 ppm

Substances	CAS Number	Germany	Spain	Portugal	Finland
Acetic anhydride	108-24-7	TWA: 5 ppm TWA: 21 mg/m³ Peak: 5 ppm Peak: 21 mg/m³	TWA: 5 ppm TWA: 21 mg/m³	TWA: 5 ppm	STEL: 5 ppm STEL: 21 mg/m³
Acetic acid	64-19-7	TWA: 10 ppm TWA: 25 mg/m³ Peak: 20 ppm Peak: 50 mg/m³	TWA: 10 ppm TWA: 25 mg/m³ 15 ppm STEL [VLA-EC]; 37 mg/m³ STEL [VLA-EC]	TWA: 10 ppm TWA: 25 mg/m³ STEL: 15 ppm	TWA: 5 ppm TWA: 13 mg/m³ STEL: 10 ppm STEL: 25 mg/m³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Acetic anhydride	108-24-7	TWA: 5 ppm TWA: 20 mg/m³ STEL" 10 ppm STEL" 40 mg/m³	1 ppm TWA; 2.5 mg/m³ TWA 3 ppm STEL; 10 mg/m³ STEL	TWA: 5 ppm TWA: 20 mg/m³ STEL: 5 ppm STEL: 20 mg/m³	Not applicable
Acetic acid	64-19-7	TWA: 10 ppm TWA: 25 mg/m³ STEL" 20 ppm STEL" 50 mg/m³	10 ppm TWA; 25 mg/m³ TWA 15 ppm STEL; 37 mg/m³ STEL	TWA: 10 ppm TWA: 25 mg/m³ STEL: 20 ppm STEL: 50 mg/m³	TWA: 10 ppm TWA: 25 mg/m³ STEL: 20 ppm STEL: 37.5 mg/m³

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Acetic anhydride	108-24-7	Not applicable	TWA: 10 mg/m³	TWA: 20 mg/m³ STEL: 20 mg/m³	TWA: 4 mg/m³
Acetic acid	64-19-7	10 ppm	TWA: 25 mg/m³ STEL: 50 mg/m³	TWA: 25 mg/m³ STEL: 25 mg/m³	TWA: 25 mg/m³

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus	Bulgaria
Acetic anhydride	108-24-7	Ceiling: 5 ppm Ceiling: 20 mg/m³	TWA: 3.6 ppm TWA: 15 mg/m³ STEL: 6 ppm STEL: 25 mg/m³	TWA: 0.5 ppm TWA: 2.5 mg/m³ STEL: 2 ppm STEL: 10 mg/m³	Not applicable	Not applicable
Acetic acid	64-19-7	TWA: 10 ppm TWA: 25 mg/m³	TWA: 10 ppm TWA: 25 mg/m³	TWA: 10 ppm TWA: 25 mg/m³	TWA: 10 ppm TWA: 25 mg/m³	TWA: 25.0 mg/m³ STEL: 37.0 mg/m³

Derived No Effect Level (DNEL) No information available

Worker

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Hazards for the eyes - local effects
Acetic anhydride	4.2 mg/m³	Not available	4.2 mg/m³	12.6 mg/m³	Not available	Not available	Not available	Not available	Not available
Acetic acid	Not available	Not available	25 mg/m³	25 mg/m³	Not available	Not available	Not available	Not available	Not available

General Population

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Long-term exposure - systemic effects, Oral	Acute / short term exposure - local effects, Oral	Hazards for the eyes - local effects

Acetic acid	Not available	Not available	25 mg/m³	25 mg/m³	Not available	Not available	Not available	Not available	Not available	Not available	Not available

Predicted No Effect Concentration (PNEC) No information available.

Substances	Freshwater	Marine water	Intermittent release	Sewage treatment plant	Sediment (freshwater)	Sediment (marine water)	Air	Soil	Secondary poisoning
Acetic anhydride	3.06 mg/L	0.306 mg/L	30.58 mg/L	115 mg/L	11.4 mg/kg (wet)	1.14 mg/kg (wet)	Not available	0.478 mg/kg (wet)	Not available
Acetic acid	3.06 mg/l	0.306 mg/l	30.58 mg/l	85 mg/l	11.4 mg/kg	1.14 mg/kg	Not available	0.478 mg/kg	Not available

8.2. Exposure controls

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Personal protective equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection Organic vapor/acid gas respirator.
Hand Protection Impervious rubber gloves.
Skin Protection Rubber boots Full protective chemical resistant clothing.
Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.
Other Precautions Eyewash fountains and safety showers must be easily accessible.

Environmental Exposure Controls Do not allow material to contaminate ground water system

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid
Color: Clear colorless
Odor: Pungent acrid
Odor Threshold: No information available

Property Remarks/ - Method	Values
pH:	< 2
Freezing Point / Range	-9 °C
Melting Point / Range	No data available
Boiling Point / Range	126 °C / 259 °F
Flash Point	39 °C / 103 °F PMCC
Flammability (solid, gas)	No data available
Upper flammability limit	19
Lower flammability limit	3
Evaporation rate	0.97
Vapor Pressure	11.7
Vapor Density	3.5
Specific Gravity	1.0753
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	332 °C / 630 °F
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%) No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

Will Not Occur

10.4. Conditions to avoid

Keep away from heat, sparks and flame. Do not allow water to get into container because of violent reaction.

10.5. Incompatible materials

Strong alkalis. Strong oxidizers. Reacts with water.

10.6. Hazardous decomposition products

Carbon monoxide and carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute Toxicity

Inhalation Toxic by inhalation. Causes severe respiratory irritation.

Eye Contact Causes severe eye burns.

Skin Contact Causes severe burns.

Ingestion Harmful if swallowed. Causes burns of the mouth, throat and stomach.

Chronic Effects/Carcinogenicity Prolonged, excessive exposure may cause erosion of the teeth.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acetic anhydride	108-24-7	630 mg/kg bw (rat)	4000 mg/kg bw (rabbit)	4.1 mg/L (rat, vapor, 4h)
Acetic acid	64-19-7	No data available	1060 mg/kg-bw (rabbit)	11.4 mg/L (rat, 4 h, vapor)

Substances	CAS Number	Skin corrosion/irritation
Acetic anhydride	108-24-7	Corrosive to skin
Acetic acid	64-19-7	Corrosive to skin Extremely corrosive and destructive to tissue Skin, rabbit:

Substances	CAS Number	Serious eye damage/irritation
Acetic anhydride	108-24-7	Causes severe eye burns
Acetic acid	64-19-7	Corrosive to eyes Eye, rabbit: Causes serious eye damage

Substances	CAS Number	Skin Sensitization
Acetic anhydride	108-24-7	Not regarded as a sensitizer.
Acetic acid	64-19-7	Not regarded as a sensitizer.

Substances	CAS Number	Respiratory Sensitization
Acetic anhydride	108-24-7	No information available
Acetic acid	64-19-7	No information available

Substances	CAS Number	Mutagenic Effects
Acetic anhydride	108-24-7	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects.
Acetic acid	64-19-7	In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Acetic anhydride	108-24-7	No information available
Acetic acid	64-19-7	Did not show carcinogenic effects in animal experiments

Substances	CAS Number	Reproductive toxicity
Acetic anhydride	108-24-7	Not a confirmed teratogen or embryotoxin.
Acetic acid	64-19-7	Did not show teratogenic effects in animal experiments. Animal testing did not show any effects on fertility.

Substances	CAS Number	STOT - single exposure
Acetic anhydride	108-24-7	May cause respiratory irritation.
Acetic acid	64-19-7	May cause respiratory irritation.

Substances	CAS Number	STOT - repeated exposure
Acetic anhydride	108-24-7	Not applicable due to corrosivity of the substance.
Acetic acid	64-19-7	Not applicable due to corrosivity of the substance.

Substances	CAS Number	Aspiration hazard
Acetic anhydride	108-24-7	Not applicable
Acetic acid	64-19-7	Not applicable

SECTION 12: Ecological information

12.1. Toxicity

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Acetic anhydride	108-24-7	EC50 (72 h) >300.82 mg/L (Skeletonema costatum) EC50 (72 h) >300.82 mg/L (Skeletonema costatum)	LC50 (96 h) >300.82 mg/L (Danio rerio)	NOEC (16h) 1150 mg/L (Pseudomonas putida) (similar substance)	LC50 (24) 55 mg/L (Daphnia magna)
Acetic acid	64-19-7	EC50 (72 h) =55.22 mg/L (Anabaena) (Effect concentrations in the aquatic environment are attributable to a change in pH value.)	LC50 (96 h) =75 mg/L (Lepomis macrochirus) LC50 (96 h) =251 mg/L (Gambusia affinis) (Effect concentrations in the aquatic environment are attributable to a change in pH value.)	NOAEC (16 h) =1150 mg/L (Pseudomonas putida)	EC50 (48 h) =65 mg/L (Daphnia magna) (Effect concentrations in the aquatic environment are attributable to a change in pH value.)

12.2. Persistence and degradability

Readily biodegradable

Substances	CAS Number	Persistence and Degradability
Acetic anhydride	108-24-7	Readily biodegradable (96% @ 20d)
Acetic acid	64-19-7	Readily biodegradable (99% @ 7d)

12.3. Bioaccumulative potential

Does not bioaccumulate.

Substances	CAS Number	Log Pow
Acetic anhydride	108-24-7	LogPow -0.5774
Acetic acid	64-19-7	Log Kow =-0.17

12.4. Mobility in soil

Substances	CAS Number	Mobility
Acetic anhydride	108-24-7	KOC = 1.339 (Calculated)
Acetic acid	64-19-7	No information available

12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

Substances	PBT and vPvB assessment
Acetic anhydride	Not PBT/vPvB
Acetic acid	Not PBT/vPvB

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods

Disposal should be made in accordance with federal, state, and local regulations. Incineration recommended in approved incinerator according to federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

Contaminated Packaging

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

SECTION 14: Transport information

IMDG/IMO

UN Number	UN2920
UN proper shipping name:	Corrosive Liquid, Flammable, N.O.S. (Contains Acetic Anhydride, Acetic Acid)
Transport Hazard Class(es):	8 (3)
Packing Group:	II
Environmental Hazards:	Not applicable

RID

UN Number	UN2920
UN proper shipping name:	Corrosive Liquid, Flammable, N.O.S. (Contains Acetic Anhydride, Acetic Acid)
Transport Hazard Class(es):	8 (3)
Packing Group	II
Environmental Hazards:	Not applicable

ADR

UN Number	UN2920
UN proper shipping name:	Corrosive Liquid, Flammable, N.O.S. (Contains Acetic Anhydride, Acetic Acid)
Transport Hazard Class(es):	8 (3)
Packing Group	II
Environmental Hazards:	Not applicable

IATA/ICAO

UN Number	UN2920
UN proper shipping name:	Corrosive Liquid, Flammable, N.O.S. (Contains Acetic Anhydride, Acetic Acid)
Transport Hazard Class(es):	8 (3)
Packing Group:	II
Environmental Hazards:	Not applicable

14.1. UN Number UN2920

14.2. UN proper shipping name: Corrosive Liquid, Flammable, N.O.S. (Contains Acetic Anhydride, Acetic Acid)

14.3. Transport Hazard Class(es): 8 (3)

14.4. Packing Group II

14.5. Environmental Hazards: Not applicable

14.6. Special Precautions for User None

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

EINECS (European Inventory of Existing Chemical Substances)	This product, and all its components, complies with EINECS
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian Domestic Substances List (DSL)	All components listed on inventory or are exempt.

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

Germany, Water Endangering Classes (WGK) WGK 1: Low hazard to waters.

15.2. Chemical safety assessment
Yes

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3
H226 - Flammable liquid and vapor
H302 - Harmful if swallowed

H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H331 - Toxic if inhaled
H335 - May cause respiratory irritation

Key or legend to abbreviations and acronyms used in the safety data sheet
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
ErC50 – Effective Concentration growth rate 50%
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL0 – Lethal Loading 0%
LL50 – Lethal Loading 50%
MARPOL – International Convention for the Prevention of Pollution from Ships
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NOEC – No Observed Effect Concentration
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
PC – Chemical Product category
PEL – Permissible Exposure Limit
ppm – parts per million
PROC – Process category
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
STEL – Short Term Exposure Limit
SU – Sector of Use category

Key literature references and sources for data
www.ChemADVISOR.com/
NZ CCID

Revision Date: 04-Oct-2016
Revision Note
SDS sections updated:
2

This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010

Disclaimer Statement
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

Revision Number: 43 Revision Date: 04-Oct-2016

FE-1A ACIDIZING COMPOSITION

Annex to SDS					
Substances	**CAS Number**	**Process categories**	**Environmental release category**	**Product category(ies)**	**Sector of uses**
Acetic acid	64-19-7	PROC4; PROC8b; PROC15	ERC1	-	SU2a; SU2b; SU3

Exposure Scenario
Application of bulk onshore/offshore oilfield liquid or solid/powder.

1. Title Section

Use
Use in batch process where opportunities for exposure arise.
Transfer from support vessel to installation.
Transfer from bulk/ IBC/ drum to on-site storage, transfer to process.
Transfer from pot/tin/tube to process. On-site sampling and testing e.g. QC

Sector of uses
SU2a - Mining, (without offshore industries)
SU2b - Offshore industries

Worker

Process categories
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
PROC15 - Use as a laboratory reagent
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Product category(ies) Not applicable

Article categories Not applicable

Environmental

Environmental release category(ies) ERC1 - Manufacture of substances

2. Conditions of use affecting exposure

Control of environmental exposure

Amount used, frequency and duration of use (or from service life)

Substances	Daily Amount Per Site	Annual site tonnage	Frequency	Duration of use
Acetic acid	-	-	-	-

Technical and organisational conditions and measures

Substances	Technical and organisational conditions and measures
Acetic acid	Prevent entry into waterways, sewers, basements or confined areas.

Conditions and measures related to sewage treatment plant

Substances	Conditions and measures related to sewage treatment plant
Acetic acid	No information available

Conditions and measures related to treatment of waste (including article waste)

Substances	Conditions and measures related to treatment of waste (including article waste)
Acetic acid	Dispose of contents/container in accordance with local/regional/national/international regulations.

Other conditions affecting environmental exposure

Substances	Receiving surface water flow m3/d	Degradation
Acetic acid	-	99% @ 7d

Control of Worker Exposure

Product (article) characteristics

Physical State:	Liquid
Vapor Pressure	11.7
Dustiness	Not applicable

Substances	Limit the substance content in the product to
Acetic acid	25%

Amount used (or contained in articles), frequency and duration of use/exposure

Substances	Amounts used (daily)	Covers daily exposures up to (hours/day)	Frequency (days/year)
Acetic acid	-	8	260

Technical and organisational conditions and measures

Substances	Technical and organisational conditions and measures
Acetic acid	Use in closed batch process (synthesis or formulation). Provide a basic standard of general ventilation (3 to 5 air changes per hour). General exposure (open systems): Avoid carrying out activities involving exposure for more than 4 hours. Ensure operation is undertaken outdoors. Sample via a closed loop or other system to avoid exposure. PROC8b: Ensure material transfers are under containment or extract ventilation. Transfer via enclosed lines. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Locate bulk storage outdoors. PROC15: Provide a basic standard of general ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour. Handle in a fume cupboard or under extract ventilation.

Conditions and measures related to personal protection, hygiene and health evaluation

Substances	Conditions and measures related to personal protection, hygiene and health evaluation
Acetic acid	Use suitable eye protection. Wear suitable gloves tested to EN374. Refer to section 8 of the SDS.

Other conditions affecting workers exposure

Substances	Other conditions affecting workers exposure
Acetic acid	PROC4 + PROC8b: Indoor and outdoor use. Assumes process temperature up to 25 °C. PROC15: Indoor use.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Substances	Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply
Acetic acid	Wash hands after use. Launder contaminated clothing before reuse.

3. Exposure estimation and reference to its source

Environmental release and exposure

Substances	Environmental release and exposure
Acetic acid	When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterization ratios are expected to be less than 1.

Worker exposure

Substances	Route of exposure and type of effects	Exposure estimate PROC4	Assessment Method	RCR
Acetic acid	Long-term exposure - Local effects, Inhalation mg/m³	8.40	Used ECETOC TRA model.	0.84
	Long-term exposure - local effects, Dermal mg/kg bw/day	1.37		0.14
	Combined routes, systemic, long-term mg/kg bw/day	9.77		0.98

Substances	Route of exposure and type of effects	Exposure	Assessment Method	RCR

		estimate PROC8b		
Acetic acid	Long-term exposure - Local effects, Inhalation mg/m³	7.00	Used ECETOC TRA model.	0.70
	Long-term exposure - local effects, Dermal mg/kg bw/day	1.37		0.14
	Combined routes, systemic, long-term mg/kg bw/day	8.37		0.81

Substances	Route of exposure and type of effects	Exposure estimate PROC15	Assessment Method	RCR
Acetic acid	Long-term exposure - Local effects, Inhalation mg/m³	1.00	Used ECETOC TRA model.	0.10
	Long-term exposure - local effects, Dermal mg/kg bw/day	0.03		0.0
	Combined routes, systemic, long-term mg/kg bw/day	1.03		0.10

4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Scaling method	For scaling see: http://www.ecetoc.org/tra, ECETOC TRA worker v2.3, modified version.
Scaling parameters	The DU works inside the boundaries set by the ES if either the proposed risk management measures as described above are met or the downstream user can demonstrate on his own that his implemented risk management measures are adequate.

HALLIBURTON

SAFETY DATA SHEET

Product Trade Name: **15% FE ACID - DOUBLE STRENGTH**

Revision Date: 29-Apr-2015 **Revision Number:** 6

1. Identification

1.1. Product Identifier

Product Trade Name: 15% FE ACID - DOUBLE STRENGTH
Synonyms None
Chemical Family: Acid
Internal ID Code HM005788

1.2 Recommended use and restrictions on use

Application: Acid
Uses advised against No information available

1.3 Manufacturer's Name and Contact Details

Manufacturer/Supplier
Halliburton Energy Services, Inc.
P.O. Box 1431
Duncan, Oklahoma 73536-0431
Telephone: 1-281-871-6107

Halliburton Group Canada
645 - 7th Ave SW Suite 1800
Calgary, AB, T2P 4G8, Canada
Telephone: 1-403-231-9300

Prepared By Chemical Stewardship
Telephone: 1-281-871-6107
e-mail: fdunexchem@halliburton.com

1.4. Emergency telephone number:

Emergency Telephone Number 1-866-519-4752 or 1-760-476-3962 (accessible 24 hours a day / 7 days a week)
Global Incident Response Access Code: 334305
Contract Number: 14012

2. Hazards Identification

2.1 Classification in accordance with paragraph (d) of §1910.1200

Skin Corrosion / Irritation	Category 1 B - H314
Serious Eye Damage/Irritation	Category 1 - H318
Corrosive to Metals.	Category 1 - H290
Substances/mixtures corrosive to metal	Category 1 - H290

2.2. Label Elements

Hazard Pictograms



Signal Word: Danger

Hazard Statements
H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage

Precautionary Statements

Prevention
P234 - Keep only in original packaging.
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P280 - Wear protective gloves/protective clothing
P280 - Wear eye protection/face protection

Response
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P363 - Wash contaminated clothing before reuse
P390 - Absorb spillage to prevent material damage
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Storage
P405 - Store locked up
P406 - Store in corrosive resistant container with a resistant inner liner.

Disposal
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

2.3 Hazards not otherwise classified
None known

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Hydrochloric acid	7647-01-0	10 - 30%	Skin Corr. 1A (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Met. Corr. 1 (H290)
Acetic anhydride	108-24-7	1 - 5%	Acute Tox. 4 (H302) Acute Tox. 3 (H331) Skin Corr. 1B (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Flam. Liq. 3 (H226)

The exact percentage (concentration) of the composition has been withheld as proprietary.

4. First Aid Measures

4.1. Description of first aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes In case of contact, immediately flush eyes with plenty of water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Seek immediate medical attention/advice. Suitable emergency eye wash facility should be immediately available

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately. Remove contaminated clothing and launder before reuse.

Ingestion Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

4.2 Most important symptoms/effects, acute and delayed

Causes severe skin irritation with tissue destruction. Causes severe eye irritation which may damage tissue.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. Fire-fighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

5.2 Specific hazards arising from the substance or mixture

Special exposure hazards in a fire

Decomposition in fire may produce harmful gases. Reaction with steel and certain other metals generates flammable hydrogen gas. Do not allow runoff to enter waterways.

5.3 Special protective equipment and precautions for fire-fighters

Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment.

See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Neutralize to pH of 6-8. Scoop up and remove.

7. Handling and storage

7.1. Precautions for safe handling

Handling Precautions

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Store away from alkalis. Store in a cool well ventilated area. Keep container closed when not in use.

8. Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Hydrochloric acid	7647-01-0	Not applicable	Ceiling: 2 ppm
Acetic anhydride	108-24-7	TWA: 5 ppm TWA: 20 mg/m^3	TWA: 1 ppm STEL: 3 ppm

8.2 Appropriate engineering controls

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

8.3 Individual protection measures, such as personal protective equipment

Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection Acid gas respirator.

Hand Protection Impervious rubber gloves.

Skin Protection Full protective chemical resistant clothing.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid

Color Clear colorless

Odor: Pungent acrid

Odor Threshold: No information available

Property Remarks/ - Method	Values
pH:	1
Freezing Point / Range	No data available
Melting Point / Range	No data available
Pour Point / Range	No data available
Boiling Point / Range	110 °C / 230 °F
Flash Point	No data available
Flammability (solid, gas)	No data available
Upper flammability limit	19%
Lower flammability limit	3%
Evaporation rate	No data available

Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	1.07
Water Solubility	Miscible with water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	332 °C / 630 °F
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%) No data available

10. Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

Will Not Occur

10.4. Conditions to avoid

None anticipated

10.5. Incompatible materials

Strong alkalis.

10.6. Hazardous decomposition products

Flammable hydrogen gas. Chlorine. Hydrogen sulfide.

11. Toxicological Information

11.1 Information on likely routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation.

11.2 Symptoms related to the physical, chemical and toxicological characteristics

Acute Toxicity

Inhalation	Causes severe respiratory irritation.
Eye Contact	Causes severe eye irritation May cause eye burns.
Skin Contact	Causes severe skin irritation. May cause skin burns on prolonged contact.
Ingestion	Causes burns of the mouth, throat and stomach.

Chronic Effects/Carcinogenicity Prolonged, excessive exposure may cause erosion of the teeth.

11.3 Toxicity data

Toxicology data for the components

Substances	CAS Number	**LD50 Oral**	**LD50 Dermal**	**LC50 Inhalation**
Hydrochloric acid	7647-01-0	No data available	No data available	No data available
Acetic anhydride	108-24-7	630 mg/kg bw (rat)	4000 mg/kg bw (rabbit)	4.1 mg/L (rat, vapor, 4h)

Substances	CAS Number	Skin corrosion/irritation
Hydrochloric acid	7647-01-0	Causes severe burns
Acetic anhydride	108-24-7	Corrosive to skin

Substances	CAS Number	Serious eye damage/irritation
Hydrochloric acid	7647-01-0	Causes severe burns
Acetic anhydride	108-24-7	Causes severe eye burns

Substances	CAS Number	Skin Sensitization
Hydrochloric acid	7647-01-0	Did not cause sensitization on laboratory animals (guinea pig)
Acetic anhydride	108-24-7	Not regarded as a sensitizer.

Substances	CAS Number	Respiratory Sensitization
Hydrochloric acid	7647-01-0	No information available
Acetic anhydride	108-24-7	No information available

Substances	CAS Number	Mutagenic Effects
Hydrochloric acid	7647-01-0	In vitro tests did not show mutagenic effects.
Acetic anhydride	108-24-7	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Hydrochloric acid	7647-01-0	No data of sufficient quality are available.
Acetic anhydride	108-24-7	No information available

Substances	CAS Number	Reproductive toxicity
Hydrochloric acid	7647-01-0	Embryo and fetotoxicity has been observed in female rats exposed to maternally toxic levels of hydrogen chloride (450 mg/m^3, 1hr.). When tested at maternally toxic doses, no adverse effects on fertility, teratogenicity, or development were observed.
Acetic anhydride	108-24-7	Not a confirmed teratogen or embryotoxin.

Substances	CAS Number	STOT - single exposure
Hydrochloric acid	7647-01-0	May cause respiratory irritation.
Acetic anhydride	108-24-7	May cause respiratory irritation.

Substances	CAS Number	STOT - repeated exposure
Hydrochloric acid	7647-01-0	No significant toxicity observed in animal studies at concentration requiring classification.
Acetic anhydride	108-24-7	Not applicable due to corrosivity of the substance.

Substances	CAS Number	Aspiration hazard
Hydrochloric acid	7647-01-0	Not applicable
Acetic anhydride	108-24-7	Not applicable

12. Ecological Information

12.1. Toxicity

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Hydrochloric acid	7647-01-0	No information available	LC50 282 mg/L (Gambusia affinis) LC50 20.5 mg/L (Lepomis macrochirus) LC50 (96h) 3.25 – 3.5 (pH) (Lepomis macrochirus)	EC50 (3h) >= 5 and <= 5.5 (pH) (Activated sludge, domestic)	EC50 (48 h) 4.92 mg/L (Daphnia magna)
Acetic anhydride	108-24-7	EC50 (72 h) >300.82 mg/L (Skeletonema costatum) EC50 (72 h) >300.82 mg/L (Skeletonema costatum)	LC50 (96 h) >300.82 mg/L (Danio rerio)	NOEC (16h) 1150 mg/L (Pseudomonas putida) (similar substance)	LC50 (24) 55 mg/L (Daphnia magna)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Hydrochloric acid	7647-01-0	The methods for determining biodegradability are not applicable to inorganic substances.
Acetic anhydride	108-24-7	Readily biodegradable (96% @ 20d)

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Hydrochloric acid	7647-01-0	-2.65
Acetic anhydride	108-24-7	LogPow -0.5774

12.4. Mobility in soil

Substances	CAS Number	Mobility
Hydrochloric acid	7647-01-0	No information available
Acetic anhydride	108-24-7	KOC = 1.339 (Calculated)

12.5 Other adverse effects

No information available

13. Disposal Considerations

13.1. Waste treatment methods

Disposal methods Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging Follow all applicable national or local regulations.

14. Transport Information

US DOT

UN Number UN3264
UN proper shipping name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Contains Hydrochloric Acid, Acetic Anhydride)
Transport Hazard Class(es): 8
Packing Group: II
Environmental Hazards: Not applicable
Reportable Quantity: RQ (Hydrochloric Acid - 15153 kg.)
NAERG: NAERG 154

Canadian TDG

UN Number UN3264
UN proper shipping name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Contains Hydrochloric Acid, Acetic Anhydride)
Transport Hazard Class(es): 8
Packing Group: II
Environmental Hazards: Not applicable

IMDG/IMO

UN Number UN3264
UN proper shipping name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Contains Hydrochloric Acid, Acetic Anhydride)
Transport Hazard Class(es): 8
Packing Group: II
Environmental Hazards: Not applicable
Reportable Quantity: RQ (Hydrochloric Acid - 15153 kg.)

IATA/ICAO

UN Number UN3264
UN proper shipping name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Contains Hydrochloric Acid, Acetic Anhydride)
Transport Hazard Class(es): 8
Packing Group: II
Environmental Hazards: Not applicable
Reportable Quantity: RQ (Hydrochloric Acid - 15153 kg.)

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable
Special Precautions for User None

15. Regulatory Information

US Regulations

US TSCA Inventory All components listed on inventory or are exempt.

TSCA Significant New Use Rules - S5A2

Substances	CAS Number	TSCA Significant New Use Rules - S5A2	TSCA Section 5(E) Consent Orders
Hydrochloric acid	7647-01-0	Not applicable	Not applicable
Acetic anhydride	108-24-7	Not applicable	Not applicable

EPA SARA Title III Extremely Hazardous Substances

Substances	CAS Number	EPA SARA Title III Extremely Hazardous Substances
Hydrochloric acid	7647-01-0	5000 lb
Acetic anhydride	108-24-7	Not applicable

EPA SARA (311,312) Hazard Class

Corrosive to metal
Skin Corrosion or Irritation
Serious eye damage or eye irritation

EPA SARA (313) Chemicals

Substances	CAS Number	Toxic Release Inventory (TRI) - Group I	Toxic Release Inventory (TRI) - Group II
Hydrochloric acid	7647-01-0	1.0%	Not applicable
Acetic anhydride	108-24-7	Not applicable	Not applicable

EPA CERCLA/Superfund Reportable Spill Quantity

Substances	CAS Number	CERCLA RQ
Hydrochloric acid	7647-01-0	5000 lb 2270 kg
Acetic anhydride	108-24-7	5000 lb 2270 kg

EPA RCRA Hazardous Waste Classification

If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of:

Corrosivity D002

California Proposition 65

Substances	CAS Number	California Proposition 65
Hydrochloric acid	7647-01-0	Not applicable
Acetic anhydride	108-24-7	Not applicable

U.S. State Right-to-Know Regulations

Substances	CAS Number	MA Right-to-Know Law	NJ Right-to-Know Law	PA Right-to-Know Law
Hydrochloric acid	7647-01-0	Extraordinarily hazardous	Present	Environmental hazard
Acetic anhydride	108-24-7	Present	Present	Environmental hazard

NFPA Ratings: Health 3, Flammability 0, Reactivity 1
HMIS Ratings: Health 3, Flammability 0, Reactivity 1

Canadian Regulations

Canadian Domestic Substances List (DSL) All components listed on inventory or are exempt.

16. Other information

Preparation Information

Prepared By Chemical Stewardship
Telephone: 1-281-871-6107
e-mail: fdunexchem@halliburton.com

Revision Date: 29-Apr-2015

Reason for Revision Update to Format
SECTION:
2

Additional information
For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key or legend to abbreviations and acronyms used in the safety data sheet
bw – body weight
CAS – Chemical Abstracts Service
d - day
EC50 – Effective Concentration 50%
ErC50 – Effective Concentration growth rate 50%
h - hour
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
NIOSH – National Institute for Occupational Safety and Health
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
UN – United Nations
w/w - weight/weight

Key literature references and sources for data
www.ChemADVISOR.com/
OSHA
ECHA C&L

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This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **SODIUM BROMIDE BRINE**

Revision Date: 29-Jan-2013

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Statement of Hazardous Nature Non-Hazardous according to the criteria of NOHSC, Non-Dangerous Goods according to the criteria of ADG.

Manufacturer/Supplier

Halliburton Australia Pty. Ltd.
15 Marriott Road
Jandakot
WA 6164
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

Product Emergency Telephone
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

Fire, Police & Ambulance - Emergency Telephone
Australia: 000
Papua New Guinea: 000
New Zealand: 111

Identification of Substances or Preparation

Product Trade Name: SODIUM BROMIDE BRINE
Synonyms: None
Chemical Family: Salt
UN Number: None
Dangerous Goods Class: None
Subsidiary Risk: None
Hazchem Code: None Allocated
Poisons Schedule: None Allocated
Application: Additive

Prepared By

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT	Australia NOHSC	New Zealand WES	ACGIH TLV-TWA
Sodium bromide	7647-15-6	30 - 60%	Not applicable	Not applicable	Not applicable

Non-Hazardous Substance to Total of 100%

3. HAZARDS IDENTIFICATION

Hazard Overview May cause eye and skin irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed. Repeated overexposure may cause liver and kidney effects.

Risk Phrases R36 Irritating to eyes.

HSNO Classification Not Determined

4. FIRST AID MEASURES

Inhalation If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

Eyes In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media All standard fire fighting media

Extinguishing media which must not be used for safety reasons None known.

Special Exposure Hazards Decomposition in fire may produce toxic gases.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Wash hands after use. Launder contaminated clothing before reuse.

Storage Information Store away from oxidizers. Store away from acids. Store in a cool, dry location. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)

Hand Protection Nitrile gloves.

Skin Protection Normal work coveralls.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Clear colorless
Odor:	Odorless
pH:	Not Determined
Specific Gravity @ 20 C (Water=1):	1.44 - 1.5
Density @ 20 C (kg/l):	1.5
Bulk Density @ 20 C (kg/m^3):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (C):	Not Determined
Pour Point/Range (C):	Not Determined
Flash Point/Range (C):	Not Determined
Flash Point Method:	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (g/m^3):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (g/m^3):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (g/l):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined
Decomposition Temperature (C):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data: Stable

Hazardous Polymerization: Will Not Occur

Conditions to Avoid None anticipated

Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure Eye or skin contact, inhalation.

Sympotoms related to exposure

Inhalation Vapors given off by heated product may be harmful. May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Skin Contact May cause skin irritation.

Eye Contact May cause eye irritation.

Ingestion Harmful if swallowed. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions. May cause liver and kidney damage.

Aggravated Medical Conditions Skin disorders. Central nervous system disorders.

Chronic Effects/Carcinogenicity Repeated overexposure may cause liver and kidney effects.

Other Information None known.

Toxicity Tests

Oral Toxicity:	LD50: 3500 mg/kg (Rat)
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not determined
Bio-accumulation	Not determined

Ecotoxicological Information

Acute Fish Toxicity: Not determined
Acute Crustaceans Toxicity: Not determined
Acute Algae Toxicity: Not determined

Chemical Fate Information Not determined

Other Information Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

ADR
Not restricted

Air Transportation

ICAO/IATA
Not restricted

Sea Transportation

IMDG
Not restricted

Other Transportation Information

Labels: None

15. REGULATORY INFORMATION

Chemical Inventories

Australian AICS Inventory All components listed on inventory or are exempt.
New Zealand Inventory of Chemicals All components listed on inventory or are exempt.
US TSCA Inventory All components listed on inventory or are exempt.
EINECS Inventory This product, and all its components, complies with EINECS

Classification Xi - Irritant.

Risk Phrases R36 Irritating to eyes.

Safety Phrases None S25 Avoid contact with eyes.

16. OTHER INFORMATION

The following sections have been revised since the last issue of this SDS
Not applicable

Contact

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

New Zealand National Poisons Centre
0800 764 766

Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

AVA S.p.A.
Sediu legal: Via Salaria 1313/c
00138 Roma
Italia

FIŞĂ CU DATE DE SECURITATE

În conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

DEOXY DEHA

1. IDENTIFICAREA SUBSTANŢEI / AMESTECULUI ŞI A SOCIETĂŢII / ÎNTREPRINDERII

1.1. Element de identificare a produsului

Denumire produs:	**DEOXY DEHA**

1.2. Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizare:	**Inhibitor de coroziune pentru fluide de foraj**

1.3. Detalii privind furnizorul fişei cu date de securitate

Identificarea companiei producătoare

Nume:	Ava S.p.A.
Adresă:	Via Salaria 1313/C
Oraş/Ţară:	00138 ROMA (Italia)
Număr de telefon:	+39 06 885611386 / +39 06 885611324 / +39 06 8856111
Fax:	+39 06 8889363

Număr de telefon care poate fi apelat în caz de urgenţă

+39 06 885611386	+39 06 885611324	+39 06 8856111

Adresa de e-mail a persoanei responsabile

E-mail:	laboratorio.roma@newpark.com

Importator / Distribuitor / Utilizator

Nume:	S.C AVA EASTERN EUROPE D.F&S SRL
Adresă:	Calea Floreasca nr. 60, et.9, cam.12, sector 1
Oraş/Ţară:	BUCURESTI / Romania
Număr de telefon:	004 021 312 44 23; 021 312 28 72,
Fax:	004 021 311 18 14

Număr de telefon care poate fi apelat în caz de urgenţă

	004 021 312 44 23 (între orele 9^{00} - 17^{00})	004 0752 01 25 88

Adresa de e-mail a persoanei responsabile

E-mail:	aionescu@newpark.com

1.4. Număr de telefon care poate fi apelat în caz de urgență

Biroul RSI (Regulamentul Sanitar Internațional) și Informare Toxicologică, Institutul de Sănătate Publică

Telefon de urgență	004 021 318 36 06 (apelabil între orele 8:00 – 15:00)
E-mail:	mihaela.purcarea@insp.gov.ro
Telefon de urgență	**112**

2. IDENTIFICAREA PERICOLELOR

2.1. Clasificarea substanţei sau a amestecului

Indicarea de pericole specifice pentru om şi mediul înconjurător:

SUBSTANŢA / AMESTECUL ESTE CLASIFICAT CA FIIND PERICULOS ÎN CONFORMITATE CU URMĂTOARELE REGLEMENTĂRI

Clasificarea conform Regulamentului (UE) nr. 1272/2008 - (CLP)

	**GHS07**	**Tox. Ac. 4** **H312:** Nociv în contact cu pielea **H332:** Nociv în caz de inhalare. **Irit. Piele 2** **H315:** Provoacă iritarea pielii **Irit. Oc. 2** **H319:** Provoacă o iritare gravă a ochilor **STOT SE 3** **H335:** Poate provoca iritarea căilor respiratorii
Fără pictograma	**Fara cuvant de atentionare**	**Acvatic cronic 3** **H412:** Nociv pentru mediul acvatic cu efecte pe termen lung

Clasificarea conform Directivei 67/548/CEE (DPP), a Directivei 1999/45/CE (DSP) şI amendamentele, HG 1408/2008, HG 937/2010.

	**Xn - nociv**	**R20/21:** Nociv prin inhalare şi în contact cu pielea.
	Xi - iritant	**R 36/37/38:** Iritant pentru ochi, sistem respirator şi pentru piele
	**N – Periculos pentru mediu**	**R52/53:** Nociv pentru organismele acvatice, poate provoca efecte adverse pe termen lung asupra mediului acvatic.

2: IDENTIFICAREA PERICOLELOR

2.2. Elemente pentru etichetă

Etichetarea conform Regulamentului (UE) nr. 1272/2008 (CLP)

Identificarea pericolelor:	 **GHS07**	**Tox. Ac. 4** **H312:** Nociv în contact cu pielea **H332:** Nociv în caz de inhalare
		Irit. Piele 2 **H315:** Provoacă iritarea pielii
		Irit. Oc. 2 **H319:** Provoacă o iritare gravă a ochilor.
		STOT SE 3 **H335:** Poate provoca iritarea căilor respiratorii
	Fără pictograma	**Acvatic cronic 3** **H412:** Nociv pentru mediul acvatic cu efecte pe termen lung
Fraze de precauţie:	**P261:** Nu respiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul. **P280:** Purtaţi mănuşi de protecţie / îmbrăcăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei.	

	P312: Sunați la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic, dacă nu vă simțiți bine. **P362:** Scoateți îmbracămintea contaminată și spălați-o înainte de reutilizare. **P304 + P340:** ÎN CAZ DE INHALARE: transportați victima la aer liber și mențineți-o în stare de repaus, într-o poziție comfortabilă pentru respirație. **P332 + P313**: În caz de iritare a pielii, consultați medical. **P305 + P351 + P338:** ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
Eliminarea:	**P501**: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

Etichetarea conform Directivei 67/548/CEE (DPP)), a Directivei 1999/45/CE (DSP) și amendamentele, HG 1408/2008, HG 937/2010.

Identificarea pericolelor:		**Xn - nociv** **R20/21:** Nociv prin inhalare și în contact cu pielea.
		Xi - iritant **R 36/37/38:** Iritant pentru ochi, sistem respirator și pentru piele
		**N – Periculos pentru mediu** **R52/53:** Nociv pentru organismele acvatice, poate provoca efecte adverse pe termen lung asupra mediului acvatic.
Sfaturi de siguranță::	**S23:** A nu se inspira gazul/fumul/vaporii/aerosolii/ (termenul(ii) corespunzător(i) se specific de producător). **S26:** În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul. **S24/25:** Evitați contactul cu pielea și ochii. **S36/37:** Purtați echipament de protecție corespunzător, mănuși și mască de protecție pentru ochi/față.	
Eliminarea:	**S60:** Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos.	

2.3. Alte pericole

- - -

3. COMPOZIŢIE / INFORMAŢII PRIVIND COMPONENŢII

3.1. Proprietăţi chimice ale substanţei sau amestecului

Compoziţie:	Amestec
Conţinut:	În conformitate cu tabelul următor
Formula moleculară:	- - -
Numărul EC:	- - -
Numărul CAS:	- - -
Numărul ONU	- - -
Numărul REACH:	- - -

3.2. Componenţi periculoşi

Nume	Nr. CAS	Nr. EC	Cantitate	Clasificare	Simbol	Fraze de pericol
N, N-Dietil-hidroxilamina 85% REACH No. 01-2119962470-39-XXXX	3710-84-7	223-055-4	10-12,5%	**Lich. Infl. 3**	 **GHS02**	**H226**
				Tox. Ac. 4	 **GHS07**	**H312**
				Irit. Cut. 2		**H332**
				Irit. Oc. 2		**H315**
				STOT SE 3		**H319**
				Acvatic cronic 2	 **GHS09**	**H411**
Nume	**Nr. CAS**	**Nr. EC**	**Cantitate**	**Clasificare**	**Simbol**	**Fraze de pericol**
N, N-Dietil-hidroxilamina 85%	3710-84-7	223-055-4	10-12,5%	**F - Inflamabil**		**R10**
				Xn - nociv		**R20/21**
				Xi - iritant		**R36/37/38**
				N – Periculos pentru medi		**R52/53**

4. MĂSURI DE PRIM AJUTOR

4.1. Descrierea măsurilor de prim ajutor

Informaţii generale	În acest caz de afecţiuni, solicitaţi asistență medicală. Arătaţi medicului această Fișă cu Date de Securitate.
După inhalare:	Dacă respiratia este neregulată sau a încetat, administrați respirație artificială. Consultați imediat un medic și arătați-i ambalajul sau eticheta
După contactul cu pielea:	Scoateți imediat toate hainele contaminate. Spălați imediat cu apă curentă din abundență și, eventual, cu săpun, zone ale corpului care a venit în contact cu produsul, chiar dacă este doar o suspiciune
După contactul cu ochii:	În caz de contact cu ochii, clătiti cu apă pentru o durată suficientă de timp și cu pleoapele deschise, apoi consultați imediat un medic oftalmolog. Proteja ochiul intact
După înghiţire:	Nu mâncați, nu beți și nu fumați în timpul utilizării. Dacă în caz de înghițire nu vă simțiți bine, contactați de urgență un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic.
Alte informaţii:	- - -

4.2. Cele mai importante simptome şi efecte, atât acute, cât si intârziate.

Simptome	Nu sunt disponibile.

4.3. Indicatii privind orice fel de asistenţă medicală imediată şi tratamentele speciale necesare.

Supraveghere medicală:	Supravegherea medicală în timpul activităţii la locul de muncă nu este necesară. În caz de boală sau accident, consultați imediat un medic și arătaţi-i aceasta Fișă cu Date de Securitate.
Mijloace speciale de intervenție:	- - -

5. MĂSURI DE COMBATERE A INCENDIILOR

5.1. Mijloace de stingere a incendiilor

Măsuri de precauție în caz de incendiu:	În caz de incendiu respectaţi, urmați instrucțiunile.
Mijloace de stingere corespunzătoare:	Utilizați spumă, pulbere uscată sau CO2
Mijloace de stingere necorespunzătoare:	Niciuna in mod particular
Riscuri care derivă din ardere (produşi de descompunere termică periculoşi):	Nu inhalați gazele de explozie și de ardere. Arderea produce un fum greu.
Echipamente speciale de stingere a incendiilor	Folosiți un aparat de respirație adecvat
Altele:	Colectați separat apa contaminată folosită pentru a stinge focul. Nu va fi evacuată în sistemul de canalizare. Dacă este posibil în ceea ce privește siguranța, scoateți ambalaje nedeteriorate din zona de pericol imediat

6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1. Precauţii personale, echipament de protecţie și proceduri de urgență

Echipament de protecţie:	Evitați contactul cu ochii și pielea. Scoateți toate hainele contaminate
Proceduri de urgență:	Nu respirați vaporii / ceața / gaz. Feriți-vă de acumularile de vapori care formeaza concentratii explosive. Vaporii se pot acumula in zonele joase. Scoateți persoane în zone de siguranță

6.2. Precauţii pentru mediul înconjurător

Medii de izolare:	Folosiți media absorbant, organic, nisip
Metode de limitare a poluarii	Nu permiteți infiltrarea în sol / subsol. Nu permiteli infiltrarea în apele de suprafață sau în sistemul de canalizare. In cazul accesului în cursurile de apă, sol sau in canalizare, informați autoritățile responsabile

Informatii suplimentare:	Reţineti apa de spălare contaminată şi eliminaţi-o conform regulamentelor

7. MANIPULARE ŞI DEPOZITARE

7.1. Precauţii pentru manipularea în condiţii de securitate

Precauţii pentru manipulare în condiţii de securitate:	Evitați contactul cu ochii și pielea, inhalarea de vapori și aburi. A nu se folosi recipientul gol înainte de a fi curățat. Înainte de operațiunile de transfer să vă asigurați că în recipiente nu există reziduuri materiale incompatibile. Hainele contaminate ar trebui să fie schimbate înainte de a intra la locurile de servit masa

7.2. Precauţii pentru depozitare în condiţii de securitate, inclusiv eventualele incompatibilităţi

Condiţii de depozitare:	Păstrați ambalajul închis ermetic. A se păstra la distanță de alimente, băuturi și hrană pentru animale
Specificaţiile zonei de depozitare:	Spații suficient ventilatet, la distanță de materiale incompatibile
Specificaţiile recipienţilor:	Păstrați întotdeauna containerele ermetic închise
Incompatibilităţi:	Niciuna

7.3. Utilizare finală specifică:

Utilizări finale specifice:	**Inhibitor de coroziune pentru fluide de foraj**

8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1. Parametri de control

Amestec	***N, N-Dietil-hidroxilamina 85% CAS No. 3710-84-7***
Valori limită de expunere DNEL	**Consumator:** 00:13 mg / kg - Expunere: orala umana - efecte sistemice pe termen scurt **Lucrător industrial:** 8.76 mg/m3 - Expunere: Inhalarea umană - efecte sistemice pe termen lung **Consumator:** 0,65 mg/m3 - Expunere: Inhalare umană - efecte sistemice pe termen scurt **Lucrător industrial:** 45,6 mg/m3 - Expunere: Inhalarea umană - efecte locale pe termen lung, **Lucrător industrial**: 4,7 mg / kg - Expunere: Dermic umana- efecte sistemice pe termen lung
Valori limită de expunere PNEC	**Target:** apă proaspătă - Valoare: 8,2 mg / l **Target:** apa de mare - Valoare: 0,82 mg / l **Țintă:** sedimente de apă dulce - Valoare: 0.0652 mg / kg **Target:** sedimente apa de mare - Valoare: 0.00652 mg / kg
Limita biologică:	- - -

8.2. Controale ale expunerii profesionale

8.2.1. Controale tehnice corespunzătoare		Ventilație generală
8.2.2. Măsuri de protecție individuală, precum echipamentul de protecție personală.		Stație de spălare ochi în apropiere.
Protecţia individuală	Respiratorie:	Utilizați aparat de respirație
	Ochi	Ochelari de protecție
	Maini	Mănuși de protecție totală
	Corp	Salopetă protectoare pentru intregul corp

8.3. Controlul expunerii mediuluiâ

Variante de expunere	- -

9. PROPRIETĂŢI FIZICE ŞI CHIMICE	
9.1. Informaţii generale	
Forma:	Lichid
Aspect:	Lichid
Culoare:	De la incolor la galben pai
Miros:	Nu este relevant
Prag olfactiv:	N.a.
9.2. Informaţii pentru sănătate, siguranţă şi mediu	
pH:	> 10
Punct de topire:	N.a.
Punct de fierbere:	100 °C
Punct de aprindere:	N.a.
Inflamabilitate (solid, gaz):	N.a.
Temperatura de autoaprindere:	N.a.
Temperatura de descompunere:	N.a.
Pericol de explozie:	N.a.
Limita de inflamabilitate superioară:	N.a.
Limita inferioară de inflamabilitate:	N.a.
Presiunea de vapori:	N.a.
Densitatea la 20 °C:	N.a.
Densitatea aparentă (20°C):	N.a.
Densitatea relativă:	1,00 gr/cm3
Densitatea de vapori:	N.a.
Rata de evaporare:	N.a.
Solubilitate în apă (20°C):	N.a.
Coeficientul de distribuție (n-octanol):	N.a.
Vâscozitatea (40°C):	N.a.
9.3. Alte informaţii	
Alte informaţii:	N.a.

10. STABILITATE ŞI REACTIVITATE	
10.1. Reactivitate	
Condiții care trebuie evitate:	Stabil în condiții normale
10.2. Stabilitate chimică	
Materiale incompatibile:	Niciunul
Posibilitatea de reacții periculoase:	Stabil în condiții normale
10.3. Produși de descompunere periculoși	
Alte informaţii:	Stabil în condiții normale.

11. INFORMAŢII TOXICOLOGICE	
11.1. Toxicitate Acută	
Substanța	***N, N-Dietil-hidroxilamina 85% CAS No. 3710-84-7***
Toxicitate orală acută:	LD50 (Șobolan): 2190 mg/kg
Toxicitate inhalatorie acută:	LC50 (Șobolan) 4 h: 3140 ppm
Toxicitate cutanată acută:	LD50 (Iepure): 1300 mg/kg

11.2. Corozivitate	
Piele:	N.a.
Ochi:	N.a.
11.3. Iritabilitate primară	
Piele:	N.a.
Ochi:	N.a.
11.4. Nocivitate	
Ingestie:	N.a.
Inhalare:	N.a.
11.5. Sensibilitate	
Piele:	N.a.
Ochi:	N.a.

12. INFORMAŢII ECOLOGICE

12.1. Toxicitate	
Substanța	***N, N-Dietil-hidroxilamina 85% CAS No. 3710-84-7***
Toxicitate în apă:	LC50 (Pești): 134 mg/l EC50 (Alge) 48h: 8.9 mg/l EC50 (Crustacee) 96h:> 101 mg/l
Toxicitate în aer:	N.a.
Toxicitate în sol:	N.a.
12.2. Persistență și degradabilitate	
Alte informații:	Nu este ușor biodegradabil
12.3. Potența Bioacumulativ	
N.a.	N.a.
12.4. Mobilitate în sol	
Alte informații:	N.a.
12.5. Resultatele evaluării PBT și vPvB	
PBT:	N.a.
vPvB:	Niciunul
12.6. Alte efecte adverse	
Alte informații:	N.a.

13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1. Metode de eliminare a produsului	
Sfaturi:	Colectați daca este posibil. Eliminați în conformitate cu reglementările locale.
Cod de deșeu:	N.a.
13.2. Metode de eliminare a ambalajului	
Sfaturi:	N.a.
Alte recomandări:	Eliminați în conformitate cu reglementările locale și naționale

14. INFORMAŢII REFERITOARE LA TRANSPORT

14.1. Transport rutier / feroviar (ADR / RID)

Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Norme de transport ONU	N.a.
Clasa (clasele) de pericol pentru transport	N.a.
Grupul de ambalare:	N.a.
Denumirea oficiala a transportului	
Cod de restrictie in galerie/tunel	N.a.

14.2. Transport Maritim (IMDG)

Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Numarul EMS	
Clasa (clasele) de pericol pentru transport	
Grupul de ambalare:	
Poluant marin:	
Denumirea oficiala a transportului	N.a.

14.3. Transport Aerian (ICAO-TI si IATA-DGR)

Număr ONU	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Clasa IACO/ATA	
Eticheta	
Grupul de ambalare:	
Denumirea oficiala a transportului	N.a.

14.4. Transport în vrac

Anexa II a MARPOL73/78:	Nu sunt mărfuri periculoase în conformitate cu reglementarile in transport
Codul IBC:	N.a.

15. INFORMAŢII DE REGLEMENTARE

15.1. Regulamente / legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză.

Regulamentul (CE) nr. 1907/2006 (REACH) - privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH), de înfiinţare a Agenţiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a Directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei

Regulamentul (CE) nr. 1272/2008 (CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 790/2009 (adaptarea la progresul tehnic şi ştiinţific al Regulamentului CLP) - privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Regulamentul (CE) nr. 453/2010 (Amendamentul Regulamentului REACH) - modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European și al Consiliului privind înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice (REACH)

Regulament FDS: Această Fişă cu Date de Securitate este elaborată în conformitate cu Regulamentul (UE) nr. 1272/2008, Regulamentul (UE) nr. 1907/2006, amendat prin Regulamentul (UE) nr. 453/2010, Directiva 67/548/CEE (DPP) și Directiva 1999/45/CE (DSP)

Regulament (CE) nr.1907/2006 (REACH)

Restricţii la introducerea pe piaţă şi utilizare, Regulament 552/2009: Nu conţine substanţe restricţionate.

Reglementări naţionale:

Legea 249/2011 pentru modificarea art. 4 din Legea nr. 349/2007 privind reorganizarea cadrului instituţional în domeniul managementului substanţelor chimice.

Legea 254/2011 pentru modificarea art. 26 din Legea nr. 360/2003 privind regimul substantelor si preparatelor chimice periculoase.

REGULAMENTUL (UE) NR. 286/2011 AL COMISIEI de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor

HG 1408/2008 privind clasificarea, ambalarea şi etichetarea substanţelor periculoase;

HG 937/2010 privind clasificarea, ambalarea si etichetarea la introducerea pe piaţă a preparatelor periculoase;

REGULAMENTUL (CE) NR. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006.

Rectificare la Regulamentul (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006 (Jurnalul Oficial al Uniunii Europene L 353 din 31 decembrie 2008).

REGULAMENTUL (CE) NR. 790/2009 de modificare, în vederea adaptării la progresul tehnic şi ştiinţific, a Regulamentului (CE) nr. 1272/2008 al Parlamentului European şi al Consiliului privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor.

REGULAMENTUL (UE) NR. 453/2010 AL COMISIEI din 20 mai 2010 de modificare a Regulamentului (CE) nr. 1907/2006 al Parlamentului European şi al Consiliului privind înregistrarea, evaluarea, autorizarea şi restricţionarea substanţelor chimice (REACH).

Regulament 552/2009 de modificare a anexei XVII din **Regulamentul (CE) nr.1907/2006 – REACH** privind „Restricţiile privind producerea, introducerea pe piaţă şi utilizarea anumitor substanţe, amestecuri şi articole periculoase
HG 735/2006 privind limitarea emisiei de compuşi organici volatili.
HG 371/2010 pentru modificarea şi completarea Hotararii Guvernului nr. 699/2003 privind stabilirea unor măsuri pentru reducerea emisiilor de compusi organici volatili datorate utilizării solventilor organici în anumite activitati şi instalatii.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
Legea 263/2005 pentru modificarea şi completarea Legii nr. 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă.
REGULAMENTUL (CE) NR. 1336/2008 de modificare a Regulamentului (CE) nr. 648/2004 în vederea adaptării acestuia la Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei.
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.
O.U.G. 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006.

Legislaţia privind eliminarea deşeurilor:
Legea 211/2011 privind regimul deseurilor.
HG 427/2010 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deşeurilor.
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase peteritoriul României.
HG 268/2005 pentru modificarea şi completarea HG nr. 128/2002 privind incinerarea deseurilor.
HG 349/2005 privind depozitarea deşeurilor;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 856/ 2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase.
HG 128/2002 privind incinerarea deşeurilor, modificată şi completată prin HG 268/2005.

Legislaţia pentru deşeuri de ambalaj:
Ordinul 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje.
HG 247/2011 pentru modificarea si completarea Hotararii Guvernului nr. 621/2005 privind gestionarea ambalajelor si a deseurilor de ambalaje.
HG 1872/2006 pentru modificarea şi completarea HG 621 /2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
HG 621/2005 privind gestionarea ambalajelor şi deşeurilor de ambalaje.
Cod deseu ambalaj: 15 01 10* ambalaje care conţin reziduuri sau sunt contaminate cu substanţe periculoase.

16. ALTE INFORMAŢII

16.1. Principalele surse bibliografice

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition – Van Nostrand Reinold

Istituto Superiore di Sanità - Inventario Nazionale Sostanze Chimiche

ACGIH - Threshold Limit Values - 2009 edition

16.2. Declaraţii

Această fișă completează buletinul tehnic, fără să-l înlocuiască. Informațiile furnizate în această fișă tehnică cu date de securitate sunt corecte, conform cunoștințelor noastre, informațiilor și datelor noastre la data publicării sale.

Informațiile se referă numai la produsul specificat și nu pot fi valabile pentru un altfel de produs/material care este folosit în combinație cu orice alte produse/ materiale sau în orice proces, dacă nu se specifică acest lucru în text.

Această fișă tehnică cu date de siguranță conține doar informații referitoare la sănătate și siguranță. Produsul trebuie să fie utilizat în conformitate cu tehnologia AVA. Persoanele care manipulează acest produs trebuie să fie informate cu privire la măsurile de siguranță și trebuie să aibă acces la această informație.

Aceasta fişa cu date de securitate a fost actualizată complet în conformitate cu Regulamentul 453/2010/EU.

Această fișă anulează și înlocuiește orice ediție precedentă.

Alte informaţii

Informaţiile conţinute în această Fişă cu Date de Securitate se bazează pe datele acumulate în timp şi disponibile în momentul elaborării şi sunt specifice acestui document.

Scopul acestei fişe este de descriere a produsului din punct de vedere al siguranţei în utilizare, procesare, depozitare, transport, eliminare şi nu constituie o garanţie privind proprietăţile specifice ale produsului.

Este întotdeauna responsabilitatea utilizatorului să ia toate măsurile de prevedere pentru fiecare secţiune a prezentei fişe astfel ca produsul să fie utilizat în siguranţă.

În cazul în care sunt neclarităţi, se vor lua ca şi informaţii principale de referinţă, informaţiile conţinute în varianta în limba engleză a prezentei Fişe cu Date de Securitate.

16.3. Abrevieri și acronime:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) - Acordul european privind transportul rutier internațional al mărfurilor periculoase

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) - Regulamentul privind transportul internațional de mărfuri periculoase pe căile ferate

GHS: Globally Harmonized System of Classification and Labelling of Chemicals - Sistemul global armonizat de clasificare și etichetare a produselor chimice

EINECS: European Inventory of Existing Commercial Chemical Substances – Baza de date Europeană a substanțelor chimice existente

CAS: Chemical Abstracts Service (division of the American Chemical Society) – Baza de date pentru substanţe chimice (divizie a Societăţii Americane de Chimicale)

CSA: Chemical Safety Assessment – Evaluarea Securităţii Chimice

ACGIH: American Conference of Industrial Hygienists - Conferința americană de Sănătate Publică

EC50: median effective concentration - concentrația efectivă medie

LC50: median lethal concentration - concentrația letală medie

LD50: median lethal dose **-** doză letală medie

NOEC: no observable effect concentration – concentraţia fără efect observat

PNEC: predicted no-effect concentration - concentrația fără efect prevăzut

PBT: persistent, bioaccumulative, toxic chemicals - substanțe chimice persistente, bioacumulative, toxice

vPvB: very persistent, very bioaccumulative chemicals - produse chimice foarte persistente, foarte bioacumulative

TLV-TWA: Threshold limit value – Time weighted average; professional exposure limit average on 8 hours - Valoarea prag limită - Timpul mediu ponderat; limita medie de expunere profesională în 8 ore

TLV-STEL: Threshold limit value – Short Term exposure limit ; professional exposure limit at short term - Valoarea prag limită - Limita de expunere pe termen scurt; limita de expunere profesională pe termen scurt

TLV–C : Threshold limit value – Ceiling - Valoarea prag limită – maximă

16.4. Alte informaţii

Fraze de pericol utilizate în secţiunile anterioare

H226: Lichid și vapori inflamabili
H312: Nociv în contact cu pielea
H332: Nociv în caz de inhalare
H315: Provoacă iritarea pielii
H319: Provoacă o iritare gravă a ochilor
H335: Poate provoca iritarea căilor respiratorii
H411: Toxic pentru mediul acvatic cu efecte pe termen lung
H412: Nociv pentru mediul acvatic cu efecte pe termen lung

R10: Inflamabil
R20/21: Nociv prin inhalare și în contact cu pielea.
R36/37/38: Iritant pentru ochi, sistem respirator și pentru piele
R52/53: Nociv pentru organismele acvatice, poate provoca efecte adverse pe termen lung asupra mediului acvatic.

Fraze de precauție /siguranta utilizate în secţiunile anterioare

P261: Nu respiraţi praful/fumul/gazul/ceaţa/vaporii/spray-ul.
P280: Purtaţi mănuşi de protecţie / îmbracăminte de protecţie / echipament de protecţie a ochilor / echipament de protecţie a feţei.
P312: Sunați la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic, dacă nu vă simțiți bine.
P362: Scoateți îmbracămintea contaminată și spălați-o înainte de reutilizare.
P304 + P340: ÎN CAZ DE INHALARE: transportați victima la aer liber și mențineți-o în stare de repaus, într-o poziție comfortabilă pentru respirație.
P332 + P313: În caz de iritare a pielii, consultați medical.
P305 + P351 + P338: ÎN CAZ DE CONTACT CU OCHII: clătiţi cu atenţie cu apă, timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
P501: Aruncaţi conţinutul / recipientul în conformitate cu reglementările în vigoare.

S23: A nu se inspira gazul/fumul/vaporii/aerosolii/ (termenul(ii) corespunzător(i) se specific de producător).
S26: În cazul contactului cu ochii, spălaţi imediat cu multă apă şi consultaţi medicul.
S24/25: Evitați contactul cu pielea și ochii.
S36/37: Purtați echipament de protecție corespunzător, mănuși și mască de protecție pentru ochi/față.
S60: Acest produs şi ambalajul (recipientul) său se vor depozita ca un deşeu periculos

Fișa cu date de securitate

în conformitate cu Regulamentul (CE) nr. 1907/2006 (REACH)

Ferrocid 8583

număr articol: 48202

Numărul versiunii: Vers. 8.0
Înlocuiește versiunea din: 21.01.2021 (Vers. 7)

Revizuire: 31.03.2021

SECȚIUNEA 1: Identificarea substanței/amestecului și a societății/întreprinderii

1.1 Element de identificare a produsului

Denumirea comercială **Ferrocid 8583**

Număr articol **48202**

Identificatori (Uniunea Europeană)

Numărul de înregistrare (REACH) nerelevante (amestec)

1.2 Utilizări relevante identificate ale substanței sau amestecului și utilizări contraindicate

Utilizări relevante identificate

Biocid
Produse chimice de tratare a apei
Agent de condiționare

1.3 Detalii privind furnizorul fișei cu date de securitate

Kurita Europe GmbH
Theodor-Heuss-Anlage 2
DE-68165 Mannheim
Germania

Telefon: + 49 621 1218-3000
e-mail: KEG_PS@kurita-water.com
Website: www.kurita.eu

Producător

Furnizor a produsului						
Țara	*Denumirea*	*Strada*	*Codul poștal/ localitatea*	*Telefon*	*Telefax*	*Website*
România	ACC Waterchem SRL	Bd. Decabal 10	RO 030967 Bucharest	Cristian Cojocaru +40 741 23 59 68		www.kurita.eu

1.4 Număr de telefon care poate fi apelat în caz de urgență

Numar telefon urgenta: 021.318.36.06 (Disponibil in intervalul orar 8.00 – 16.00), Birou RSI si Informare Toxicologica din cadrul INSP, Str. D.Leonte Nr.1-3,Bucuresti, Romania
National Environmental Protection Agency (NEPA): +40 (0) 213118620
Emergency CONTACT (24-Hour-Number):
Europe: GBK GmbH +49 (0)6132-84463
International: GBK/Infotrac ID 108808: (001) 352 323 3500
Assistance in mother tongue.

SECȚIUNEA 2: Identificarea pericolelor

2.1 Clasificarea substanței sau a amestecului

Clasificare conform Regulamentului (CE) nr. 1272/2008 (CLP)

Clasa de pericol	*Clasa și categoria de pericol*	*Categorie*	*Fraza de pericol*
corodarea/iritarea pielii	Skin Corr. 1C	1C	H314
lezarea gravă a ochilor/iritarea ochilor	Eye Dam. 1	1	H318
sensibilizarea pielii	Skin Sens. 1A	1A	H317
periculos pentru mediul acvatic - pericol acut	Aquatic Acute 1	1	H400
periculos pentru mediul acvatic - pericol cronic	Aquatic Chronic 1	1	H410

Pentru textul complet al abrevierilor: a se vedea SECŢIUNEA 16.

Cele mai importante efecte adverse fizico-chimice, asupra sănătății umane și asupra mediului

Corodarea pielii produce leziunea ireversibilă a pielii; anume, necroza vizibilă trecând de epidermă şi ajungând până la dermă. Vărsarea și apa de stingere a incendiului pot cauza poluarea cursurilor de apă.

2.2 Elemente pentru etichetă

Etichetarea în conformitate cu Regulamentul (CE) nr. 1272/2008 (CLP)

Cuvânt de avertizare pericol

Pictograme

GHS05, GHS07, GHS09



Frazele de pericol

H314	Provoacă arsuri grave ale pielii şi lezarea ochilor.
H317	Poate provoca o reacţie alergică a pielii.
H410	Foarte toxic pentru mediul acvatic cu efecte pe termen lung.

Frazele de precauţie

P261	Evitaţi să inspiraţi ceaţa/vaporii/spray-ul.
P273	Evitaţi dispersarea în mediu.
P280	A se purta mănuși de protecție/îmbrăcăminte de protecție/echipament de protecție a ochilor/echipament de protecție a feței/protecție a auzului/....
P301+P330+P331	ÎN CAZ DE ÎNGHIŢIRE: clătiţi gura. NU provocaţi voma.
P303+P361+P353	ÎN CAZ DE CONTACT CU PIELEA (sau cu părul): Scoateţi imediat toată îmbrăcămintea contaminată. Clătiţi pielea cu apă [sau faceţi duş].
P304+P340	ÎN CAZ DE INHALARE: transportaţi persoana la aer liber și menţineţi-o într-o poziţie confortabilă pentru respiraţie.
P305+P351+P338	ÎN CAZ DE CONTACT CU OCHII: Clătiţi cu atenţie cu apă timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul și dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
P310	Sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ/un medic.
P501	Aruncaţi conţinutul/recipientul în conformitate cu reglementările locale/regionale/naţionale/internaţionale.

Informații suplimentare privind pericolele

EUH071	Corosiv pentru căile respiratorii.

Ingrediente periculoase pentru etichetare masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)

2.3 Alte pericole

Rezultatele evaluării PBT și vPvB

Acest amestec nu conţine nicio substanţă evaluată a fi PBT sau vPvB.

SECȚIUNEA 3: Compoziție/informații privind componenții

3.2 Amestecuri

Ingrediente periculoase

Denumirea substanței	*Element de identificare*	*% Masă*	*Clasificare conf. 1272/2008/CE*	*Limite de conc. specifice*	*Factori M*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	Nr. CAS 55965-84-9 Nr. index 613-167-00-5	1 – < 3	Acute Tox. 3 / H301 Acute Tox. 2 / H310 Acute Tox. 2 / H330 Skin Corr. 1C / H314 Eye Dam. 1 / H318 Skin Sens. 1A / H317 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410 EUH071	Skin Corr. 1C; H314: C ≥ 0,6 % Skin Irrit. 2; H315: 0,06 % ≤ C < 0,6 % Eye Dam. 1; H318: C ≥ 0,6 % Eye Irrit. 2; H319: 0,06 % ≤ C < 0,6 % Skin Sens. 1A; H317: C ≥ 0,0015 %	factor M (acut) = 100.0 factor M (cronic) = 100.0
copper dinitrate	Nr. CAS 3251-23-8 Nr. CE 221-838-5 Nr. Înreg. REACH 01-2119969290-34-xxxx	< 1	Ox. Sol. 2 / H272 Skin Corr. 1B / H314 Eye Dam. 1 / H318 Aquatic Acute 1 / H400 Aquatic Chronic 2 / H411		factor M (acut) = 10.0

Pentru textul complet al abrevierilor: a se vedea SECŢIUNEA 16.

SECȚIUNEA 4: Măsuri de prim ajutor

4.1 Descrierea măsurilor de prim ajutor

Observaţii generale

Nu lăsați persoana afectată nesupravegheată. Evacuați victima din zona de pericol. Mențineți persoana afectată la căldură, nemișcată și acoperită. Scoateţi imediat toată îmbrăcămintea contaminată. În caz de pierdere a cunoștinței, așezați persoana în poziție laterală stabilă. Nu-i administrați niciodată ceva pe gură.

După inhalare

În caz de iritare a tractului respirator, consultați un medic.

După contactul cu pielea

Scoateți îmbrăcămintea contaminată. După contactul cu pielea, scoateţi imediat toată îmbrăcămintea contaminată şi spălaţi imediat cu multă apa. Sunați imediat la un medic.

După contactul cu ochii

Clătiți din abundență cu apă proaspătă și curată, timp de cel puțin 10 minute, ținând pleoapele depărtate. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi. Sunați un medic imediat.

După ingerare

Se clătește gura cu apă (numai dacă persoana este conștientă). NU provocaţi voma. Sunați imediat la un medic.

4.2 Cele mai importante simptome și efecte, atât acute, cât și întârziate

Provoacă arsuri grave ale pielii şi lezarea ochilor. Ingestion causes pain, burns, abdominal pain, possible general impact (shock).

4.3 Indicații privind orice fel de asistență medicală imediată și tratamentele speciale necesare

No specific antidot is known. Treatment of the symptoms.

SECȚIUNEA 5: Măsuri de combatere a incendiilor

5.1 Mijloace de stingere a incendiilor

Mijloace de stingere corespunzătoare

Pulverizare de apă, Spumă rezistentă la alcool, Praf de extinctor, Dioxid de carbon (CO2)

Mijloace de stingere necorespunzătoare

Jet continuu de apă

5.2 Pericole speciale cauzate de substanța sau amestecul în cauză

Produși de combustie periculoși

Oxizi de azot (NOx), Monoxid de carbon (CO), Dioxid de carbon (CO2), Oxizi de sulf (SOx)

5.3 Recomandări destinate pompierilor

Mențineți containerele reci prin pulverizarea de apă. A nu se inspira fumul în caz de incendiu şi/sau explozie. Nu lăsați apa folosită la stingerea incendiului să pătrundă încanalizări sau în cursurile de apă. Colectați separat apa contaminată folosită la stingerea incendiilor. Stingeţi incendiul de la o distanţă rezonabilă, luând măsuri normale de precauţie.

Echipamentul de protecție special destinat pompierilor

Echipament de protecţie chimică, Folosiți aparate de protecție respiratorie adecvate

SECȚIUNEA 6: Măsuri de luat în caz de dispersie accidentală

6.1 Precauții personale, echipament de protecție și proceduri de urgență

Pentru personalul care nu este implicat în situații de urgență

Evacuați persoana într-un loc sigur.

Pentru personalul care intervine în situații de urgență

Purtați aparat de respirat dacă sunteți expus la vapori/praf/spray/gaze. Utilizaţi echipamentul de protecţie individuală conform cerinţelor.

6.2 Precauții pentru mediul înconjurător

Păstrați la distanță față de canalele de scurgere și apele de suprafață sau subterane. Rețineți apa de spălare contaminată și eliminați-o. Chemicals generally shouldn't reach surface water.

6.3 Metode și material pentru izolarea incendiilor și pentru curățenie

Sfaturi privind modul de izolare a unei cantități vărsate

Acoperirea canalelor de evacuare

Sfaturi privind modul de curățare a unei cantități vărsate

Ștergeți cu material absorbant (de ex. cârpă, fleece). Colectaţi scurgerile de produs: Material absorbant (de exemplu, nisip, diatomit, liant acid, liant universal, rumeguș etc.)

Tehnica adecvată de izolare

Utilizarea materialelor absorbante.

Alte informații referitoare la vărsări și dispersii

Puneți în containere adecvate pentru eliminare. Ventilați zona afectată.

6.4 Trimitere la alte secțiuni

Secțiunea 7: Manipularea și depozitarea. A se vedea și secțiunile 8 și 13 din fișa cu date de securitate.

SECȚIUNEA 7: Manipularea și depozitarea

7.1 Precauții pentru manipularea în condiții de securitate

Recomandări

Măsurile de prevenire a incendiilor, precum și a generării de aerosoli și praf

Nu sunt necesare masuri speciale.

Sfaturi privind igiena generală la locul de muncă

Spălați mâinile după utilizare. Nu mâncați, beți sau fumați în zonele de lucru. Îndepărtați îmbrăcămintea contaminată și echipamentul de protecție înainte de a pătrunde în zonele în care se ia masa. Nu țineți niciodată mâncarea sau băutura în apropiere de produsele chimice. Nu puneți niciodată produsele chimice în recipiente care sunt folosite în mod obișnuit pentru mâncare sau băutură. A se păstra departe de hrană, băuturi şi hrană pentru animale.

7.2 Condiții de depozitare în condiții de securitate, inclusiv eventuale incompatibilități

Proiectarea specială a spațiilor de depozitare sau a rezervoarelor

Păstraţi ambalajul închis ermetic şi într-un loc bine ventilat.

Temperatura de depozitare

Temperatura de depozitare recomandată: <40 °C.

Compatibilitățile privind ambalarea

Păstraţi numai în recipientul original. Pot fi utilizate exclusiv ambalajele omologate (de ex. conf. ADR).

7.3 Utilizare finală specifică (utilizări finale specifice)

Biocid. Produse chimice de tratare a apei. Agent de condiționare.

SECȚIUNEA 8: Controale ale expunerii/protecția personală

8.1 Parametri de control

Valorile limită naționale

Valori limită de expunere profesională (Limite de expunere la locul de muncă)

nu este relevant

8.2 Controale ale expunerii

Controale tehnice corespunzătoare

Ventilaţie generală.

Măsuri de protecție individuală (echipamentul de protecție personală)

Trebuie sa existe garantii, ca instalatiile de clatire a ochilor si dusurile de siguranta se afla aproape de locul de munca.

Protecția ochilor/feței

A se purta mască de protecţie a ochilor/feţei.

Protecția pielii

Chemical resistant protective clothing.

Protecția mâinilor

A se purta mănuși corespunzătoare. Mănușile de protecție chimică adecvate sunt testate conform EN 374. Verificați etanșeitatea/impermeabilitatea înainte de utilizare. În scopuri speciale, se recomandă să verificați rezistența la produse chimice a mănușilor de protecție menționate mai sus, împreună cu furnizorul acestor mănuși. In case of spray contact at least protection index 2 recommended, according to more than 30 min. penetration time (EN 374).
Layer thickness of gloves at least: 0.4 mm
In case of prolonged and intensive contact protection index 6 recommended, according to more than 480 min. penetration time (EN 374).
Layer thickness of gloves at least: 0.7 mm.

Tipul de material

PVC: policlorură de vinil, PE: polietilenă, CR: cauciuc cloroprenic (clorobutadienic), NBR: cauciuc acrilonitrilbutadienic, IIR: cauciuc izobuten-izoprenic (butilcauciuc), FKM: elastomer cu fluor

Timpul de perforare a materialului din care sunt fabricate mănușile

Momentul de cedare si insusirile de origine ale materialului trebuie luate in consideratie

Alte măsuri de protecție

Spălaţi-vă maini bine după utilizare.

Protecția respirației

În cazul în care ventilarea este insuficientă, purtaţi echipament de protecţie respiratorie.

Controlul expunerii mediului

Considerații privind eliminarea: a se vedea secțiunea 13.

SECȚIUNEA 9: Proprietățile fizice și chimice

9.1 Informații privind proprietățile fizice și chimice de bază

Aspect

Starea fizică	lichid
Culoarea	galben - verde - albastru deschis

Miros	fara miros
Pragul de acceptare a mirosului	nu este aplicabilă

Alți parametri de securitate

pH (valoare)	ca. 4 – 6 (in aqueous solution: 10 $^{g}/_{l}$)
Punctul de topire/punctul de înghețare	ca. -5 °C
Punctul inițial de fierbere și intervalul de fierbere	ca. 102 °C
Punctul de aprindere	>101 °C
Viteza de evaporare	nedeterminat
Inflamabilitatea (solid, gaz)	nu este relevant (fluid)
Limita superioară/inferioară de inflamabilitate sau de explozie	nedeterminat
Presiunea de vapori	nedeterminat
Densitatea vaporilor	aceste informații nu sunt disponibile
Densitatea	ca. 1,04 $^{g}/_{cm^3}$ la 20 °C

Solubilitatea (solubilitățile)

Solubilitatea în apă	miscibil în orice proporție

Coeficientul de partiție

- n-octanol/apă (log KOW)	aceste informații nu sunt disponibile

Temperatura de autoaprindere	>600 °C
Temperatura de descompunere	nu există date disponibile

Vâscozitatea

Vâscozitatea cinematică	4,5 $^{mm^2}/_{s}$
Vâscozitatea dinamică	4,6 mPa s la 20 °C

Proprietăți explozive	nici una/nici unul
Proprietăți oxidante	nici una/nici unul

9.2 Alte informații

Nu există informații suplimentare.

SECȚIUNEA 10: Stabilitate și reactivitate

10.1 Reactivitate

Acest material nu este reactiv în condiții normale de mediu ambiant.

10.2 Stabilitate chimică

Materialul este stabil în condiții ambientale normale, precum și în condițiile de temperatură și presiune în care se anticipează că vor avea loc depozitarea și manipularea.

10.3 Posibilitatea de reacții periculoase

Nu se cunosc reacţii periculoase.

10.4 Condiții de evitat

Nu există condiții specifice cunoscute care trebuie evitate.

10.5 Materiale incompatibile

Nu există informații suplimentare.

10.6 Produși de descompunere periculoși

Produșii de descompunere periculoși anticipați în mod rezonabil care sunt produși în urma utilizării, depozitării, vărsării și încălzirii nu sunt cunoscuți. Produși de combustie periculoși: a se vedea secțiunea 5.

SECȚIUNEA 11: Informații toxicologice

11.1 Informații privind efectele toxicologice

Nu sunt disponibile date de testare pentru întregul amestec.

Procedura de clasificare

Metoda pentru clasificarea amestecului se bazează pe ingredientele amestecului (formula de aditivitate).

Toxicitate acută

Nu se clasifică ca fiind toxic(ă) acut(ă).

Product ATEmix oral : >2000 mg/kg
Product ATEmix dermal : >2000 mg/kg

Toxicitatea acută a componenților amestecului

Denumirea substanței	*Nr. CAS*	*Calea de expunere*	*Efect*	*Valoare*	*Specii*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	orală	LD50	64 $^{mg}/_{kg}$	șobolan
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	prin inhalare: praf/ceață	LC50	0,33 $^{mg}/_{l}$/4h	șobolan
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	dermică	LD50	87,12 $^{mg}/_{kg}$	iepure

Corodarea/iritarea pielii

Provoacă arsuri grave ale pielii şi lezarea ochilor.

Lezarea gravă a ochilor/iritarea ochilor

Provoacă leziuni oculare grave.

Sensibilizarea căilor respiratorii sau a pielii

Poate provoca o reacţie alergică a pielii.

Mutagenicitatea celulelor embrionare

Nu sunt disponibile date de testare pentru întregul amestec.

Cancerigenitate

Nu sunt disponibile date de testare pentru întregul amestec.

Toxicitatea pentru reproducere

Nu sunt disponibile date de testare pentru întregul amestec.

Toxicitate asupra unui organ ţintă specific - o singură expunere

Nu sunt disponibile date de testare pentru întregul amestec.

Toxicitate asupra unui organ ţintă specific - expunere repetată

Nu sunt disponibile date de testare pentru întregul amestec.

Pericol prin aspirare

Nu se clasifică ca prezentând pericol prin aspirare.

Alte informaţii

Corosiv pentru căile respiratorii.

SECŢIUNEA 12: Informaţii ecologice

12.1 Toxicitatea

Foarte toxic pentru mediul acvatic cu efecte pe termen lung.

Toxicitate acvatică (acută) a componenţilor amestecului

Denumirea substanţei	*Nr. CAS*	*Efect*	*Durata de expunere*	*Valoare*	*Specii*
masă de reacţie compusă din 5-cloro-2-metil-2H-izotiazol-3-onă şi 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	LC50	96 h	0,19 $^{mg}/_{l}$	peşte
masă de reacţie compusă din 5-cloro-2-metil-2H-izotiazol-3-onă şi 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	EC50	48 h	0,16 $^{mg}/_{l}$	nevertebrate acvatice
masă de reacţie compusă din 5-cloro-2-metil-2H-izotiazol-3-onă şi 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	ErC50	72 h	19,9 $^{µg}/_{l}$	alge

Toxicitate acvatică (cronică) a componenților amestecului					
Denumirea substanței	*Nr. CAS*	*Efect*	*Valoare*	*Specii*	*Durata de expunere*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	LC50	0,07 $^{mg}/_{l}$	pește	14 d
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	EC50	>0,18 $^{mg}/_{l}$	nevertebrate acvatice	21 d
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	ErC50	45,6 $^{µg}/_{l}$	alge	120 h

12.2 Persistența și degradabilitatea

Nu este ușor biodegradabil(ă).

Degradabilitatea componenților amestecului					
Denumirea substanței	*Nr. CAS*	*Proces*	*Rata de degradare*	*Timp*	*Metoda*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	generare de dioxid de carbon	>60 %	29 d	

12.3 Potențialul de bioacumulare

A worth-mentioning accumulation in organisms is not expected.

Potențial de bioacumulare a componenților amestecului				
Denumirea substanței	*Nr. CAS*	*BCF*	*Log KOW*	*BOD5/COD*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	54	≥-0,34 – ≤0,63 (pH valoare: 7, 10 °C)	

12.4 Mobilitatea în sol

Nu sunt disponibile date.

12.5 Rezultatele evaluării PBT și vPvB

Nu este aplicabilă.

12.6 Alte efecte adverse

Potențialul de a afecta sistemul endocrin

Niciun ingredient nu figurează pe listă.

Observații

A nu se arunca în rețeaua de canalizare sau în apa de suprafață.

SECȚIUNEA 13: Considerații privind eliminarea

13.1 Metode de tratare a deșeurilor

Acest produs şi ambalajul său se vor depozita ca un deşeu periculos. Alocarea de numere de identificare/marcaje pentru reziduuri trebuie sa se efectueze corespunzator OID, specifc procesului si bransei. Eliminarea deseurilor de produs se va face conform legii 211/2011 privind regimul deseurilor.¶Eliminarea deseurilor de ambalaje se face cf. HG 621/2005 privind gestionarea ambalajelor si deseurilor de ambalaje; HG 856/2002- evidenta gestiunii deseurilor si aprobarea listei deseurilor. Legea 249/2015 privind modalitatea de gestionare a ambalajelor si a deseurilor de ambalaje.

Informaţii relevante pentru tratarea deşeurilor

Este un deșeru periculos; pot fi utilizate exclusiv ambalajele omologate (de ex. conf. ADR). Ambalajele golite complet pot fi reciclate. Manipulați ambalajele contaminate în același mod ca și substanța respectivă.

Observații

Vă rugăm să luați în considerare dispozițiile naționale sau regionale relevante. Deșeurile vor fi selectate pe categorii care pot fi tratate separat de către facilitățile de gestionare a deșeurilor de la nivel local sau național. A nu se arunca în rețeaua de canalizare sau în apa de suprafață. Evitaţi dispersarea în mediu.

SECȚIUNEA 14: Informații referitoare la transport

14.1 Numărul ONU	3265
14.2 Denumirea corectă ONU pentru expediție	LICHID ORGANIC COROSIV, ACID, N.S.A.
Denumire tehnică (ingrediente periculoase)	(isothiazolinones)
14.3 Clasa (clasele) de pericol pentru transport	
Clasa	8
14.4 Grupul de ambalare	III
14.5 Pericole pentru mediul înconjurător	periculos pentru mediul acvatic
Substanţă periculoasă pentru mediu (mediul acvatic)	isothiazolinones

14.6 Precauții speciale pentru utilizatori

Nu există informații suplimentare.

14.7 Transport în vrac, în conformitate cu anexa II la MARPOL și Codul IBC

Încărcătura nu este destinată să fie transportată în vrac.

Informații pentru fiecare Regulament-tip ONU

Transportul rutier, feroviar şi pe căi navigabile interioare al mărfurilor periculoase (ADR/RID/ADN)

Numărul ONU	3265
Denumirea oficială de transport	LICHID ORGANIC COROSIV, ACID, N.S.A., (isothiazolinones)
Clasa	8
Grupul de ambalare	III
Etichetă(e) de pericol	8, peşte şi copac



Pericole pentru mediul înconjurător	da
Cod restricţie tunel (CRT)	E

Codul maritim internaţional pentru mărfuri periculoase (IMDG)

Numărul ONU	3265
Denumirea oficială de transport	LICHID ORGANIC COROSIV, ACID, N.S.A., (isothiazolinones)
Clasa	8
Poluează mediul acvatic marin	da
Grupul de ambalare	III
Etichetă(e) de pericol	8, peşte şi copac



EmS	F-A, S-B
Grupă de segregare	1 - Acizi
Coduri de segregare	SG36, SG49

Organizaţia Internaţională de Aviaţie Civilă (OACI-IATA/DGR)

Numărul ONU	3265
Denumirea oficială de transport	Lichid organic corosiv, acid, n.s.a., (isothiazolinones)
Clasa	8
Pericole pentru mediul înconjurător	da
Grupul de ambalare	III
Etichetă(e) de pericol	8



SECȚIUNEA 15: Informații de reglementare

15.1 Regulamente/legislație în domeniul securității, al sănătății și al mediului specifice (specifică) pentru substanța sau amestecul în cauză

Dispozițiile relevante ale Uniunii Europene (UE)

Restricții în conformitate cu REACH, Anexa XVII

Substanțe periculoase cu restricții (REACH, Anexa XVII)			
Denumirea substanței	*Denumirea conf. inventarului*	*Nr. CAS*	*Restricție*
Ferrocid 8583	acest produs îndeplineşte criteriile de clasificare în conformitate cu Regulamentul nr. 1272/2008/CE		R3

Legendă

R3 1. Nu se utilizează în:
- articole decorative destinate producerii unor efecte de lumină sau de culoare prin intermediul unor faze diferite, de exemplu, în lămpi decorative și în scrumiere;
- obiecte destinate producerii de farse și capcane;
- jocuri pentru unul sau mai mulți participanți sau orice alt articol destinat unei folosințe similare, chiar și cu aspecte decorative.
2. Este interzisă introducerea pe piață a articolelor care nu se conformează punctului 1.
3. Nu se introduc pe piață dacă conțin colorant, cu excepția cazului în care este necesar din motive fiscale, sau parfum ori ambele, dacă:
- pot fi utilizate drept combustibili în lămpi decorative cu ulei pentru a fi furnizate publicului larg; și
- prezintă un pericol în caz de inhalare și sunt etichetate cu R65 sau H304.
4. Lămpile decorative cu ulei destinate publicului larg nu sunt introduse pe piață decât dacă sunt conforme standardului european privind lămpile decorative cu ulei (EN 14059), adoptat de Comitetul European de Standardizare (CEN).
5. Fără a aduce atingere punerii în aplicare a altor dispoziții comunitare referitoare la clasificarea, ambalarea și etichetarea substanțelor și a amestecurilor periculoase, furnizorii se asigură, înainte de introducerea pe piață, că sunt respectate următoarele cerințe:
(a) uleiurile lampante, etichetate cu R65 sau H304, destinate publicului larg, sunt marcate vizibil, lizibil și de neșters după cum urmează: „A nu se lăsa la îndemâna copiilor lămpi umplute cu acest lichid" și, începând cu 1 decembrie 2010, „Doar o înghițitură de ulei lampant – sau chiar suptul fitilului lămpilor – poate cauza leziuni pulmonare care constituie o amenințare la adresa vieții";
(b) lichidele de aprins focul pentru barbecue, etichetate cu R65 sau H304, destinate publicului larg, sunt marcate, începând cu 1 decembrie 2010, lizibil și de neșters, după cum urmează: „O singură înghițitură din acest lichid poate cauza leziuni pulmonare care constituie o amenințare la adresa vieții";
(c) uleiurile lampante și lichidele de aprins focul pentru barbecue, etichetate cu R65 sau H304, destinate publicului larg, sunt îmbuteliate, începând cu 1 decembrie 2010, în recipiente negre opace care nu depășesc 1 litru.
6. Până la 1 iunie 2014 cel târziu, Comisia solicită Agenției Europene pentru Produse Chimice să pregătească un dosar, în conformitate cu articolul 69 din prezentul regulament, în scopul de a interzice, dacă este cazul, lichidele de aprins focul pentru barbecue și combustibilii pentru lămpile decorative, etichetați R65 sau H304, destinați publicului larg.
7. Persoanele fizice sau juridice care introduc pe piață pentru prima oară uleiuri lampante și lichide de aprins focul pentru barbecue, etichetate cu R65 sau H304, furnizează autorității competente din statul membru în cauză, până la 1 decembrie 2011 și apoi anual, date privind soluții alternative pentru uleiul lampant și lichidele de aprins focul pentru barbecue etichetate R65 sau H304. Statele membre pun datele respective la dispoziția Comisiei.

Lista substanțelor care fac obiectul autorizării (REACH, Anexa XIV) / SVHC - lista substanțelor candidate

niciun ingredient nu figurează pe listă

Directiva Seveso

2012/18/UE (Seveso III)				
Nr.	*Substanță periculoasă/categorii de pericol*	*Cantități relevante (tone) ale substanțelor pentru încadrarea amplasamentelor de nivel inferior și de nivel superior*		*Note*
E1	pericole pentru mediu (periculoase pentru mediul acvatic, cat. 1)	100	200	56)

Observație

56) periculoase pentru mediul acvatic în categoria acut 1 sau cronic 1

Directiva 2011/65/UE privind restricțiile de utilizare a anumitor substanțe periculoase în echipamentele electrice și electronice (RoHS) - Anexa II

niciun ingredient nu figurează pe listă

Regulamentul 166/2006/CE privind înfiinţarea Registrului European al Poluanţilor Emişi şi Transferaţi (PRTR)

niciun ingredient nu figurează pe listă

Directiva-cadru privind apa (DCA)

Lista poluanților (DCA)

Denumirea substanței	*Nr. CAS*	*Enumerată în*	*Observații*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)		A)	
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)		A)	

Legendă
A) Lista orientativă a principalilor poluanți

Regulamentul (UE) 2019/1148 al Parlamentului European și al Consiliului din 20 iunie 2019 privind comercializarea și utilizarea precursorilor de explozivi, de modificare a Regulamentului (CE) nr. 1907/2006 și de abrogare a Regulamentului (UE) nr. 98/2013

niciun ingredient nu figurează pe listă

Regulamentul 111/2005/CE de stabilire a normelor de monitorizare a comerțului cu precursori de droguri între Comunitate și țările terțe

niciun ingredient nu figurează pe listă

Restricţii privind ocupaţia

Respectati restrictiile ocupationale conform Legii pentru protectia muncii juvenile (94/33/UE). Legea nr. 319/2006- legea securitatii si sanatatii in munca. HG 1218/2006 privind stabilirea cerinţelor minime de securitate si sănătate in munca pentru asigurarea protecției lucrătorilor împotriva riscurilor legate de prezenta agenților chimici.

Regulamentul 528/2012/UE privind introducerea pe piață și utilizarea produselor biocide

Utilizați în siguranță produsele biocide. Citiți întotdeauna eticheta și informațiile despre produs înainte de utilizare.

15.2 Evaluarea securității chimice

Evaluarea securității chimice: Nu.

SECŢIUNEA 16: Alte informaţii

Indicație a modificărilor (fișă cu date de securitate revizuită)

Secțiunea	*Introducere anterioară (text/valoare)*	*Introducere actuală (text/valoare)*
1.3	Detalii privind furnizorul fișei cu date de securitate: Kurita Europe GmbH Giulinistrasse 2 DE-67065 Ludwigshafen Germania Telefon: + 49 621 1218-3000	Detalii privind furnizorul fișei cu date de securitate: Kurita Europe GmbH Theodor-Heuss-Anlage 2 DE-68165 Mannheim Germania Telefon: + 49 621 1218-3000

Secţiunea	*Introducere anterioară (text/valoare)*	*Introducere actuală (text/valoare)*
	e-mail: MSDS@kurita.eu Website: www.kurita.eu	e-mail: KEG_PS@kurita-water.com Website: www.kurita.eu
1.3		Furnizor a produsului: modificare în listă (tabel)
12.2		Degradabilitatea componenţilor amestecului: modificare în listă (tabel)

Abrevieri si acronime

Abr.	*Descrieri ale abrevierilor utilizate*
Acute Tox.	Toxicitate acută
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (Acordul european privind transportul internaţional al mărfurilor periculoase pe căile navigabile interioare)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (Acordul european referitor la transportul rutier internaţional al mărfurilor periculoase)
Aquatic Acute	Periculos pentru mediul acvatic - pericol acut
Aquatic Chronic	Periculos pentru mediul acvatic - pericol cronic
BCF	Bioconcentration factor (factor de bioconcentrare)
BOD	Consumul biochimic de oxigen
CAS	Chemical Abstracts Service (departament care deţine cea mai cuprinzătoare listă a substanţelor chimice)
CLP	Regulamentul (CE) Nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
COD	Consumul chimic de oxigen
DGR	Reglementări privind Mărfurile Periculoase (a se vedea IATA/DGR)
EC50	Concentraţia Efectivă 50%. CE50 corespunde concentraţiei unei substanţe testate care produce schimbări de 50% în efect (de ex., asupra creşterii) într-un interval de timp specificat
EINECS	European Inventory of Existing Commercial Chemical Substances (Inventarul european al substanţelor chimice existente introduse pe piaţă)
ELINCS	European List of Notified Chemical Substances (Lista europeană a substanţelor chimice notificate)
EmS	Emergency Schedule (Plan de urgenţă)
ErC50	≡ CE50: în această metodă, acea concentraţie a substanţei de testat care determină o reducere cu 50 % fie a creşterii (CEb50), fie a vitezei de creştere (CEr50) în comparaţie cu testul martor
Eye Dam.	Lezare gravă a ochiului
Eye Irrit.	Iritant pentru ochi
factor M	Înseamnă un factor de multiplicare. Acesta se aplică concentraţiei unei substanţe clasificate ca fiind periculoasă pentru mediul acvatic, toxicitate acută categoria 1 sau toxicitate cronică categoria 1, şi care se utilizează pentru determinarea, prin metoda însumării, a clasificării unui amestec, în care este prezentă substanţa
IATA	International Air Transport Association (Asociaţia Internaţională de Transport Aerian)
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA) (Reglementări privind Mărfurile Periculoase pentru transportul aerian)

Abr.	*Descrieri ale abrevierilor utilizate*
IMDG	International Maritime Dangerous Goods Code (Codul maritim internaţional pentru mărfuri periculoase)
LC50	Lethal Concentration 50 % (concentrație letală 50 %): LC50 corespunde concentrației unei substanțe testate care produce o letalitate de 50 % într-un interval de timp specificat
LD50	Lethal Dose 50 % (doză letală 50 %): DLx corespunde dozei unei substanțe testate care produce o letalitate de 50 % într-un interval de timp specificat
log KOW	n-Octanol/apă
MARPOL	Convenția internațională pentru prevenirea poluării de către nave (abr. de la „Marine Pollutant")
NLP	No-Longer Polymer (ex-polimer)
Nr. CE	Inventarul CE (EINECS, ELINCS și NLP-list) este sursa numărului CE, format din șapte cifre, un identificator al substanțelor disponibile pe piață în UE (Uniunea Europeană)
Nr. index	Numărul index reprezintă codul de identificare alocat substanței în partea 3 din anexa VI la Regulamentul (CE) nr. 1272/2008
OACI	International Civil Aviation Organization (Organizația Internațională de Aviație Civilă)
Ox. Sol.	Solid oxidant
PBT	Persistent, bioacumulativ și toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice)
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulamentul privind transportul internațional feroviar al mărfurilor periculoase)
Skin Corr.	Corosiv pentru piele
Skin Irrit.	Iritant pentru piele
Skin Sens.	Sensibilizarea pielii
SVHC	Substance of Very High Concern (substanță care prezintă motive de îngrijorare deosebită)
vPvB	Very Persistent and very Bioaccumulative (foarte persistent și foarte bioacumulativ)

Trimiteri către literatura de specialitate şi către sursele de date

Regulamentul (CE) Nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor. Regulamentul (CE) nr. 1907/2006 (REACH), modificat prin 2015/830/UE. ECHA: Agenția Europeană pentru Produse Chimice, http://echa.europa.eu/.

Transportul rutier, feroviar și pe căi navigabile interioare al mărfurilor periculoase (ADR/RID/ADN). Codul maritim internaţional pentru mărfuri periculoase (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA) (Reglementări privind Mărfurile Periculoase pentru transportul aerian).

Procedura de clasificare

Proprietățile fizice și chimice: Clasificarea este bazată pe amestecul testat.
Pericolele pentru sănătate, Pericole pentru mediul înconjurător: Metoda pentru clasificarea amestecului se bazează pe ingredientele amestecului (formula de aditivitate).

Lista frazelor relevante (codul şi textul întreg aşa cum figurează în capitolul 2 şi 3)

Cod	*Text*
H272	Poate agrava un incendiu; oxidant.
H301	Toxic în caz de înghiţire.
H310	Mortal în contact cu pielea.
H314	Provoacă arsuri grave ale pielii şi lezarea ochilor.
H317	Poate provoca o reacţie alergică a pielii.
H318	Provoacă leziuni oculare grave.
H330	Mortal în caz de inhalare.
H400	Foarte toxic pentru mediul acvatic.
H410	Foarte toxic pentru mediul acvatic cu efecte pe termen lung.
H411	Toxic pentru mediul acvatic cu efecte pe termen lung.

Clauză de exonerare de răspundere

Aceste informaţii se bazează pe nivelul actual de cunoştinţe pe care le deţinem. Prezenta FDS a fost redactată şi este destinată exclusiv pentru acest produs.

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **SODIUM BROMIDE BRINE**

Revision Date: 29-Jan-2013

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Statement of Hazardous Nature Non-Hazardous according to the criteria of NOHSC, Non-Dangerous Goods according to the criteria of ADG.

Manufacturer/Supplier

Halliburton Australia Pty. Ltd.
15 Marriott Road
Jandakot
WA 6164
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

Product Emergency Telephone
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

Fire, Police & Ambulance - Emergency Telephone
Australia: 000
Papua New Guinea: 000
New Zealand: 111

Identification of Substances or Preparation

Product Trade Name: SODIUM BROMIDE BRINE
Synonyms: None
Chemical Family: Salt
UN Number: None
Dangerous Goods Class: None
Subsidiary Risk: None
Hazchem Code: None Allocated
Poisons Schedule: None Allocated
Application: Additive

Prepared By

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT	Australia NOHSC	New Zealand WES	ACGIH TLV-TWA
Sodium bromide	7647-15-6	30 - 60%	Not applicable	Not applicable	Not applicable

Non-Hazardous Substance to Total of 100%

3. HAZARDS IDENTIFICATION

Hazard Overview May cause eye and skin irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed. Repeated overexposure may cause liver and kidney effects.

Risk Phrases R36 Irritating to eyes.

HSNO Classification Not Determined

4. FIRST AID MEASURES

Inhalation If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

Eyes In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media All standard fire fighting media

Extinguishing media which must not be used for safety reasons None known.

Special Exposure Hazards Decomposition in fire may produce toxic gases.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Wash hands after use. Launder contaminated clothing before reuse.

Storage Information Store away from oxidizers. Store away from acids. Store in a cool, dry location. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)

Hand Protection Nitrile gloves.

Skin Protection Normal work coveralls.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Clear colorless
Odor:	Odorless
pH:	Not Determined
Specific Gravity @ 20 C (Water=1):	1.44 - 1.5
Density @ 20 C (kg/l):	1.5
Bulk Density @ 20 C (kg/m^3):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (C):	Not Determined
Pour Point/Range (C):	Not Determined
Flash Point/Range (C):	Not Determined
Flash Point Method:	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (g/m^3):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (g/m^3):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (g/l):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined
Decomposition Temperature (C):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data: Stable

Hazardous Polymerization: Will Not Occur

Conditions to Avoid None anticipated

Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure Eye or skin contact, inhalation.

Sympotoms related to exposure

Inhalation Vapors given off by heated product may be harmful. May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Skin Contact May cause skin irritation.

Eye Contact May cause eye irritation.

Ingestion Harmful if swallowed. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions. May cause liver and kidney damage.

Aggravated Medical Conditions Skin disorders. Central nervous system disorders.

Chronic Effects/Carcinogenicity Repeated overexposure may cause liver and kidney effects.

Other Information None known.

Toxicity Tests

Oral Toxicity:	LD50: 3500 mg/kg (Rat)
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not determined
Bio-accumulation	Not determined

Ecotoxicological Information

Acute Fish Toxicity: Not determined
Acute Crustaceans Toxicity: Not determined
Acute Algae Toxicity: Not determined

Chemical Fate Information Not determined

Other Information Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

ADR
Not restricted

Air Transportation

ICAO/IATA
Not restricted

Sea Transportation

IMDG
Not restricted

Other Transportation Information

Labels: None

15. REGULATORY INFORMATION

Chemical Inventories

Australian AICS Inventory All components listed on inventory or are exempt.
New Zealand Inventory of Chemicals All components listed on inventory or are exempt.
US TSCA Inventory All components listed on inventory or are exempt.
EINECS Inventory This product, and all its components, complies with EINECS

Classification Xi - Irritant.

Risk Phrases R36 Irritating to eyes.

Safety Phrases None S25 Avoid contact with eyes.

16. OTHER INFORMATION

The following sections have been revised since the last issue of this SDS
Not applicable

Contact

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

New Zealand National Poisons Centre
0800 764 766

Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

Section: 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier: **STEA06348A**
Substance type: CLP Mixture

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Use of the Substance/Mixture : CORROSION/SCALE INHIBITOR

Recommended restrictions on use : Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet:

COMPANY IDENTIFICATION
NALCO EUROPE B.V.
Postbus 627
2300 AP Leiden, The Netherlands
TEL: 0031 71 5241100

LOCAL COMPANY IDENTIFICATION
Nalco Ltd.
P.O. BOX 11, WINNINGTON AVENUE
NORTHWICH, CHESHIRE, U.K. CW8 4DX
TEL: +44 (0)1606 74488

For Product Safety information please contact: msdseame@nalco.com

1.4 Emergency telephone number: +32-(0)3-575-5555 Trans-European

Date of Compilation/Revision: 29.06.2017
Version Number: 1.0

Section: 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2	H315
Eye irritation, Category 2	H319
Specific target organ toxicity - repeated exposure, Category 2	H373

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal Word : Warning

Hazard Statements :

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements : **Prevention:**

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/ eye protection/ face

protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P314 Get medical advice/ attention if you feel unwell.

P332+P313 If skin irritation occurs: Get medical advice/attention.

Hazardous components which must be listed on the label:
Ethylene Glycol

2.3 Other hazards

None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous components

Chemical Name	CAS-No. EC-No. REACH No.	Classification (REGULATION (EC) No 1272/2008)	Concentration: [%]
Ethylene Glycol	107-21-1 203-473-3 01-2119456816-28	Acute toxicity Category 4; H302 Specific target organ toxicity - repeated exposure Category 2; H373	10 - < 20
C10-16 alkyl alcohol ethoxylate phosphate diethanolamine salt.	69011-83-2	Skin irritation Category 2; H315 Eye irritation Category 2; H319	10 - < 20

For the full text of the H-Statements mentioned in this Section, see Section 16.

Section: 4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled : Get medical attention if symptoms occur.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.
Use a mild soap if available.
Get medical attention if irritation develops and persists.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
Get medical attention.

If swallowed : Rinse mouth.
Get medical attention if symptoms occur.

Protection of first-aiders : In event of emergency assess the danger before taking action.

Do not put yourself at risk of injury. If in doubt, contact emergency responders.Use personal protective equipment as required.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Indication of immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

Section: 5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : Do not use water unless flooding amounts are available.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.

Hazardous combustion products : Decomposition products may include the following materials:
Carbon oxides
nitrogen oxides (NOx)
Sulphur oxides
Oxides of phosphorus

5.3 Advice for firefighters

Special protective equipment for firefighters : Use personal protective equipment.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel : Remove all sources of ignition.
Ensure clean-up is conducted by trained personnel only.
Refer to protective measures listed in sections 7 and 8.

Advice for emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

6.2 Environmental precautions

Environmental precautions : Do not allow contact with soil, surface or ground water.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	:	Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

6.4 Reference to other sections

See Section 1 for emergency contact information.
For personal protection see section 8.
See Section 13 for additional waste treatment information.

Section: 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling	:	Avoid contact with skin and eyes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from fire, sparks and heated surfaces. Wash hands thoroughly after handling. Use only with adequate ventilation.
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Keep away from heat and sources of ignition. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
Suitable material	:	The following compatibility data is suggested based on similar product data and/or industry experience: Viton, TFE, FEP (encapsulated), Neoprene, Stainless Steel 304, Stainless Steel 316L, Nitrile, EPDM, Perfluoroelastomer, PTFE, HDPE (high density polyethylene), MDPE (medium density polyethylene), Teflon
Unsuitable material	:	The following compatibility data is suggested based on similar product data and/or industry experience: Carbon Steel C1018, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

7.3 Specific end uses

Specific use(s)	:	CORROSION/SCALE INHIBITOR

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethylene Glycol	107-21-1	TWA (Vapour.)	20 ppm 52 mg/m3	UKCOSSTD
Further information	Sk	Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
		STEL (Vapour.)	40 ppm 104 mg/m3	UKCOSSTD
Further information	Sk	Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
		TWA (particles)	10 mg/m3	UKCOSSTD
Further information	Sk	Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		

DNEL

Ethylene Glycol	:	End Use: Workers Exposure routes: Skin contact Potential health effects: Long-term systemic effects Value: 106 mg/cm2
		End Use: Workers Exposure routes: Dermal Potential health effects: long term - systemic
		End Use: Workers Exposure routes: Inhalation Potential health effects: Long-term systemic effects Value: 35 mg/m3
		End Use: Workers Exposure routes: Inhalation Potential health effects: long-term - local Value: 35 mg/m3
		End Use: Consumers Exposure routes: Skin contact Potential health effects: Long-term systemic effects Value: 53 mg/cm2
		End Use: Consumers Exposure routes: Inhalation Potential health effects: Long-term systemic effects Value: 7 mg/m3

PNEC

Ethylene Glycol	:	Fresh water Value: 10 mg/l
		Marine water Value: 1 mg/l
		Water Value: 10 mg/l
		Intermittent release Value: 10 mg/l
		Fresh water sediment Value: 20.9 mg/kg
		Water Value: 1995.5 mg/l

		Soil Value: 1.53 mg/kg

8.2 Exposure controls

Appropriate engineering controls

Effective exhaust ventilation system.
Maintain air concentrations below occupational exposure standards.

Individual protection measures

Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice.Remove and wash contaminated clothing before re-use.Wash face, hands and any exposed skin thoroughly after handling.
Eye/face protection (EN 166)	:	Safety glasses with side-shields
Hand protection (EN 374)	:	Wear the following personal protective equipment: Nitrile rubber butyl-rubber Impervious gloves Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Skin and body protection (EN 14605)	:	Wear suitable protective clothing.
Respiratory protection (EN 143, 14387)	:	Where concentrations in air may exceed the limits given in this section, the use of a half face filter mask or air supplied breathing apparatus is recommended.A suitable filter material depends on the amount and type of chemicals being handled.Consider the use of filter type:A-PIn event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used.If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

Environmental exposure controls

General advice	:	Consider the provision of containment around storage vessels.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	:	Liquid
Colour	:	amber
Odour	:	Slight
Flash point	:	80 °C Method: Pensky-Martens closed cup Does not sustain combustion.

pH	:	7.3
Odour Threshold	:	no data available
Melting point/freezing point	:	no data available
Initial boiling point and boiling range	:	100 °C
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	no data available
Relative vapour density	:	no data available
Relative density	:	1.089 (20 °C)
Solubility(ies)		
Water solubility	:	completely soluble
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition	:	no data available
Viscosity		
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	6 mm2/s (40 °C) Method: ASTM D 445
Explosive properties	:	no data available
Oxidizing properties	:	no data available

9.2 Other information

no data available

Section: 10. STABILITY AND REACTIVITY

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid	:	Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.

10.6 Hazardous decomposition products

Hazardous decomposition products	:	Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus

Section: 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on likely routes of exposure	:	Inhalation, Eye contact, Skin contact

Toxicity

Product

Acute oral toxicity	:	Acute toxicity estimate : > 2,000 mg/kg
Acute inhalation toxicity	:	There is no data available for this product.
Acute dermal toxicity	:	There is no data available for this product.
Skin corrosion/irritation	:	There is no data available for this product.
Serious eye damage/eye irritation	:	There is no data available for this product.
Respiratory or skin sensitization	:	There is no data available for this product.
Carcinogenicity	:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive effects	:	No toxicity to reproduction
Germ cell mutagenicity	:	Contains no ingredient listed as a mutagen
Teratogenicity	:	There is no data available for this product.
STOT - single exposure	:	Based on available data, the classification criteria are not met.
STOT - repeated exposure	:	There is no data available for this product.
Aspiration toxicity	:	No aspiration toxicity classification

Components

Acute dermal toxicity	:	Ethylene Glycol LD50 rabbit: 10,600 mg/kg

Potential Health Effects

Eyes	:	Causes serious eye irritation.
Skin	:	Causes skin irritation.
Ingestion	:	Health injuries are not known or expected under normal use.
Inhalation	:	Health injuries are not known or expected under normal use.
Chronic Exposure	:	May cause damage to organs through prolonged or repeated exposure.

Experience with human exposure

Eye contact	:	Redness, Pain, Irritation
Skin contact	:	Redness, Irritation
Ingestion	:	No symptoms known or expected.
Inhalation	:	No symptoms known or expected.
Further information	:	no data available

Section: 12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Product

Environmental Effects	:	This product has no known ecotoxicological effects.
Toxicity to fish	:	96 hrs LC50 Turbot: > 1,800 mg/l
		96 hrs NOEC Turbot: 1,800 mg/l
Toxicity to daphnia and other aquatic invertebrates	:	240 hrs LC50 Corophium volutator: > 1,228.5 mg/l
Toxicity to algae	:	no data available

Components

Toxicity to fish	:	Ethylene Glycol 96 h LC50: 72,860 mg/l

Components

Toxicity to daphnia and other aquatic invertebrates	:	Ethylene Glycol 48 h EC50: > 100 mg/l

Components

Toxicity to algae	:	Ethylene Glycol 96 h EC50: 6,500 mg/l

Components

Toxicity to bacteria : Ethylene Glycol
> 1,995 mg/l
Method: ISO 8192

Components

Toxicity to fish (Chronic toxicity) : Ethylene Glycol
7 d NOEC: 15,380 mg/l

Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Ethylene Glycol
7 d NOEC: 8,590 mg/l

12.2 Persistence and degradability

Product

Biodegradability : The organic portion of this preparation is expected to be readily biodegradable.

Components

Biodegradability : Ethylene Glycol
Result: Readily biodegradable.

C10-16 alkyl alcohol ethoxylate phosphate diethanolamine salt.
Result: no data available

12.3 Bioaccumulative potential

Product

Bioaccumulation : This preparation or material is not expected to bioaccumulate.

12.4 Mobility in soil

Product

This substance is water soluble and is expected to remain primarily in water.

12.5 Results of PBT and vPvB assessment

Product

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

No adverse effects expected.

Section: 13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with the European Directives on waste and hazardous waste.Waste codes should

be assigned by the user, preferably in discussion with the waste disposal authorities.

13.1 Waste treatment methods

Product	:	Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
Contaminated packaging	:	Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.
Guidance for Waste Code selection	:	16 03 05*- OFF SPECIFICATION BATCHES AND UNUSED PRODUCTS - Organic wastes containing dangerous substances. If this product is used in any further processes, the final user must redefine and assign the most appropriate European Waste Catalogue Code.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (ADR/ADN/RID)

14.1 UN number:	Not applicable.
14.2 UN proper shipping name:	PRODUCT IS NOT REGULATED DURING TRANSPORTATION
14.3 Transport hazard class(es):	Not applicable.
14.4 Packing group:	Not applicable.
14.5 Environmental hazards:	No
14.6 Special precautions for user:	Not applicable.

Air transport (IATA)

14.1 UN number:	Not applicable.
14.2 UN proper shipping name:	PRODUCT IS NOT REGULATED DURING TRANSPORTATION
14.3 Transport hazard class(es):	Not applicable.
14.4 Packing group:	Not applicable.
14.5 Environmental hazards:	No
14.6 Special precautions for user:	Not applicable.

Sea transport (IMDG/IMO)

14.1 UN number:	Not applicable.
14.2 UN proper shipping name:	PRODUCT IS NOT REGULATED DURING TRANSPORTATION
14.3 Transport hazard class(es):	Not applicable.
14.4 Packing group:	Not applicable.
14.5 Environmental hazards:	No
14.6 Special precautions for user:	Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:	Not applicable.

Section: 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

INTERNATIONAL CHEMICAL CONTROL LAWS

CANADA
This product contains substance(s) which are found on the Non-Domestic Substances List (NDSL), or are not in compliance with other Canadian Acts.

United States TSCA Inventory
The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

15.2 Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out on the product.

Section: 16. OTHER INFORMATION

Procedure used to derive the classification according to REGULATION (EC) No 1272/2008

Classification	Justification
Skin irritation 2, H315	Calculation method
Eye irritation 2, H319	Calculation method
Specific target organ toxicity - repeated exposure 2, H373	Calculation method

Full text of H-Statements

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure.

Full text of other abbreviations

ADN – European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS – Australian Inventory of Chemical Substances; ASTM – American Society for the Testing of Materials; bw – Body weight; CLP – Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR – Carcinogen, Mutagen or Reproductive Toxicant; DIN – Standard of the German Institute for Standardisation; DSL – Domestic Substances List (Canada); ECHA – European Chemicals Agency; EC-Number – European Community number; ECx – Concentration associated with x% response; ELx – Loading rate associated with x% response; EmS – Emergency Schedule; ENCS – Existing and New Chemical Substances (Japan); ErCx – Concentration associated with x% growth rate response; GHS – Globally Harmonized System; GLP – Good Laboratory Practice; IARC – International Agency for Research on Cancer; IATA – International Air Transport Association; IBC – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 – Half maximal inhibitory concentration; ICAO – International Civil Aviation Organization; IECSC – Inventory of Existing Chemical Substances in China; IMDG – International Maritime Dangerous Goods; IMO – International Maritime Organization; ISHL – Industrial Safety and Health Law (Japan); ISO – International Organisation for Standardization; KECI – Korea Existing Chemicals Inventory; LC50 – Lethal Concentration to 50 % of a test population; LD50 – Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL – International Convention for the Prevention of Pollution from Ships; n.o.s. – Not Otherwise Specified; NO(A)EC – No Observed (Adverse) Effect Concentration; NO(A)EL – No Observed (Adverse) Effect Level; NOELR – No Observable Effect Loading Rate; NZIoC – New Zealand Inventory of Chemicals; OECD – Organization for Economic Co-operation and Development; OPPTS – Office of Chemical Safety and Pollution Prevention; PBT – Persistent, Bioaccumulative and Toxic substance; PICCS – Philippines Inventory of Chemicals and

Chemical Substances; (Q)SAR – (Quantitative) Structure Activity Relationship; REACH – Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID – Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT – Self-Accelerating Decomposition Temperature; SDS – Safety Data Sheet; TCSI – Taiwan Chemical Substance Inventory; TRGS – Technical Rule for Hazardous Substances; TSCA – Toxic Substances Control Act (United States); UN – United Nations; vPvB – Very Persistent and Very Bioaccumulative

Further information

Sources of key data used to compile the Safety Data Sheet	:	IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer. The possible key literature references and data sources which may have been used in conjunction with the consideration of expert judgment to compile this Safety Data Sheet: European regulations/directives (including (EC) No. 1907/2006, (EC) No. 1272/2008), supplier data, inter-net, ESIS, IUCLID, ERIcards, Non European official regulatory data and other data sources.
Prepared By	:	Regulatory Affairs

Numbers quoted in the MSDS are given in the format: 1,000,000 = 1 million and 1,000 = 1 thousand. 0.1 = 1 tenth and 0.001 = 1 thousandth

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Appendix I. Chemicals Safety Data Sheets

2 – Safety Data Sheets of chemicals used during construction/installation phase

Fișa cu date de securitate

în conformitate cu Regulamentul (CE) nr. 1907/2006 (REACH)

Ferrocid 8583

număr articol: 48202

Numărul versiunii: Vers. 8.0
Înlocuiește versiunea din: 21.01.2021 (Vers. 7)

Revizuire: 31.03.2021

SECȚIUNEA 1: Identificarea substanței/amestecului și a societății/întreprinderii

1.1 Element de identificare a produsului

Denumirea comercială **Ferrocid 8583**

Număr articol **48202**

Identificatori (Uniunea Europeană)

Numărul de înregistrare (REACH) nerelevante (amestec)

1.2 Utilizări relevante identificate ale substanței sau amestecului și utilizări contraindicate

Utilizări relevante identificate

Biocid
Produse chimice de tratare a apei
Agent de condiționare

1.3 Detalii privind furnizorul fișei cu date de securitate

Kurita Europe GmbH
Theodor-Heuss-Anlage 2
DE-68165 Mannheim
Germania

Telefon: + 49 621 1218-3000
e-mail: KEG_PS@kurita-water.com
Website: www.kurita.eu

Producător

Furnizor a produsului						
Țara	*Denumirea*	*Strada*	*Codul poștal/ localitatea*	*Telefon*	*Telefax*	*Website*
România	ACC Waterchem SRL	Bd. Decabal 10	RO 030967 Bucharest	Cristian Cojocaru +40 741 23 59 68		www.kurita.eu

1.4 Număr de telefon care poate fi apelat în caz de urgență

Numar telefon urgenta: 021.318.36.06 (Disponibil in intervalul orar 8.00 – 16.00), Birou RSI si Informare Toxicologica din cadrul INSP, Str. D.Leonte Nr.1-3,Bucuresti, Romania
National Environmental Protection Agency (NEPA): +40 (0) 213118620
Emergency CONTACT (24-Hour-Number):
Europe: GBK GmbH +49 (0)6132-84463
International: GBK/Infotrac ID 108808: (001) 352 323 3500
Assistance in mother tongue.

SECȚIUNEA 2: Identificarea pericolelor

2.1 Clasificarea substanței sau a amestecului

Clasificare conform Regulamentului (CE) nr. 1272/2008 (CLP)

Clasa de pericol	*Clasa și categoria de pericol*	*Categorie*	*Fraza de pericol*
corodarea/iritarea pielii	Skin Corr. 1C	1C	H314
lezarea gravă a ochilor/iritarea ochilor	Eye Dam. 1	1	H318
sensibilizarea pielii	Skin Sens. 1A	1A	H317
periculos pentru mediul acvatic - pericol acut	Aquatic Acute 1	1	H400
periculos pentru mediul acvatic - pericol cronic	Aquatic Chronic 1	1	H410

Pentru textul complet al abrevierilor: a se vedea SECŢIUNEA 16.

Cele mai importante efecte adverse fizico-chimice, asupra sănătății umane și asupra mediului

Corodarea pielii produce leziunea ireversibilă a pielii; anume, necroza vizibilă trecând de epidermă şi ajungând până la dermă. Vărsarea și apa de stingere a incendiului pot cauza poluarea cursurilor de apă.

2.2 Elemente pentru etichetă

Etichetarea în conformitate cu Regulamentul (CE) nr. 1272/2008 (CLP)

Cuvânt de avertizare pericol

Pictograme

GHS05, GHS07, GHS09



Frazele de pericol

H314	Provoacă arsuri grave ale pielii şi lezarea ochilor.
H317	Poate provoca o reacţie alergică a pielii.
H410	Foarte toxic pentru mediul acvatic cu efecte pe termen lung.

Frazele de precauţie

P261	Evitaţi să inspiraţi ceaţa/vaporii/spray-ul.
P273	Evitaţi dispersarea în mediu.
P280	A se purta mănuși de protecție/îmbrăcăminte de protecție/echipament de protecție a ochilor/echipament de protecție a feței/protecție a auzului/....
P301+P330+P331	ÎN CAZ DE ÎNGHIŢIRE: clătiţi gura. NU provocaţi voma.
P303+P361+P353	ÎN CAZ DE CONTACT CU PIELEA (sau cu părul): Scoateţi imediat toată îmbrăcămintea contaminată. Clătiţi pielea cu apă [sau faceţi duş].
P304+P340	ÎN CAZ DE INHALARE: transportaţi persoana la aer liber și menţineţi-o într-o poziţie confortabilă pentru respiraţie.
P305+P351+P338	ÎN CAZ DE CONTACT CU OCHII: Clătiţi cu atenţie cu apă timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul și dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
P310	Sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ/un medic.
P501	Aruncaţi conţinutul/recipientul în conformitate cu reglementările locale/regionale/naţionale/internaţionale.

Informații suplimentare privind pericolele

EUH071	Corosiv pentru căile respiratorii.

Ingrediente periculoase pentru etichetare masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)

2.3 Alte pericole

Rezultatele evaluării PBT și vPvB

Acest amestec nu conţine nicio substanţă evaluată a fi PBT sau vPvB.

SECȚIUNEA 3: Compoziție/informații privind componenții

3.2 Amestecuri

Ingrediente periculoase

Denumirea substanței	*Element de identificare*	*% Masă*	*Clasificare conf. 1272/2008/CE*	*Limite de conc. specifice*	*Factori M*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	Nr. CAS 55965-84-9 Nr. index 613-167-00-5	1 – < 3	Acute Tox. 3 / H301 Acute Tox. 2 / H310 Acute Tox. 2 / H330 Skin Corr. 1C / H314 Eye Dam. 1 / H318 Skin Sens. 1A / H317 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410 EUH071	Skin Corr. 1C; H314: C ≥ 0,6 % Skin Irrit. 2; H315: 0,06 % ≤ C < 0,6 % Eye Dam. 1; H318: C ≥ 0,6 % Eye Irrit. 2; H319: 0,06 % ≤ C < 0,6 % Skin Sens. 1A; H317: C ≥ 0,0015 %	factor M (acut) = 100.0 factor M (cronic) = 100.0
copper dinitrate	Nr. CAS 3251-23-8 Nr. CE 221-838-5 Nr. Înreg. REACH 01-2119969290-34-xxxx	< 1	Ox. Sol. 2 / H272 Skin Corr. 1B / H314 Eye Dam. 1 / H318 Aquatic Acute 1 / H400 Aquatic Chronic 2 / H411		factor M (acut) = 10.0

Pentru textul complet al abrevierilor: a se vedea SECŢIUNEA 16.

SECȚIUNEA 4: Măsuri de prim ajutor

4.1 Descrierea măsurilor de prim ajutor

Observaţii generale

Nu lăsați persoana afectată nesupravegheată. Evacuați victima din zona de pericol. Mențineți persoana afectată la căldură, nemișcată și acoperită. Scoateţi imediat toată îmbrăcămintea contaminată. În caz de pierdere a cunoștinței, așezați persoana în poziție laterală stabilă. Nu-i administrați niciodată ceva pe gură.

După inhalare

În caz de iritare a tractului respirator, consultați un medic.

După contactul cu pielea

Scoateți îmbrăcămintea contaminată. După contactul cu pielea, scoateţi imediat toată îmbrăcămintea contaminată şi spălaţi imediat cu multă apa. Sunați imediat la un medic.

După contactul cu ochii

Clătiți din abundență cu apă proaspătă și curată, timp de cel puțin 10 minute, ținând pleoapele depărtate. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi. Sunați un medic imediat.

După ingerare

Se clătește gura cu apă (numai dacă persoana este conștientă). NU provocaţi voma. Sunați imediat la un medic.

4.2 Cele mai importante simptome și efecte, atât acute, cât și întârziate

Provoacă arsuri grave ale pielii şi lezarea ochilor. Ingestion causes pain, burns, abdominal pain, possible general impact (shock).

4.3 Indicații privind orice fel de asistență medicală imediată și tratamentele speciale necesare

No specific antidot is known. Treatment of the symptoms.

SECȚIUNEA 5: Măsuri de combatere a incendiilor

5.1 Mijloace de stingere a incendiilor

Mijloace de stingere corespunzătoare

Pulverizare de apă, Spumă rezistentă la alcool, Praf de extinctor, Dioxid de carbon (CO2)

Mijloace de stingere necorespunzătoare

Jet continuu de apă

5.2 Pericole speciale cauzate de substanța sau amestecul în cauză

Produși de combustie periculoși

Oxizi de azot (NOx), Monoxid de carbon (CO), Dioxid de carbon (CO2), Oxizi de sulf (SOx)

5.3 Recomandări destinate pompierilor

Mențineți containerele reci prin pulverizarea de apă. A nu se inspira fumul în caz de incendiu şi/sau explozie. Nu lăsați apa folosită la stingerea incendiului să pătrundă încanalizări sau în cursurile de apă. Colectați separat apa contaminată folosită la stingerea incendiilor. Stingeţi incendiul de la o distanţă rezonabilă, luând măsuri normale de precauţie.

Echipamentul de protecție special destinat pompierilor

Echipament de protecţie chimică, Folosiți aparate de protecție respiratorie adecvate

SECȚIUNEA 6: Măsuri de luat în caz de dispersie accidentală

6.1 Precauții personale, echipament de protecție și proceduri de urgență

Pentru personalul care nu este implicat în situații de urgență

Evacuați persoana într-un loc sigur.

Pentru personalul care intervine în situații de urgență

Purtați aparat de respirat dacă sunteți expus la vapori/praf/spray/gaze. Utilizaţi echipamentul de protecţie individuală conform cerinţelor.

6.2 Precauții pentru mediul înconjurător

Păstrați la distanță față de canalele de scurgere și apele de suprafață sau subterane. Rețineți apa de spălare contaminată și eliminați-o. Chemicals generally shouldn't reach surface water.

6.3 Metode și material pentru izolarea incendiilor și pentru curățenie

Sfaturi privind modul de izolare a unei cantități vărsate

Acoperirea canalelor de evacuare

Sfaturi privind modul de curățare a unei cantități vărsate

Ștergeți cu material absorbant (de ex. cârpă, fleece). Colectaţi scurgerile de produs: Material absorbant (de exemplu, nisip, diatomit, liant acid, liant universal, rumeguș etc.)

Tehnica adecvată de izolare

Utilizarea materialelor absorbante.

Alte informații referitoare la vărsări și dispersii

Puneți în containere adecvate pentru eliminare. Ventilați zona afectată.

6.4 Trimitere la alte secțiuni

Secțiunea 7: Manipularea și depozitarea. A se vedea și secțiunile 8 și 13 din fișa cu date de securitate.

SECȚIUNEA 7: Manipularea și depozitarea

7.1 Precauții pentru manipularea în condiții de securitate

Recomandări

Măsurile de prevenire a incendiilor, precum și a generării de aerosoli și praf

Nu sunt necesare masuri speciale.

Sfaturi privind igiena generală la locul de muncă

Spălați mâinile după utilizare. Nu mâncați, beți sau fumați în zonele de lucru. Îndepărtați îmbrăcămintea contaminată și echipamentul de protecție înainte de a pătrunde în zonele în care se ia masa. Nu țineți niciodată mâncarea sau băutura în apropiere de produsele chimice. Nu puneți niciodată produsele chimice în recipiente care sunt folosite în mod obișnuit pentru mâncare sau băutură. A se păstra departe de hrană, băuturi şi hrană pentru animale.

7.2 Condiții de depozitare în condiții de securitate, inclusiv eventuale incompatibilități

Proiectarea specială a spațiilor de depozitare sau a rezervoarelor

Păstraţi ambalajul închis ermetic şi într-un loc bine ventilat.

Temperatura de depozitare

Temperatura de depozitare recomandată: <40 °C.

Compatibilitățile privind ambalarea

Păstraţi numai în recipientul original. Pot fi utilizate exclusiv ambalajele omologate (de ex. conf. ADR).

7.3 Utilizare finală specifică (utilizări finale specifice)

Biocid. Produse chimice de tratare a apei. Agent de condiționare.

SECȚIUNEA 8: Controale ale expunerii/protecția personală

8.1 Parametri de control

Valorile limită naționale

Valori limită de expunere profesională (Limite de expunere la locul de muncă)

nu este relevant

8.2 Controale ale expunerii

Controale tehnice corespunzătoare

Ventilaţie generală.

Măsuri de protecție individuală (echipamentul de protecție personală)

Trebuie sa existe garantii, ca instalatiile de clatire a ochilor si dusurile de siguranta se afla aproape de locul de munca.

Protecția ochilor/feței

A se purta mască de protecţie a ochilor/feţei.

Protecția pielii

Chemical resistant protective clothing.

Protecția mâinilor

A se purta mănuși corespunzătoare. Mănușile de protecție chimică adecvate sunt testate conform EN 374. Verificați etanșeitatea/impermeabilitatea înainte de utilizare. În scopuri speciale, se recomandă să verificați rezistența la produse chimice a mănușilor de protecție menționate mai sus, împreună cu furnizorul acestor mănuși. In case of spray contact at least protection index 2 recommended, according to more than 30 min. penetration time (EN 374).
Layer thickness of gloves at least: 0.4 mm
In case of prolonged and intensive contact protection index 6 recommended, according to more than 480 min. penetration time (EN 374).
Layer thickness of gloves at least: 0.7 mm.

Tipul de material

PVC: policlorură de vinil, PE: polietilenă, CR: cauciuc cloroprenic (clorobutadienic), NBR: cauciuc acrilonitrilbutadienic, IIR: cauciuc izobuten-izoprenic (butilcauciuc), FKM: elastomer cu fluor

Timpul de perforare a materialului din care sunt fabricate mănușile

Momentul de cedare si insusirile de origine ale materialului trebuie luate in consideratie

Alte măsuri de protecție

Spălaţi-vă maini bine după utilizare.

Protecția respirației

În cazul în care ventilarea este insuficientă, purtaţi echipament de protecţie respiratorie.

Controlul expunerii mediului

Considerații privind eliminarea: a se vedea secțiunea 13.

SECȚIUNEA 9: Proprietățile fizice și chimice

9.1 Informații privind proprietățile fizice și chimice de bază

Aspect

Starea fizică	lichid
Culoarea	galben - verde - albastru deschis

Miros	fara miros
Pragul de acceptare a mirosului	nu este aplicabilă

Alți parametri de securitate

pH (valoare)	ca. 4 – 6 (in aqueous solution: 10 $^{g}/_{l}$)
Punctul de topire/punctul de înghețare	ca. -5 °C
Punctul inițial de fierbere și intervalul de fierbere	ca. 102 °C
Punctul de aprindere	>101 °C
Viteza de evaporare	nedeterminat
Inflamabilitatea (solid, gaz)	nu este relevant (fluid)
Limita superioară/inferioară de inflamabilitate sau de explozie	nedeterminat
Presiunea de vapori	nedeterminat
Densitatea vaporilor	aceste informații nu sunt disponibile
Densitatea	ca. 1,04 $^{g}/_{cm^3}$ la 20 °C

Solubilitatea (solubilitățile)

Solubilitatea în apă	miscibil în orice proporție

Coeficientul de partiție

- n-octanol/apă (log KOW)	aceste informații nu sunt disponibile

Temperatura de autoaprindere	>600 °C
Temperatura de descompunere	nu există date disponibile

Vâscozitatea

Vâscozitatea cinematică	4,5 $^{mm^2}/_{s}$
Vâscozitatea dinamică	4,6 mPa s la 20 °C

Proprietăți explozive	nici una/nici unul
Proprietăți oxidante	nici una/nici unul

9.2 Alte informații

Nu există informații suplimentare.

SECȚIUNEA 10: Stabilitate și reactivitate

10.1 Reactivitate

Acest material nu este reactiv în condiții normale de mediu ambiant.

10.2 Stabilitate chimică

Materialul este stabil în condiții ambientale normale, precum și în condițiile de temperatură și presiune în care se anticipează că vor avea loc depozitarea și manipularea.

10.3 Posibilitatea de reacții periculoase

Nu se cunosc reacţii periculoase.

10.4 Condiții de evitat

Nu există condiții specifice cunoscute care trebuie evitate.

10.5 Materiale incompatibile

Nu există informații suplimentare.

10.6 Produși de descompunere periculoși

Produșii de descompunere periculoși anticipați în mod rezonabil care sunt produși în urma utilizării, depozitării, vărsării și încălzirii nu sunt cunoscuți. Produși de combustie periculoși: a se vedea secțiunea 5.

SECȚIUNEA 11: Informații toxicologice

11.1 Informații privind efectele toxicologice

Nu sunt disponibile date de testare pentru întregul amestec.

Procedura de clasificare

Metoda pentru clasificarea amestecului se bazează pe ingredientele amestecului (formula de aditivitate).

Toxicitate acută

Nu se clasifică ca fiind toxic(ă) acut(ă).

Product ATEmix oral : >2000 mg/kg
Product ATEmix dermal : >2000 mg/kg

Toxicitatea acută a componenților amestecului

Denumirea substanței	*Nr. CAS*	*Calea de expunere*	*Efect*	*Valoare*	*Specii*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	orală	LD50	64 $^{mg}/_{kg}$	șobolan
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	prin inhalare: praf/ceață	LC50	0,33 $^{mg}/_{l}$/4h	șobolan
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	dermică	LD50	87,12 $^{mg}/_{kg}$	iepure

Corodarea/iritarea pielii

Provoacă arsuri grave ale pielii şi lezarea ochilor.

Lezarea gravă a ochilor/iritarea ochilor

Provoacă leziuni oculare grave.

Sensibilizarea căilor respiratorii sau a pielii

Poate provoca o reacţie alergică a pielii.

Mutagenicitatea celulelor embrionare

Nu sunt disponibile date de testare pentru întregul amestec.

Cancerigenitate

Nu sunt disponibile date de testare pentru întregul amestec.

Toxicitatea pentru reproducere

Nu sunt disponibile date de testare pentru întregul amestec.

Toxicitate asupra unui organ ţintă specific - o singură expunere

Nu sunt disponibile date de testare pentru întregul amestec.

Toxicitate asupra unui organ ţintă specific - expunere repetată

Nu sunt disponibile date de testare pentru întregul amestec.

Pericol prin aspirare

Nu se clasifică ca prezentând pericol prin aspirare.

Alte informaţii

Corosiv pentru căile respiratorii.

SECŢIUNEA 12: Informaţii ecologice

12.1 Toxicitatea

Foarte toxic pentru mediul acvatic cu efecte pe termen lung.

Toxicitate acvatică (acută) a componenţilor amestecului

Denumirea substanţei	*Nr. CAS*	*Efect*	*Durata de expunere*	*Valoare*	*Specii*
masă de reacţie compusă din 5-cloro-2-metil-2H-izotiazol-3-onă şi 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	LC50	96 h	0,19 $^{mg}/_{l}$	peşte
masă de reacţie compusă din 5-cloro-2-metil-2H-izotiazol-3-onă şi 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	EC50	48 h	0,16 $^{mg}/_{l}$	nevertebrate acvatice
masă de reacţie compusă din 5-cloro-2-metil-2H-izotiazol-3-onă şi 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	ErC50	72 h	19,9 $^{µg}/_{l}$	alge

Toxicitate acvatică (cronică) a componenților amestecului					
Denumirea substanței	*Nr. CAS*	*Efect*	*Valoare*	*Specii*	*Durata de expunere*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	LC50	0,07 $^{mg}/_{l}$	pește	14 d
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	EC50	>0,18 $^{mg}/_{l}$	nevertebrate acvatice	21 d
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	ErC50	45,6 $^{µg}/_{l}$	alge	120 h

12.2 Persistența și degradabilitatea

Nu este ușor biodegradabil(ă).

Degradabilitatea componenților amestecului					
Denumirea substanței	*Nr. CAS*	*Proces*	*Rata de degradare*	*Timp*	*Metoda*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	generare de dioxid de carbon	>60 %	29 d	

12.3 Potențialul de bioacumulare

A worth-mentioning accumulation in organisms is not expected.

Potențial de bioacumulare a componenților amestecului				
Denumirea substanței	*Nr. CAS*	*BCF*	*Log KOW*	*BOD5/COD*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	54	≥-0,34 – ≤0,63 (pH valoare: 7, 10 °C)	

12.4 Mobilitatea în sol

Nu sunt disponibile date.

12.5 Rezultatele evaluării PBT și vPvB

Nu este aplicabilă.

12.6 Alte efecte adverse

Potențialul de a afecta sistemul endocrin

Niciun ingredient nu figurează pe listă.

Observații

A nu se arunca în rețeaua de canalizare sau în apa de suprafață.

SECȚIUNEA 13: Considerații privind eliminarea

13.1 Metode de tratare a deșeurilor

Acest produs şi ambalajul său se vor depozita ca un deşeu periculos. Alocarea de numere de identificare/marcaje pentru reziduuri trebuie sa se efectueze corespunzator OID, specifc procesului si bransei. Eliminarea deseurilor de produs se va face conform legii 211/2011 privind regimul deseurilor.¶Eliminarea deseurilor de ambalaje se face cf. HG 621/2005 privind gestionarea ambalajelor si deseurilor de ambalaje; HG 856/2002- evidenta gestiunii deseurilor si aprobarea listei deseurilor. Legea 249/2015 privind modalitatea de gestionare a ambalajelor si a deseurilor de ambalaje.

Informaţii relevante pentru tratarea deşeurilor

Este un deșeru periculos; pot fi utilizate exclusiv ambalajele omologate (de ex. conf. ADR). Ambalajele golite complet pot fi reciclate. Manipulați ambalajele contaminate în același mod ca și substanța respectivă.

Observații

Vă rugăm să luați în considerare dispozițiile naționale sau regionale relevante. Deșeurile vor fi selectate pe categorii care pot fi tratate separat de către facilitățile de gestionare a deșeurilor de la nivel local sau național. A nu se arunca în rețeaua de canalizare sau în apa de suprafață. Evitaţi dispersarea în mediu.

SECȚIUNEA 14: Informații referitoare la transport

14.1 Numărul ONU	3265
14.2 Denumirea corectă ONU pentru expediție	LICHID ORGANIC COROSIV, ACID, N.S.A.
Denumire tehnică (ingrediente periculoase)	(isothiazolinones)
14.3 Clasa (clasele) de pericol pentru transport	
Clasa	8
14.4 Grupul de ambalare	III
14.5 Pericole pentru mediul înconjurător	periculos pentru mediul acvatic
Substanţă periculoasă pentru mediu (mediul acvatic)	isothiazolinones

14.6 Precauții speciale pentru utilizatori

Nu există informații suplimentare.

14.7 Transport în vrac, în conformitate cu anexa II la MARPOL și Codul IBC

Încărcătura nu este destinată să fie transportată în vrac.

Informații pentru fiecare Regulament-tip ONU

Transportul rutier, feroviar şi pe căi navigabile interioare al mărfurilor periculoase (ADR/RID/ADN)

Numărul ONU	3265
Denumirea oficială de transport	LICHID ORGANIC COROSIV, ACID, N.S.A., (isothiazolinones)
Clasa	8
Grupul de ambalare	III
Etichetă(e) de pericol	8, peşte şi copac



Pericole pentru mediul înconjurător	da
Cod restricţie tunel (CRT)	E

Codul maritim internaţional pentru mărfuri periculoase (IMDG)

Numărul ONU	3265
Denumirea oficială de transport	LICHID ORGANIC COROSIV, ACID, N.S.A., (isothiazolinones)
Clasa	8
Poluează mediul acvatic marin	da
Grupul de ambalare	III
Etichetă(e) de pericol	8, peşte şi copac



EmS	F-A, S-B
Grupă de segregare	1 - Acizi
Coduri de segregare	SG36, SG49

Organizaţia Internaţională de Aviaţie Civilă (OACI-IATA/DGR)

Numărul ONU	3265
Denumirea oficială de transport	Lichid organic corosiv, acid, n.s.a., (isothiazolinones)
Clasa	8
Pericole pentru mediul înconjurător	da
Grupul de ambalare	III
Etichetă(e) de pericol	8



SECȚIUNEA 15: Informații de reglementare

15.1 Regulamente/legislație în domeniul securității, al sănătății și al mediului specifice (specifică) pentru substanța sau amestecul în cauză

Dispozițiile relevante ale Uniunii Europene (UE)

Restricții în conformitate cu REACH, Anexa XVII

Substanțe periculoase cu restricții (REACH, Anexa XVII)			
Denumirea substanței	*Denumirea conf. inventarului*	*Nr. CAS*	*Restricție*
Ferrocid 8583	acest produs îndeplineşte criteriile de clasificare în conformitate cu Regulamentul nr. 1272/2008/CE		R3

Legendă

R3 1. Nu se utilizează în:
- articole decorative destinate producerii unor efecte de lumină sau de culoare prin intermediul unor faze diferite, de exemplu, în lămpi decorative și în scrumiere;
- obiecte destinate producerii de farse și capcane;
- jocuri pentru unul sau mai mulți participanți sau orice alt articol destinat unei folosințe similare, chiar și cu aspecte decorative.
2. Este interzisă introducerea pe piață a articolelor care nu se conformează punctului 1.
3. Nu se introduc pe piață dacă conțin colorant, cu excepția cazului în care este necesar din motive fiscale, sau parfum ori ambele, dacă:
- pot fi utilizate drept combustibili în lămpi decorative cu ulei pentru a fi furnizate publicului larg; și
- prezintă un pericol în caz de inhalare și sunt etichetate cu R65 sau H304.
4. Lămpile decorative cu ulei destinate publicului larg nu sunt introduse pe piață decât dacă sunt conforme standardului european privind lămpile decorative cu ulei (EN 14059), adoptat de Comitetul European de Standardizare (CEN).
5. Fără a aduce atingere punerii în aplicare a altor dispoziții comunitare referitoare la clasificarea, ambalarea și etichetarea substanțelor și a amestecurilor periculoase, furnizorii se asigură, înainte de introducerea pe piață, că sunt respectate următoarele cerințe:
(a) uleiurile lampante, etichetate cu R65 sau H304, destinate publicului larg, sunt marcate vizibil, lizibil și de neșters după cum urmează: „A nu se lăsa la îndemâna copiilor lămpi umplute cu acest lichid" și, începând cu 1 decembrie 2010, „Doar o înghițitură de ulei lampant – sau chiar suptul fitilului lămpilor – poate cauza leziuni pulmonare care constituie o amenințare la adresa vieții";
(b) lichidele de aprins focul pentru barbecue, etichetate cu R65 sau H304, destinate publicului larg, sunt marcate, începând cu 1 decembrie 2010, lizibil și de neșters, după cum urmează: „O singură înghițitură din acest lichid poate cauza leziuni pulmonare care constituie o amenințare la adresa vieții";
(c) uleiurile lampante și lichidele de aprins focul pentru barbecue, etichetate cu R65 sau H304, destinate publicului larg, sunt îmbuteliate, începând cu 1 decembrie 2010, în recipiente negre opace care nu depășesc 1 litru.
6. Până la 1 iunie 2014 cel târziu, Comisia solicită Agenției Europene pentru Produse Chimice să pregătească un dosar, în conformitate cu articolul 69 din prezentul regulament, în scopul de a interzice, dacă este cazul, lichidele de aprins focul pentru barbecue și combustibilii pentru lămpile decorative, etichetați R65 sau H304, destinați publicului larg.
7. Persoanele fizice sau juridice care introduc pe piață pentru prima oară uleiuri lampante și lichide de aprins focul pentru barbecue, etichetate cu R65 sau H304, furnizează autorității competente din statul membru în cauză, până la 1 decembrie 2011 și apoi anual, date privind soluții alternative pentru uleiul lampant și lichidele de aprins focul pentru barbecue etichetate R65 sau H304. Statele membre pun datele respective la dispoziția Comisiei.

Lista substanțelor care fac obiectul autorizării (REACH, Anexa XIV) / SVHC - lista substanțelor candidate

niciun ingredient nu figurează pe listă

Directiva Seveso

2012/18/UE (Seveso III)				
Nr.	*Substanță periculoasă/categorii de pericol*	*Cantități relevante (tone) ale substanțelor pentru încadrarea amplasamentelor de nivel inferior și de nivel superior*		*Note*
E1	pericole pentru mediu (periculoase pentru mediul acvatic, cat. 1)	100	200	56)

Observație

56) periculoase pentru mediul acvatic în categoria acut 1 sau cronic 1

Directiva 2011/65/UE privind restricțiile de utilizare a anumitor substanțe periculoase în echipamentele electrice și electronice (RoHS) - Anexa II

niciun ingredient nu figurează pe listă

Regulamentul 166/2006/CE privind înfiinţarea Registrului European al Poluanţilor Emişi şi Transferaţi (PRTR)

niciun ingredient nu figurează pe listă

Directiva-cadru privind apa (DCA)

Lista poluanților (DCA)

Denumirea substanței	*Nr. CAS*	*Enumerată în*	*Observații*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)		A)	
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)		A)	

Legendă
A) Lista orientativă a principalilor poluanți

Regulamentul (UE) 2019/1148 al Parlamentului European și al Consiliului din 20 iunie 2019 privind comercializarea și utilizarea precursorilor de explozivi, de modificare a Regulamentului (CE) nr. 1907/2006 și de abrogare a Regulamentului (UE) nr. 98/2013

niciun ingredient nu figurează pe listă

Regulamentul 111/2005/CE de stabilire a normelor de monitorizare a comerțului cu precursori de droguri între Comunitate și țările terțe

niciun ingredient nu figurează pe listă

Restricţii privind ocupaţia

Respectati restrictiile ocupationale conform Legii pentru protectia muncii juvenile (94/33/UE). Legea nr. 319/2006- legea securitatii si sanatatii in munca. HG 1218/2006 privind stabilirea cerinţelor minime de securitate si sănătate in munca pentru asigurarea protecției lucrătorilor împotriva riscurilor legate de prezenta agenților chimici.

Regulamentul 528/2012/UE privind introducerea pe piață și utilizarea produselor biocide

Utilizați în siguranță produsele biocide. Citiți întotdeauna eticheta și informațiile despre produs înainte de utilizare.

15.2 Evaluarea securității chimice

Evaluarea securității chimice: Nu.

SECŢIUNEA 16: Alte informaţii

Indicație a modificărilor (fișă cu date de securitate revizuită)

Secțiunea	*Introducere anterioară (text/valoare)*	*Introducere actuală (text/valoare)*
1.3	Detalii privind furnizorul fișei cu date de securitate: Kurita Europe GmbH Giulinistrasse 2 DE-67065 Ludwigshafen Germania Telefon: + 49 621 1218-3000	Detalii privind furnizorul fișei cu date de securitate: Kurita Europe GmbH Theodor-Heuss-Anlage 2 DE-68165 Mannheim Germania Telefon: + 49 621 1218-3000

Secţiunea	*Introducere anterioară (text/valoare)*	*Introducere actuală (text/valoare)*
	e-mail: MSDS@kurita.eu Website: www.kurita.eu	e-mail: KEG_PS@kurita-water.com Website: www.kurita.eu
1.3		Furnizor a produsului: modificare în listă (tabel)
12.2		Degradabilitatea componenţilor amestecului: modificare în listă (tabel)

Abrevieri si acronime

Abr.	*Descrieri ale abrevierilor utilizate*
Acute Tox.	Toxicitate acută
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (Acordul european privind transportul internaţional al mărfurilor periculoase pe căile navigabile interioare)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (Acordul european referitor la transportul rutier internaţional al mărfurilor periculoase)
Aquatic Acute	Periculos pentru mediul acvatic - pericol acut
Aquatic Chronic	Periculos pentru mediul acvatic - pericol cronic
BCF	Bioconcentration factor (factor de bioconcentrare)
BOD	Consumul biochimic de oxigen
CAS	Chemical Abstracts Service (departament care deţine cea mai cuprinzătoare listă a substanţelor chimice)
CLP	Regulamentul (CE) Nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
COD	Consumul chimic de oxigen
DGR	Reglementări privind Mărfurile Periculoase (a se vedea IATA/DGR)
EC50	Concentraţia Efectivă 50%. CE50 corespunde concentraţiei unei substanţe testate care produce schimbări de 50% în efect (de ex., asupra creşterii) într-un interval de timp specificat
EINECS	European Inventory of Existing Commercial Chemical Substances (Inventarul european al substanţelor chimice existente introduse pe piaţă)
ELINCS	European List of Notified Chemical Substances (Lista europeană a substanţelor chimice notificate)
EmS	Emergency Schedule (Plan de urgenţă)
ErC50	≡ CE50: în această metodă, acea concentraţie a substanţei de testat care determină o reducere cu 50 % fie a creşterii (CEb50), fie a vitezei de creştere (CEr50) în comparaţie cu testul martor
Eye Dam.	Lezare gravă a ochiului
Eye Irrit.	Iritant pentru ochi
factor M	Înseamnă un factor de multiplicare. Acesta se aplică concentraţiei unei substanţe clasificate ca fiind periculoasă pentru mediul acvatic, toxicitate acută categoria 1 sau toxicitate cronică categoria 1, şi care se utilizează pentru determinarea, prin metoda însumării, a clasificării unui amestec, în care este prezentă substanţa
IATA	International Air Transport Association (Asociaţia Internaţională de Transport Aerian)
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA) (Reglementări privind Mărfurile Periculoase pentru transportul aerian)

Abr.	*Descrieri ale abrevierilor utilizate*
IMDG	International Maritime Dangerous Goods Code (Codul maritim internaţional pentru mărfuri periculoase)
LC50	Lethal Concentration 50 % (concentrație letală 50 %): LC50 corespunde concentrației unei substanțe testate care produce o letalitate de 50 % într-un interval de timp specificat
LD50	Lethal Dose 50 % (doză letală 50 %): DLx corespunde dozei unei substanțe testate care produce o letalitate de 50 % într-un interval de timp specificat
log KOW	n-Octanol/apă
MARPOL	Convenția internațională pentru prevenirea poluării de către nave (abr. de la „Marine Pollutant")
NLP	No-Longer Polymer (ex-polimer)
Nr. CE	Inventarul CE (EINECS, ELINCS și NLP-list) este sursa numărului CE, format din șapte cifre, un identificator al substanțelor disponibile pe piață în UE (Uniunea Europeană)
Nr. index	Numărul index reprezintă codul de identificare alocat substanței în partea 3 din anexa VI la Regulamentul (CE) nr. 1272/2008
OACI	International Civil Aviation Organization (Organizația Internațională de Aviație Civilă)
Ox. Sol.	Solid oxidant
PBT	Persistent, bioacumulativ și toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice)
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulamentul privind transportul internațional feroviar al mărfurilor periculoase)
Skin Corr.	Corosiv pentru piele
Skin Irrit.	Iritant pentru piele
Skin Sens.	Sensibilizarea pielii
SVHC	Substance of Very High Concern (substanță care prezintă motive de îngrijorare deosebită)
vPvB	Very Persistent and very Bioaccumulative (foarte persistent și foarte bioacumulativ)

Trimiteri către literatura de specialitate şi către sursele de date

Regulamentul (CE) Nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor. Regulamentul (CE) nr. 1907/2006 (REACH), modificat prin 2015/830/UE. ECHA: Agenția Europeană pentru Produse Chimice, http://echa.europa.eu/.

Transportul rutier, feroviar și pe căi navigabile interioare al mărfurilor periculoase (ADR/RID/ADN). Codul maritim internaţional pentru mărfuri periculoase (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA) (Reglementări privind Mărfurile Periculoase pentru transportul aerian).

Procedura de clasificare

Proprietățile fizice și chimice: Clasificarea este bazată pe amestecul testat.
Pericolele pentru sănătate, Pericole pentru mediul înconjurător: Metoda pentru clasificarea amestecului se bazează pe ingredientele amestecului (formula de aditivitate).

Lista frazelor relevante (codul şi textul întreg aşa cum figurează în capitolul 2 şi 3)

Cod	*Text*
H272	Poate agrava un incendiu; oxidant.
H301	Toxic în caz de înghiţire.
H310	Mortal în contact cu pielea.
H314	Provoacă arsuri grave ale pielii şi lezarea ochilor.
H317	Poate provoca o reacţie alergică a pielii.
H318	Provoacă leziuni oculare grave.
H330	Mortal în caz de inhalare.
H400	Foarte toxic pentru mediul acvatic.
H410	Foarte toxic pentru mediul acvatic cu efecte pe termen lung.
H411	Toxic pentru mediul acvatic cu efecte pe termen lung.

Clauză de exonerare de răspundere

Aceste informaţii se bazează pe nivelul actual de cunoştinţe pe care le deţinem. Prezenta FDS a fost redactată şi este destinată exclusiv pentru acest produs.

Section: 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier: **Hydrosure™ HD-5000**
Substance type: CLP Mixture

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Use of the Substance/Mixture : HYDROTEST CHEMICAL

Recommended restrictions on use : Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet:

COMPANY IDENTIFICATION
NALCO EUROPE B.V.
Postbus 627
2300 AP Leiden, The Netherlands
TEL: 0031 71 5241100

LOCAL COMPANY IDENTIFICATION
Nalco Ltd.
P.O. BOX 11, WINNINGTON AVENUE
NORTHWICH, CHESHIRE, U.K. CW8 4DX
TEL: +44 (0)1606 74488

For Product Safety information please contact: msdseame@nalco.com

1.4 Emergency telephone number: +32-(0)3-575-5555 Trans-European

Date of Compilation/Revision: 06.09.2017
Version Number: 1.2

Section: 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4	H302
Skin corrosion, Category 1B	H314
Serious eye damage, Category 1	H318
Specific target organ toxicity - repeated exposure, Category 2	H373
Acute aquatic toxicity, Category 1	H400

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal Word : Danger

Hazard Statements :	H302	Harmful if swallowed.
	H314	Causes severe skin burns and eye damage.
	H373	May cause damage to organs through prolonged or repeated exposure.
	H400	Very toxic to aquatic life.
Supplemental Hazard :	EUH031	Contact with acids liberates toxic gas.

Statements

Precautionary Statements : **Prevention:**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

Hazardous components which must be listed on the label:
Didecyl-Dimethyl-Ammonium chloride
Ethylene Glycol
Quaternary ammonium compounds, C12-16-alkyltrimethyl, chlorides

2.3 Other hazards

None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous components

Chemical Name	CAS-No. EC-No. REACH No.	Classification (REGULATION (EC) No 1272/2008)	Concentration: [%]
Didecyl-Dimethyl-Ammonium chloride	7173-51-5 230-525-2	Acute toxicity Category 4; H302 Skin corrosion Category 1B; H314 Serious eye damage Category 1; H318 Acute aquatic toxicity Category 1; H400 Chronic aquatic toxicity Category 2; H411	20 - < 25
Ammonium Bisulfite	10192-30-0 233-469-7	Eye irritation Category 2; H319	10 - < 20
Ethylene Glycol	107-21-1 203-473-3 01-2119456816-28	Acute toxicity Category 4; H302 Specific target organ toxicity - repeated exposure Category 2; H373	10 - < 20
Quaternary ammonium compounds, C12-16-alkyltrimethyl, chlorides	308074-39-7	Acute toxicity Category 4; H302 Skin corrosion Category 1B; H314 Serious eye damage Category 1; H318 Acute aquatic toxicity Category 1; H400	10 - < 20

For the full text of the H-Statements mentioned in this Section, see Section 16.

Section: 4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled	:	Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.
In case of skin contact	:	Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
In case of eye contact	:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
If swallowed	:	Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Protection of first-aiders	:	In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders.Use personal protective equipment as required.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Indication of immediate medical attention and special treatment needed

Treatment	:	Treat symptomatically.

Section: 5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	:	Foam Carbon dioxide Dry powder Other extinguishing agent suitable for Class B fires For large fires, use water spray or fog, thoroughly drenching the burning material.
Unsuitable extinguishing media	:	None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Fire Hazard Keep away from heat and sources of ignition. Flash back possible over considerable distance.
Hazardous combustion	:	Decomposition products may include the following materials:

products	Carbon oxides nitrogen oxides (NOx) Sulphur oxides

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Use personal protective equipment.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel	:	Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
Advice for emergency responders	:	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

6.2 Environmental precautions

Environmental precautions	:	Do not allow contact with soil, surface or ground water.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	:	Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

6.4 Reference to other sections

See Section 1 for emergency contact information.
For personal protection see section 8.
See Section 13 for additional waste treatment information.

Section: 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling	:	Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Do not ingest.

Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep away from heat and sources of ignition. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.

Suitable material : Keep in properly labelled containers.

Unsuitable material :

not determined

7.3 Specific end uses

Specific use(s) : HYDROTEST CHEMICAL

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethylene Glycol	107-21-1	TWA (Vapour.)	20 ppm 52 mg/m3	UKCOSSTD
Further information	Sk	Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
		STEL (Vapour.)	40 ppm 104 mg/m3	UKCOSSTD
Further information	Sk	Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
		TWA (particles)	10 mg/m3	UKCOSSTD
Further information	Sk	Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		

DNEL

Ethylene Glycol	:	End Use: Workers Exposure routes: Skin contact Potential health effects: Long-term systemic effects Value: 106 mg/cm2
		End Use: Workers Exposure routes: Dermal Potential health effects: long term - systemic
		End Use: Workers Exposure routes: Inhalation Potential health effects: Long-term systemic effects

		Value: 35 mg/m3
		End Use: Workers Exposure routes: Inhalation Potential health effects: long-term - local Value: 35 mg/m3
		End Use: Consumers Exposure routes: Skin contact Potential health effects: Long-term systemic effects Value: 53 mg/cm2
		End Use: Consumers Exposure routes: Inhalation Potential health effects: Long-term systemic effects Value: 7 mg/m3

PNEC

Ethylene Glycol	:	Fresh water Value: 10 mg/l
		Marine water Value: 1 mg/l
		Water Value: 10 mg/l
		Intermittent release Value: 10 mg/l
		Fresh water sediment Value: 20.9 mg/kg
		Water Value: 1995.5 mg/l
		Soil Value: 1.53 mg/kg

8.2 Exposure controls

Appropriate engineering controls

Effective exhaust ventilation system.
Maintain air concentrations below occupational exposure standards.

Individual protection measures

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.Remove and wash contaminated clothing before re-use.Wash face, hands and any exposed skin thoroughly after handling.Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

Eye/face protection (EN 166) : Safety goggles
Face-shield

Hand protection (EN 374) : Recommended preventive skin protection
Gloves
Nitrile rubber
butyl-rubber

Breakthrough time: 1 – 4 hours
Minimum thickness for butyl-rubber 0.7 mm for nitrile rubber 0.4 mm or equivalent (please refer to the gloves manufacturer/distributor for advise).
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin and body protection (EN 14605)	:	Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing
Respiratory protection (EN 143, 14387)	:	When respiratory risks cannot be avoided or sufficiently limited by technical means of collective protection or by measures, methods or procedures of work organization, consider the use of certified respiratory protection equipment meeting EU requirements (89/656/EEC, 89/686/EEC), or equivalent, with filter type:A-P

Environmental exposure controls

General advice	:	Consider the provision of containment around storage vessels.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	colourless
Odour	:	characteristic
Flash point	:	92 °C
pH	:	4.51 - 6.51
Odour Threshold	:	no data available
Melting point/freezing point	:	no data available
Initial boiling point and boiling range	:	194 - 205 °C
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	15.3 V%
Lower explosion limit	:	3.2 V%
Vapour pressure	:	0.123 hPa
Relative vapour density	:	no data available
Relative density	:	1.046 - 1.076 (20 °C)
Density	:	1.044 - 1.074 g/cm3
Solubility(ies)		
Water solubility	:	soluble

Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	410 °C
Thermal decomposition	:	no data available
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	no data available
Explosive properties	:	no data available
Oxidizing properties	:	no data available

9.2 Other information

no data available

Section: 10. STABILITY AND REACTIVITY

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Strong oxidizing agents
Strong acids
Strong bases

10.6 Hazardous decomposition products

Hazardous decomposition products : Decomposition products may include the following materials:
Carbon oxides
nitrogen oxides (NOx)
Sulphur oxides

Section: 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Toxicity

Product

Acute oral toxicity	:	Acute toxicity estimate : 1,728 mg/kg
Acute inhalation toxicity	:	There is no data available for this product.
Acute dermal toxicity	:	There is no data available for this product.
Skin corrosion/irritation	:	There is no data available for this product.
Serious eye damage/eye irritation	:	There is no data available for this product.
Respiratory or skin sensitization	:	There is no data available for this product.
Carcinogenicity	:	There is no data available for this product.
Reproductive effects	:	There is no data available for this product.
Germ cell mutagenicity	:	There is no data available for this product.
Teratogenicity	:	There is no data available for this product.
STOT - single exposure	:	There is no data available for this product.
STOT - repeated exposure	:	There is no data available for this product.
Aspiration toxicity	:	There is no data available for this product.

Components

Acute oral toxicity	:	Didecyl-Dimethyl-Ammonium chloride LD50 rat: 1,150 mg/kg Ammonium Bisulfite LD50 rat: 2,610 mg/kg

Components

Acute dermal toxicity	:	Didecyl-Dimethyl-Ammonium chloride LD50 rabbit: 2,930 mg/kg Ethylene Glycol LD50 rabbit: 10,600 mg/kg

Potential Health Effects

Eyes	:	Causes serious eye damage.
Skin	:	Causes severe skin burns.
Ingestion	:	Harmful if swallowed. Causes digestive tract burns.
Inhalation	:	May cause nose, throat, and lung irritation.
Chronic Exposure	:	May cause damage to organs through prolonged or repeated exposure.

Experience with human exposure

Eye contact	:	Redness, Pain, Corrosion
Skin contact	:	Redness, Pain, Corrosion
Ingestion	:	Corrosion, Abdominal pain
Inhalation	:	Respiratory irritation, Cough
Further information	:	no data available

Section: 12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Product

Environmental Effects	:	Very toxic to aquatic life.
Toxicity to fish	:	no data available
Toxicity to daphnia and other aquatic invertebrates	:	no data available
Toxicity to algae	:	no data available

Components

Toxicity to fish	:	Didecyl-Dimethyl-Ammonium chloride 96 h LC50: 1 mg/l Ethylene Glycol 96 h LC50: 72,860 mg/l

Components

Toxicity to daphnia and other aquatic invertebrates	:	Ammonium Bisulfite 48 h EC50: 89 mg/l Ethylene Glycol 48 h EC50: > 100 mg/l

Components

Toxicity to algae	:	Ethylene Glycol 96 h EC50: 6,500 mg/l

Components

Toxicity to bacteria	:	Ethylene Glycol > 1,995 mg/l Method: ISO 8192

Components

Toxicity to fish (Chronic toxicity)	:	Ethylene Glycol 7 d NOEC: 15,380 mg/l

Components

Toxicity to daphnia and other	:	Ethylene Glycol

aquatic invertebrates (Chronic toxicity)	7 d NOEC: 8,590 mg/l

12.2 Persistence and degradability

Product

no data available

Components

Biodegradability : Didecyl-Dimethyl-Ammonium chloride
Result: Eliminated from aquatic environment

Ammonium Bisulfite
Result: Not applicable - inorganic

Ethylene Glycol
Result: Readily biodegradable.

Quaternary ammonium compounds, C12-16-alkyltrimethyl, chlorides
Result: no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

Product

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

no data available

Section: 13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with the European Directives on waste and hazardous waste.Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.
Where possible recycling is preferred to disposal or incineration.
If recycling is not practicable, dispose of in compliance with local regulations.

Dispose of wastes in an approved waste disposal facility.

Contaminated packaging : Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (ADR/ADN/RID)

14.1 UN number:	UN 1760
14.2 UN proper shipping name:	CORROSIVE LIQUID, N.O.S. (Didecyl-Dimethyl-Ammonium chloride, Quaternary ammonium compounds)
14.3 Transport hazard class(es):	8
14.4 Packing group:	II
14.5 Environmental hazards:	Yes
14.6 Special precautions for user:	Not applicable.

Air transport (IATA)

14.1 UN number:	UN 1760
14.2 UN proper shipping name:	CORROSIVE LIQUID, N.O.S. (Didecyl-Dimethyl-Ammonium chloride, Quaternary ammonium compounds)
14.3 Transport hazard class(es):	8
14.4 Packing group:	II
14.5 Environmental hazards:	Yes
14.6 Special precautions for user:	Not applicable.

Sea transport (IMDG/IMO)

14.1 UN number:	UN 1760
14.2 UN proper shipping name:	CORROSIVE LIQUID, N.O.S. (Didecyl-Dimethyl-Ammonium chloride, Quaternary ammonium compounds)
14.3 Transport hazard class(es):	8
14.4 Packing group:	II
14.5 Environmental hazards:	Yes (Marine Pollutant)
14.6 Special precautions for user:	Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:	Not applicable.

Section: 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

INTERNATIONAL CHEMICAL CONTROL LAWS

United States TSCA Inventory
not determined

15.2 Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out on the product.

Section: 16. OTHER INFORMATION

Procedure used to derive the classification according to REGULATION (EC) No 1272/2008

Classification	Justification
Acute toxicity 4, H302	Calculation method
Skin corrosion 1B, H314	Calculation method
Serious eye damage 1, H318	Calculation method
Specific target organ toxicity - repeated exposure 2, H373	Calculation method
Acute aquatic toxicity 1, H400	Calculation method

Full text of H-Statements

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

ADN – European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS – Australian Inventory of Chemical Substances; ASTM – American Society for the Testing of Materials; bw – Body weight; CLP – Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR – Carcinogen, Mutagen or Reproductive Toxicant; DIN – Standard of the German Institute for Standardisation; DSL – Domestic Substances List (Canada); ECHA – European Chemicals Agency; EC-Number – European Community number; ECx – Concentration associated with x% response; ELx – Loading rate associated with x% response; EmS – Emergency Schedule; ENCS – Existing and New Chemical Substances (Japan); ErCx – Concentration associated with x% growth rate response; GHS – Globally Harmonized System; GLP – Good Laboratory Practice; IARC – International Agency for Research on Cancer; IATA – International Air Transport Association; IBC – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 – Half maximal inhibitory concentration; ICAO – International Civil Aviation Organization; IECSC – Inventory of Existing Chemical Substances in China; IMDG – International Maritime Dangerous Goods; IMO – International Maritime Organization; ISHL – Industrial Safety and Health Law (Japan); ISO – International Organisation for Standardization; KECI – Korea Existing Chemicals Inventory; LC50 – Lethal Concentration to 50 % of a test population; LD50 – Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL – International Convention for the Prevention of Pollution from Ships; n.o.s. – Not Otherwise Specified; NO(A)EC – No Observed (Adverse) Effect Concentration; NO(A)EL – No Observed (Adverse) Effect Level; NOELR – No Observable Effect Loading Rate; NZIoC – New Zealand Inventory of Chemicals; OECD – Organization for Economic Co-operation and Development; OPPTS – Office of Chemical Safety and Pollution Prevention; PBT – Persistent, Bioaccumulative and Toxic substance; PICCS – Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR – (Quantitative) Structure Activity Relationship; REACH – Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID – Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT – Self-Accelerating Decomposition Temperature; SDS – Safety Data Sheet; TCSI – Taiwan Chemical Substance Inventory; TRGS – Technical Rule for Hazardous Substances; TSCA – Toxic Substances Control Act (United States); UN – United Nations; vPvB – Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet : IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

		The possible key literature references and data sources which may have been used in conjunction with the consideration of expert judgment to compile this Safety Data Sheet: European regulations/directives (including (EC) No. 1907/2006, (EC) No. 1272/2008), supplier data, inter-net, ESIS, IUCLID, ERIcards, Non European official regulatory data and other data sources.
Prepared By	:	Regulatory Affairs

Numbers quoted in the MSDS are given in the format: 1,000,000 = 1 million and 1,000 = 1 thousand. 0.1 = 1 tenth and 0.001 = 1 thousandth

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name
MULTITREAT 9379

Material number: 235807

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture

Industry sector :	Oilfield
Type of use :	Oxygen scavenger

1.3. Details of the supplier of the safety data sheet

Identification of the company
Clariant Produkte (Deutschland) GmbH
65926 Frankfurt am Main
Telephone no. : +49 69 305 18000

Information about the substance/mixture
BU Oil & Mining Services
Product Stewardship
e-mail: SDS.Europe@clariant.com

1.4. Emergency telephone number

00800-5121 5121 (24 h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2	H315: Causes skin irritation.
Eye irritation, Category 2	H319: Causes serious eye irritation.
Specific target organ toxicity - single exposure, Category 3, Respiratory system	H335: May cause respiratory irritation.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Warning

Hazard statements : H315 Causes skin irritation.
H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Precautionary statements :

Prevention:

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear eye protection/ face protection.
P280 Wear protective gloves.

Response:

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P337 + P313 If eye irritation persists: Get medical advice/ attention.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Hazardous components which must be listed on the label:
Ammonium hydrogensulphite

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
No additional hazards are known except those derived from the labelling.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Ammonium hydrogensulphite	10192-30-0 233-469-7	Eye Dam./Irrit. 2; H319 STOT SE 3; H335 2; H315 EUH031	>= 50 - < 70
2-Butenedioic acid (2Z)-, polymer with sodium 2-propene-1-sulfonate	68715-83-3	Acute Tox. 4; H302 Skin Corr. 1B; H314 Met. Corr. 1; H290	>= 1 - < 3

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Remove/Take off immediately all contaminated clothing.
Get medical advice/ attention if you feel unwell.

Protection of first-aiders	:	First Aid responders should pay attention to self-protection and use the recommended protective clothing
If inhaled	:	If inhaled, remove to fresh air. Get medical advice/ attention.
In case of skin contact	:	In case of contact, immediately flush skin with soap and plenty of water.
In case of eye contact	:	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
If swallowed	:	If swallowed do not induce vomiting,seek medical advice and show safety datasheet or label

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	Treat symptomatically.
Risks	:	Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Water spray jet Alcohol-resistant foam Dry powder Carbon dioxide (CO2)
Unsuitable extinguishing media	:	High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	In case of fires, hazardous combustion gases are formed: Carbon monoxide (CO) Carbon dioxide (CO2)

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Self-contained breathing apparatus
Further information	:	Wear suitable protective equipment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Wear suitable protective equipment.
Ensure adequate ventilation.

6.2 Environmental precautions

Environmental precautions : The product should not be allowed to enter drains, water courses or the soil.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Treat recovered material as described in the section "Disposal considerations".

6.4 Reference to other sections

Information regarding Safe handling, see chapter 7., For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : When used and handled appropriately no special measures are needed

Advice on protection against fire and explosion : Observe the general rules of industrial fire protection

Hygiene measures : Wash hands before breaks and at the end of workday. Use protective skin cream before handling the product. Take off immediately all contaminated clothing and wash it before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Further information on storage conditions : Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care.

7.3 Specific end use(s)

Specific use(s) : No further recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Personal protective equipment

Eye protection	:	Depending on the risk, wear sufficient eye protection (safety glasses with side protection or goggles, and if necessary, face shield.)
Hand protection		
Break through time	:	480 min
Glove thickness	:	0,7 mm
Remarks	:	Long-term exposure Impervious butyl rubber gloves
Break through time	:	30 min
Glove thickness	:	0,4 mm
Remarks	:	For short-term exposure (splash protection): Nitrile rubber gloves.
Remarks	:	These types of protective gloves are offered by various manufacturers. Please note the manufacturers´ detailed statements, especially about the minimum thickness and the minimum breakthrough time. Consider also the particular working conditions under which the gloves are being used.
Protective measures	:	Observe the usual precautions for handling chemicals.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	Liquid
Colour	:	colourless to slightly yellow
Odour	:	acrid, slight odour of sulfur dioxide
Odour Threshold	:	not tested.
pH	:	4,0 - 6,0
Melting point	:	approx. -10 °C (1.011 hPa)
Boiling point	:	approx. 100 °C (1.011 hPa)
Flash point	:	Not applicable
Evaporation rate	:	not tested.
Burning number	:	Not applicable

Upper explosion limit / upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	Not applicable
Vapour pressure	:	13 - 40 hPa (25 °C)
Relative vapour density	:	> 1
Density	:	1,31 - 1,35 g/cm3 (25 °C) Method: ASTM D 1298
Bulk density	:	Not applicable
Solubility(ies)		
Water solubility	:	soluble
Solubility in other solvents	:	not tested. Solvent: fat
Partition coefficient: n-octanol/water	:	Pow: < 3
Auto-ignition temperature	:	> 300 °C
Decomposition temperature	:	> 200 °C No decomposition if used as directed.
Viscosity		
Viscosity, dynamic	:	< 10 mPa.s
Viscosity, kinematic	:	not tested.
Explosive properties	:	Not explosive
Oxidizing properties	:	not oxidizing

9.2 Other information

Minimum ignition energy	:	Not applicable
Particle size	:	Not applicable
Self-ignition	:	Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

See section 10.3. "Possibility of hazardous reactions"

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : not known

10.6 Hazardous decomposition products

When handled and stored appropriately, no dangerous decomposition products are known

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity : Remarks: no data available

Acute inhalation toxicity : Remarks: no data available

Acute dermal toxicity : Remarks: no data available

Skin corrosion/irritation

Product:

Remarks: no data available

Serious eye damage/eye irritation

Product:

Remarks: no data available

Respiratory or skin sensitisation

Product:

Remarks: no data available

Germ cell mutagenicity

Product:

Germ cell mutagenicity- Assessment : No information available.

Carcinogenicity

Product:

Carcinogenicity - Assessment : No information available.

Reproductive toxicity

Product:

Reproductive toxicity - Assessment : No information available.
No information available.

STOT - single exposure

Product:

Remarks: no data available

STOT - repeated exposure

Product:

Remarks: no data available

Repeated dose toxicity

Product:

Remarks: no data available

Aspiration toxicity

Product:

no data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : Remarks: no data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: no data available

Toxicity to algae : Remarks: no data available

Toxicity to microorganisms : Remarks: no data available

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: no data available

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: no data available

12.4 Mobility in soil

Product:

Distribution among environmental compartments : Remarks: no data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Other adverse effects

Product:

Additional ecological information : no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Product should be taken to a suitable and authorized waste disposal site in accordance with relevant regulations and if necessary after consultation with the waste disposal operator and/or the competent Authorities

Contaminated packaging : Packaging that cannot be cleaned should be disposed of as product waste

SECTION 14: Transport information

Section 14.1. to 14.5.

ADR	not restricted
ADN	not restricted
RID	not restricted
IATA	not restricted
IMDG	not restricted

14.6. Special precautions for user

See sections 6 to 8 of this Safety Data Sheet.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code (International Bulk Chemicals Code)

No transport as bulk according IBC - Code.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Other regulations:

Apart from the data/regulations specified in this chapter, no further information is available concerning safety, health and environmental protection.

Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical safety assessment

No Chemical Safety Assessment (CSA) is yet available for the substance, or for the component substances, contained in this product.

SECTION 16: Other information

Full text of H-Statements

EUH031	:	Contact with acids liberates toxic gas.
H290	:	May be corrosive to metals.
H302	:	Harmful if swallowed.
H314	:	Causes severe skin burns and eye damage.
H315	:	Causes skin irritation.
H319	:	Causes serious eye irritation.
H335	:	May cause respiratory irritation.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Eye Dam./Irrit.	:	Serious eye damage/eye irritation
Met. Corr.	:	Corrosive to metals
Skin Corr.	:	Skin corrosion
STOT SE	:	Specific target organ toxicity - single exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the

Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information : Observe national and local legal requirements

Classification of the mixture:		**Classification procedure:**
Skin Irrit. 2	H315	Calculation method
Eye Irrit. 2	H319	Calculation method
STOT SE 3	H335	Calculation method

This information corresponds to the present state of our knowledge and is intended as a general description of our products and their possible applications. Clariant makes no warranties, express or implied, as to the information's accuracy, adequacy, sufficiency or freedom from defect and assumes no liability in connection with any use of this information. Any user of this product is responsible for determining the suitability of Clariant's products for its particular application. Nothing included in this information waives any of Clariant's General Terms and Conditions of Sale, which control unless it agrees otherwise in writing. Any existing intellectual/industrial property rights must be observed. Due to possible changes in our products and applicable national and international regulations and laws, the status of our products could change. Material Safety Data Sheets providing safety precautions, that should be observed when handling or storing Clariant products, are available upon request and are provided in compliance with applicable law. You should obtain and review the applicable Material Safety Data Sheet information before handling any of these products. For additional information, please contact Clariant.

REG_EU / EN

SAFETY DATA SHEET

PETROSWEET HSW85790

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Product name : PETROSWEET HSW85790

Product code : HSW85790

Product type : Liquid. [Clear.]

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use : Hydrogen Sulphide Scavenger

1.3 Details of the supplier of the safety data sheet

Baker Hughes
Kirkby Bank Road,
Knowsley Industrial Park,
Liverpool,
L33 7SY, UK

Tel: +44 (0)151 545 3899
Fax: +44 (0)151 547 3590

e-mail address of person responsible for this SDS : paul.chapman2@bakerhughes.com

1.4 Emergency telephone number

Supplier

Telephone number : CHEMTREC Emergency Telephone within UK: 0870 820 0418
CHEMTREC Emergency Telephone outside UK: +44 870 820 0418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Skin Irrit. 2, H315
Eye Irrit. 2, H319
Skin Sens. 1, H317
Muta. 2, H341
STOT SE 3, H335

2.2 Label elements

Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms :



GHS08 GHS07

Signal word : Warning

SECTION 2: Hazards identification

Hazard statements : Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.
Suspected of causing genetic defects.
May cause respiratory irritation.

Precautionary statements

Prevention : Obtain special instructions before use. Wear protective gloves: > 8 hours (breakthrough time): nitrile Gloves. Wear eye or face protection: Recommended: Safety glasses.. Wear protective clothing.

Response : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.

Storage : Store locked up.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Not applicable.

Hazardous ingredients : glyoxal

Precautionary statements (Code) : P201, P280, P304 + P340 + P312, P405, P501

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
Not applicable.
P: Not available. B: Not available. T: Not available.

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
Not applicable.
vP: Not available. vB: Not available.

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	% by weight	Classification Regulation (EC) No. 1272/2008 [CLP]	Type
glyoxal	REACH #: 01-2119461733-37 EC: 203-474-9 CAS: 107-22-2 Index: 605-016-00-7	≥25 - <50	Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Muta. 2, H341 STOT SE 3, H335	[1]
ethanediol	REACH #: 01-2119456816-28 EC: 203-473-3	≥1 - <3	Acute Tox. 4, H302 STOT RE 2, H373	[1] [2]

SECTION 3: Composition/information on ingredients

Alcohols, C8-10, ethoxylated	CAS: 107-21-1 Index: 603-027-00-1 CAS: 71060-57-6	≥1 - <3	Acute Tox. 4, H302 Eye Dam. 1, H318 **See Section 16 for the full text of the H statements declared above.**	[1]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
[5] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention. Continue to rinse for at least 15 minutes. Chemical burns must be treated promptly by a physician.

Inhalation : Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 15 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : May cause respiratory irritation.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following: pain or irritation watering redness

Inhalation : Adverse symptoms may include the following: respiratory tract irritation coughing

Skin contact : Adverse symptoms may include the following: irritation redness

Ingestion : No specific data.

SECTION 4: First aid measures

4.3 Indication of any immediate medical attention and special treatment needed

Notes to medical doctor : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : Not available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable : If necessary Use dry chemical, CO_2, alcohol-resistant foam or water spray (fog). Use water spray for extinction.

Not suitable : None known.

5.2 Special hazards arising from the substance or mixture

Special exposure hazards : In a fire or if heated, a pressure increase will occur and the container may burst.

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

5.3 Advice for fire-fighters

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment.

Additional information : Not available.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

6.2 Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

6.4 Reference to other sections : Note: see section 8 for personal protective equipment and section 13 for waste disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Storage : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Recommended Packaging materials : Use original container.

7.3 Specific end use(s) : Hydrogen Sulphide Scavenger

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
ethanediol	**EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin.** TWA: 10 mg/m³ 8 hours. Form: Particulate STEL: 104 mg/m³ 15 minutes. Form: Vapour TWA: 52 mg/m³ 8 hours. Form: Vapour STEL: 40 ppm 15 minutes. Form: Vapour TWA: 20 ppm 8 hours. Form: Vapour

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
glyoxal	DNEL	Long term Dermal	48 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	16.9 mg/m³	Workers	Systemic
ethanediol	DNEL	Long term Dermal	106 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	35 mg/m³	Workers	Local

PNECs

SECTION 8: Exposure controls/personal protection

Product/ingredient name	Compartment Detail	Value	Method Detail
glyoxal	Fresh water	0.319 mg/l	-
	Marine water	0.0319 mg/l	-
	Fresh water sediment	0.685 mg/kg	-
	Marine water sediment	0.0685 mg/kg	-
	Soil	4.06 mg/kg	-
	Sewage Treatment Plant	4.1 mg/l	-
ethanediol	Fresh water	10 mg/l	-
	Marine	1 mg/l	-
	Fresh water sediment	20.9 mg/kg	-
	Soil	1.53 mg/kg	-
	Sewage Treatment Plant	199.5 mg/l	-

8.2 Exposure controls

Occupational exposure controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: half-face mask and organic vapour (Type A) and particulate filter

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Wear suitable gloves tested to EN374.

Chemical-resistant gloves: nitrile Gloves

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Recommended: Safety glasses.

Skin protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	Liquid. [Clear.]
Colour	:	Yellow. [Light]
Odour	:	Odourless.
Odour threshold	:	Not available.
pH	:	7.1
Initial boiling point and boiling range	:	Not available.
Melting point/freezing point	:	-15°C (5°F)
Flammability (solid, gas)	:	May be combustible at high temperature.
Flash point	:	Closed cup: >62°C (>143.6°F) [PMCC]
Explosive properties	:	Not available.
Upper/lower flammability or explosive limits	:	Not available.
Oxidising properties	:	Not available.
Vapour pressure	:	Not available.
Density	:	Not available.
Relative density	:	1.241 to 1.311 (16°C)
Solubility	:	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	:	Not available.
Viscosity	:	Kinematic (40°C): <6 cSt
Vapour density	:	Not available.
Evaporation rate (butyl acetate = 1)	:	Not available.
Decomposition temperature	:	Not available.
Auto-ignition temperature	:	Not available.

9.2 Other information

Pour point	:	Not available.

SECTION 10: Stability and reactivity

10.1 Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	:	The product is stable.
10.3 Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	:	No specific data.
10.5 Incompatible materials	:	No specific data.
10.6 Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
ethanediol	LC50 Inhalation Vapour	Rat	>2.5 mg/l	6 hours
	LD50 Dermal	Mouse	>3500 mg/kg	-
Alcohols, C8-10, ethoxylated	LD50 Oral	Rat	2700 mg/kg	-

Conclusion/Summary : Not available.

Acute toxicity estimates

Route	ATE value
Oral	13247.9 mg/kg
Inhalation (vapours)	28.21 mg/l

Irritation/Corrosion

Conclusion/Summary : Not available.

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
glyoxal	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
ethanediol	Category 2	Not determined	Not determined

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Inhalation : May cause respiratory irritation.

Ingestion : Irritating to mouth, throat and stomach.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Eye contact : Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : Adverse symptoms may include the following: respiratory tract irritation coughing

Ingestion : No specific data.

Skin contact : Adverse symptoms may include the following: irritation redness

Eye contact : Adverse symptoms may include the following: pain or irritation watering redness

Delayed and immediate effects and also chronic effects from short and long term exposure

SECTION 11: Toxicological information

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Conclusion/Summary : Not available.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : Suspected of causing genetic defects.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Interactive effects : Not available.

Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity : No known significant effects or critical hazards.

Product/ingredient name	Result	Species	Exposure
glyoxal	Acute EC50 66480 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute LC50 215000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
ethanediol	Acute EC50 6500 to 13000 mg/l Fresh water	Algae	72 hours
	Acute EC50 >100 mg/l Fresh water	Daphnia	48 hours
	Acute LC50 72860 mg/l Fresh water	Fish	96 hours

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	
ethanediol	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
glyoxal	-1.62	3.2	low
ethanediol	-1.36	-	low

12.4 Mobility in soil : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

P: Not available. B: Not available. T: Not available.

vPvB : Not applicable.

vP: Not available. vB: Not available.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 12: Ecological information

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

13.2 Additional information

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

International transport regulations

Regulatory information	14.1 UN number	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	Label
ADR/RID Class	Not regulated.		-	-	
ADN Class	Not regulated.		-	-	
IMDG Class	Not regulated.		-	-	
IATA Class	Not regulated.		-	-	

PG* : Packing group

Regulatory information	14.5 Environmental hazards	Additional information
ADR/RID Class	No.	-
ADN Class	No.	-
IMDG Class	No.	-
IATA Class	No.	-

SECTION 14: Transport information

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Europe inventory : Not determined.

Black List Chemicals (76/464/EEC) : Not listed

Priority List Chemicals (793/93/EEC) : Not listed

Seveso Directive

This product is not controlled under the Seveso Directive.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments are still required.

Additional information : Shelf life: 6 months

SECTION 16: Other information

16.1 Revision comments : Not available.

Indicates information that has changed from previously issued version.

16.2 Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

16.3 Key literature references and sources for data : Not available.

16.4 Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Skin Irrit. 2, H315
Eye Irrit. 2, H319
Skin Sens. 1, H317
Muta. 2, H341
STOT SE 3, H335

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Skin Sens. 1, H317	Calculation method
Muta. 2, H341	Calculation method
STOT SE 3, H335	Calculation method

16.5 Full text of abbreviated H statements :

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H373	May cause damage to organs through prolonged or repeated exposure.

Full text of classifications [CLP/GHS] :

Acute Tox. 4, H302	ACUTE TOXICITY (oral) - Category 4
Acute Tox. 4, H332	ACUTE TOXICITY (inhalation) - Category 4
Eye Dam. 1, H318	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
Eye Irrit. 2, H319	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
Muta. 2, H341	GERM CELL MUTAGENICITY - Category 2
Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1, H317	SKIN SENSITIZATION - Category 1
STOT RE 2, H373	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
STOT SE 3, H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

16.6 Training advice : Not available.

16.7 Further information

Date of issue/ Date of revision : 2 November 2016

Date of previous issue : 14 September 2016

Version : 3.01

Disclaimer

SECTION 16: Other information

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.



Safety Data Sheet
California CARB Compliant

1 - Identification

Product Name: WD-40 Multi-Use Product Aerosol **Product Use: Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion** **Restrictions on Use: None identified** **SDS Date Of Preparation: August 2, 2021**	**Manufacturer: WD-40 Company** **Address: 9715 Businesspark Avenue San Diego, California, USA 92131** **Telephone:** **Emergency: 1-888-324-7596** **Information: 1-888-324-7596** **Chemical Spills: 1-800-424-9300 (Chemtrec)** **1-703-527-3887 (International Calls)**

2 – Hazards Identification

Hazcom 2012/GHS Classification:
Flammable Aerosol Category 1
Gas Under Pressure: Compressed Gas
Aspiration Toxicity Category 1
Specific Target Organ Toxicity Single Exposure Category 3 (nervous system effects)

Note: This product is a consumer product and is labeled in accordance with the US Consumer Product Safety Commission regulations which take precedence over OSHA Hazard Communication labeling. The actual container label will not include the label elements below. The labeling below applies to industrial/professional products.

Label Elements:



DANGER!
Extremely Flammable Aerosol.
Contains gas under pressure; may explode if heated.
May be fatal if swallowed and enters airways.
May cause drowsiness or dizziness.

Prevention
Keep away from heat, sparks, open flames, hot surfaces. – No smoking.
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.
Avoid breathing vapors or mists.
Use only outdoors or in a well-ventilated area.

Response
IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.

Storage
Store locked up.
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store in a well-ventilated place.

Disposal
Dispose of contents and container in accordance with local and national regulations.

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent	US Hazcom 2012/ GHS Classification
LVP Aliphatic Hydrocarbon	64742-47-8	45-50%	Aspiration Toxicity Category 1
Petroleum Base Oil	64742-56-9 64742-65-0 64742-53-6 64742-54-7 64742-71-8	<35%	Not Hazardous
Aliphatic Hydrocarbon	64742-47-8	<25%	Flammable Liquid Category 3 Aspiration Toxicity Category 1 Specific Target Organ Toxicity Single Exposure Category 3 (nervous system effects)
Carbon Dioxide	124-38-9	2-3%	Simple Asphyxiant Gas Under Pressure, Compressed Gas

Note: The specific chemical identity and exact percentages are a trade secret.

4 – First Aid Measures

Ingestion (Swallowed): Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.
Eye Contact: Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.
Skin Contact: Wash with soap and water. If irritation develops and persists, get medical attention.
Inhalation (Breathing): If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.
Signs and Symptoms of Exposure: Harmful or fatal if swallowed. Aspiration of liquid into the lungs during swallowing or vomiting may cause lung damage. May cause eye and respiratory irritation. Inhalation of mists or vapors may cause drowsiness, dizziness and other nervous system effects. Skin contact may cause drying of the skin.
Indication of Immediate Medical Attention/Special Treatment Needed: Immediate medical attention is needed for ingestion.

5 – Fire Fighting Measures

Suitable (and unsuitable) Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.
Specific Hazards Arising from the Chemical: Extremely flammable aerosol. Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back. Combustion will produce oxides of carbon and hydrocarbons.
Special Protective Equipment and Precautions for Fire-Fighters: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.

6 – Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area.
Methods and Materials for Containment/Cleanup: Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

7 – Handling and Storage

Precautions for Safe Handling: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.
Conditions for Safe Storage: Store in a cool, well-ventilated area, away from incompatible materials. Do not store above 120°F or in direct sunlight. U.F.C (NFPA 30B) Level 3 Aerosol. Store away from oxidizers.

8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure Limits
LVP Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Petroleum Base Oil	5 mg/m3 TWA (Inhalable) ACGIH TLV (as Mineral oil) 5 mg/m3 TWA OSHA PEL (as Oil mist, mineral)
Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Carbon Dioxide	5000 ppm TWA, 30,000 ppm STEL ACGIH TLV 5000 ppm TWA OSHA PEL

The Following Controls are Recommended for Normal Consumer Use of this Product
Appropriate Engineering Controls: Use in a well-ventilated area.
Personal Protection:
Eye Protection: Avoid eye contact. Always spray away from your face.
Skin Protection: Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.
Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended
Appropriate Engineering Controls: Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.
Personal Protection:
Eye Protection: Safety goggles recommended where eye contact is possible.
Skin Protection: Wear chemical resistant gloves.
Respiratory Protection: None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.
Work/Hygiene Practices: Wash with soap and water after handling.

9 – Physical and Chemical Properties

Appearance:	Light green to amber liquid	Flammable Limits: (Solvent Portion)	LEL: 0.6% UEL: 8%
Odor:	Mild petroleum odor	Vapor Pressure:	95-115 PSI @ 70°F
Odor Threshold:	Not established	Vapor Density:	Greater than 1 (air=1)
pH:	Not Applicable	Relative Density:	0.8 – 0.82 @ 60°F
Melting/Freezing Point:	Not established	Solubilities:	Insoluble in water
Boiling Point/Range:	361 - 369°F (183 - 187°C)	Partition Coefficient; n-octanol/water:	Not established
Flash Point:	138°F (59°C) Tag Closed Cup (liquid)	Autoignition Temperature:	Not established
Evaporation Rate:	Not established	Decomposition Temperature:	Not established
Flammability (solid, gas):	Flammable Aerosol	Viscosity:	2.79-2.96 cSt @ 100°F
VOC:	24.1%	Pour Point:	-63°C (-81.4°F) ASTM

	MIR=0.43gO3/gVOC		D-97

10 – Stability and Reactivity

Reactivity: Not reactive under normal conditions
Chemical Stability: Stable
Possibility of Hazardous Reactions: May react with strong oxidizers generating heat.
Conditions to Avoid: Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.
Incompatible Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

11 – Toxicological Information

Symptoms of Overexposure:
Inhalation: High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.
Skin Contact: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.
Eye Contact: Contact may be irritating to eyes. May cause redness and tearing.
Ingestion: This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death.
Chronic Effects: None expected.
Carcinogen Status: None of the components are listed as a carcinogen or suspect carcinogen by IARC, NTP, ACGIH or OSHA.
Reproductive Toxicity: None of the components is considered a reproductive hazard.

Numerical Measures of Toxicity:
Acute Toxicity Estimates: Oral > 5,000 mg/kg; Dermal >2,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.

12 – Ecological Information

Ecotoxicity: No specific aquatic toxicity data is currently available; however components of this product are not expected to be harmful to aquatic organisms
Persistence and Degradability: Components are readily biodegradable.
Bioaccumulative Potential: Bioaccumulation is not expected based on an assessment of the ingredients.
Mobility in Soil: No data available
Other Adverse Effects: None known

13 - Disposal Considerations

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Do not puncture or incinerate containers, even empty. Dispose in accordance with federal, state, and local regulations.

14 – Transportation Information

DOT Surface Shipping Description: UN1950, Aerosols, 2.1 Ltd. Qty
(Note: Shipping Papers are not required for Limited Quantities unless transported by air or vessel – each package must be marked with the Limited Quantity Mark)
IMDG Shipping Description: UN1950, Aerosols, 2.1, LTD QTY
ICAO Shipping Description: UN1950, Aerosols, flammable, 2.1

NOTE: WD-40 Company does not test aerosol cans to assure that they meet the pressure and other requirements for transport by air. We do not recommend that our aerosol products be transported by air.

15 – Regulatory Information

U.S. Federal Regulations:
CERCLA 103 Reportable Quantity: This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.
SARA TITLE III:
Hazard Category For Section 311/312: Refer to Section 2 for the OSHA Hazard Classification.
Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None
Section 302 Extremely Hazardous Substances (TPQ): None
EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.
California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This product does not require a California Proposition 65 warning.
VOC Regulations: This product complies with the consumer product VOC limits of CARB, the US EPA and states adopting the OTC VOC rules.
Canadian Environmental Protection Act: All of the ingredients are listed on the Canadian Domestic Substances List or exempt from notification

16 – Other Information

HMIS Hazard Rating:
Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Physical Hazard – 0 (minimal hazard)

Revision Date: August 2, 2021 Supersedes: March 5, 2019

Revision Summary: Section 9: Appearance

Prepared by: Industrial Health & Safety Consultants, Inc. Shelton, CT, USA

Reviewed by: I. Kowalski Regulatory Affairs Dept.

1012200/No.0084706

Fişă cu Date de Securitate conform Regulamentului (CE) nr.1907/2006

Motorina Standard
Nr. produs 450000

Data emiterii: 01.10.1991
Data revizuirii: 05.03.2018

SECTIUNEA 1. IDENTIFICAREA SUBSTANŢEI/AMESTECULUI ŞI A SOCIETĂŢII/ÎNTREPRINDERII

1.1 Element de identificare a produsului

Denumire comercială	:	Motorina Standard

1.2 Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizări relevante identificate

Utilizări relevante	:	Funcţionarea motoarelor Diesel ale vehiculelor.
Utilizari identificate conform raportului de securitate chimică (CSR)	:	Utilizare în spaţii industriale 01a - Distribuţia substanţei/materialului 12a - Utilizare drept combustibil sau carburant: Industrial Formulare sau reambalare 02 - Formularea & (re)ambalarea substanţelor/materialelor şi amestecurilor Utilizare larg răspândită de către lucrători profesionişti 12b - Utilizare drept combustibil sau carburant: Profesional Utilizare de către consumatori 12c - Utilizare drept combustibil sau carburant - Consumatori

Pentru detalii privind utilizările, a se vedea Anexa

1.3 Detalii privind furnizorul fişei cu date de securitate

Adresă completă **Producător, importator, distribuitor**	:	S.C. OMV PETROM Marketing S.R.L. Str. Coralilor Nr. 22, Cladirea Infinity, Et.1, Oval B, Sect. 1 013329 Bucuresti Romania
Telefon	:	0 800 0 800 11
Adresa de e-mail a persoanei competente	:	info.msds@petrom.com

1.4 Număr de telefon care poate fi apelat în caz de urgenţă

+40 (0) 725 16 16 16	Centrul de urgenta HSSE/ tarif normal / 24/7 / română/engleză
+40 21 318 36 06	Biroul pentru Regulamentul Sanitar International si Informare Toxicologica / tarif normal; L-V; 8:00-15:00; limba română

SECTIUNEA 2. IDENTIFICAREA PERICOLELOR

2.1 Clasificarea substanţei sau a amestecului

Clasificare (Regulamentul (CE) Nr. 1272/2008)

Flam. Liq. 3 H226, Acute Tox. 4 H332, Skin Irrit. 2 H315, Asp. Tox. 1 H304, Carc. 2 H351, STOT RE 2 H373, Aquatic Chronic 2 H411,
Pentru textul complet al frazelor de pericol H menţionate în această Secţiune, consultaţi Secţiunea 16.

2.2 Elemente pentru etichetă

Etichetare (Regulamentul (CE) Nr. 1272/2008)

Pictograme de pericol :



Cuvânt de avertizare : Pericol

Fraze de pericol :
H226 Lichid şi vapori inflamabili.
H304 Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii.
H315 Provoacă iritarea pielii.
H332 Nociv în caz de inhalare.
H351 Susceptibil de a provoca cancer.
H373 Poate provoca leziuni ale organelor (timus, ficat, măduvă osoasă) in caz de expunere prelungită sau repetată.
H411 Toxic pentru viaţa acvatică având efecte de lungă durată.

Fraze de precauţie :
Prevenire:
P210 A se păstra departe de surse de căldură, suprafeţe fierbinţi, scântei, flăcări şi alte surse de aprindere. Fumatul interzis.
P260 Nu inspiraţi ceaţa/vaporii/spray-ul.
P273 Evitaţi dispersarea în mediu.
P280 Purtaţi mănuşi de protecţie/îmbrăcăminte de protecţie/echipament de protecţie a ochilor/ echipament de protecţie a feţei.
Interventie:
P301 + P310 ÎN CAZ DE ÎNGHIŢIRE: sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic.
P331 NU provocaţi voma.
Eliminare:
P501 Eliminaţi conţinutul/recipientele conform prevederilor legale în vigoare

2.3 Alte pericole

Note : Pericol ridicat de alunecare ca urmare a deversării accidentale a produsului.
Nu sunt cunoscute pericole suplimentare generate de produs pentru oameni şi mediu.
Conform informatiilor de pana acum, nu contine compusi care indeplinesc criteriile de PBT sau vPvB.

SECTIUNEA 3. COMPOZIŢIE/INFORMAŢII PRIVIND COMPONENŢII

3.1 Substanţe

Nu se aplică

3.2 Amestecuri

Natura chimică	hidrocarburi Conţine aditivi pentru îmbunătăţirea performanţelor, în cantităţi mici (max. 0,1% m/m.).

Ingrediente periculoase

Denumirea substanţei chimice	Număr Index Nr. CAS Nr. EINECS/Nr. ELINCS (Lista Europeană a Substanţelor Chimice Notificate) Număr de înregistrare	Clasificare (Regulamentul (CE) Nr. 1272/2008)	Concentraţie [% m/m]
combustibili, diesel; motorina - fara specificatii	649-224-00-6 68334-30-5 269-822-7 01-2119484664-27-0165	Flam. Liq. 3; H226 Acute Tox. 4; H332 Skin Irrit. 2; H315 Asp. Tox. 1; H304 Carc. 2; H351 STOT RE 2; H373 Aquatic Chronic 2; H411	<= 95,00
metanol	603-001-00-X 67-56-1 200-659-6 01-2119433307-44	Flam. Liq. 2; H225 Acute Tox. 3; H331 Acute Tox. 3; H311 Acute Tox. 3; H301 STOT SE 1; H370	<= 0,014

Nu reprezintă specificaţie a produsului / procente greutate max. posibile
Pentru textul complet al frazelor de pericol H menţionate în această Secţiune, consultaţi Secţiunea 16.

SECTIUNEA 4. MĂSURI DE PRIM AJUTOR

4.1 Descrierea măsurilor de prim ajutor

Indicaţii generale	:	Din cauza materialelor vărsate, suprafaţa devine alunecoasă. Înainte de a încerca să salvaţi victimele, izolaţi zona de toate sursele potenţiale de aprindere, incluzând deconectarea alimentării cu energie electrică. Asiguraţi o ventilaţie suficientă şi verificaţi dacă este prezentă o atmosferă sigură şi respirabilă înainte de intrarea în spaţii închise. Este necesară protecţia proprie a persoanelor care acordă măsurile de prim ajutor.
Inhalare	:	După inhalarea accidentală a vaporilor, persoana (persoanele) afectată (afectate) trebuie transportată (transportate) la aer curat. A se solicita asistenţă medicală de urgenţă. Dacă victima este inconştientă şi nu respiră: asiguraţi-vă că nu există obstrucţii ale respiraţiei şi dispuneţi administrarea respiraţiei artificiale de către personal instruit. Dacă este necesar, aplicaţi masaj cardiac extern şi cereţi sfatul medicului. Dacă victima este inconştientă şi respiră: aşezaţi-o în poziţia de recuperare. Administraţi oxigen dacă este necesar. În cazul unor simptome persistente este necesară consultarea medicului.
Contact cu pielea	:	După contactul cu pielea se spală bine zona cu apă şi săpun. Daca a fost expus intreg corpul, persoana trebuie spalata in intregime, mai ales parul acesteia. Îndepărtaţi îmbrăcămintea contaminată, încălţămintea contaminată şi eliminaţi-le în siguranţă. Se acopera zonele corpului afectate cu haine curate si care nu adera la aceste zone. Cereţi sfatul medicului dacă apar şi persistă iritaţii, umflături sau înroşire a pielii. Atunci când utilizaţi echipamente de înaltă presiune, se poate produce injectarea produsului. Dacă se produc leziuni la presiuni mari, solicitaţi imediat asistenţă medicală profesionistă. Nu aşteptaţi să apară simptomele. În caz de arsuri termice minore: răciţi zona afectată. Ţineţi zona arsă sub un jet de apă rece timp de cel puţin cinci minute sau până când durerea scade în intensitate. În orice caz, hipotermia trebuie să fie evitată.
Contact cu ochii	:	După contactul cu ochii clătiţi timp de 10-15 minute, ţinând pleoapele deschise cu jet de apă sau cu soluţie din recipientul pentru spălarea ochilor. Îndepărtaţi lentilele de contact, dacă sunt prezente şi sunt uşor de scos. Continuaţi clătirea. În cazul unor simptome de durată, este necesară consultarea unui oftalmolog.
Ingerare, Absorbţie substanţă în plămâni	:	În caz de ingerare, presupuneţi întotdeauna că a avut loc aspiraţia. Victima trebuie trimisă imediat la spital. Nu aşteptaţi să apară simptomele. Nu induceţi voma deoarece există un risc ridicat de aspiraţie. Nu administraţi nimic pe gură unei persoane inconştiente.

4.2 Cele mai importante simptome şi efecte, atât acute cât şi întârziate

Simptome	:	Greţuri, vărsături şi diaree, precum şi pericolul unei pneumonite de origine chimică din cauza aspiraţiei pe parcursul inghiţirii sau al vomei. Vaporii produsului în concentraţie ridicată pot conduce la apariţia unor iritaţii ale ochilor şi ale mucoaselor (nas, gat). După inhalarea pe termen lung a vaporilor concentraţi este posibilă apariţia durerilor de cap, a ameţelilor, a stărilor euforice, de nervozitate, a tremurului, a spasmelor tonico-clonice, pierderea cunoştinţei, insuficienţa circulatorie şi paralizia centrală a sistemului respirator. Concentraţii foarte ridicate pot provoca pierderea cunoştinţei chiar şi după perioade foarte scurte de expunere. Simptome la contactul cu pielea: înroşire, iritaţie. Simptome la contactul cu ochii: iritatie uşoară (nespecifica).
Efecte	:	În caz de aspiraţie, există riscul de apariţie a pneumonitei chimice.

4.3 Indicaţii privind orice fel de asistenţă medicală imediată şi tratamente speciale necesare

Tratament	:	Tratament simptomatic. Dacă este necesar, solicitaţi spitalizarea persoanei. După înghiţirea unor cantităţi mai mari de 1-2 ml/kg greutate corporală este necesară administrarea de cărbune activ (aproximativ 50 g) şi spitalizarea persoanei. În cazul unei stări puternice de agitaţie, este necesară sedarea persoanei (la indicaţia medicului).

SECTIUNEA 5. MĂSURI DE COMBATERE A INCENDIILOR

5.1 Mijloace de stingere a incendiilor

Mijloace de stingere corespunzătoare	:	Pentru focarele mici de incendiu: pulbere uscata de stingere, Spumă (numai personal special instruit); Ceată de apă (numai personal special instruit); bioxid de carbon (CO2); Alte gaze inerte (în conformitate cu reglementările); Nisip sau pământ. În cazul unui focar de incendiu extins: spumă sau apa pulverizata.
Mijloace de stingere necorespunzătoare	:	Jet direct/compact de apă; (poate cauza extinderea focarului de ardere prin stropire); Se va evita utilizarea simultană de spumă şi apă pe aceeaşi suprafaţă deoarece apa distruge spuma.

5.2 Pericole speciale cauzate de substanţa sau amestecul în cauză

Pericol specific din cauza substanței sau amestecului, din cauza produselor de combustie sau din cauza gazelor generate prin ardere.	:	Produsul evaporat este mai greu decât aerul şi se acumulează la nivelul solului. În amestec cu aerul, vaporii pot forma un amestec exploziv. Prevenirea pătrunderii în canalizare şi în subsoluri. Prevenirea pătrunderii în sol şi în ape. Această substanţă pluteşte şi se poate reaprinde la suprafaţa apei. A se feri de sursele de aprindere. Este permisă numai utilizarea sculelor, dispozitivelor si echipamentelor care nu produc scântei sau realizate in construcţie antiexplozivă şi rezistente la solvenţi. Trebuie avuţi în vedere potenţialii produşi de combustie, cum ar fi CO, SOx sau NOx. Combustia incompletă poate genera un amestec complex de particule solide şi lichide aeropurtate şi gaze, inclusiv monoxid de carbon şi compuşi organici şi anorganici neidentificati.

5.3 Recomandări destinate pompierilor

Echipament special de protecţie	:	În cazul unui incendiu de proporţii sau în spaţiile închise şi insuficient aerisite, purtaţi îmbrăcăminte de protecţie ignifugă completă şi un aparat de respirat autonom (SCBA) cu o mască pentru întreaga faţă acţionat în modul de presiune pozitivă.
Informaţii suplimentare	:	Răcirea imediată a recipientelor şi a ambalajelor din apropiere cu apă pulverizată, şi, dacă este posibil, îndepărtarea acestora din zona de pericol. Reziduurile de ardere şi apa contaminată utilizată la stingerea incendiilor trebuie eliminate conform prevederilor impuse de autorităţile locale. Asiguraţi o rezervă de apă pentru stingere.

SECTIUNEA 6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1 Precauţii personale, echipament de protecţie şi proceduri de urgenţă

Precauţii pentru personal	:	Se acţionează din aceeaşi direcţie cu direcţia vântului (atenţie la schimbarea direcţiei vântului). Alertaţi personalul de urgenţă. Dacă se poate efectua în siguranţă, opriţi sau izolaţi scurgerea la sursă. Îndepartati toate sursele de foc din apropiere. Identificarea, marcarea si limitarea accesului in zona cu pericol de explozie. Nu este permis accesul persoanelor neautorizate. Exceptând deversările de mică amploare: Fezabilitatea oricăror acţiuni trebuie întotdeauna evaluată şi avizată, dacă este posibil, de o persoană competentă instruită responsabilă cu gestionarea situaţiei de urgenţă. În cazul unei emisii de amploare, alertaţi locuitorii aflaţi în direcţia de bătaie a vântului. Dacă este necesar, notificaţi autorităţile competente în conformitate cu toate reglementările în vigoare. Personalul de prim-ajutor trebuie să poarte echipament individual de protecţie. Aerisirea corespunzătoare a încăperilor contaminate. Evitaţi contactului cu pielea. Deversări de mică amploare: hainele de lucru antistatice normale sunt, de obicei, suficiente. Deversări de amploare: costum pentru întregul corp din material antistatic şi rezistent la substanţe chimice; Mănuşi de lucru care asigură rezistenţă adecvată la substanţe chimice, în special la hidrocarburi aromatice. Notă: mănuşile din PVA (alcool polivinilic) nu sunt impermeabile şi nu sunt potrivite pentru utilizare în caz de urgenţă. Cască de lucru. Pantofi sau cizme de siguranţă antistatice nederapante. Ochelari de protecţie şi/sau mască de protecţie a feţei, dacă este posibil(ă) sau se anticipează stropirea sau contactul cu ochii. Protecţie respiratorie: Se poate utiliza mască, pentru protecţia parţială sau totală a feţei, cu filtru pentru vapori organici sau un aparat de respirat autonom (SCBA), în funcţie de amploarea deversării şi de nivelul estimat de expunere. Dacă situaţia nu poate fi evaluată complet sau dacă este posibilă lipsa oxigenului, trebuie utilizate doar aparate SCBA. A se evita contactul direct cu materialul degajat. Evitaţi formarea de scântei. În zona de pericol, este recomandată oprirea utilajelor, echipamentelor şi a autovehiculelor care nu sunt realizate în construcţie antiexplozivă. Fumatul este interzis. Nu este permisă acţionarea întrerupătoarelor şi pornirea echipamentelor electrice care pot conduce la formarea de scântei. Produsul evaporat este mai greu decât aerul şi se acumulează la nivelul solului.

6.2 Precauţii pentru mediul înconjurător

Precauţii pentru mediul înconjurător	:	Se va opri scurgerea produsului in conditii de siguranta. Prevenirea scurgerii în canalizari, cursuri de apa, subsoluri sau spatii închise prin realizarea unor diguri de nisip si/sau pamânt sau prin alte masuri adecvate de stopare scurgere (bariere plutitoare, skimming sau alte tehnici de ordin mecanic). Materialul absorbant contaminat poate să prezinte acelasi grad de periculozitate ca şi produsul scurs. Deversarea in mediu trebuie evitată. Dacă produsul deversat a poluat mediul (a ajuns în canalizări, cursuri de apă, sol sau aer) este necesară informarea autorităţilor relevante.

6.3 Metode şi materiale pentru izolarea incendiilor şi pentru curăţenie

Procedee adecvate pentru curăţare sau absorbţie sau izolare	:	Aspirarea /evacuarea prin pompare a cantităţilor mari. Colectarea cantităţilor reziduale cu materiale absorbante neinflamabile, de exemplu nisip, pământ sau liant pentru ulei, respectiv îndiguirea acestora. Deversările de amploare pot fi acoperite atent cu spumă, dacă este disponibilă, pentru a limita formarea norilor de vapori. Nu utilizaţi jeturi directe. Observaţie: pe măsură ce creşte cantitatea de substantă absorbită în liant, creşte viteza de evaporare şi, prin aceasta, pericolul de incendiu. În caz de contaminare a solului, îndepărtaţi solul contaminat şi trataţi în conformitate cu reglementările locale. În cazul deversărilor de mică amploare în ape închise (cum ar fi porturile), izolaţi produsul cu bariere plutitoare sau alte echipamente. Colectaţi produsul vărsat cu materiale absorbante plutitoare adecvate/specifice. Deversările mari în ape deschise trebuie izolate cu bariere plutitoare sau alte mijloace mecanice Dacă acest lucru nu este posibil, controlaţi propagarea şi colectaţi produsul prin separare mecanică (skimming) sau alte mijloace mecanice. Utilizarea agenţilor de dispersie trebuie avizată de un expert şi, dacă este necesar, aprobată de autorităţile locale. Colectaţi produsul recuperat şi alte materiale în rezervoare sau containere adecvate în vederea revalorificării sau eliminării în siguranţă. Colectarea deşeurilor în containere etichetate adecvat pentru deşeuri periculoase şi eliminarea ulterioară conform normelor şi legislaţiei în vigoare.
Procedee neadecvate pentru curăţare sau absorbţie sau izolare	:	Fără date disponibile

6.4 Trimitere la alte secţiuni

A se vedea şi Secţiunea 8 (Controale ale expunerii/Protecţia personală) şi Secţiunea 13 (Consideraţii privind eliminarea).

6.5 Informaţii suplimentare

Adoptaţi măsuri corespunzătoare condiţiilor şi reglementărilor locale.

SECTIUNEA 7. MANIPULARE ŞI DEPOZITARE

7.1 Precauţii pentru manipularea în condiţii de securitate

Recomandări pentru manipularea în condiţii de securitate	:	Procuraţi instrucţiuni speciale înainte de utilizare. Se va utiliza numai în sistem închis. Aspirarea vaporilor la locul de emisie. În cazul în care este disponibil, pentru evacuarea în aer liber a gazelor de ardere şi a aerului uzat se va folosi un separator, respectiv epurator de aer. Dacă este posibil, se va face aerisirea încăperii la nivelul solului. Evitarea contactului cu pielea, cu ochii şi cu îmbrăcămintea. A nu se ingera. Nu este permisă inhalarea vaporilor. Evitaţi scurgerea produsului. A se utiliza şi depozita doar în exterior sau într-un spaţiu bine aerisit. Utilizaţi echipamentul de protecţie individuală conform cerinţelor. Pentru mai multe informaţii despre echipamentele de protecţie şi condiţiile de operare, a se vedea scenariile de expunere.
Recomandări de prevenire a incendiului şi a exploziei	:	Produsul evaporat este mai greu decât aerul şi se acumulează la nivelul solului. Aveţi grijă la acumularea în puţuri şi spaţiile închise. A nu se utiliza aer comprimat pentru operaţiuni de umplere, descărcare sau manipulare. În amestec cu aerul, vaporii pot forma un amestec exploziv. Prevenirea pătrunderii în canalizare şi în subsoluri. Prevenirea pătrunderii în sol şi în ape. Adoptaţi măsuri împotriva încărcării electrostatice. Legaţi la centura de împământare toate echipamentele de lucru. A se feri de sursele de aprindere. Utilizarea de echipamente / armături protejate împotriva exploziilor şi a unor instrumente care nu produc scântei. Fumatul interzis. Asiguraţi-vă că toate reglementările relevante privind facilităţile de manipulare şi depozitare a produselor inflamabile sunt respectate.

A se vedea şi Secţiunea 8 (Controale ale expunerii/Protecţia personală) şi Secţiunea 13 (Consideraţii privind eliminarea).

7.2 Condiţii de depozitare în condiţii de securitate, inclusiv eventuale incompatibilităţi

Cerinţe pentru spaţiile de depozitare şi containere	:	Dispunerea zonei de depozitare, construcţia rezervoarelor, echipamentele şi procedurile de operare trebuie să respecte legislaţia europeană, naţională sau locală relevantă. Instalaţiile de depozitare trebuie proiectate cu împrejmuiri adecvate pentru a preveni poluarea solului şi apelor în caz de scurgeri sau deversări. Recipientele vor fi păstrate închise etanş şi într-un loc bine ventilat. Este permisă numai utilizarea unor recipiente staţionare autorizate. Toate rezervoarele şi echipamentele se vor lega la centura de împământare. Depozitaţi într-un spaţiu corespunzător. De regulă este necesară existenţa unui spaţiu de depozitare etanşat şi rezistent. Curăţarea, inspectarea şi întreţinerea structurii interne a rezervoarelor de depozitare trebuie efectuate doar de personal calificat şi echipat corespunzător, conform prevederilor din reglementările naţionale, locale sau ale companiei. Înainte de intrarea în rezervoarele de stocare sau a începerii unor lucrări în spaţii închise, trebuie efectuată proba de gaze (prezenţa hidrocarburilor, conţinutul de oxigen) respectiv testată prezenţa atmosferei explozive. Materialele recomandate pentru containere sau căptuşelile containerelor includ oţel moale, oţel inoxidabil. Materiale nepotrivite: Anumite materiale sintetice pot fi nepotrivite pentru containere sau căptuşeala containerelor, în funcţie de specificaţiile şi utilizarea materialului. Compatibilitatea trebuie verificată împreună cu producătorul. Dacă produsul se livrează în containere: Păstraţi produsul numai în ambalajul (recipientul) original. Etichetaţi containerele în mod corespunzător . A se proteja de lumina solară. Vapori de hidrocarburi uşoare se pot acumula în spaţiile libere ale containerelor. Aceştia pot cauza pericole de inflamabilitate/explozie. Containerele golite pot conţine reziduuri inflamabile ale produsului. Nu sudaţi, lipiţi, perforaţi, tăiaţi sau incineraţi containerele goale, cu excepţia cazului în care au fost curăţate corespunzător.
Informaţii suplimentare asupra condiţiilor de depozitare	:	Evitarea efectului termic. A se feri de sursele de aprindere.

Măsuri de protecţie în cazul depozitării în comun	:	A nu se depozita împreună cu: substanţe periculoase explozive, gaze, alte substanţe periculoase explozive, substanţe solide periculoase inflamabile, substanţe periculoase piroforice sau care se autoîncălzesc, substanţe periculoase care, în contact cu apa, degajă gaze inflamabile, substanţe periculoase puternic oxidante, azotat de amoniu şi produse care conţin azotat de amoniu, peroxizi organici şi substanţe periculoase auto-reactive, substanţe periculoase necombustibile încadrate în categoriile de toxicitate acută 1 şi 2 / foarte toxice, substanţe infecţioase, substanţe radioactive, Restricţii la depozitarea împreună cu: substanţe periculoase oxidante, substanţe periculoase necombustibile, cu toxicitate acuta cat. 3 / toxice sau cu efecte cronice, solide combustibile, alte substanţe combustibile şi necombustibile, Ca urmare a normelor specifice de depozitare şi din cauza caracteristicilor speciale ale substanţelor/amestecurilor dintr-un depozit, în urma evaluării riscurilor, pot rezulta şi alte limitări (restricţii).

7.3 Utilizare finală specifică (utilizări finale specifice)

Instrucţiuni legate de utilizări specifice	:	Se va utiliza numai în scopurile relevante menţionate în Secţiunea 1.2. Pentru informaţii referitoare la aplicaţii specifice, consultaţi scenariile de expunere din anexă.

SECTIUNEA 8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1 Parametri de control

Valoare limită de expunere profesională pentru produs

Nu se cunosc date

Valoare limită de expunere profesională pentru componenţi

Componenţi: Ingredienţi intenţionaţi ai amestecurilor si/sau markeri pentru clasificarea substanţelor

combustibili, diesel; motorina - fara specificatii - Nr. CAS: 68334-30-5 - Nr. EINECS: 269-822-7

Tip	mg/m3	ppm	Coeficient de depasire	Notă	Sursă
Valoare limită maximă la locul de muncă (8 h)	700	-	-	-	Hotarâre Guvern 1218/2006

Tip	mg/m3	ppm	Coeficient de depasire	Notă	Sursă
Valoare limită maximă la locul de muncă (15 min)	1.000	-	-	-	Hotarâre Guvern 1218/2006

metanol - Nr. CAS: 67-56-1 - Nr. EINECS: 200-659-6

Tip	mg/m3	ppm	Coeficient de depasire	Notă	Sursă
Valoare limită maximă la locul de muncă (15 min)	-	5	-	H	Hotarâre Guvern 1218/2006
Valoare limită maximă la locul de muncă (8 h)	260	200	-	H	Hotarâre Guvern 1218/2006; Directiva 2006/15/CE

A	Fracţiune care trece prin alveole
E	Fracţiune inhalabilă
H	Se absoarbe prin piele
Y	Nu există un risc de afectare a capacităţii de reproducere în cazul respectării valorilor limită de expunere profesională si limită biologică.
Z	Nu poate fi exclus riscul afectării capacităţii de reproducere chiar în cazul respectării valorilor limită de expunere profesională si limită biologică.
Sh	Pericol de sensibilizare a pielii
SP	Pericol de sensibilizare în urma contactului cu lumina
Sa	Sensibilizant pentru căile respiratorii
Sah	Risc de sensibilizare a căilor respiratorii si a pielii
X	substanta cancerigena din cat. 1A/1B

Valori limită biologice pentru produs

Nu se cunosc date

Valori limită biologice pentru componenţi

metanol 67-56-1

Tip	Valoare	Parametri	Material biologic	Momentul prelevării probelor	Sursă
Valoare limită biologică obligatorie	6 mg/l	Metanol	Urină	sfârşit de schimb	Hotarâre Guvern 1218/2006

DNEL/DMEL pentru produs

Utilizare finală: muncitor
Rute de expunere: expunere acută, inhalare, sistemic
Valoare: 4300 mg/m3
Cel mai sensibil criteriu: Toxicitate acută (inhalare) NOEC 6000 mg/m3, DNEL, CAS-NR.: 68334-30-5

Utilizare finală: muncitor
Rute de expunere: expunere cronică, inhalare, sistemic
Valoare: 68,3 mg/m3

Cel mai sensibil criteriu: Dezvoltare (dermic) NOEL 125 mg/kg/zi, DNEL, CAS-NR.: 68334-30-5

Utilizare finală: muncitor
Rute de expunere: Cronică dermică, sistemic
Valoare: 2,9 mg/kg g.c./zi
Cel mai sensibil criteriu: Toxicitate cu doze repetate (dermic) NOAEL 30/kg/zi, DNEL, CAS-NR.: 68334-30-5

Utilizare finală: Populaţie generală
Rute de expunere: expunere acută, inhalare, sistemic
Valoare: 2600 mg/m3
Cel mai sensibil criteriu: Toxicitate acută (inhalare) NOEC 6000 mg/m3, DNEL, CAS-NR.: 68334-30-5

Utilizare finală: Populaţie generală
Rute de expunere: expunere cronică, inhalare, sistemic
Valoare: 20 mg/m3
Cel mai sensibil criteriu: Dezvoltare (dermic) NOEL 125 mg/kg/zi, DNEL, CAS-NR.: 68334-30-5

Utilizare finală: Populaţie generală
Rute de expunere: Cronică dermică, sistemic
Valoare: 1,3 mg/kg g.c./zi
Cel mai sensibil criteriu: Toxicitate cu doze repetate (dermic) NOAEL 30/kg/zi, DNEL, CAS-NR.: 68334-30-5

PNEC pentru produs

Substanţa component principal al produsului este un complex de hidrocarburi cu structură variabilă sau necunoscută. Metodele tradiţionale pentru determinarea PNEC nu sunt aplicabile, nefiind astfel posibilă determinarea unei singure valori PNEC reprezentative pentru astfel de substanţe.

8.2 Controale ale expunerii

Se va utiliza numai în scopurile relevante menţionate în Secţiunea 1.2., Pentru informaţii referitoare la aplicaţii specifice, consultaţi scenariile de expunere din anexă.

Măsuri generale de protecţie

Măsuri de igienă	:	Asiguraţi-vă că sunt instituite măsuri de administrare adecvate. Evitarea contactului cu ochii, cu pielea şi cu îmbrăcămintea. Hainele contaminate cu produs trebuie schimbate imediat şi curăţate înainte de reutilizare.

Echipament personal de protecţie

Protecţie respiratorie	:	Când se produc vapori: utilizaţi protecţie respiratorie cu filtru A pentru gaz, culoare caracteristică maro (A1 până la 0,1 vol%, A2 până la 0,5 vol%, A3 până la 1 vol%). În cazul unor concentraţii ridicate şi în situaţia în care nu există informaţii suficiente, se va utiliza numai aparat pentru protecţia respiraţiei autonom (izolant).
Protecţia mâinilor	:	În practică, durata de utilizare a mănuşilor recomandate pentru protecţia împotriva substanţelor chimice poate fi mai redusă decât timpul de penetrare determinat conform normelor EN 374 din cauza numărului mare de factori de influenţă (de exemplu temperatură, sarcină mecanică). În cazul unui posibil contact cu mâinile, a se purta mănuşi de protecţie rezistente împotriva pătrunderii lichidelor. **Material: Nitril;** Timpul de penetrare: 480 min Grosimea materialului: 0,40 mm Metodă de verificare: EN 374 **Material: Viton;** Timpul de penetrare: 480 min Grosimea materialului: 0,70 mm Metodă de verificare: EN 374 **Material: Butil;** Timpul de penetrare: 120 min Grosimea materialului: 0,70 mm Metodă de verificare: EN 374 **Material: Policloropren;** Timpul de penetrare: 60 min Grosimea materialului: 0,60 mm Metodă de verificare: EN 374
Protecţia ochilor / feţei	:	Ochelari de protecţie cu ecrane laterale. Ochelari de protecţie şi/sau mască de protecţie a feţei, dacă este posibil(ă) sau se anticipează stropirea sau contactul cu ochii.
Protecţia corpului	:	Utilizarea, în toate cazurile, de îmbrăcăminte rezistentă la foc şi antistatică pe termen lung. Cască de lucru. Pantofi sau cizme de siguranţă antistatice nederapante. Dacă este necesar, termorezistente.

Controlul expunerii mediului

Controlul expunerii mediului	:	Se va utiliza pe cât posibil aparatură închisă. Dacă există risc de expunere, trebuie asigurată extracţia/ventilaţia adecvată. Respectarea valorilor limită cu privire la emisii, dacă este cazul, asigurând o ventilaţie cu evacuare a aerului (dacă este necesar). A se vedea şi Secţiunea 6 " Măsuri de luat in caz de dispersie accidentala ".

8.3 Informaţii suplimentare

În situaţia concretă de utilizare, ca urmare a evaluării individuale de pericol poate fi necesară utilizarea de echipamente diferite de protecţie a persoanei.

SECTIUNEA 9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1 Informaţii privind proprietăţile fizice şi chimice de bază

Aspect	:	lichid
Stare de agregare	:	lichid
Culoare	:	uşor gălbui
Miros	:	specific de produs petrolier
Prag de acceptare a mirosului	:	miros clar perceptibil

Caracteristica	Valori	Metodă	Notă
pH			nu se aplică
punct de topire/punct de congelare			punct de curgere, Nedeterminat
punctul iniţial de distilare	cca. 160 °C	SR EN ISO 3405	
punctul final de distilare	cca. 370 °C	SR EN ISO 3405	
Punct de inflamabilitate	> 55 °C	EN ISO 2719	
Viteză de evaporare			Nedeterminat
Tranziţie de fază solid/gaz			---
Limită inferioară de explozie	cca. 0,6 %(V)		Date literatura
Limită superioară de explozie	cca. 6,5 %(V)		Date literatura
Presiune de vapori	<= 1 kPa la 37,8 °C	EN 13016-1	
Densitatea vaporilor			Nedeterminat
Densitate	820 - 845 kg/m3 la 15 °C	EN ISO 12185, EN ISO 3675	
Densitate relativă			nu este relevant;
Solubilitate în apă			practic insolubil
solubilitate (solubilităţi)			Solubilitatea în grăsimi: Nedeterminat
Coeficient de partiţie (n-octanol/apă)			nu există date

Temperatură de autoaprindere	>= 200 °C		Date literatura
Temperatura de descompunere			Nedeterminat
Vâscozitate cinematică	2,0 - 4,5 mm2/s la 40 °C	EN ISO 3104	
Vâscozitate dinamică			Nedeterminat
Proprietăţi explozive		Derivaţie din structura chimică	nu este exploziv
Proprietăţi oxidante		Derivaţie din structura chimică	neoxidant

9.2 Alte informaţii

nu există date

SECTIUNEA 10. STABILITATE SI REACTIVITATE

10.1 Reactivitate

Stabil chimic in condiţii normale de depozitare şi manipulare, cu respectarea prevederilor din Secţiunea 7.

10.2 Stabilitate chimică

Stabil chimic in condiţii normale de depozitare şi manipulare, cu respectarea prevederilor din Secţiunea 7.

10.3 Posibilitatea de reacţii periculoase

Reacţii potenţial periculoase : Amestecurile de vapori / aer care prezintă pericol de explozie pot fi prezente, chiar şi în recipiente goale, necurăţate.
Dacă este puternic încălzit: Pericol de ardere spontană
Reacţii cu substanţele oxidante.

10.4 Condiţii de evitat

Condiţii de evitat : A se feri de surse de căldură, flacără deschisă şi alte surse similare de foc.

10.5 Materiale incompatibile

Materiale de evitat : acizi tari şi agenţi oxidanţi;

10.6 Produşi de descompunere periculoşi

Produşi de descompunere periculoşi : Nedeterminat

10.7 Informaţii suplimentare

vapori invizibili, mai grei decât aerul

SECTIUNEA 11. INFORMAŢII TOXICOLOGICE

11.1 Informaţii privind efectele toxicologice

Toxicitate acută

Efect oral acut	:	LD50 şobolan Metodă: OECD 420 Substanţă de test: 68334-30-5 Doză: aprox. 7.600 mg/kg g.c.
Efect acut la inhalare	:	LC50 şobolan Doză: 3,6 mg/l / 4 o Metodă: OECD 403 Substanţă de test: 68334-30-5
Efect acut cutanat	:	LD50 iepure Doză: > 5 ml/kg gc Metodă: OECD 434 Substanţă de test: 68334-30-5 (aprox. >4.300 mg/kg g.c./zi)
Alte efecte acute	:	nu există date
Alte efecte	:	nicio informaţie

Corodarea/iritarea pielii

Iritaţia pielii	:	iepure Rezultat: Iritant pentru piele Metodă: OECD 404 Substanţă de test: 68334-30-5

Lezarea gravă/iritarea ochilor

Iritaţia ochilor	:	iepure Rezultat: nu este iritant Metodă: OECD 405 Substanţă de test:68334-30-5 posibilă iritaţie temporară

Sensibilizarea căilor respiratorii sau a pielii

sensibilizare	:	Metodă: OECD 406 Substanţă de test: 68334-30-5 Nu există informaţii cu privire la posibile efecte de sensibilizare

Mutagenitatea celulelor germinative

Genotoxicitate in vitro	:	testul Ames Rezultat: negativ cu activare metabolica Metodă: Test Ames modificat conform ASTM E 1687 Substanţă de test: 68334-30-5
Genotoxicitate in vivo	:	încercare micronucleară (clastogenicitate) Substanţă de test: 68476-30-2 Metodă: OECD 475 Rezultat: negativ
	:	Test de aberatie cromozomiala Substanţă de test: 64741-44-2 Metodă: OECD 475 Rezultat: negativ
Evaluare toxicologică / Mutagenitatea celulelor germinative	:	Pe baza datelor disponibile, nu este clasificat ca mutagen.

Cancerogenitatea

Efect cancerigen	:	Substanţă de test: 10 distilate medii Metodă: Nedeterminat Studii privind efectele cancerigene la şoareci dermic Rezultat: pozitiv LOAEL Doză: 25 mg/kg/gc/zi cronic şoarece
Evaluare toxicologică / Cancerogenitatea	:	Clasificat în conformitate cu Regulamentul CLP (CE) a UE nr. 1272/2008 la categoria 2 H351

Toxicitate pentru reproducere

Toxicitate pentru reproducere/fertilitate	:	Mod de aplicare: orală; şobolan Substanţă de test: distilate, grele, C18-50 - ramificate, ciclice şi liniare Metodă: US EPA Ghidul de testare a efectelor asupra sănătăţii OPPTS 870.3800 şi OECD 416 NOAEL (F1); Dozã: 1000 mg/kg gc/zi
Toxicitate pentru dezvoltare/teratogenicitate	:	Mod de aplicare: piele; şobolan Substanţă de test: 64741-49-7 Metodă: OECD 414 NOAEL Doză: 125 mg/kg/zi (toxicitate maternală/la dezvoltare)
Evaluare toxicologică / Toxicitate pentru dezvoltare/teratogenicitate Toxicitate pentru reproducere/fertilitate	:	În baza datelor disponibile, nu este clasificat ca fiind toxic pentru dezvoltare sau teratogenic.

Toxicitate asupra unui organ ţintă specific - expunere unică

Toxicitate asupra unui organ ţintă specific - expunere unică	:	Rute de expunere: nu există date

Toxicitate asupra unui organ ţintă specific - expunere repetată

Efecte în cazul expunerii repetate sau de lungă durată	:	Poate provoca leziuni ale organelor (timus, ficat, măduvă osoasă) in caz de expunere prelungită sau repetată.

Pericol prin aspirare

Toxicitate prin aspirare	:	Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii.

Efecte neurologice

Efecte neurologice	:	nu există date
Efecte narcotice	:	Concentraţiile ridicate pot avea efecte narcotice.

Evaluare toxicologică /

Toxicitate la doză repetată	:	NOEL dermic; Doză: 0,5 ml/kg (sistemic); 0,0001 ml/kg (local); Metodă: OECD 410
	:	NOAEC (inhalare) doză: >1,71 mg/l/90d (sistemic); 0,88 mg/l/90 d (local); metodă: OECD 413; substanţă de test: cel mai probabil 68334-30-6

11.2 Informaţii suplimentare

Datele de mai sus sunt pentru componentul principal, CAS-Nr. 68334-30-5
(dacă nu se menţionează altfel)

SECTIUNEA 12. INFORMAŢII ECOLOGICE

12.1 Toxicitatea

Toxicitate acută

Toxicitate acută la peşti	:	LL50 Specii: Oncorhynchus mykiss (pastrav curcubeu) Doză: 65 mg/l Durată de expunere: 96 o Metodă: OECD 203

		NOEL Specii: Oncorhynchus mykiss (pastrav curcubeu) Doză: 10 mg/l Durată de expunere: 96 o Metodă: OECD 203
Toxicitate acută în cazul nevertebratelor acvatice	:	NOEL Specii: Daphnia magna (Purici de apă mari) Doză: 46 mg/l Durată de expunere: 48 o Metodă: OECD 202
Toxicitatea pentru alge şi plantele acvatice	:	ErL50 Specii: Pseudokirchneriella subcapitata Doză: 22 mg/l Durată de expunere: 72 o Metodă: OECD 201
Toxicitate la microorganisme	:	NOEL Specii: Tetrahymena pyriformis Doză: 3.217 mg/l Durată de expunere: 40 o Substanţă de test: motorină de vid, motorina hidrocracată si combustibili distilati Metodă: QSAR
		EL50 Specii: Tetrahymena pyriformis Doză: > 1.000 mg/l Durată de expunere: 40 o Substanţă de test: motorină de vid, motorina hidrocracată si combustibili distilati Metodă: QSAR
Toxicitate pentru organismele edafice	:	nu există date
Toxicitate în cazul plantelor terestre	:	nu există date
Toxicitate asupra altor organisme terestre (care nu sunt mamifere)	:	nu există date

Toxicitate cronică

Toxicitate pentru peşti (Toxicitate cronică)	:	NOEL Specii: Oncorhynchus mykiss (pastrav curcubeu) Doză: 0,083 mg/l Durată de expunere: 14 z Substanţă de test: motorină de vid, motorina hidrocracată si combustibili distilati Metodă: QSAR

Toxicitate la daphnia şi alte nevertebrate acvatice. (Toxicitate cronică)	:	NOEL Specii: Daphnia magna Doză: 0,2 mg/l Durată de expunere: 21 z Substanţă de test: motorină de vid, motorina hidrocracată si combustibili distilati Metodă: (Q)SAR
Acvatică acută	:	EL50: >1000 mg/l/ 40h; NOEL: 3,217 mg/l, nu există criterii de clasificare pentru toxicitate acvatică acută
Acvatică cronică	:	Toxic pentru organismele acvatice, poate provoca efecte adverse pe termen lung asupra mediului acvatic
Date de toxicitate în sol	:	nu există date
Alte organisme relevante din punct de vedere al mediului	:	nu există date

12.2 Persistenţă şi degradabilitate

Persistenţă,Biodegradare	:	Greu biodegradabil.

12.3 Potenţial de bioacumulare

Bioacumulare	:	Nu sunt disponibile date relevante. Potenţial de bioacumulare (Coeficient de partiţie (n-octanol/apă)): nu există date

12.4 Mobilitate în sol

Mobilitate	:	Note: Nu lăsaţi produsul să fie eliberat necontrolat în mediu.
Transport între diferite medii	:	nu există date
Capacitate de eliminare fizico-chimică	:	Acest produs este insolubil în apă şi pluteşte la suprafaţa acesteia. Poate fi separat mecanic, în staţii de tratare a apelor uzate.

12.5 Rezultate ale evaluării PBT şi vPvB

Rezultate ale evaluării PBT şi vPvB	:	Conform informatiilor de pana acum, nu contine compusi care indeplinesc criteriile de PBT sau vPvB.

12.6 Alte efecte adverse

Efecte asupra staţiilor de epurare	:	nicio informaţie
Alte efecte adverse	:	Nu evacuaţi produsul în sistemul de canalizare, cursuri de apă şi pe sol. În caz de accident, contactaţi echipele speciale de intervenţie şi anunţaţi autorităţile locale competente.

12.7 Alte informaţii

Alte informaţii	:	Datele de mai sus sunt pentru componentul principal, CAS-Nr. 68334-30-5 (dacă nu se menţionează altfel)

SECTIUNEA 13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1 Metode de tratare a deşeurilor

Instrucţiuni privind eliminarea deşeului de produs	:	Reziduurile de produs vor fi eliminate conform prevederilor legale.
Instrucţiuni privind eliminarea deşeului de ambalaj	:	În măsura în care produsul a fost livrat în ambalaj, de preferat, ambalajele goale vor fi refolosite sau, dacă nu există această posibilitate, vor fi transportate la un punct de valorificare / eliminare finală a deşeurilor periculoase. Nu sudaţi, lipiţi, perforaţi, tăiaţi sau incineraţi containerele goale, cu excepţia cazului în care au fost curăţate corespunzător.
Codul deşeului conform Catalogului european al deşeurilor în cazul utilizării conform Secţiunii 1:		
Cod deşeu de produs	:	13 07 01* ulei combustibil si combustibil diesel
Cod deşeu de ambalaj	:	15 01 10* ambalaje care conţin reziduuri de substanţe periculoase sau sunt contaminate cu substanţe periculoase

13.2 Informaţii suplimentare

Codul de deşeu depinde de originea deşeului şi, în situaţii individuale, poate diferi de informaţiile de mai sus.

Legislaţia privind eliminarea deşeurilor de produs:
Legea nr 211/2011 privind regimul deseurilor, cu modificarile si completarile ulterioare ;
HG 235/2007 privind gestionarea uleiurilor uzate;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 349/2005 privind depozitarea deşeurilor, cu modificarile si completarile ulterioare;
HG 856/2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase, cu modificarile si completarile ulterioare;
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase pe teritoriul României.

Legislaţia pentru deşeurile de ambalaje:
Ordinul nr. 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje;
Legea nr. 249/2015 privind modalitatea de gestionare a ambalajelor şi deşeurilor de ambalaje, cu modificările si completările ulterioare.

SECTIUNEA 14. INFORMATII REFERITOARE LA TRANSPORT



Transport rutier (ADR)

14.1	**Nr. ONU**	:	1202
14.2	**Denumirea corectă ONU pentru expediţie**	:	CARBURANT DIESEL
14.3	**Clasa (clasele) de pericol pentru transport**	:	3
14.4	**Grupa de ambalare**	:	III
14.5	**Pericole pentru mediul înconjurător**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.

Alte informaţii

Număr de marcare a pericolului	:	30
Etichete ADR/RID	:	3
Cod de clasificare	:	F1
Cod de restricţionare a accesului în tunel	:	(D/E)
Observaţii	:	Model etichetă de pericole nr. 3, Marcaj peşte şi copac pentru materiale periculoase pentru mediu, Dispoziţie specială 640L

Transport feroviar (RID)

14.1	**Nr. ONU**	:	1202
14.2	**Denumirea corectă ONU pentru expediţie**	:	CARBURANT DIESEL
14.3	**Clasa (clasele) de pericol pentru transport**	:	3
14.4	**Grupa de ambalare**	:	III
14.5	**Pericole pentru mediul înconjurător**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.

Alte informaţii

Număr de marcare a pericolului	:	30
Etichete ADR/RID	:	3
Cod de clasificare	:	F1
Observaţii	:	Model etichetă de pericole nr. 3, Marcaj peşte şi copac pentru materiale periculoase pentru mediu, Dispoziţie specială 640L

Navigaţie interioară cu barje-cisternă (ADN)

14.1	**Nr. ONU**	:	1202
14.2	**Denumirea corectă ONU pentru expediţie**	:	CARBURANT DIESEL
14.3	**Clasa (clasele) de pericol pentru transport**	:	3
14.4	**Grupa de ambalare**	:	III
14.5	**Pericole pentru mediul înconjurător**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.

Alte informaţii

Observaţii	:	(N2+F)

Transport maritim (IMDG)

14.1	**Nr. ONU**	:	1202
14.2	**Denumirea corectă ONU pentru expediţie**	:	DIESEL FUEL
14.3	**Clasa (clasele) de pericol pentru transport**	:	3
14.4	**Grupa de ambalare**	:	III
14.5	**Poluant marin**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.
14.7	**Transport în vrac, în conformitate cu anexa II la Conventia MARPOL si cu Codul IBC**	:	MARPOL Anexa 1

Alte informaţii

Etichete ale Organizaţiei Internaţionale de Aviaţie Civilă (ICAO)	:	3
Ghid de Urgenţă (EmS)	:	F-E, S-E

Transport aerian (ICAO-TI/IATA-DGR)

14.1	**Nr. ONU**	:	1202

14.2	**Denumirea corectă ONU pentru expediţie**	:	DIESEL FUEL
14.3	**Clasa (clasele) de pericol pentru transport**	:	3
14.4	**Grupa de ambalare**	:	III
14.5	**Pericole pentru mediul înconjurător**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.

Alte informaţii

Etichete ale Organizaţiei Internaţionale de Aviaţie Civilă (ICAO)	:	3

Informaţii suplimentare

La cerere, producătorul vă oferă informaţii suplimentare referitoare la clasificarea produsului pentru transport.

SECTIUNEA 15. INFORMAŢII DE REGLEMENTARE

15.1 Regulamente/legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză

Dispoziţii comunitare privind protecţia sănătăţii şi a mediului

Directiva 2010/75/UE privind emisiile industriale (prevenirea şi controlul integrat al poluării) - Capitolul V - Dispoziţii speciale aplicabile instalaţiilor şi activităţilor care utilizează solvenţi organici.	:	Produsul nu face obiectul directivei COV dacă se utilizează în scopurile prevăzute (vezi secţiunea 1.2).
Regulamentul (CE) nr. 1907/2006, Anexa XVII	:	nr. 3 - Substanţe sau amestecuri lichide considerate periculoase conform definiţiilor din Directiva 67/548/CEE şi Directiva 1999/45/CE;
Directiva 2012/18/UE a Parlamentului European şi a Consiliului din 4 iulie 2012 privind controlul pericolelor de accidente majore care implică substanţe periculoase, de modificare şi ulterior de abrogare a Directivei 96/82/CE a Consiliului (SEVESO III).	:	Anexă I, Partea 1: P5c LICHIDE INFLAMABILE E2 Periculoase pentru mediul acvatic în categoria cronic 2. Anexa I Partea 2: 34. Produse petroliere şi carburanţi alternativi. (c) distilate de petrol, exclusiv fracţia grea (inclusiv motorină, combustibil gazos pentru încălzirea locuinţelor şi amestecurile).
Directiva 92/85/CEE a Consiliului din 19 octombrie 1992 privind introducerea de măsuri pentru promovarea îmbunătătirii securitătii si a sănătătii la locul de muncă în cazul lucrătoarelor gravide, care au născut de curând sau care alăptează [a zecea directivă specială în sensul articolului 16 alineatul (1) din Directiva 89/391/CEE]	:	Produsul face obiectul restrictiilor stabilite prin legislatia nationala de transpunere a Directivei.

Directiva 94/33/CE a Consiliului din 22 iunie 1994 privind protectia tinerilor la locul de muncă	:	Produsul face obiectul restrictiilor stabilite prin legislatia nationala de transpunere a Directivei.

Alte reglementări:
Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006, cu modificarile si completarile ulterioare.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase, cu modificările şi completările ulterioare;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă, cu modificarile si completarile ulterioare;
Regulamentul (CE) nr.1907/2006 privind înregistrarea, evaluarea, autorizarea si restrictionarea substantelor chimice (REACH), cu modificarile si completarile ulterioare.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006
Legea 319/2006 privind Securitatea şi sănătatea în muncă, cu modificările şi completările ulterioare;
HG 1218/2006 privind stabilirea cerinţelor minime de securitate şi sănătate în muncă pentru asigurarea protecţiei lucrătorilor împotriva riscurilor legate de prezenţa agenţilor chimici, cu modificarile si completarile ulterioare;
OUG 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) 1.907/2006, cu modificările şi completările ulterioare.
Legea nr.59/2016 privind controlul asupra pericolelor de accident major în care sunt implicate substanţe periculoase.
OUG 96/2003 privind protectia maternitatii la locul de munca, cu modificarile si completarile ulterioare.
HG 600/2007 privind protecţia tinerilor la locul de muncă, cu modificarile si completarile ulterioare
Hotarârea nr. 893/2006 pentru modificarea Hotarârii Guvernului nr. 1.593/2002 privind aprobarea Planului national de pregatire, raspuns si cooperare în caz de poluare marina cu hidrocarburi.

15.2 Evaluarea securităţii chimice

S-a efectuat evaluarea privind siguranţa chimică pentru componenta principală, în cadrul procesului de înregistrare REACH. S-a confirmat faptul, că în caz de controlare a componentei principale ca substanţă primară se poate asigura controlul corespunzător şi pentru celelalte componente ale amestecului. În consecinţă, în Anexă sunt listate scenariile de expunere elaborate pentru componenta principală. CAS-NR.: 68334-30-5

SECTIUNEA 16. ALTE INFORMAŢII

Textul integral al frazelor de pericol H menţionate la Secţiunile 2 şi 3

Acute Tox.	Toxicitate acută
Aquatic Chronic	Toxicitate acvatică cronică
Asp. Tox.	Pericol de aspirare
Carc.	Carcinogenicitate
Flam. Liq.	Lichide inflamabile
Skin Irrit.	Corodarea/Iritarea pielii
STOT RE	Toxicitate asupra unui organ ţintă specific - expunere repetată

STOT SE	Toxicitate asupra unui organ ţintă specific - o singură expunere
H225	Lichid şi vapori foarte inflamabili.
H226	Lichid şi vapori inflamabili.
H301	Toxic în caz de înghiţire.
H304	Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii.
H311	Toxic în contact cu pielea.
H315	Provoacă iritarea pielii.
H331	Toxic în caz de inhalare.
H332	Nociv în caz de inhalare.
H351	Susceptibil de a provoca cancer.
H370	Provoacă leziuni ale organelor (nerv optic (nervus opticus), sistem nervos central).
H373	Poate provoca leziuni ale organelor (timus, ficat, măduvă osoasă) in caz de expunere prelungită sau repetată.
H411	Toxic pentru viaţa acvatică având efecte de lungă durată.

Alte informaţii

Alte Informaţii :	Actualizările fata de versiunea principală precedentă (nemarcate precum este mentionat mai jos) au fost efectuate în: Secţiunea 1 şi Anexă Secţiunea 4 - 8 Secţiunile 11 - 16
	Listă de acronime: (Q)SAR = relatie cantitativă structură-activitate ADN = Acordul european privind transportul international al mărfurilor periculoase pe căile navigabile interioare ADR = Acordul european privind transportul rutier international al mărfurilor periculoase ATE = Estimare a toxicităţii acute BCF = Factor de bioconcentrare CAS# = Numărul Chemical Abstracts Service CMR = Cancerigen, mutagen sau toxic pentru reproducere CSA = Evaluarea securităţii chimice CSR = Raport de securitate chimică DMEL = Nivel calculat cu efect minim DNEL = Nivel calculat fără efect EC50 = concentraţie efectivă 50% - concentraţia cu efect a substanţei asociată cu un raspuns de 50% ECHA = Agentia Europeană pentru Produse Chimice Număr CE = Număr EINECS si ELINCS (a se vedea, de asemenea, EINECS si ELINCS) EINECS = Inventarul european al substantelor chimice existente introduse pe piată EL50 = Nivel efectiv 50% ELINCS = Lista europeană a substantelor chimice notificate EPA = Agentia pentru Protectia Mediului (SUA) GES = Scenariu generic de expunere IATA = Asociatia Internatională pentru Transport Aerian IC50 = concentraţie de inhibare 50% ICAO-TI = Instrucţiuni tehnice privind siguranţa transportului aerian al bunurilor periculoase IMDG = Codul maritim international pentru mărfuri periculoase Kow = coeficient de partitie octanol / apă Koc = coeficient de partitie carbon organic din sol / apa LC50 = Concentratie letală până la 50 % din populatia-test LD50 = Doză letală până la 50 % din populatia-test (doză letală medie) LL50 = Incarcare letala 50% LOAEC = Concentratia cea mai scazuta cu efect advers observat

	LOAEL = Nivelul cel mai scazut cu efect advers observat NOAEC = Concentratie fara efect advers observat NOAEL = Nivel fara efect advers observat NOEC = Concentratie fara efect observat NOEL = Nivel fara efect observat OECD = Organizatia pentru cooperare si dezvoltare economică OSHA = Organizatia europeana pentru securitate si sanatate la locul de munca PBT = Substantă persistentă, bioacumulativă si toxică PEC = Concentratie predictibilă în mediu PNEC = Concentratie predictibilă fără efect RID = Regulamentele privind transportul international feroviar al mărfurilor periculoase RMM = Masuri de management al riscului SVHC = Substante care prezintă motive de îngrijorare deosebite TRA = Evaluare de risc directionata TLV = valoare limita maxima STEL = Limita de expunere de durata scurta TWA = Medie ponderata in timp UVCB = substanţă cu compoziţie necunoscută sau variabilă, produse de reacţie complexă sau materiale biologice vPvB = (substanta) foarte persistenta si foarte bioacumulativa LGK = Clasa de depozitare TRGS = Reguli tehnice pentru substante periculoase (Germania)

Surse de informaţii	:	Raport de securitate chimica (CSR)
		Clasificarea si procedura utilizate pentru realizarea clasificării pentru amestecuri în conformitate cu Regulamentul (CE) nr. 1272/2008 [CLP]: Flam. Liq. 3 H226 - Pe baza datelor colectate în timpul testului Acute Tox. 4 H332 - Metoda de calcul Skin Irrit. 2 H315 - Metoda de calcul Asp. Tox. 1 H304 - Pe baza datelor colectate în timpul testului Carc. 2 H351 - Metoda de calcul STOT RE 2 H373 - Metoda de calcul Aquatic Chronic 2 H411 - Metoda de calcul

Linia verticală (|) la capătul din stânga şi/sau textul de culoare roşie indică modificarea faţă de versiunea principală anterioară.
Aceste date sunt conforme informaţiilor şi experienţei de care dispunem la data menţionată a prelucrării fişei şi se referă exclusiv la produsul care poate fi identificat cu claritate în baza codului de produs, în starea de livrare a acestuia. În cazul utilizării diferite faţă de cele menţionate la secţiunea 1, sau dacă produsul este amestecat cu alte materiale ori este alterat în cursul procesului de producţie, există posibilitatea ca declaraţiile specificate în fişa cu date de securitate să nu fie valabile fără restricţii sau să nu mai fie valabile deloc. Informaţiile nu pot fi aplicate asupra altor produse cu denumiri identice sau similare. Această fişă nu scuteşte în niciun caz utilizatorul de cunoaşterea şi aplicarea tuturor textelor care reglementează activitatea sa.
Acest produs nu trebuie utilizat pentru altă aplicaţie sau aplicaţii decât cele specificate, fără consultarea prealabilă a furnizorului.
Este obligaţia utilizatorului să evalueze şi să folosească acest produs în siguranţă şi conform cu toate legile şi reglementările aplicabile.
Puteţi contacta furnizorul pentru a vă asigura că acest document este cea mai nouă versiune.
Modificarea acestui document este strict interzisă.

Anexă

Scenariile de expunere pentru cele mai frecvente utilizari sunt enumerate mai jos. Dacă este necesar, se pot furniza la cerere şi alte scenarii de expunere.

1. Titlu scurt al Scenariului de expunere: 01a - Distribuţia substanţei/materialului

Stadiul ciclului de viaţă	:	**IS:** Utilizare în spaţii industriale
Domeniu de utilizare	:	nu se aplică
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC4:** Producţie chimică în cadrul căreia există posibilitatea de expunere **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC9:** Transferul de substanţă sau amestecuri în recipiente mici (linie de umplere dedicată, inclusiv cu cântărire) **PROC15:** Utilizare ca reactiv de laborator
Categorie de eliberare în mediu	:	**ERC4:** Utilizarea unui aditiv de prelucrare nereactiv într-un spatiu industrial (fără includere în sau pe un articol) **ERC5:** Utilizare într-un spațiu industrial care conduce la includerea în sau pe un articol **ERC6a:** Utilizarea unui intermediar **ERC6b:** Utilizarea unui aditiv de prelucrare reactiv într-un spațiu industrial (fără includere în sau pe un articol) **ERC6c:** Utilizarea unui monomer în procese de polimerizare într-un spațiu industrial (cu sau fără includere în sau pe un articol) **ERC6d:** Utilizarea de regulatori de proces reactivi în procese de polimerizare într-un spaţiu industrial (cu sau fără includere în sau pe un articol) **ERC7:** Utilizarea unui fluid funcțional într-un spațiu industrial
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 1.1b.v1
Procese, sarcini, activităţi acoperite	:	Încărcarea în vrac (incluzând încărcarea în nave maritime/barje, vagoane de cale ferată/autocisterne şi containere intermediare de transport în vrac) şi reambalarea (incluzând canistre şi recipiente mici) a substanţei/materialului, inclusiv eşantionarea, depozitarea, descărcarea şi activităţile de laborator asociate. Nu include emisiile din timpul transportului.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC4, Utilizarea unui aditiv de prelucrare nereactiv într-un spatiu industrial (fără includere în sau pe un articol)

ERC5, Utilizare într-un spațiu industrial care conduce la includerea în sau pe un articol

ERC6a, Utilizarea unui intermediar

ERC6b, Utilizarea unui aditiv de prelucrare reactiv într-un spațiu industrial (fără includere în sau pe un articol)

ERC6c, Utilizarea unui monomer în procese de polimerizare într-un spațiu industrial (cu sau fără includere în sau pe un articol)

ERC6d, Utilizarea de regulatori de proces reactivi în procese de polimerizare într-un spaţiu industrial (cu sau fără includere în sau pe un articol)

ERC7, Utilizarea unui fluid funcțional într-un spațiu industrial

Cantitatea folosită

Tonaj pentru utilizare regională	:	31 10E6 t/an
Tonaj anual la amplasament (tone/an)	:	61.000
Tonaj zilnic maxim la amplasament (kg/zi)	:	200.000
Fracţiune de tonaj UE utilizată în regiune	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	0,002
Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
MSafe (tonaj maxim permis la amplasament)	:	670.000 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	300 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,1 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %
Factor de emisie sau de eliberare/degajare: Sol	:	0,001 %
Note	:	Toţi factorii de eliberare/degajare se referă la eliberarea/degajarea iniţială, inainte de aplicarea măsurilor de management al riscurilor (RMM). Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală.

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepărtare/eliminare de: 90,0 %
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de eliminare: 83,3 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 0 %

Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de toxicitatea secundară a elementului apă dulce. Dacă se evacuează la staţia de tratare a apelor menajere uzate, nu este necesară tratarea apelor reziduale de la amplasament.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	94,9 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	94,9 %
Tratarea nămolului	:	Măsuri organizaţionale pentru prevenirea/limitarea degajărilor de la amplasament: A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Valorificarea şi reciclarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1 : Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.

PROC2 : Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente

PROC3 : Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente

PROC4 : Producţie chimică în cadrul căreia există posibilitatea de expunere

PROC8a : Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate

PROC8b : Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate

PROC9 : Transferul de substanţă sau amestecuri în recipiente mici (linie de umplere dedicată, inclusiv cu cântărire)

PROC15 : Utilizare ca reactiv de laborator

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid, cu potenţial de generare a aerosolilor
Presiune de vapori	:	Presiunea vaporilor este dată la temperatură şi presiune standard (conditii STP). < 5 hPa
Note	:	Presupune implementarea unui standard de bază adecvat privind igiena profesională., Presupune utilizarea la nu mai mult de 20°C peste temperatura ambiantă, dacă nu este menţionat altfel.

Frecvenţa şi durata folosirii

Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel) : 8 o

Condiţii tehnice şi măsuri

CS135 Măsuri generale aplicabile tuturor activităţilor
Controlaţi orice potenţială expunere folosind măsuri precum sisteme izolate sau închise, unităţi proiectate şi întreţinute corespunzător şi un standard adecvat de ventilaţie generală. Goliţi sistemele şi liniile de transfer înainte de a afecta etanşeitatea. Goliţi şi spălaţi echipamentele, acolo unde este posibil, înainte de efectuarea lucrărilor de întreţinere.
G19 Măsuri generale (substanţe iritante pentru piele)
Nu au fost identificate alte măsuri specifice.
CS15 Expuneri generale (sisteme închise).
Manipulaţi substanţa în cadrul unui sistem închis.
CS16 Expuneri generale (sisteme deschise).
Nu au fost identificate alte măsuri specifice.
CS2 Eşantionare a procesului
Nu au fost identificate alte măsuri specifice.
CS36 Activităţi de laborator.
Nu au fost identificate alte măsuri specifice.
CS501 Încărcare şi descărcare închisă în vrac.
Manipulaţi substanţa în cadrul unui sistem închis.
CS503 Încărcare şi descărcare deschisă în vrac
Nu au fost identificate alte măsuri specifice.
CS6 Umplere a canistrelor şi a recipientelor mici
Nu au fost identificate alte măsuri specifice.
CS39 Curăţare şi întreţinere echipamente.
Goliţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.
CS67 Depozitare.
Manipulaţi substanţa în cadrul unui sistem închis.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

CS135 Măsuri generale aplicabile tuturor activităţilor
Acolo unde există potenţial de expunere: Asiguraţi-vă că personalul relevant este informat cu privire la potenţialul expunerii şi cunoaşte acţiunile de bază pentru reducerea la minimum a expunerilor; monitorizaţi eficacitatea măsurilor de control; asiguraţi examinări medicale regulate, după cum este necesar; identificaţi şi implementaţi acţiuni corective.
G19 Măsuri generale (substanţe iritante pentru piele)
Asiguraţi instruirea de bază a angajaţilor astfel încât să prevină / minimizeze expunerile şi să raporteze orice efecte asupra pielii care ar putea să se producă.
CS15 Expuneri generale (sisteme închise).
Nu au fost identificate alte măsuri specifice.
CS16 Expuneri generale (sisteme deschise).
Nu au fost identificate alte măsuri specifice.
CS2 Eşantionare a procesului
Nu au fost identificate alte măsuri specifice.
CS36 Activităţi de laborator.
Nu au fost identificate alte măsuri specifice.
CS501 Încărcare şi descărcare închisă în vrac.
Nu au fost identificate alte măsuri specifice.
CS503 Încărcare şi descărcare deschisă în vrac
Nu au fost identificate alte măsuri specifice.
CS6 Umplere a canistrelor şi a recipientelor mici
Nu au fost identificate alte măsuri specifice.
CS39 Curăţare şi întreţinere echipamente.
Nu au fost identificate alte măsuri specifice.
CS67 Depozitare.
Nu au fost identificate alte măsuri specifice.

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

CS135 Măsuri generale aplicabile tuturor activităţilor
Când există posibilitatea de expunere: asiguraţi-vă că este disponibil echipament de protecţie adecvat, curăţaţi scurgerile de produs şi eliminaţi deşeurile in conformitate cu cerinţele legale.
G19 Măsuri generale (substanţe iritante pentru piele)
Evitaţi contactul direct al pielii cu produsul. Identificaţi suprafeţele potenţiale de contact indirect cu pielea Purtaţi mănuşi (testate conform EN374) dacă este posibil un contact al mâinilor cu substanţa/materialul. Curăţaţi contaminarea/substanţele/materialele scurse/vărsate de îndată ce acestea apar. Îndepărtaţi imediat prin spălare contaminarea pielii.
CS15 Expuneri generale (sisteme închise).
Nu au fost identificate alte măsuri specifice.
CS16 Expuneri generale (sisteme deschise).
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS2 Eşantionare a procesului
Nu au fost identificate alte măsuri specifice.
CS36 Activităţi de laborator.
Nu au fost identificate alte măsuri specifice.
CS501 Încărcare şi descărcare închisă în vrac.
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS503 Încărcare şi descărcare deschisă în vrac
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS6 Umplere a canistrelor şi a recipientelor mici
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS39 Curăţare şi întreţinere echipamente.
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374) şi efectuaţi instruirea la nivel de bază a angajatului.
CS67 Depozitare.
Nu au fost identificate alte măsuri specifice.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:
Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL)/fără efect derivat (DNEL) atunci când sunt implementate măsurile de management al riscurilor (RMM)/condiţiile operaţionale (OC) descrise la secţiunea 2. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efectele iritante asupra pielii. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.
4.2. Mediu înconjurător:
Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).
Rata maximă de caracterizare a riscului pentru emisiile de aer RCRair
0,024
Rata maximă de caracterizare a riscurilor pentru emisiile de ape reziduale RCRwater
0,2

1. Titlu scurt al Scenariului de expunere: 02 - Formularea & (re)ambalarea substanţelor/materialelor şi amestecurilor

Stadiul ciclului de viaţă	:	**F:** Formulare sau reambalare
Domeniu de utilizare	:	nu se aplică
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC4:** Producţie chimică în cadrul căreia există posibilitatea de expunere **PROC5:** Amestecare sau combinare în procese discontinue **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC9:** Transferul de substanţă sau amestecuri în recipiente mici (linie de umplere dedicată, inclusiv cu cântărire) **PROC14:** Tabletare, comprimare, extrudare, peletizare, granulare **PROC15:** Utilizare ca reactiv de laborator
Categorie de eliberare în mediu	:	**ERC2:** Formulare în amestec
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 2.2.v1
Procese, sarcini, activităţi acoperite	:	Formularea, ambalarea şi reambalarea substanţei şi a amestecurilor acesteia în loturi sau prin operaţiuni continue, inclusiv depozitarea, transferurile de materiale, amestecarea, tabletarea, comprimarea, peletizarea, extrudarea, ambalarea la scară mare şi mică, întreţinerea, eşantionarea şi activităţile de laborator asociate.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC2, Formulare în amestec

Cantitatea folosită

Tonaj pentru utilizare regională	:	30 10E6 t/an
Tonaj anual la amplasament (tone/an)	:	30.000
Tonaj zilnic maxim la amplasament (kg/zi)	:	100.000
Fracţiune de tonaj UE utilizată în regiune	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	0,001
Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
MSafe (tonaj maxim permis la amplasament)	:	100.000 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	300 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	1,00 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,02 %
Factor de emisie sau de eliberare/degajare: Sol	:	0,01 %
Note	:	Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală. Fracţie degajată din proces în aer (după măsuri tipice de management al riscurilor la amplasament în conformitate cu cerinţele Directivei UE privind emisiile de solvenţi) Factorii de eliberare/degajare in apă si sol se referă la eliberarea/degajarea iniţială, inainte de aplicarea măsurilor de management al riscurilor (RMM)

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepărtare/eliminare de: 0 %
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de îndepărtare/eliminare de >= (%):: 96,7 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 35,1 %
Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de sedimentul din apa dulce. Preveniţi descărcarea substanţei nedizolvate în sau recuperaţi-o din apele reziduale de la amplasament. Dacă se evacuează la staţia de tratare a apelor menajere uzate, este necesară tratarea suplimentara a apelor reziduale de la amplasament.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	94,9 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	96,7 %
Tratarea nămolului	:	Măsuri organizaţionale pentru prevenirea/limitarea degajărilor de la amplasament: A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Valorificarea şi reciclarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1	:	**Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.**
PROC2	:	**Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC3	:	**Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC4	:	**Producţie chimică în cadrul căreia există posibilitatea de expunere**
PROC5	:	**Amestecare sau combinare în procese discontinue**
PROC8a	:	**Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate**
PROC8b	:	**Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate**
PROC9	:	**Transferul de substanţă sau amestecuri în recipiente mici (linie de umplere dedicată, inclusiv cu cântărire)**
PROC14	:	**Tabletare, comprimare, extrudare, peletizare, granulare**
PROC15	:	**Utilizare ca reactiv de laborator**

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid, cu potenţial de generare a aerosolilor
Presiune de vapori	:	Presiunea vaporilor este dată la temperatură şi presiune standard (conditii STP). < 5 hPa
Note	:	Presupune implementarea unui standard de bază adecvat privind igiena profesională., Presupune utilizarea la nu mai mult de 20°C peste temperatura ambiantă, dacă nu este menţionat altfel.

Frecvenţa şi durata folosirii

Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel)	:	8 o

Condiţii tehnice şi măsuri

CS135 Măsuri generale aplicabile tuturor activităţilor
Controlaţi orice potenţială expunere folosind măsuri precum sisteme izolate sau închise, unităţi proiectate şi întreţinute corespunzător şi un standard adecvat de ventilaţie generală. Goliţi sistemele şi liniile de transfer înainte de a afecta etanşeitatea. Goliţi şi spălaţi echipamentele, acolo unde este posibil, înainte de efectuarea lucrărilor de întreţinere.

CS136 Procese discontinue la temperaturi ridicate
Asiguraţi ventilaţie cu extragerea aerului la punctele unde apar emisii.

G19 Măsuri generale (substanţe iritante pentru piele)
Nu au fost identificate măsuri specifice.

CS15 Expuneri generale (sisteme închise).
Manipulaţi substanţa în cadrul unui sistem închis.

CS16 Expuneri generale (sisteme deschise).
Nu au fost identificate alte măsuri specifice.

CS2 Eşantionare a procesului
Nu au fost identificate alte măsuri specifice.

CS8 Transferuri în canistre/în loturi
Nu au fost identificate măsuri specifice.

CS14 Transferuri în vrac.
Manipulaţi substanţa în cadrul unui sistem închis.

CS30 Operaţiuni de amestecare (sisteme deschise).
Asiguraţi ventilaţie cu extragerea aerului la punctele unde apar emisii.

CS100 Producţia sau prepararea articolelor prin tabletare, comprimare, extrudare sau peletizare
Nu au fost identificate alte măsuri specifice.

CS6 Umplere a canistrelor şi a recipientelor mici
Nu au fost identificate alte măsuri specifice.

CS36 Activităţi de laborator.
Nu au fost identificate alte măsuri specifice.

CS39 Curăţare şi întreţinere echipamente.
Goliţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.

CS67 Depozitare.
Depozitaţi substanţa în cadrul unui sistem închis.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

CS135 Măsuri generale aplicabile tuturor activităţilor
Acolo unde există potenţial de expunere: Asiguraţi-vă că personalul relevant este informat cu privire la potenţialul expunerii şi cunoaşte acţiunile de bază pentru reducerea la minimum a expunerilor; monitorizaţi eficacitatea măsurilor de control; asiguraţi examinări medicale regulate, după cum este necesar; identificaţi şi implementaţi acţiuni corective.

CS136 Procese discontinue la temperaturi ridicate
Nu au fost identificate alte măsuri specifice.

G19 Măsuri generale (substanţe iritante pentru piele)
Asiguraţi instruirea de bază a angajaţilor astfel încât să prevină / minimizeze expunerile şi să raporteze orice efecte asupra pielii care ar putea să se producă.

CS15 Expuneri generale (sisteme închise).
Nu au fost identificate alte măsuri specifice.

CS16 Expuneri generale (sisteme deschise).
Nu au fost identificate alte măsuri specifice.

CS2 Eşantionare a procesului
Nu au fost identificate alte măsuri specifice.

CS8 Transferuri în canistre/în loturi
Utilizaţi pompe pentru canistre sau turnaţi cu atenţie din container/recipient.

CS14 Transferuri în vrac.
Nu au fost identificate măsuri specifice.

CS30 Operaţiuni de amestecare (sisteme deschise).
Nu au fost identificate alte măsuri specifice.

CS100 Producţia sau prepararea articolelor prin tabletare, comprimare, extrudare sau peletizare
Nu au fost identificate alte măsuri specifice.

CS6 Umplere a canistrelor şi a recipientelor mici
Nu au fost identificate alte măsuri specifice.

CS36 Activităţi de laborator.
Nu au fost identificate alte măsuri specifice.

CS39 Curăţare şi întreţinere echipamente.
Nu au fost identificate alte măsuri specifice.

CS67 Depozitare.
Nu au fost identificate alte măsuri specifice.

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

CS135 Măsuri generale aplicabile tuturor activităţilor
Când există posibilitatea de expunere: asiguraţi-vă că este disponibil echipament de protecţie adecvat, curăţaţi scurgerile de produs şi eliminaţi deşeurile in conformitate cu cerinţele legale.
CS136 Procese discontinue la temperaturi ridicate
Nu au fost identificate alte măsuri specifice.
G19 Măsuri generale (substanţe iritante pentru piele)
Evitaţi contactul direct al pielii cu produsul. Identificaţi suprafeţele potenţiale de contact indirect cu pielea Purtaţi mănuşi (testate conform EN374) dacă este posibil un contact al mâinilor cu substanţa/materialul. Curăţaţi contaminarea/substanţele/materialele scurse/vărsate de îndată ce acestea apar. Îndepărtaţi imediat prin spălare contaminarea pielii.
CS15 Expuneri generale (sisteme închise).
Nu au fost identificate alte măsuri specifice.
CS16 Expuneri generale (sisteme deschise).
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS2 Eşantionare a procesului
Nu au fost identificate alte măsuri specifice.
CS8 Transferuri în canistre/în loturi
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374) şi efectuaţi instruirea la nivel de bază a angajatului.
CS14 Transferuri în vrac.
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS30 Operaţiuni de amestecare (sisteme deschise).
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374) şi efectuaţi instruirea la nivel de bază a angajatului.
CS100 Producţia sau prepararea articolelor prin tabletare, comprimare, extrudare sau peletizare
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS6 Umplere a canistrelor şi a recipientelor mici
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS36 Activităţi de laborator.
Nu au fost identificate alte măsuri specifice.
CS39 Curăţare şi întreţinere echipamente.
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374) şi efectuaţi instruirea la nivel de bază a angajatului.
CS67 Depozitare.
Nu au fost identificate alte măsuri specifice.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:
Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL)/fără efect derivat (DNEL) atunci când sunt implementate măsurile de management al riscurilor (RMM)/condiţiile operaţionale (OC) descrise la secţiunea 2. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efectele iritante asupra pielii. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.
4.2. Mediu înconjurător:

Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).
Rata maximă de caracterizare a riscului pentru emisiile de aer RCRair
0,027
Rata maximă de caracterizare a riscurilor pentru emisiile de ape reziduale RCRwater
0,91

1. Titlu scurt al Scenariului de expunere: 12a - Utilizare drept combustibil sau carburant: Industrial

Stadiul ciclului de viață	:	**IS:** Utilizare în spații industriale
Domeniu de utilizare	:	nu se aplică
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC16:** Utilizarea combustibililor
Categorie de eliberare în mediu	:	**ERC7:** Utilizarea unui fluid funcțional într-un spațiu industrial
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 7.12a.v1
Procese, sarcini, activităţi acoperite	:	Acoperă utilizarea ca şi / ori în combustibil sau carburant (sau aditivi sau componenţi de aditivi pentru combustibil sau carburant) şi include activităţi asociate cu transferul, utilizarea, întreţinerea echipamentelor şi manipularea deşeurilor acestora.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC7, Utilizarea unui fluid funcțional într-un spațiu industrial

Cantitatea folosită

Tonaj pentru utilizare regională	:	3,7 10E6 t/an
Tonaj anual la amplasament	:	1,5 10E6 t/an
Tonaj zilnic maxim la amplasament (kg/zi)	:	5 10E6
Fracţiune de tonaj UE utilizată în regiune	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	0,4
Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
MSafe (tonaj maxim permis la amplasament)	:	5 10E6 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	300 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10

Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,500 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %
Factor de emisie sau de eliberare/degajare: Sol	:	0 %
Note	:	Toţi factorii de eliberare/degajare se referă la eliberarea/degajarea iniţială, inainte de aplicarea măsurilor de management al riscurilor (RMM). Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală.

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepărtare/eliminare de: 95,0 %
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de îndepărtare/eliminare de >= (%):: 98,7 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 74,1 %
Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de sedimentul din apa dulce. Dacă se evacuează la staţia de tratare a apelor menajere uzate, este necesară tratarea suplimentara a apelor reziduale de la amplasament.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	94,9 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	98,7 %
Tratarea nămolului	:	Măsuri organizaţionale pentru prevenirea/limitarea degajărilor de la amplasament: A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Emisiile rezultate din ardere sunt limitate prin măsuri obligatorii de control al emisiilor de evacuare., Emisiile rezultate din ardere sunt avute în vedere în cadrul evaluării regionale a impactului., Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Această substanţă este consumată în timpul utilizării şi nu sunt generate deşeuri ale acesteia.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1 : Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.

PROC2	:	**Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC3	:	**Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC8a	:	**Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate**
PROC8b	:	**Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate**
PROC16	:	**Utilizarea combustibililor**

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid, cu potenţial de generare a aerosolilor
Presiune de vapori	:	Presiunea vaporilor este dată la temperatură şi presiune standard (conditii STP). < 5 hPa
Note	:	Presupune implementarea unui standard de bază adecvat privind igiena profesională., Presupune utilizarea la nu mai mult de 20°C peste temperatura ambiantă, dacă nu este menţionat altfel.

Frecvenţa şi durata folosirii

Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel)	:	8 o

Condiţii tehnice şi măsuri

CS135 Măsuri generale aplicabile tuturor activităţilor
Controlaţi orice potenţială expunere folosind măsuri precum sisteme izolate sau închise, unităţi proiectate şi întreţinute corespunzător şi un standard adecvat de ventilaţie generală. Goliţi sistemele şi liniile de transfer înainte de a afecta etanşeitatea. Goliţi şi spălaţi echipamentele, acolo unde este posibil, înainte de efectuarea lucrărilor de întreţinere.
G19 Măsuri generale (substanţe iritante pentru piele)
Nu au fost identificate alte măsuri specifice.
CS14 Transferuri în vrac.
Nu au fost identificate alte măsuri specifice.
CS8 Transferuri în canistre/în loturi
Nu au fost identificate alte măsuri specifice.
GEST_12I Utilizare drept combustibil/carburant, CS107 (sisteme închise)
Nu au fost identificate alte măsuri specifice.
CS39 Curăţare şi întreţinere echipamente
Goliţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.
CS67 Depozitare.
Manipulaţi substanţa în cadrul unui sistem închis.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

CS135 Măsuri generale aplicabile tuturor activităţilor
Acolo unde există potenţial de expunere: Asiguraţi-vă că personalul relevant este informat cu privire la potenţialul expunerii şi cunoaşte acţiunile de bază pentru reducerea la minimum a expunerilor; monitorizaţi eficacitatea măsurilor de control; asiguraţi examinări medicale regulate, după cum este necesar; identificaţi şi implementaţi acţiuni corective.
G19 Măsuri generale (substanţe iritante pentru piele)
Asiguraţi instruirea de bază a angajaţilor astfel încât să prevină / minimizeze expunerile şi să raporteze orice efecte asupra pielii care ar putea să se producă.
CS14 Transferuri în vrac.
Nu au fost identificate alte măsuri specifice.
CS8 Transferuri în canistre/în loturi
Nu au fost identificate alte măsuri specifice.
GEST_12l Utilizare drept combustibil/carburant, CS107 (sisteme închise)
Nu au fost identificate alte măsuri specifice.
CS39 Curăţare şi întreţinere echipamente
Nu au fost identificate alte măsuri specifice.
CS67 Depozitare.
Nu au fost identificate alte măsuri specifice.

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

CS135 Măsuri generale aplicabile tuturor activităţilor
Când există posibilitatea de expunere: asiguraţi-vă că este disponibil echipament de protecţie adecvat, curăţaţi scurgerile de produs şi eliminaţi deşeurile in conformitate cu cerinţele legale.
G19 Măsuri generale (substanţe iritante pentru piele)
Evitaţi contactul direct al pielii cu produsul. Identificaţi suprafeţele potenţiale de contact indirect cu pielea Purtaţi mănuşi (testate conform EN374) dacă este posibil un contact al mâinilor cu substanţa/materialul. Curăţaţi contaminarea/substanţele/materialele scurse/vărsate de îndată ce acestea apar. Îndepărtaţi imediat prin spălare contaminarea pielii.
CS14 Transferuri în vrac.
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS8 Transferuri în canistre/în loturi
Purtaţi mănuşi corespunzătoare testate conform EN374.
GEST_12l Utilizare drept combustibil/carburant, CS107 (sisteme închise)
Nu au fost identificate alte măsuri specifice.
CS39 Curăţare şi întreţinere echipamente
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS67 Depozitare.
Nu au fost identificate alte măsuri specifice.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:

Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL)/fără efect derivat (DNEL) atunci când sunt implementate măsurile de management al riscurilor (RMM)/condiţiile operaţionale (OC) descrise la secţiunea 2. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efectele iritante asupra pielii. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.
4.2. Mediu înconjurător:
Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).
Rata maximă de caracterizare a riscului pentru emisiile de aer RCRair
0,028
Rata maximă de caracterizare a riscurilor pentru emisiile de ape reziduale RCRwater
0,91

1. Titlu scurt al Scenariului de expunere: 12b - Utilizare drept combustibil sau carburant: Profesional

Stadiul ciclului de viață	:	**PW:** Utilizare larg răspândită de către lucrători profesioniști
Domeniu de utilizare	:	nu se aplică
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC16:** Utilizarea combustibililor
Categorie de eliberare în mediu	:	**ERC9a:** Utilizare larg răspândită a unui fluid funcțional (la interior)
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 9.12b.v1 Scenariul de expunere este, de asemenea, aplicabil ERC9b: Utilizare larg răspândită a unui fluid funcțional (la exterior)
Procese, sarcini, activităţi acoperite	:	Acoperă utilizarea ca şi / ori în combustibil sau carburant (sau aditivi sau componenţi de aditivi pentru combustibil sau carburant) şi include activităţi asociate cu transferul, utilizarea, întreţinerea echipamentelor şi manipularea deşeurilor acestora.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC9a, Utilizare larg răspândită a unui fluid funcțional (la interior)
ERC9b, Utilizare larg răspândită a unui fluid funcțional (la exterior)

Cantitatea folosită

Tonaj pentru utilizare regională	:	6,9 10E6 t/an
Tonaj anual la amplasament (tone/an)	:	3.400
Tonaj zilnic maxim la amplasament (kg/zi)	:	9.400
Fracţiune de tonaj UE utilizată în regiune	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	0,0005
Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
MSafe (tonaj maxim permis la amplasament)	:	69.000 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	365 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,1 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %
Factor de emisie sau de eliberare/degajare: Sol	:	0,001 %
Note	:	Toţi factorii de eliberare/degajare se referă la eliberare/degajare din proces de utilizare cu dispersie largă. Factorii de eliberare/degajare pentru aer şi sol se referă exclusiv la utilizarea regională. Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală.

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepartare/eliminare de: nu se aplică:
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de îndepărtare/eliminare de >= (%):: 62,9 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 0 %
Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de elementul apă dulce. Dacă se evacuează la staţia de tratare a apelor menajere uzate, nu este necesară tratarea apelor reziduale de la amplasament.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	94,9 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	94,9 %
Tratarea nămolului	:	Măsuri organizaţionale pentru prevenirea/limitarea degajărilor de la amplasament: A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Emisiile rezultate din ardere sunt limitate prin măsuri obligatorii de control al emisiilor de evacuare., Emisiile rezultate din ardere sunt avute în vedere în cadrul evaluării regionale a impactului., Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Această substanţă este consumată în timpul utilizării şi nu sunt generate deşeuri ale acesteia.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1 : Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.

PROC2 : Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente

PROC3 : Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente

PROC8a : Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate

PROC8b : Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate

PROC16 : Utilizarea combustibililor

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid, cu potenţial de generare a aerosolilor
Presiune de vapori	:	Presiunea vaporilor este dată la temperatură şi presiune standard (conditii STP). < 5 hPa
Note	:	Presupune implementarea unui standard de bază adecvat privind igiena profesională., Presupune utilizarea la nu mai mult de 20°C peste temperatura ambiantă, dacă nu este menţionat altfel.

Frecvenţa şi durata folosirii

Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel)	:	8 o

Condiţii tehnice şi măsuri

CS135 Măsuri generale aplicabile tuturor activităţilor
Controlaţi orice potenţială expunere folosind măsuri precum sisteme izolate sau închise, unităţi proiectate şi întreţinute corespunzător şi un standard adecvat de ventilaţie generală. Goliţi sistemele şi liniile de transfer înainte de a afecta etanşeitatea. Goliţi şi spălaţi echipamentele, acolo unde este posibil, înainte de efectuarea lucrărilor de întreţinere.
G19 Măsuri generale (substanţe iritante pentru piele)
Nu au fost identificate alte măsuri specifice.
CS14 Transferuri în vrac.
Nu au fost identificate alte măsuri specifice.
CS8 Transferuri în canistre/în loturi
Utilizaţi pompe pentru canistre sau turnaţi cu atenţie din container.
CS507 Activităţi de realimentare cu combustibil/carburant
Nu au fost identificate alte măsuri specifice.
GEST_12I Utilizare drept combustibil/carburant, CS107 (sisteme închise)
Asiguraţi un standard adecvat de ventilaţie generală (nu mai puţin de 3 - 5 schimburi de aer pe oră) sau Asiguraţi-vă că operaţiunea este efectuată în spaţiul exterior (în aer liber).
CS39 Curăţare şi întreţinere echipamente.
Goliţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.
CS67 Depozitare.
Depozitaţi substanţa în cadrul unui sistem închis.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

CS135 Măsuri generale aplicabile tuturor activităţilor
Acolo unde există potenţial de expunere: Asiguraţi-vă că personalul relevant este informat cu privire la potenţialul expunerii şi cunoaşte acţiunile de bază pentru reducerea la minimum a expunerilor; monitorizaţi eficacitatea măsurilor de control; asiguraţi examinări medicale regulate, după cum este necesar; identificaţi şi implementaţi acţiuni corective.
G19 Măsuri generale (substanţe iritante pentru piele)
Asiguraţi instruirea de bază a angajaţilor astfel încât să prevină / minimizeze expunerile şi să raporteze orice efecte asupra pielii care ar putea să se producă.
CS14 Transferuri în vrac.
Nu au fost identificate alte măsuri specifice.
CS8 Transferuri în canistre/în loturi
Nu au fost identificate alte măsuri specifice.
CS507 Activităţi de realimentare cu combustibil/carburant
Nu au fost identificate alte măsuri specifice.
GEST_12I Utilizare drept combustibil/carburant, CS107 (sisteme închise)
Nu au fost identificate alte măsuri specifice.
CS39 Curăţare şi întreţinere echipamente.
Nu au fost identificate alte măsuri specifice.
CS67 Depozitare.
Nu au fost identificate alte măsuri specifice.

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

CS135 Măsuri generale aplicabile tuturor activităţilor
Când există posibilitatea de expunere: asiguraţi-vă că este disponibil echipament de protecţie adecvat, curăţaţi scurgerile de produs şi eliminaţi deşeurile in conformitate cu cerinţele legale.
G19 Măsuri generale (substanţe iritante pentru piele)
Evitaţi contactul direct al pielii cu produsul. Identificaţi suprafeţele potenţiale de contact indirect cu pielea Purtaţi mănuşi (testate conform EN374) dacă este posibil un contact al mâinilor cu substanţa/materialul. Curăţaţi contaminarea/substanţele/materialele scurse/vărsate de îndată ce acestea apar. Îndepărtaţi imediat prin spălare contaminarea pielii.
CS14 Transferuri în vrac.
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS8 Transferuri în canistre/în loturi
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS507 Activităţi de realimentare cu combustibil/carburant
Purtaţi mănuşi corespunzătoare testate conform EN374.
GEST_12I Utilizare drept combustibil/carburant, CS107 (sisteme închise)
Nu au fost identificate alte măsuri specifice.
CS39 Curăţare şi întreţinere echipamente.
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374) şi efectuaţi instruirea la nivel de bază a angajatului.
CS67 Depozitare.
Nu au fost identificate alte măsuri specifice.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:

Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL) / fără efect derivat (DNEL) atunci când sunt implementate Măsurile de Management al Riscului (RMM)/Condiţiile Operaţionale (OC) descrise la Secţiunea 2. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efectele iritante asupra pielii. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.
4.2. Mediu înconjurător:
Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).
Rata maximă de caracterizare a riscului pentru emisiile de aer RCRair
0,024
Rata maximă de caracterizare a riscurilor pentru emisiile de ape reziduale RCRwater
0,077

1. Titlu scurt al Scenariului de expunere: 12c - Utilizare drept combustibil sau carburant - Consumatori

Stadiul ciclului de viață	:	**C:** Utilizare de către consumatori
Domeniu de utilizare	:	nu se aplică
Categorie produs	:	**PC13:** Combustibili/carburanţi
Categorie de eliberare în mediu	:	**ERC9a:** Utilizare larg răspândită a unui fluid funcțional (la interior) **ERC9b:** Utilizare larg răspândită a unui fluid funcțional (la exterior)
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 9.12c.v1
Procese, sarcini, activităţi acoperite	:	Acoperă utilizarea de către consumatori a combustibililor/carburanţilor.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC9a, Utilizare larg răspândită a unui fluid funcțional (la interior)

ERC9b, Utilizare larg răspândită a unui fluid funcțional (la exterior)

Caracteristici produs

Cantitatea folosită

Tonaj pentru utilizare regională	:	19 10E6 t/an
Tonaj anual la amplasament (tone/an)	:	9.500
Tonaj zilnic maxim la amplasament (kg/zi)	:	26.000
Fracţiune de tonaj UE utilizată în regiune	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	0,0005
Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
MSafe (tonaj maxim permis la amplasament)	:	180.000 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	365 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,1 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %

Factor de emisie sau de eliberare/degajare:	:	0,001 %
Sol		
Note	:	Toţi factorii de eliberare/degajare se referă la eliberare/degajare din proces de utilizare cu dispersie largă. Factorii de eliberare/degajare pentru aer şi sol se referă exclusiv la utilizarea regională. Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	94,9 %
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Emisiile rezultate din ardere sunt limitate prin măsuri obligatorii de control al emisiilor de evacuare., Emisiile rezultate din ardere sunt avute în vedere în cadrul evaluării regionale a impactului., Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Această substanţă este consumată în timpul utilizării şi nu sunt generate deşeuri ale acesteia.

2.2 Scenariu de contribuţie pentru controlul expunerii consumatorului pentru:

PC13 : Combustibili/carburanţi

Caracteristici produs

Concentraţia substanţei în amestec/articol	:	Dacă nu este menţionat altfel, se referă la concentraţii de până la 100%
Formă fizică (în momentul folosirii)	:	Lichid
Presiune de vapori	:	Presiune de vapori > 0,1 hPa
Note	:	Dacă nu se specifică altfel, acoperă cantităţile de utilizare de până la 37500 g [ConsOC2]; acoperă suprafaţa de contact cu pielea de până la 420 cm2 [ConsOC5] Dacă nu este menţionat altfel, se referă la frecvenţa de utilizare de până la 0,143 ori/zi (ConsOC4); Se referă la expunerea de până la 2 ore/caz (ConsOC14); Dacă nu este menţionat altfel, presupune utilizarea la temperatura ambiantă. Presupune utilizarea într-o cameră de 20 m3. Presupune utilizarea cu ventilaţie obişnuită.

Alte condiţii de exploatare date care afectează expunerea consumatorilor

Activitatea (în aer liber/în spaţii interioare)	:	PC13:Carburanţi--Lichid - subcategorii adăugate: Alimentare cu carburanţi a autovehiculelor
Volum încapere	:	100 m3
Note	:	Dacă nu este menţionat altfel, se referă la concentraţii până la 100%., Se referă la utilizarea de până la 52 zile/an., Se referă la utilizarea de până la o dată/zi de utilizare., Se referă la suprafeţe de contact cu pielea de până la 210 cm2., Pentru fiecare caz de utilizare, se referă la cantităţi utilizate de până la 37500 g., Se referă la utilizarea în aer liber., Acoperă utilizarea într-o încăpere cu dimensiunea de 100m3; , Pentru fiecare caz de utilizare, se referă la expunerea de până la 0,05 ore/caz.
Activitatea (în aer liber/în spaţii interioare)	:	PC13:Combustibili--Lichid -: combustibil pentru încălzirea locuinţelor
Volum încapere	:	100 m3

Note	:	Dacă nu este menţionat altfel, se referă la concentraţii până la 100%., Se referă la utilizarea de până la 120 zile/an., Se referă la utilizarea de până la o dată/zi de utilizare., Se referă la suprafeţe de contact cu pielea de până la 210.00 cm2., Pentru fiecare caz de utilizare, se referă la cantităţi utilizate de până la 1500 g., Acoperă utilizarea în condiţii de ventilare casnică tipică., Acoperă utilizarea într-o încăpere cu dimensiunea de 20m3; , Pentru fiecare caz de utilizare, se referă la expunerea de până la 0,03 ore/caz.
Activitatea (în aer liber/în spaţii interioare)	:	PC13:Carburanţi--Lichid - subcategorii adăugate: Echipament pentru grădină - Utilizare
Volum încapere	:	100 m3
Note	:	Dacă nu este menţionat altfel, se referă la concentraţii până la 100%., Se referă la utilizarea de până la 26 zile/an., Se referă la utilizarea de până la o dată/zi de utilizare., Pentru fiecare caz de utilizare, se referă la cantităţi utilizate până la 750 g., Se referă la utilizarea în aer liber., Acoperă utilizarea într-o încăpere cu dimensiunea de 100m3; , Pentru fiecare caz de utilizare, se referă la expunerea de până la 2 ore/caz.
Activitatea (în aer liber/în spaţii interioare)	:	PC13:Carburanţi--Lichid (subcategorii adăugate): Echipament pentru grădină - Alimentare cu carburanţi
Volum încapere	:	34 m3
Note	:	Dacă nu este menţionat altfel, se referă la concentraţii până la 100%., Se referă la utilizarea de până la 26 zile/an., Se referă la utilizarea de până la o dată/zi de utilizare., Se referă la suprafeţe de contact cu pielea de până la 420 cm2., Pentru fiecare caz de utilizare, se referă la cantităţi utilizate până la 750 g., Se referă la utilizarea într-un garaj pentru o singură maşină (34 m3) cu folosirea ventilaţiei obişnuite., Acoperă utilizarea într-o încăpere cu dimensiunea de 34m3; , Pentru fiecare caz de utilizare, se referă la expunerea de până la 0,03 ore/caz.

Condiţii şi măsuri legate de protecţia consumatorului (ex. sfaturi de comportament, protecţie personală şi igienă)

Mod de aplicare	:	PC13:Carburanţi--Lichid - subcategorii adăugate: Alimentare cu carburanţi a autovehiculelor
Note	:	Nu sunt identificate măsuri specifice de management al riscurilor (RMM) în afara acelor condiţii operaţionale (OC) stabilite
Mod de aplicare	:	PC13:Combustibili--Lichid -: combustibil pentru încălzirea locuinţelor
Note	:	Nu sunt identificate măsuri specifice de management al riscurilor (RMM) în afara acelor condiţii operaţionale (OC) stabilite
Mod de aplicare	:	PC13:Carburanţi--Lichid - subcategorii adăugate: Echipament pentru grădină - Utilizare
Note	:	Nu sunt identificate măsuri specifice de management al riscurilor (RMM) în afara acelor condiţii operaţionale (OC) stabilite
Mod de aplicare	:	PC13:Carburanţi--Lichid (subcategorii adăugate): Echipament pentru grădină - Alimentare cu carburanţi
Note	:	Nu sunt identificate măsuri specifice de management al riscurilor (RMM) în afara acelor condiţii operaţionale (OC) stabilite

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru a estima expunerile consumatorilor, în conformitate cu conţinutul raportului ECETOC nr. 107 şi cu Capitolul R15 din IR&CSA TGD. În situaţiile în care determinanţii expunerii diferă de aceste surse, atunci aceştia sunt indicaţi.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:
Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL) / fără efect derivat (DNEL) atunci când sunt implementate Măsurile de Management al Riscului (RMM)/Condiţiile Operaţionale (OC) descrise la Secţiunea 2. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente.
4.2. Mediu înconjurător:
Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului.
Rata maximă de caracterizare a riscului pentru emisiile de aer RCRair
0,024
Rata maximă de caracterizare a riscurilor pentru emisiile de ape reziduale RCRwater
0,088

SECTIUNEA 1. IDENTIFICAREA SUBSTANŢEI/AMESTECULUI ŞI A SOCIETĂŢII/ÎNTREPRINDERII

1.1 Element de identificare a produsului

Denumire comercială	:	Combustibil naval RMG 380 - max. 0,5% S

1.2 Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizări relevante identificate

Utilizări relevante	:	Utilizarea la motoare de nave autorizate în acest scop.
Utilizari identificate conform raportului de securitate chimică (CSR)	:	Producere 01-Producerea substanţei Formulare sau reambalare 02 Formularea şi (re)ambalarea substanţelor şi amestecurilor Utilizare în spaţii industriale 01a - Distribuţia substanţei 12a - Utilizare drept combustibil sau carburant: Industrial Utilizare larg răspândită de către lucrători profesionişti 12b - Utilizare drept combustibil sau carburant: Profesional

Pentru detalii privind utilizările, a se vedea Anexa

Restricţii recomandate privind utilizarea

Utilizări contraindicate	:	Sunt contraindicate utilizarile în scop profesional ale substantelor din categoria combustibili grei (HFO) în acoperiri, si aplicaţii rutiere si în constructii., Din motive care ţin de protecţia sănătăţii umane, aceste utilizări nu mai sunt susţinute în dosarele de înregistrare.

1.3 Detalii privind furnizorul fişei cu date de securitate

Adresă completă **Producător, importator, distribuitor**	:	OMV Petrom S.A. Strada Coralilor Nr. 22 Sector 1 013329 Bucureşti („Petrom City") Romania
Telefon	:	+40 (0) 725 16 16 16
Adresa de e-mail a persoanei competente	:	info.msds@petrom.com

1.4 Număr de telefon care poate fi apelat în caz de urgenţă

+40 (0) 725 16 16 16	Linia de urgenţă / tarif normal / 24/7 / română / engleză
+40 21 318 36 06	Biroul pentru Regulamentul Sanitar International si Informare Toxicologica / tarif normal; L-V; 8:00-15:00; limba română

SECTIUNEA 2. IDENTIFICAREA PERICOLELOR

2.1 Clasificarea substanţei sau a amestecului

Clasificare (Regulamentul (CE) Nr. 1272/2008)

Acute Tox. 4 H332, Carc. 1B H350, Repr. 2 H361d, STOT RE 2 H373, Aquatic Acute 1 H400, Aquatic Chronic 1 H410,
Pentru textul complet al frazelor de pericol H menţionate în această Secţiune şi metodele de clasificare, consultaţi Secţiunea 16.

2.2 Elemente pentru etichetă

Etichetare (Regulamentul (CE) Nr. 1272/2008)

Pictograme de pericol :



Cuvânt de avertizare : Pericol

Fraze de pericol :
H350 Poate provoca cancer.
H332 Nociv în caz de inhalare.
H361d Susceptibil de a dăuna fătului
H373 Poate provoca leziuni ale organelor (sânge, timus, ficat) în caz de expunere prelungită sau repetată.
H410 Foarte toxic pentru viața acvatică având efecte de lungă durată.

Fraze de precauţie :
Prevenire:
P201 Procuraţi instrucţiuni speciale înainte de utilizare.
P260 Nu inspiraţi vaporii.
P273 Evitaţi dispersarea în mediu.
P280 Purtaţi mănuşi de protecţie/îmbrăcăminte de protecţie/echipament de protecţie a ochilor/ echipament de protecţie a feţei.
Interventie:
P308 + P313 ÎN CAZ DE expunere sau de posibilă expunere: consultaţi medicul.
Eliminare:
P501 Eliminaţi conţinutul/recipientele conform prevederilor legale în vigoare

Etichetare suplimentară:

EUH 066 Expunerea repetată poate provoca uscarea sau crăparea pielii.
Restrictionat la utilizari profesionale din cauza clasificarii cancerigen, categoria 1B, cu exceptia utilizarilor drept carburant/combustibil.

2.3 Alte pericole

Note : De regulă, produsul este prelucrat în stare încălzită (până la 90 °C).
Produsul este livrat si transportat la temperatura mai mica de 60 °C
Contactul cu acesta poate provoca arsuri.
Pericol ridicat de alunecare ca urmare a deversării accidentale a produsului.
Produsul nu contine constituenti PBT inclusi în lista candidatelor SVHC în concentratii mai mari de 0,1%.

SECTIUNEA 3. COMPOZIŢIE/INFORMAŢII PRIVIND COMPONENŢII

3.1 Substanţe

Nu se aplică

3.2 Amestecuri

Natura chimică	hidrocarburi

Ingrediente periculoase

Denumirea substanţei chimice	Număr Index Nr. CAS Nr. EINECS/Nr. ELINCS (Lista Europeană a Substanţelor Chimice Notificate) Număr de înregistrare	Clasificare (Regulamentul (CE) Nr. 1272/2008)	Concentraţie [% m/m]
distilate sub vid (petrol), reziduuri de petrol	649-034-00-3 68955-27-1 273-263-4 01-2119489711-31-0030	Acute Tox. 4; H332 Repr. 2; H361d Carc. 1B; H350 STOT RE 2; H373 Aquatic Acute 1; Factor de multiplicare = 1; H400 Aquatic Chronic 1; Factor de multiplicare = 1; H410	30,00 - 100,00
motorină grea (petrol), distilare sub vid	649-009-00-7 64741-57-7 265-058-3 01-2119487294-29-0069	Acute Tox. 4; H332 Repr. 2; H361d Carc. 1B; H350 STOT RE 2; H373 Aquatic Acute 1; Factor de multiplicare = 1; H400 Aquatic Chronic 1; Factor de multiplicare = 1; H410	40,00 - 100,00
distilate grele (petrol), cracare catalitică	649-010-00-2 64741-61-3 265-063-0 01-2119486893-20-0009	Acute Tox. 4; H332 Asp. Tox. 1; H304 Repr. 2; H361d Carc. 1B; H350 STOT RE 2; H373 Aquatic Acute 1; Factor de multiplicare = 1; H400 Aquatic Chronic 1; Factor de multiplicare = 1; H410	0,00 - 10,00
distilate uşoare (petrol), cracare catalitică	649-435-00-3 64741-59-9 265-060-4 01-2119489734-23-0045	Acute Tox. 4; H332 Skin Irrit. 2; H315 Asp. Tox. 1; H304 Carc. 1B; H350 STOT RE 2; H373 Aquatic Acute 1; Factor de multiplicare = 1; H400 Aquatic Chronic 1; Factor de multiplicare = 1; H410 Flam. Liq. 3; H226	0,00 - 10,00

Nu reprezintă specificaţie a produsului / procente greutate max. posibile
Pentru textul complet al frazelor de pericol H menţionate în această Secţiune şi metodele de clasificare, consultaţi Secţiunea 16.

SECTIUNEA 4. MĂSURI DE PRIM AJUTOR

4.1 Descrierea măsurilor de prim ajutor

Indicaţii generale	:	Întotdeauna evaluaţi condiţiile de securitate de la faţa locului, înainte de a încerca să salvaţi victimele şi a acorda primul ajutor. Este necesară protecţia proprie a persoanelor care acordă măsurile de prim ajutor. Întotdeauna solicitaţi ajutor, înainte de a ajuta victima.
Inhalare	:	După inhalarea accidentală a vaporilor, persoana (persoanele) afectată (afectate) trebuie transportată (transportate) la aer curat. Menţineţi victima la căldură şi în poziţie de repaus. Dacă victima este conştientă, aşezaţi-o în poziţia de recuperare. (în poziție verticală sau înclinat ușor în față în poziție șezând). Dacă victima este inconştientă şi nu respiră: asiguraţi-vă că nu există obstrucţii ale respiraţiei şi dispuneţi administrarea respiraţiei artificiale de către personal instruit. Dacă este necesar, aplicaţi masaj cardiac extern şi cereţi sfatul medicului. Dacă victima este inconştientă şi respiră: aşezaţi-o în poziţia de recuperare. Administraţi oxigen dacă este necesar. Solicitaţi asistenţă medicală dacă respiraţia continuă să fie dificilă. Dacă se suspectează inhalarea de H2S (hidrogen sulfurat): Personalul salvator trebuie să poarte măşti de oxigen, centură şi frânghie de siguranţă şi să respecte procedurile de salvare. Transportaţi victima la aer curat cât mai repede posibil. Iniţiaţi imediat respiraţia artificială dacă respiraţia s-a oprit. Poate fi utilă administrarea de oxigen. Solicitaţi sfatul medicului pentru tratamentul ulterior.
Contact cu pielea	:	Îndepărtaţi îmbrăcămintea contaminată, încălţămintea contaminată şi eliminaţi-le în siguranţă. Spălaţi zona afectată cu apă şi săpun. (10 până la 15 minute). Nu utilizaţi niciodată benzină, kerosen sau alţi solvenţi pentru spălarea pielii contaminate. Solicitati ingrijire medicala daca apare iritatia, inflamarea sau inrosirea pielii. Atunci când utilizaţi echipamente de înaltă presiune, se poate produce injectarea produsului. Dacă se produc leziuni la presiuni mari, solicitaţi imediat asistenţă medicală profesionistă. Nu aşteptaţi să apară simptomele. În cazul arsurilor termice minore, răcoriţi arsura. Ţineţi zona arsă sub un jet de apă rece timp de cel puţin cinci minute sau până când durerea scade în intensitate. Trebuie evitată hipotermia corpului. Nu aplicaţi gheaţă pe arsură. Îndepărtaţi cu atenţie hainele neaderente. NU încercaţi să îndepărtaţi porţiuni de îmbrăcăminte lipite de pielea arsă, ci tăiaţi în jurul acestora. Cereţi sfatul medicului în toate cazurile de arsuri grave.
Contact cu ochii	:	După contactul cu ochii clătiţi timp de 10-15 minute, ţinând pleoapele deschise cu jet de apă sau cu soluţie din recipientul pentru spălarea ochilor. Îndepărtaţi lentilele de contact, dacă sunt prezente şi sunt uşor de scos. Continuaţi clătirea. Dacă se produc şi persistă iritaţii, vedere înceţoşată sau umflături, solicitaţi recomandări medicale de la un specialist. Dacă produsul fierbinte este împroşcat în ochi, acesta trebuie răcit imediat pentru a disipa căldura sub un jet de apă rece. Asiguraţi imediat un consult şi un tratament medical specializat pentru victimă.
Ingerare, Absorbţie substanţă în plămâni	:	Nu induceţi voma. Solicitaţi asistenţă medicala. Clătiţi gura cu apă dacă persoana este complet conştientă şi solicitaţi imediat asistenţă medicală. Nu administraţi nimic pe gură unei persoane inconştiente.

4.2 Cele mai importante simptome şi efecte, atât acute cât şi întârziate

Simptome	:	Iritarea căilor respiratorii din cauza expunerii excesive la fum, ceață sau expunerea la vapori. Piele uscată, iritație în cazul expunerii repetate sau prelungite. Uşoară iritaţie oculară (nespecific). Poate cauza arsuri în caz de contact cu produsul la temperaturi înalte. Prin ingestie se preconizează puţine simptome sau niciun simptom. În acest caz, s-ar putea produce greaţă şi diaree.
Efecte	:	Prin inhalare: iritația nasului și a tractului respirator. În caz de contact cu pielea: poate provoca iritatie usoară. În caz de contact cu ochii: poate provoca iritatie reversibilă usoară.

4.3 Indicaţii privind orice fel de asistenţă medicală imediată şi tratamente speciale necesare

Tratament	:	Dacă este necesar, solicitaţi spitalizarea persoanei. După înghiţirea unor cantităţi mai mari de 1-2 ml/kg greutate corporală este necesară administrarea de cărbune activ (aproximativ 50 g) şi spitalizarea persoanei. În cazul unei stări puternice de agitaţie, este necesară sedarea persoanei (la indicaţia medicului).

SECTIUNEA 5. MĂSURI DE COMBATERE A INCENDIILOR

5.1 Mijloace de stingere a incendiilor

Mijloace de stingere corespunzătoare	:	Dacă focarul de incendiu este mic: pulbere de stingere, spumă (numai personal special instruit) aeromecanică sau bioxid de carbon. Ceaţă de apă (numai personal special instruit); Alte gaze inerte (în conformitate cu reglementările); Nisip sau pământ. În cazul unui focar de incendiu extins: spumă
Mijloace de stingere necorespunzătoare	:	Nu utilizati jeturi de apă directe pe produsul ce arde; ar putea provoca împroscarea si răspândirea focului. Se va evita utilizarea simultană de spumă şi apă pe aceeaşi suprafaţă deoarece apa distruge spuma.

5.2 Pericole speciale cauzate de substanţa sau amestecul în cauză

Pericol specific din cauza substanței sau amestecului, din cauza produselor de combustie sau din cauza gazelor generate prin ardere.	:	Această substanţă pluteşte şi se poate reaprinde la suprafaţa apei. Produsul evaporat este mai greu decât aerul şi se acumulează la nivelul solului. În amestec cu aerul, vaporii pot forma un amestec exploziv. Prevenirea pătrunderii în canalizare şi în subsoluri. Prevenirea pătrunderii în sol şi în ape. Combustia incompletă poate genera un amestec complex un amestec complex de particule solide şi lichide aeropurtate şi gaze, inclusiv monoxid de carbon, H2S, SOx (oxizi de sulf) sau acid sulfuric şi compuşi organici şi anorganici neidentificati.

5.3 Recomandări destinate pompierilor

Echipament special de protecţie	:	În cazul unui incendiu de proporţii sau în spaţiile închise şi insuficient aerisite, purtaţi îmbrăcăminte de protecţie ignifugă şi chimică completă şi un aparat de respirat autonom (SCBA) cu o mască pentru întreaga faţă acţionat în modul de presiune pozitivă.

Informaţii suplimentare	:	Răcirea imediată a recipientelor şi a ambalajelor din apropiere cu apă pulverizată, şi, dacă este posibil, îndepărtarea acestora din zona de pericol. Reziduurile de ardere şi apa contaminată utilizată la stingerea incendiilor trebuie eliminate conform prevederilor impuse de autorităţile locale.

SECTIUNEA 6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1 Precauţii personale, echipament de protecţie şi proceduri de urgenţă

Precauţii pentru personal	:	Se acţionează din aceeaşi direcţie cu direcţia vântului (atenţie la schimbarea direcţiei vântului). Identificarea şi închiderea zonei de pericol. Atunci când se suspectează sau se demonstrează prezenţa unor cantităţi periculoase de H2S în jurul produsului vărsat, pot fi justificate acţiuni suplimentare sau speciale, inclusiv restricţionări ale accesului, utilizarea de echipamente speciale de protecţie, proceduri speciale şi instruirea personalului. Ţineţi personalul neimplicat la distanţă de zona deversării. Alertaţi personalul de urgenţă. Aerisirea corespunzătoare a încăperilor contaminate. Evitaţi contactul direct cu materialul eliberat. Exceptând deversările de mică amploare: Fezabilitatea oricăror acţiuni trebuie întotdeauna evaluată şi avizată, dacă este posibil, de o persoană competentă instruită responsabilă cu gestionarea situaţiei de urgenţă. În cazul unei emisii de amploare, alertaţi locuitorii aflaţi în direcţia de bătaie a vântului. Eliminaţi toate sursele de aprindere dacă acest lucru prezintă siguranţă (de exemplu, electricitate, scântei, incendii, flăcări intermitente). Echipament de protectie individuală pentru situatii de urgentă. Deversări de mică amploare: hainele de lucru antistatice normale sunt, de obicei, suficiente. Deversări de amploare: costum pentru întregul corp din material antistatic şi rezistent la substanţe chimice. dacă este necesar, termorezistent şi izolant termic. Mănuşi de lucru care asigură rezistenţă adecvată la substanţe chimice, în special la hidrocarburi aromatice. Notă: mănuşile din PVA (alcool polivinilic) nu sunt impermeabile şi nu sunt potrivite pentru utilizare în caz de urgenţă. Dacă este posibil sau se anticipează contactul cu produsul fierbinte, mănuşile trebuie să fie termorezistente şi izolate termic. Protecţie respiratorie: O mască de protecţie obişnuită sau pentru întreaga faţă cu filtru(e) de compuşi organici (şi, după caz, de H2S). se poate utiliza un aparat de respirat autonom (SCBA) în funcţie de extinderea deversării şi de gradul prognozat de expunere. Dacă situaţia nu poate fi evaluată complet sau dacă este posibilă lipsa oxigenului, trebuie utilizate doar aparate SCBA. Cască de protectie. Incăltăminte de protecţie antistatică nederapantă. Dacă este necesar, termorezistente. Ochelari de protecţie şi/sau mască de protecţie a feţei, dacă este posibil(ă) sau se anticipează stropirea sau contactul cu ochii.

6.2 Precauţii pentru mediul înconjurător

Precauţii pentru mediul înconjurător	:	Etanşarea punctului de scurgere. Prevenirea scurgerii în canalizare, în apele de suprafaţă şi în apa din pânza freatică prin realizarea unor diguri din nisip, respectiv pământ sau prin alte măsuri de îndiguire. În cazul unei scurgeri în apele de suprafaţă, în reţeaua de canalizare sau pe/în sol este necesară informarea autorităţilor competente. Lăsaţi produsul fierbinte să se răcească natural. Deversările de amploare pot fi acoperite atent cu spumă, dacă este disponibilă, pentru a limita riscul de incendiu. Nu utilizaţi jeturi directe. Asigurati ventilatia adecvata in interiorul cladirilor sau in spatii inchise. Absorbiţi produsul vărsat cu materiale necombustibile adecvate.

6.3 Metode şi materiale pentru izolarea incendiilor şi pentru curăţenie

Procedee adecvate pentru curăţare sau absorbţie sau izolare	:	Aspirarea /evacuarea prin pompare a cantităţilor mari. Colectarea cantităţilor reziduale cu materiale absorbante neinflamabile, de exemplu nisip, pământ sau liant pentru ulei, respectiv îndiguirea acestora. Colectarea deşeurilor în containere etichetate adecvat pentru deşeuri periculoase şi eliminarea ulterioară conform normelor şi legislaţiei în vigoare. În caz de contaminare a solului, îndepărtaţi solul contaminat şi trataţi în conformitate cu reglementările locale. Utilizarea agenţilor de dispersie trebuie avizată de un expert şi, dacă este necesar, aprobată de autorităţile locale.
Procedee neadecvate pentru curăţare sau absorbţie sau izolare	:	Fără date disponibile

6.4 Trimitere la alte secţiuni

A se vedea şi Secţiunea 8 (Controale ale expunerii/Protecţia personală) şi Secţiunea 13 (Consideraţii privind eliminarea).

SECTIUNEA 7. MANIPULARE ŞI DEPOZITARE

7.1 Precauţii pentru manipularea în condiţii de securitate

Recomandări pentru manipularea în condiţii de securitate	:	Procuraţi instrucţiuni speciale înainte de utilizare. Asiguraţi-vă că toate reglementările relevante privind facilităţile de manipulare şi depozitare a produselor inflamabile sunt respectate. Trebuie efectuată o evaluare specifică a riscurilor de inhalare cauzate de prezenţa H2S în spaţiile libere din rezervoare, spaţiile închise, reziduurile de produse, deşeurile din rezervoare şi apele reziduale, precum şi a diseminărilor accidentale pentru a putea determina măsurile de control potrivite situaţiei locale. Se va utiliza numai în echipamente închise. Aspirarea vaporilor la locul de emisie. În spaţiile libere ale rezervoarelor de depozitare a produsului se poate acumula hidrogen sulfurat (H2S), putând atinge concentraţii potenţial periculoase. Dacă este posibil, se va face aerisirea încăperii la nivelul solului. Evitarea contactului cu pielea, cu ochii şi cu îmbrăcămintea. Trebuie luate măsuri de protecţie pentru a evita arsurile cutanate în timpul manipulării produsului fierbinte. Utilizaţi echipamente individuale de protecţie adecvate după cum este necesar. Evitaţi scurgerea produsului. A se utiliza şi depozita doar în exterior sau într-un spaţiu bine aerisit.
Recomandări de prevenire a incendiului şi a exploziei	:	Produsul evaporat este mai greu decât aerul şi se acumulează la nivelul solului. Aveţi grijă la acumularea în puţuri şi spaţiile închise. A nu se inspira aburi/ceaţă/vapori. În amestec cu aerul, vaporii pot forma un amestec exploziv. Prevenirea pătrunderii în canalizare şi în subsoluri. Prevenirea pătrunderii în sol şi în ape. Adoptaţi măsuri împotriva încărcării electrostatice. Luaţi măsuri de precauţie împotriva electricităţii statice. Containere, rezervoare şi echipamente de transfer/colectare legate la pământ/fixate Legaţi la centura de împământare toate echipamentele de lucru utilizate. A se feri de sursele de aprindere.

A se vedea şi Secţiunea 8 (Controale ale expunerii/Protecţia personală) şi Secţiunea 13 (Consideraţii privind eliminarea).

7.2 Condiţii de depozitare în condiţii de securitate, inclusiv eventuale incompatibilităţi

Cerinţe pentru spaţiile de depozitare şi containere	:	Dispunerea zonei de depozitare, construcţia rezervoarelor, echipamentele şi procedurile de operare trebuie să respecte legislaţia europeană, naţională sau locală relevantă. Instalaţiile de depozitare trebuie proiectate cu împrejmuiri adecvate pentru a preveni poluarea solului şi apelor în caz de scurgeri sau deversări. Recipientele vor fi păstrate închise etanş şi într-un loc bine ventilat. Este permisă numai utilizarea unor recipiente staţionare autorizate. Toate rezervoarele şi echipamentele se vor lega la centura de împământare. Depozitaţi într-un spaţiu corespunzător. De regulă este necesară existenţa unui spaţiu de depozitare etanşat şi rezistent. Materiale recomandate: Pentru containere sau căptuşeala containerelor folosiţi oţel cu conţinut scăzut de carbon (moale) sau oţel inoxidabil. Materiale nepotrivite: Anumite materiale sintetice pot fi nepotrivite pentru containere sau căptuşeala containerelor, în funcţie de specificaţiile şi utilizarea materialului. Compatibilitatea trebuie verificată împreună cu producătorul. Containerele goale pot conţine reziduuri de produse combustibile. Nu sudaţi, lipiţi, perforaţi, tăiaţi sau incineraţi containerele goale, cu excepţia cazului în care au fost curăţate corespunzător.
Informaţii suplimentare asupra condiţiilor de depozitare	:	Evitarea efectului termic. A se feri de sursele de aprindere. Curăţarea, inspectarea şi întreţinerea structurii interne a rezervoarelor de depozitare trebuie efectuate doar de personal calificat şi echipat corespunzător, conform prevederilor din reglementările naţionale, locale sau ale companiei. În spaţiile libere ale rezervoarelor de depozitare a produsului se poate acumula hidrogen sulfurat (H2S), putând atinge concentraţii potenţial periculoase. Înainte de a pătrunde în rezervoarele de depozitare şi de a iniţia orice operaţiune într-o zonă închisă, verificaţi conţinutul de oxigen, nivelul de hidrogen sulfurat (H2S) şi inflamabilitatea din atmosferă.
Măsuri de protecţie în cazul depozitării în comun	:	A nu se depozita împreună cu substanţe periculoase explozive, gaze, alte substanţe periculoase potential explozive, substanţe periculoase puternic oxidante, azotat de amoniu şi produse care conţin azotat de amoniu, peroxizi organici şi substanţe periculoase auto-reactive, substanţe infecţioase sau substanţe radioactive. Restricţii la depozitarea împreună cu substanţe periculoase piroforice sau care se autoîncălzesc, substanţe periculoase care degajă gaze inflamabile în contact cu apa sau substanţe periculoase oxidante. Ca urmare a normelor specifice de depozitare şi din cauza caracteristicilor speciale ale substanţelor/amestecurilor dintr-un depozit, în urma evaluării riscurilor, pot rezulta şi alte limitări (restricţii).

7.3 Utilizare finală specifică (utilizări finale specifice)

Instrucţiuni legate de utilizări specifice	:	Se va utiliza numai în scopurile prevăzute/relevante. Pentru informaţii referitoare la aplicaţii specifice, consultaţi scenariile de expunere din anexă.

SECTIUNEA 8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1 Parametri de control

Valoare limită de expunere profesională pentru produs

Nu se cunosc date

Valoare limită de expunere profesională pentru componenţi

Componenţi: Impuritate

hidrogen sulfurat - Nr. CAS: 7783-06-4 - Nr. EINECS: 231-977-3

Tip	mg/m3	ppm	Coeficient de depasire	Notă	Sursă
Valoare limită maximă la locul de muncă (8 h)	7	5	-	-	Hotarâre Guvern 1/2012; Directiva 2009/161/UE
Valoare limită maximă la locul de muncă (15 min)	14	10	-	-	Hotarâre Guvern 1/2012; Directiva 2009/161/UE

Valori limită biologice pentru produs

Nu se cunosc date

Valori limită biologice pentru componenţi

Nu se cunosc date

DNEL/DMEL pentru produs

Utilizare finală: Muncitor, efecte sistemice la expunere acută
Rute de expunere: inhalare;
Valoare: 4716,8 mg/m3
DNEL, Cel mai sensibil criteriu: Toxicitate acută (inhalare)

Utilizare finală: Muncitor, efecte sistemice, pe termen lung
Rute de expunere: piele;
Valoare: 0,065 mg/kg/zi
DNEL, Cel mai sensibil criteriu: Dezvoltare / Toxicitate teratogenă

Utilizare finală: Muncitor, efecte sistemice la expunere pe termen lung
Rute de expunere: inhalare;
Valoare: 0,18 mg/m3
DNEL, Cel mai sensibil criteriu: Dezvoltare / Toxicitate teratogenă

PNEC pentru produs

apă, ape reziduale, sol, sediment
Nu pot fi atribuite valori unice PNEC, deoarece produsul este un amestec de substanţe UVCB constituite din hidrocarburi.

8.2 Controale ale expunerii

Se va utiliza numai în scopurile prevăzute/relevante., Pentru informaţii referitoare la aplicaţii specifice, consultaţi scenariile de expunere din anexă.

Măsuri generale de protecţie

Măsuri de igienă	:	Asiguraţi-vă că sunt instituite măsuri de administrare adecvate. Evitarea contactului cu ochii, cu pielea şi cu îmbrăcămintea. Hainele contaminate cu produs trebuie schimbate imediat şi curăţate înainte de reutilizare.

Echipament personal de protecţie

Protecţie respiratorie	:	Când se produc vapori: utilizaţi protecţie respiratorie cu filtru A pentru gaz, culoare caracteristică maro (A1 până la 0,1 vol%, A2 până la 0,5 vol%, A3 până la 1 vol%). În cazul unor concentraţii ridicate şi în situaţia în care nu există informaţii suficiente, se va utiliza numai aparat pentru protecţia respiraţiei autonom (izolant).
Protecţia mâinilor	:	În practică, durata de utilizare a mănuşilor recomandate pentru protecţia împotriva substanţelor chimice poate fi mai redusă decât timpul de penetrare determinat conform normelor EN 374 din cauza numărului mare de factori de influenţă (de exemplu temperatură, sarcină mecanică). În cazul unui posibil contact cu mâinile, a se purta mănuşi de protecţie rezistente împotriva pătrunderii lichidelor. Atenţie la alegerea mănuşilor potrivite când lucraţi cu produse, ţevi etc., fierbinţi! **Material: Nitril;** Timpul de penetrare: 480 min Grosimea materialului: 0,40 mm Metodă de verificare: EN 374 **Material: Viton;** Timpul de penetrare: 480 min Grosimea materialului: 0,70 mm Metodă de verificare: EN 374 **Material: Butil;** Timpul de penetrare: 120 min Grosimea materialului: 0,70 mm Metodă de verificare: EN 374 **Material: Policloropren;** Timpul de penetrare: 60 min Grosimea materialului: 0,60 mm Metodă de verificare: EN 374
Protecţia ochilor / feţei	:	În cazul în care există pericol de stropire se vor utiliza ochelari cu protecţie integrală sau mască de protecţie. În caz contrar, ochelari de siguranţă cu protecţie laterală.
Protecţia corpului	:	Utilizarea, în toate cazurile, de îmbrăcăminte rezistentă la foc şi antistatică pe termen lung. Cască de protectie. Incăltăminte de protecţie antistatică nederapantă.

Controlul expunerii mediului

Controlul expunerii mediului	:	Se va utiliza numai în echipamente închise. Dacă există risc de expunere, trebuie asigurată extracţia/ventilaţia adecvată. Respectarea valorilor limită cu privire la emisii, dacă este cazul, asigurând o ventilaţie cu evacuare a aerului (dacă este necesar). În cazul unui transport în recipiente care nu prezintă siguranţă împotriva fisurării, se recomandă utilizarea de containere exterioare corespunzătoare. A se vedea şi Secţiunea 6 " Măsuri de luat in caz de dispersie accidentala ".

8.3 Informaţii suplimentare

În situaţia concretă de utilizare, ca urmare a evaluării individuale de pericol poate fi necesară utilizarea de echipamente diferite de protecţie a persoanei.

SECTIUNEA 9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1 Informaţii privind proprietăţile fizice şi chimice de bază

Aspect	:	lichid
Stare de agregare	:	lichid
Culoare	:	maro-negru
Miros	:	tipic
Prag de acceptare a mirosului	:	Miros perceptibil

Caracteristica	Valori	Metodă	Notă
pH			nu se aplică
punct de topire/punct de congelare	<= 30 °C	ISO 3016	punct de curgere
interval de fierbere			Nedeterminat
Punct de inflamabilitate	> 60 °C	EN ISO 2719	
Viteză de evaporare			nu se aplică
Tranziţie de fază solid/gaz			---
Limită inferioară de explozie	cca. 0,6 %(V)		Date literatura
Limită superioară de explozie	cca. 6,5 %(V)		Date literatura
Presiune de vapori	< 10 hPa la 120 °C		Date literatura
Densitatea vaporilor			Nedeterminat
Densitate	970 - 991 kg/m3 la 15 °C	EN ISO 12185	
Densitate relativă			nu este relevant;
Solubilitate în apă			practic insolubil
solubilitate (solubilităţi)			Solubilitatea în grăsimi: Nedeterminat
Coeficient de partiţie (n-octanol/apă)			nu există date

Temperatură de autoaprindere			Nedeterminat
Temperatura de descompunere			Nedeterminat
Vâscozitate cinematică	181 - 380 mm2/s la 50 °C	EN ISO 3104	
Vâscozitate dinamică			Nedeterminat
Proprietăţi explozive		Derivaţie din structura chimică	nu este exploziv
Proprietăţi oxidante		Derivaţie din structura chimică	neoxidant

9.2 Alte informaţii

nu există date

SECTIUNEA 10. STABILITATE SI REACTIVITATE

10.1 Reactivitate

stabil chimic

10.2 Stabilitate chimică

stabil chimic

10.3 Posibilitatea de reacţii periculoase

Reacţii potenţial periculoase : nu sunt cunoscute

10.4 Condiţii de evitat

Condiţii de evitat : Nu sunt, dacă este utilizat corect.

10.5 Materiale incompatibile

Materiale de evitat : acizi tari şi agenţi oxidanţi;

10.6 Produşi de descompunere periculoşi

Produşi de descompunere periculoşi : Nedeterminat

SECTIUNEA 11. INFORMAŢII TOXICOLOGICE

11.1 Informaţii privind efectele toxicologice

Toxicitate acută

Efect oral acut	:	LD50 şobolan, mascul/femelă Doză: > 4.320 mg/kg Metodă: OECD 401 Substanţă de test: 64741-62-4
Efect acut la inhalare	:	LC50 şobolan, mascul/femelă Doză: 4100 mg/m3/ 4 o Metodă: EPA OTS 798.1150 Substanţă de test: 64741-62-4
Efect acut cutanat	:	LD50 iepure, mascul/femelă Doză: > 2.000 mg/kg Metodă: OECD 434 Substanţă de test: 64741-62-4
Alte efecte acute	:	Nu sunt disponibile date relevante
Alte efecte	:	Expunerea repetată poate provoca uscarea sau crăparea pielii.

Corodarea/iritarea pielii

Iritaţia pielii	:	Piele de iepure Rezultat: nu este iritant Metodă: EU Method B.4 Substanţă de test: 64741-57-7

Lezarea gravă/iritarea ochilor

Iritaţia ochilor	:	Ochi de iepure Rezultat: nu este iritant Metodă: EU Method B.5 Substanţă de test:64741-57-7

Sensibilizarea căilor respiratorii sau a pielii

sensibilizare	:	Test Buehler Piele de cobai Clasificare: nu provoacă sensibilizare Metodă: EU Method B.6 Substanţă de test: 64741-62-4

Mutagenitatea celulelor germinative

Genotoxicitate in vitro	:	Testul Ames modificat Rezultat: pozitiv Metodă: OECD 471 Substanţă de test: 64741-62-4
Genotoxicitate in vivo	:	încercare micronucleară (clastogenicitate) Substanţă de test: 64741-62-4 Metodă: EU Method B.12 Rezultat: negativ
Evaluare toxicologică / Mutagenitatea celulelor germinative	:	nu există criterii de clasificare pentru mutagenitate

Cancerogenitatea

Efect cancerigen	:	dermic, şoarece Substanţă de test: 64741-62-4 Metodă: OECD 451 NOAEL Doză: 0,1% (mascul)
Evaluare toxicologică / Cancerogenitatea	:	Poate cauza cancer.

Toxicitate pentru reproducere

Toxicitate pentru reproducere/fertilitate	:	Confom coloanei II din Anexa X REACH, studiul nu trebuie realizat daca substanta este cunoscuta a fi genotoxic-cancerigena si sunt adoptate masuri adecvate de management al riscurilor.
Toxicitate pentru dezvoltare/teratogenicitate	:	Mod de aplicare: piele; şobolan Substanţă de test: 64741-62-4 Metodă: EPA OTS 798.4900 NOAEL: Doză 0,05 mg/kg/zi
Evaluare toxicologică / Toxicitate pentru dezvoltare/teratogenicitate Toxicitate pentru reproducere/fertilitate	:	Pe baza componentelor, produsul este clasificat drept toxic pentru reproducere, Nu există criterii de clasificare pentru fertilitate Pe baza datelor disponibile, produsul este clasificat ca teratogen.

Toxicitate asupra unui organ ţintă specific - expunere unică

Toxicitate asupra unui organ ţintă specific - expunere unică	:	concludent, dar insuficient pentru clasificare

Toxicitate asupra unui organ ţintă specific - expunere repetată

Efecte în cazul expunerii repetate sau de lungă durată	:	Poate provoca leziuni ale organelor în caz de expunere prelungită sau repetată. Organe ţintă: sânge, timus, ficat

Pericol prin aspirare

Toxicitate prin aspirare	:	Fără risc de aspiraţie

Efecte neurologice

Efecte narcotice	:	nici unul cunoscut

Evaluare toxicologică /

Efecte acute	:	Produsul se clasifică ca fiind nociv la inhalare.
Sensibilizare	:	Conform datelor disponibile, produsul nu se clasifică ca fiind un produs cu efecte de sensibilizare.
Toxicitate la doză repetată	:	Poate provoca leziuni ale organelor (sânge, timus, ficat) în caz de expunere prelungită sau repetată.

11.2 Informaţii suplimentare

Alte informaţii	:	Expunerea repetată poate provoca uscarea sau crăparea pielii.

SECTIUNEA 12. INFORMAŢII ECOLOGICE

12.1 Toxicitatea

Toxicitate acută

Toxicitate acută la peşti	:	LL50 Specii: Oncorhynchus mykiss (pastrav curcubeu) Doză: 79 mg/l Durată de expunere: 96 o Substanţă de test: 68476-33-5 Metodă: OECD 203
Toxicitate acută în cazul nevertebratelor acvatice	:	EL50 Specii: Daphnia magna (Purici de apă mari) Doză: 0,22 mg/l Durată de expunere: 48 o Substanţă de test: 64741-61-3 Metodă: OECD 202
Toxicitatea pentru alge şi plantele acvatice	:	EL50 Specii: Pseudokirchneriella subcapitata Doză: 0,28 - 0,37 mg/l Durată de expunere: 72 o Substanţă de test: 64741-61-3 Metodă: OECD 201

Toxicitate la microorganisme	:	LL50 Specii: Tetrahymena pyriformis Doză: > 1.000 mg/l Durată de expunere: 72 o Substanţă de test: păcură grea Metodă: QSAR
Toxicitate pentru organismele edafice	:	nu există date
Toxicitate în cazul plantelor terestre	:	nu există date
Toxicitate asupra altor organisme terestre (care nu sunt mamifere)	:	NOAEL Specii: Anas platyrhynchos Doză: 20000 mg/kg/zi Durată de expunere: 22 Săpt. Substanţă de test: titei North Slope expus la intemperii (WEVC) Metodă: OECD 206

Toxicitate cronică

Toxicitate pentru peşti (Toxicitate cronică)	:	NOEL (mortalitate) Specii: Oncorhynchus mykiss (pastrav curcubeu) Doză: 0,1 mg/l Durată de expunere: 28 z Substanţă de test: păcură grea Metodă: QSAR
Toxicitate la daphnia şi alte nevertebrate acvatice. (Toxicitate cronică)	:	NOEL (Reproducere) Specii: Daphnia magna Doză: 0,27 mg/l Durată de expunere: 21 z Substanţă de test: păcură grea Metodă: QSAR
Acvatică acută	:	Conform datelor eco-toxicologice, produsul este clasificat ca fiind foarte toxic pentru organisme acvatice.
Acvatică cronică	:	Pe baza datelor ecotoxicologice, produsul este considerat periculos pentru mediu, cu efecte îndelungate.
Date de toxicitate în sol	:	nu există date
Alte organisme relevante din punct de vedere al mediului	:	nu există date

12.2 Persistenţă şi degradabilitate

Persistenţă,Biodegradare	:	Metodă: Model computerizat Petrorisk Combustibilii petrolieri grei sunt rezistenţi la hidroliză, deoarece nu conţin un grup funcţional reactiv din punct de vedere hidrolitic. Mai mult, aceştia nu suferă fotoliză în apă sau sol.

12.3 Potenţial de bioacumulare

Bioacumulare	:	Nu sunt disponibile date relevante, Produsul este un amestec de substanţe UVCB constituite din hidrocarburi. , Testele standard pentru acest efect sunt destinate pentru substante mono-component si nu sunt adecvate pentru aceasta substanta complexa. , Cu toate acestea, acest efect a fost calculat pentru structurile hidrocarburilor reprezentative (model PETRORISK). , Valorile estimate pentru BCF sunt in general supra-conservative, intrucat nu este luata in considerare biotransformarea. , Prin urmare, este posibil ca expunerile indirecte şi estimările de risc prognozate conform PETRORISK să fie supraestimate. Potenţial de bioacumulare (Coeficient de partiţie (n-octanol/apă)): nu există date

12.4 Mobilitate în sol

Mobilitate	:	Note: Nu lăsaţi produsul să fie eliberat necontrolat în mediu.
Transport între diferite medii	:	Nu sunt informaţii relevante disponibile. Produsul este un amestec de substanţe UVCB constituite din hidrocarburi. Testele standard pentru acest efect sunt destinate pentru substante mono-component si nu sunt adecvate pentru aceasta substanta complexa. Cu toate acestea, acest efect este caracterizat prin utilizarea relatiilor cantitative structura-activitate pentru structurile hidrocarburilor reprezentative (model PETRORISK).
Capacitate de eliminare fizico-chimică	:	Acest produs este insolubil în apă şi pluteşte la suprafaţa acesteia. Poate fi separat mecanic, în staţii de tratare a apelor uzate.

12.5 Rezultate ale evaluării PBT şi vPvB

Rezultate ale evaluării PBT şi vPvB	:	Produsul este un amestec de substanţe UVCB constituite din hidrocarburi., Informaţii suplimentare relevante pentru evaluarea PBT a acestei substanţe sunt necesare., Unele eşantioane ale acestei substanţe pentru care sunt disponibile date analitice, conţin constituenţi PBT/vPvB incluşi în lista candidatelor SVHC în concentraţii mai mari de 0,1%., Nu au fost identificate alte structuri de hidrocarburi representative care sa satisfaca criteriile PBT / vPvB.

12.6 Alte efecte adverse

Efecte asupra staţiilor de epurare	:	Conform datelor modelului QSAR referitor la categoria combustibililor petrolieri grei, produsul nu are efecte toxice acute faţă de microorganismele din instalaţiile de tratare a apelor reziduale (LL50>1000 mg/l). Cu toate acestea, există posibilitatea unor efecte cronice faţă de microorganisme (NOEL 15 mg/l).
Alte efecte adverse	:	Nu evacuaţi hidrocarburi lichide în sistemul de canalizare, cursuri de apă şi pe sol. În caz de accident, contactaţi echipele speciale de intervenţie şi anunţaţi autorităţile locale competente.

SECTIUNEA 13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1 Metode de tratare a deşeurilor

Instrucţiuni privind eliminarea deşeului de produs	:	Reziduurile de produs vor fi eliminate conform prevederilor legale.
Instrucţiuni privind eliminarea deşeului de ambalaj	:	În măsura în care produsul a fost livrat în ambalaj, de preferat, ambalajele goale vor fi refolosite sau, dacă nu există această posibilitate, vor fi transportate la un punct de valorificare / eliminare finală a deşeurilor periculoase.
Codul deşeului conform Catalogului european al deşeurilor în cazul utilizării conform Secţiunii 1:		
Cod deşeu de produs	:	13 07 03* alţi combustibili (inclusiv amestecuri)
Cod deşeu de ambalaj	:	15 01 10* ambalaje care conţin reziduuri de substanţe periculoase sau sunt contaminate cu substanţe periculoase

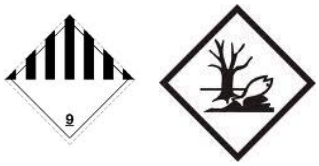
13.2 Informaţii suplimentare

Codul de deşeu depinde de originea deşeului şi, în situaţii individuale, poate diferi de informaţiile de mai sus.

Legislaţia privind eliminarea deşeurilor de produs:
Legea nr 211/2011 privind regimul deseurilor, cu modificarile si completarile ulterioare ;
HG 235/2007 privind gestionarea uleiurilor uzate;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 349/2005 privind depozitarea deşeurilor, cu modificarile si completarile ulterioare;
HG 856/2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase, cu modificarile si completarile ulterioare;
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase pe teritoriul României.

Legislaţia pentru deşeurile de ambalaje:
Ordinul nr. 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje;
Legea nr. 249/2015 privind modalitatea de gestionare a ambalajelor şi deşeurilor de ambalaje, cu modificările si completările ulterioare.

SECTIUNEA 14. INFORMATII REFERITOARE LA TRANSPORT



Transport rutier (ADR)

14.1	**Nr. ONU**	:	3082
14.2	**Denumirea corectă ONU pentru expediţie**	:	SUBSTANȚĂ PERICULOASĂ DIN PUNCT DE VEDERE AL MEDIULUI, LICHIDĂ, N.S.A. (HIDROCARBURI)
14.3	**Clasa (clasele) de pericol pentru transport**	:	9
14.4	**Grupa de ambalare**	:	III
14.5	**Pericole pentru mediul înconjurător**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.

Alte informaţii

Număr de marcare a pericolului	:	90
Etichete ADR/RID	:	9
Cod de clasificare	:	M6
Cod de restricţionare a accesului în tunel	:	(-)
Observaţii	:	Model etichetă de pericole nr. 9, Marcaj peşte şi copac pentru materiale periculoase pentru mediu

Transport feroviar (RID)

14.1	**Nr. ONU**	:	3082
14.2	**Denumirea corectă ONU pentru expediţie**	:	MATERIE PERICULOASĂ DIN PUNCT DE VEDERE AL MEDIULUI, LICHIDĂ, N.S.A. (HIDROCARBURI)
14.3	**Clasa (clasele) de pericol pentru transport**	:	9
14.4	**Grupa de ambalare**	:	III
14.5	**Pericole pentru mediul înconjurător**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.

Alte informaţii

Număr de marcare a pericolului	:	90
Etichete ADR/RID	:	9
Cod de clasificare	:	M6
Observaţii	:	Model etichetă de pericole nr. 9, Marcaj peşte şi copac pentru materiale periculoase pentru mediu

Navigaţie interioară cu barje-cisternă (ADN)

14.1	**Nr. ONU**	:	3082
14.2	**Denumirea corectă ONU pentru expediţie**	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (HIDROCARBURI)
14.3	**Clasa (clasele) de pericol pentru transport**	:	9
14.4	**Grupa de ambalare**	:	III
14.5	**Pericole pentru mediul înconjurător**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.

Alte informaţii

Observaţii	:	(N2+CMR+F)

Transport maritim (IMDG)

14.1	**Nr. ONU**	:	3082
14.2	**Denumirea corectă ONU pentru expediţie**	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (HYDROCARBONS)
14.3	**Clasa (clasele) de pericol pentru transport**	:	9
14.4	**Grupa de ambalare**	:	III
14.5	**Poluant marin**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.
14.7	**Transport în vrac, în conformitate cu anexa II la Conventia MARPOL si cu Codul IBC**	:	MARPOL Anexa 1

Alte informaţii

Etichete ale Organizaţiei Internaţionale de Aviaţie Civilă (ICAO)	:	9
Ghid de Urgenţă (EmS)	:	F-A, S-F

Transport aerian (ICAO-TI/IATA-DGR)

14.1	**Nr. ONU**	:	3082

14.2	**Denumirea corectă ONU pentru expediţie**	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(HYDROCARBONS)
14.3	**Clasa (clasele) de pericol pentru transport**	:	9
14.4	**Grupa de ambalare**	:	III
14.5	**Pericole pentru mediul înconjurător**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.

Alte informaţii

Etichete ale Organizaţiei Internaţionale de Aviaţie Civilă (ICAO)	:	9

Informaţii suplimentare

Produsul este transportat, depozitat si prelucrat la temperaturi mai mici de 100 °C.

La cerere, producătorul vă oferă informaţii suplimentare referitoare la clasificarea produsului pentru transport.

SECTIUNEA 15. INFORMAŢII DE REGLEMENTARE

15.1 Regulamente/legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză

Dispoziţii comunitare privind protecţia sănătăţii şi a mediului

Directiva 2010/75/UE privind emisiile industriale (prevenirea şi controlul integrat al poluării) - Capitolul V - Dispoziţii speciale aplicabile instalaţiilor şi activităţilor care utilizează solvenţi organici.	:	Produsul nu face obiectul directivei COV dacă se utilizează în scopurile prevăzute (vezi secţiunea 1.2).
Regulamentul (CE) nr. 1907/2006, Anexa XVII	:	nr. 28 Substanţe cancerigene din categoria 1A, respectiv 1 sau categoria 1B, respectiv 2;
Directiva 2012/18/UE a Parlamentului European şi a Consiliului din 4 iulie 2012 privind controlul pericolelor de accidente majore care implică substanţe periculoase, de modificare şi ulterior de abrogare a Directivei 96/82/CE a Consiliului (SEVESO III).	:	Anexă I, Partea 1: E1 Periculoase pentru mediul acvatic în categoria acut 1 sau cronic 1. Anexa I Partea 2: 34. Produse petroliere şi carburanţi alternativi. (d) păcură

Directiva 92/85/CEE a Consiliului din 19 octombrie 1992 privind introducerea de măsuri pentru promovarea îmbunătătirii securitătii si a sănătătii la locul de muncă în cazul lucrătoarelor gravide, care au născut de curând sau care alăptează [a zecea directivă specială în sensul articolului 16 alineatul (1) din Directiva 89/391/CEE]	:	Produsul face obiectul restrictiilor stabilite prin legislatia nationala de transpunere a Directivei.
Directiva 94/33/CE a Consiliului din 22 iunie 1994 privind protectia tinerilor la locul de muncă	:	Produsul face obiectul restrictiilor stabilite prin legislatia nationala de transpunere a Directivei.

Alte reglementări:
Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006, cu modificarile si completarile ulterioare.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase, cu modificările şi completările ulterioare;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă, cu modificarile si completarile ulterioare;
Regulamentul (CE) nr.1907/2006 privind înregistrarea, evaluarea, autorizarea si restrictionarea substantelor chimice (REACH), cu modificarile si completarile ulterioare.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006
Legea 319/2006 privind Securitatea şi sănătatea în muncă, cu modificările şi completările ulterioare;
HG 1218/2006 privind stabilirea cerinţelor minime de securitate şi sănătate în muncă pentru asigurarea protecţiei lucrătorilor împotriva riscurilor legate de prezenţa agenţilor chimici, cu modificarile si completarile ulterioare;
OUG 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) 1.907/2006, cu modificările şi completările ulterioare.
Legea nr.59/2016 privind controlul asupra pericolelor de accident major în care sunt implicate substanţe periculoase.
OUG 96/2003 privind protectia maternitatii la locul de munca, cu modificarile si completarile ulterioare.
HG 600/2007 privind protecţia tinerilor la locul de muncă, cu modificarile si completarile ulterioare
Hotarârea nr. 893/2006 pentru modificarea Hotarârii Guvernului nr. 1.593/2002 privind aprobarea Planului national de pregatire, raspuns si cooperare în caz de poluare marina cu hidrocarburi.

15.2 Evaluarea securităţii chimice

S-a efectuat evaluarea privind siguranţa chimică, în cadrul procesului de înregistrare REACH a substanţelor componente. S-a confirmat faptul, că în caz de controlare a componentei principale ca substanţă primară se poate asigura controlul corespunzător şi pentru celelalte componente ale amestecului. În consecinţă, în Anexă sunt listate scenariile de expunere elaborate pentru componenta principală. Pentru scenarii de expunere relevante, consultaţi Anexa.

SECTIUNEA 16. ALTE INFORMAŢII

Textul integral al frazelor de pericol H menţionate la Secţiunile 2 şi 3

Acute Tox.	Toxicitate acută
Aquatic Acute	Toxicitate acvatică acută
Aquatic Chronic	Toxicitate acvatică cronică
Asp. Tox.	Pericol de aspirare
Carc.	Carcinogenicitate
Flam. Liq.	Lichide inflamabile
Repr.	Toxicitate reproductivă
Skin Irrit.	Corodarea/Iritarea pielii
STOT RE	Toxicitate asupra unui organ ţintă specific - expunere repetată

H226	Lichid şi vapori inflamabili.
H304	Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii.
H315	Provoacă iritarea pielii.
H332	Nociv în caz de inhalare.
H350	Poate provoca cancer.
H361d	Susceptibil de a dăuna fătului
H373	Poate provoca leziuni ale organelor (sânge, timus, ficat) în caz de expunere prelungită sau repetată.
H400	Foarte toxic pentru viaţa acvatică.
H410	Foarte toxic pentru viaţa acvatică având efecte de lungă durată.

Alte informaţii

Alte Informaţii	:	Listă de acronime: (Q)SAR = relatie cantitativă structură-activitate ADN = Acordul european privind transportul international al mărfurilor periculoase pe căile navigabile interioare ADR = Acordul european privind transportul rutier international al mărfurilor periculoase ATE = Estimare a toxicităţii acute BCF = Factor de bioconcentrare CAS# = Numărul Chemical Abstracts Service CMR = Cancerigen, mutagen sau toxic pentru reproducere CSA = Evaluarea securităţii chimice CSR = Raport de securitate chimică DMEL = Nivel calculat cu efect minim DNEL = Nivel calculat fără efect EC50 = concentraţie efectivă 50% - concentraţia cu efect a substanţei asociată cu un raspuns de 50% ECHA = Agentia Europeană pentru Produse Chimice Număr CE = Număr EINECS si ELINCS (a se vedea, de asemenea, EINECS si ELINCS) EINECS = Inventarul european al substantelor chimice existente introduse pe piată EL50 = Nivel efectiv 50% ELINCS = Lista europeană a substantelor chimice notificate EPA = Agentia pentru Protectia Mediului (SUA) GES = Scenariu generic de expunere IATA = Asociatia Internatională pentru Transport Aerian IC50 = concentraţie de inhibare 50% ICAO-TI = Instrucţiuni tehnice privind siguranţa transportului aerian al bunurilor periculoase IMDG = Codul maritim international pentru mărfuri periculoase Kow = coeficient de partitie octanol / apă Koc = coeficient de partitie carbon organic din sol / apa LC50 = Concentratie letală până la 50 % din populatia-test LD50 = Doză letală până la 50 % din populatia-test (doză letală medie) LL50 = Incarcare letala 50% LOAEC = Concentratia cea mai scazuta cu efect advers observat

	LOAEL = Nivelul cel mai scazut cu efect advers observat NOAEC = Concentratie fara efect advers observat NOAEL = Nivel fara efect advers observat NOEC = Concentratie fara efect observat NOEL = Nivel fara efect observat OECD = Organizatia pentru cooperare si dezvoltare economică OSHA = Organizatia europeana pentru securitate si sanatate la locul de munca PBT = Substantă persistentă, bioacumulativă si toxică PEC = Concentratie predictibilă în mediu PNEC = Concentratie predictibilă fără efect RID = Regulamentele privind transportul international feroviar al mărfurilor periculoase RMM = Masuri de management al riscului SVHC = Substante care prezintă motive de îngrijorare deosebite TRA = Evaluare de risc directionata TLV = valoare limita maxima STEL = Limita de expunere de durata scurta TWA = Medie ponderata in timp UVCB = substanţă cu compoziţie necunoscută sau variabilă, produse de reacţie complexă sau materiale biologice vPvB = (substanta) foarte persistenta si foarte bioacumulativa LGK = Clasa de depozitare TRGS = Reguli tehnice pentru substante periculoase (Germania)

Surse de informaţii	:	Raport de securitate chimica (CSR)
		Procedura de clasificare: Acute Tox. 4 H332 - Metoda de calcul Repr. 2 H361d - Metoda de calcul Carc. 1B H350 - Metoda de calcul STOT RE 2 H373 - Metoda de calcul Aquatic Acute 1 H400 - Metoda de calcul; Factor de multiplicare = 1 Aquatic Chronic 1 H410 - Pe baza datelor colectate în timpul testului; factor de multiplicare= 1

Linia verticală (|) la capătul din stânga şi/sau textul de culoare roşie indică modificarea faţă de versiunea principală anterioară.
Aceste date sunt conforme informaţiilor şi experienţei de care dispunem la data menţionată a prelucrării fişei şi se referă exclusiv la produsul care poate fi identificat cu claritate în baza codului de produs, în starea de livrare a acestuia. În cazul utilizării diferite faţă de cele menţionate la secţiunea 1, sau dacă produsul este amestecat cu alte materiale ori este alterat în cursul procesului de producţie, există posibilitatea ca declaraţiile specificate în fişa cu date de securitate să nu fie valabile fără restricţii sau să nu mai fie valabile deloc. Informaţiile nu pot fi aplicate asupra altor produse cu denumiri identice sau similare. Această fişă nu scuteşte în niciun caz utilizatorul de cunoaşterea şi aplicarea tuturor textelor care reglementează activitatea sa.
Acest produs nu trebuie utilizat pentru altă aplicaţie sau aplicaţii decât cele specificate, fără consultarea prealabilă a furnizorului.
Este obligaţia utilizatorului să evalueze şi să folosească acest produs în siguranţă şi conform cu toate legile şi reglementările aplicabile.
Puteţi contacta furnizorul pentru a vă asigura că acest document este cea mai nouă versiune.
Modificarea acestui document este strict interzisă.

Anexă

Scenariile de expunere pentru cele mai frecvente utilizari sunt enumerate mai jos. Dacă este necesar, se pot furniza la cerere şi alte scenarii de expunere.

1. Titlu scurt al Scenariului de expunere: 01-Producerea substanţei

Stadiul ciclului de viață	:	**M:** Producere
Domeniu de utilizare	:	nu se aplică
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC15:** Utilizare ca reactiv de laborator
Categorie de eliberare în mediu	:	**ERC1:** Producerea substanței
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 1.1.v1
Procese, sarcini, activităţi acoperite	:	Producerea substanţei. Include transferurile de material, depozitarea, prelevarea de eşantioane, activităţile de laborator asociate, întreţinerea şi încărcarea (inclusiv în vapoare/barje, vehicule de transport combinat rutier/feroviar şi containere pentru materiale în vrac).

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC1, Producerea substanței

Cantitatea folosită

Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
Tonaj pentru utilizare regională	:	2,7 10E6 t/an
Fracţiune de tonaj UE utilizată în regiune:	:	0,2
Fracţiune din tonajul regional utilizat la nivel local:	:	1,0
Tonaj anual la amplasament (tone/an)	:	2,7 10E6
Tonaj zilnic maxim la amplasament	:	9,1 10E6 kg/zi
MSafe (tonaj maxim permis la amplasament)	:	1,17 10E7 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	300 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,001 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %
Factor de emisie sau de eliberare/degajare: Sol	:	0,010 %
Note	:	Toţi factorii de eliberare/degajare se referă la eliberarea/degajarea iniţială, inainte de aplicarea măsurilor de management al riscurilor (RMM). Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală. Factorul de emisie sau de eliberare/degajare în apă este < 0,001%.

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepărtare/eliminare de: 90,0 %
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de îndepărtare/eliminare de >= (%):: 89,2 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 0 %
Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de sedimentul din apa dulce. Preveniţi descărcarea substanţei nedizolvate în sau recuperaţi-o din apele reziduale de la amplasament. Dacă se evacuează la staţia de tratare a apelor menajere uzate, nu este necesară tratarea apelor reziduale de la amplasament.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Debitul efluentului in staţia de tratare a apelor reziduale	:	10.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	90,1 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	90,1 %
Tratarea nămolului	:	A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	În timpul producţiei nu sunt generate reziduuri/deşeuri de substanţă/material.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	În timpul producţiei nu sunt generate reziduuri/deşeuri de substanţă/material.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1	:	**Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.**
PROC2	:	**Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC3	:	**Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC8a	:	**Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate**
PROC8b	:	**Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate**
PROC15	:	**Utilizare ca reactiv de laborator**

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid
Presiune de vapori	:	Lichid, presiune de vapori la STP. < 0,5 kPa
Note	:	Operaţiunea se desfăşoară la temperatură ridicată (> 20°C peste temperatura ambiantă), Presupune implementarea unui standard de bază adecvat privind igiena profesională.

Cantitatea folosită

nu se aplică	:	

Frecvenţa şi durata folosirii

Note	:	Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel)

Condiţii tehnice şi măsuri

G18 Măsuri generale (carcinogeni).
Luaţi în considerare progresele tehnice şi modernizarea procesului (inclusiv automatizarea) pentru eliminarea degajărilor/eliberărilor/emisiilor. Minimizaţi expunerea folosind măsuri precum sistemele închise, unităţile specializate şi ventilaţia de evacuare generală / locală adecvată. Goliţi sistemele şi curăţaţi liniile/conductele de transfer înainte de a afecta etanşeitatea. Curăţaţi / spălaţi echipamentul, unde este posibil, înainte de efectuarea lucrărilor de întreţinere.
CS15 Expuneri generale (sisteme închise).
Manipulaţi substanţa în cadrul unui sistem închis.
CS2 Eşantionarea procesului + OC9 în aer liber
Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea.
CS85 Depozitare produse în vrac
Depozitaţi substanţa în cadrul unui sistem închis.
CS36 Activităţi de laborator.
Manipulaţi în interiorul unei hote de tiraj sau implementaţi metode echivalente adecvate pentru a reduce la minimum expunerea.
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
Transferaţi prin linii/conducte închise. Goliţi liniile/conductele de transfer înainte de decuplare. Păstraţi substanţele provenite din golire în spaţii de depozitare etanşe până la eliminarea sau reciclarea ulterioară.
CS511 Încărcarea autocisternelor/vagoanelor de cale ferată
Asiguraţi-vă că transferurile de material se efectuează în condiţii izolate sau sub ventilaţie cu extragerea aerului.
CS39 Curăţare şi întreţinere echipamente.
Păstraţi substanţele provenite din golire în spaţii de depozitare etanşe până la eliminarea sau reciclarea ulterioară. Goliţi şi spălaţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

G18 Măsuri generale (carcinogeni).
Inspectaţi, testaţi şi menţineţi cu regularitate toate măsurile de control. Aveţi în vedere necesitatea măsurilor de supraveghere a sănătăţii în funcţie de riscuri. Acolo unde există potenţial de expunere: permiteţi accesul doar pentru personalul autorizat; asiguraţi instruirea operatorilor pentru activitatea specifică pentru a minimiza expunerile. Asiguraţi-vă că există sisteme sigure de lucru sau mecanisme echivalente pentru gestionarea riscurilor.
CS2 Eşantionarea procesului + OC9 în aer liber
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 15 minute
CS85 Depozitare produse în vrac
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

G18 Măsuri generale (carcinogeni).
Acolo unde există potenţial de expunere: Purtaţi mănuşi corespunzătoare şi îmbrăcăminte de protecţie pentru a împiedica contaminarea pielii; purtaţi mască de protecţie respiratorie atunci când folosirea acesteia este identificată pentru anumite scenarii ajutătoare; curăţaţi imediat substanţele/materialele scurse/vărsate şi eliminaţi deşeurile în siguranţă.
CS15 Expuneri generale (sisteme închise).
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS2 Eşantionarea procesului + OC9 în aer liber
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS85 Depozitare produse în vrac
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS36 Activităţi de laborator.
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS511 Încărcarea autocisternelor/vagoanelor de cale ferată
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS39 Curăţare şi întreţinere echipamente.
Purtarea mănuşilor rezistente la produse chimice (testate conform EN374) corelată cu instruirea pentru activitatea specifică.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:
Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL)/fără efect derivat (DNEL) atunci când sunt implementate măsurile de management al riscurilor (RMM)/condiţiile operaţionale (OC) descrise la secţiunea 2. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efecte carcinogene. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.
4.2. Mediu înconjurător:

Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).

1. Titlu scurt al Scenariului de expunere: 01a - Distribuţia substanţei

Stadiul ciclului de viață	:	**IS:** Utilizare în spații industriale
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC15:** Utilizare ca reactiv de laborator
Categorie de eliberare în mediu	:	**ERC4:** Utilizarea unui aditiv de prelucrare nereactiv într-un spatiu industrial (fără includere în sau pe un articol) **ERC5:** Utilizare într-un spațiu industrial care conduce la includerea în sau pe un articol **ERC6a:** Utilizarea unui intermediar **ERC6b:** Utilizarea unui aditiv de prelucrare reactiv într-un spațiu industrial (fără includere în sau pe un articol) **ERC6c:** Utilizarea unui monomer în procese de polimerizare într-un spațiu industrial (cu sau fără includere în sau pe un articol) **ERC6d:** Utilizarea de regulatori de proces reactivi în procese de polimerizare într-un spaţiu industrial (cu sau fără includere în sau pe un articol) **ERC7:** Utilizarea unui fluid funcțional într-un spațiu industrial
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 1.1b.v1
Procese, sarcini, activităţi acoperite	:	Încărcarea în vrac (incluzând încărcarea în nave maritime/barje, vagoane de cale ferată/autocisterne şi containere intermediare de transport în vrac) şi reambalarea (incluzând canistre şi recipiente mici) a substanţei/materialului, inclusiv eşantionarea, depozitarea, descărcarea şi activităţile de laborator asociate. Nu include emisiile din timpul transportului.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC4, Utilizarea unui aditiv de prelucrare nereactiv într-un spatiu industrial (fără includere în sau pe un articol)

ERC5, Utilizare într-un spațiu industrial care conduce la includerea în sau pe un articol

ERC6a, Utilizarea unui intermediar

ERC6b, Utilizarea unui aditiv de prelucrare reactiv într-un spațiu industrial (fără includere în sau pe un articol)

ERC6c, Utilizarea unui monomer în procese de polimerizare într-un spațiu industrial (cu sau fără includere în sau pe un articol)

ERC6d, Utilizarea de regulatori de proces reactivi în procese de polimerizare într-un spaţiu industrial (cu sau fără includere în sau pe un articol)

ERC7, Utilizarea unui fluid funcțional într-un spațiu industrial

Cantitatea folosită

Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
Tonaj pentru utilizare regională	:	1,7 10E6 t/an
Fracţiune de tonaj UE utilizată în regiune:	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	0,002
Tonaj anual la amplasament (tone/an)	:	3,4 10E3
Tonaj zilnic maxim la amplasament (kg/zi):	:	3,4 10E4
MSafe (tonaj maxim permis la amplasament)	:	4,73 10E4 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	100 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,01 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %
Factor de emisie sau de eliberare/degajare: Sol	:	0,001 %
Note	:	Toţi factorii de eliberare/degajare se referă la eliberarea/degajarea iniţială, inainte de aplicarea măsurilor de management al riscurilor (RMM). Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală. Factorul de emisie sau de eliberare/degajare în apă este < 0,001%.

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepărtare/eliminare de: 90,0 %
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de îndepărtare/eliminare de >= (%):: 0 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 0 %
Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de toxicitatea secundară a elementului terestru. Nu este necesară tratarea secundară a apelor reziduale.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	90,1 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	90,1 %

Tratarea nămolului	:	A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Valorificarea şi reciclarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1 : Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.

PROC2 : Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente

PROC3 : Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente

PROC8a : Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate

PROC8b : Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate

PROC15 : Utilizare ca reactiv de laborator

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid
Presiune de vapori	:	Lichid, presiune de vapori la STP. < 0,5 kPa
Note	:	Presupune utilizarea la nu mai mult de 20°C peste temperatura ambiantă, dacă nu este menţionat altfel., Presupune implementarea unui standard de bază adecvat privind igiena profesională.

Cantitatea folosită

Neaplicabil	:	

Frecvenţa şi durata folosirii

Note	:	Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel)

Condiţii tehnice şi măsuri

G18 Măsuri generale (carcinogeni).
Luaţi în considerare progresele tehnice şi modernizarea procesului (inclusiv automatizarea) pentru eliminarea degajărilor/eliberărilor/emisiilor. Minimizaţi expunerea folosind măsuri precum sistemele închise, unităţile specializate şi ventilaţia de evacuare generală / locală adecvată. Goliţi sistemele şi curăţaţi liniile/conductele de transfer înainte de a afecta etanşeitatea. Curăţaţi / spălaţi echipamentul, unde este posibil, înainte de efectuarea lucrărilor de întreţinere.
CS15 Expuneri generale (sisteme închise).
Manipulaţi substanţa în cadrul unui sistem închis. Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea.
CS2 Eşantionarea procesului + OC9 în aer liber
Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea.
CS85 Depozitare produse în vrac
Depozitaţi substanţa în cadrul unui sistem închis.
CS137 Eşantionarea produselor
Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea.
CS36 Activităţi de laborator.
Manipulaţi în interiorul unei hote de tiraj sau implementaţi metode echivalente adecvate pentru a reduce la minimum expunerea.
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
Transferaţi prin linii/conducte închise. Goliţi liniile/conductele de transfer înainte de decuplare. Păstraţi substanţele provenite din golire în spaţii de depozitare etanşe până la eliminarea sau reciclarea ulterioară.
CS511 Încărcarea autocisternelor/vagoanelor de cale ferată
Asiguraţi-vă că transferurile de material se efectuează în condiţii izolate sau sub ventilaţie cu extragerea aerului.
CS39 Curăţare şi întreţinere echipamente.
Păstraţi substanţele provenite din golire în spaţii de depozitare etanşe până la eliminarea sau reciclarea ulterioară. Goliţi şi spălaţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

G18 Măsuri generale (carcinogeni).
Inspectaţi, testaţi şi menţineţi cu regularitate toate măsurile de control. Aveţi în vedere necesitatea măsurilor de supraveghere a sănătăţii în funcţie de riscuri. Acolo unde există potenţial de expunere: permiteţi accesul doar pentru personalul autorizat; asiguraţi instruirea operatorilor pentru activitatea specifică pentru a minimiza expunerile. Asiguraţi-vă că există sisteme sigure de lucru sau mecanisme echivalente pentru gestionarea riscurilor.
CS15 Expuneri generale (sisteme închise).
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS2 Eşantionarea procesului + OC9 în aer liber
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 15 minute
CS85 Depozitare produse în vrac
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS137 Eşantionarea produselor
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 15 minute
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

G18 Măsuri generale (carcinogeni).
Acolo unde există potenţial de expunere: Purtaţi mănuşi corespunzătoare şi îmbrăcăminte de protecţie pentru a împiedica contaminarea pielii; purtaţi mască de protecţie respiratorie atunci când folosirea acesteia este identificată pentru anumite scenarii ajutătoare; curăţaţi imediat substanţele/materialele scurse/vărsate şi eliminaţi deşeurile în siguranţă.
CS15 Expuneri generale (sisteme închise).
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS2 Eşantionarea procesului + OC9 în aer liber
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS85 Depozitare produse în vrac
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS137 Eşantionarea produselor
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS36 Activităţi de laborator.
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS511 Încărcarea autocisternelor/vagoanelor de cale ferată
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS39 Curăţare şi întreţinere echipamente.
Purtarea mănuşilor rezistente la produse chimice (testate conform EN374) corelată cu instruirea pentru activitatea specifică.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:
Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL)/fără efect derivat (DNEL) atunci când sunt implementate măsurile de management al riscurilor (RMM)/condiţiile operaţionale (OC) descrise la secţiunea 2. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efecte carcinogene. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.
4.2. Mediu înconjurător:
Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).

1. Titlu scurt al Scenariului de expunere: 02 Formularea şi (re)ambalarea substanţelor şi amestecurilor

Stadiul ciclului de viață	:	**F:** Formulare sau reambalare
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC15:** Utilizare ca reactiv de laborator
Categorie de eliberare în mediu	:	**ERC2:** Formulare în amestec
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 2.2.v1
Procese, sarcini, activităţi acoperite	:	Formularea, ambalarea şi reambalarea substanţei şi a amestecurilor sale în operaţiuni continue sau discontinue, inclusiv depozitarea, transferurile de materiale, amestecarea, tabletarea, comprimarea, peletizarea, extrudarea, ambalarea la scară mare şi mică, eşantionarea, întreţinerea şi activităţile de laborator asociate.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC2, Formulare în amestec

Cantitatea folosită

Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
Tonaj pentru utilizare regională	:	1,7 10E5 t/an
Fracţiune de tonaj UE utilizată în regiune:	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	0,18
Tonaj anual la amplasament (tone/an)	:	3 10E4
Tonaj zilnic maxim la amplasament (kg/zi):	:	1 10E5
MSafe (tonaj maxim permis la amplasament)	:	1,34 10E5 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	300 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,1 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %
Factor de emisie sau de eliberare/degajare: Sol	:	0,01 %
Note	:	Fracţie degajată din proces în aer (după măsuri tipice de management al riscurilor la amplasament în conformitate cu cerinţele Directivei UE privind emisiile de solvenţi) Factorii de eliberare/degajare in apă si sol se referă la eliberarea/degajarea iniţială, inainte de aplicarea măsurilor de management al riscurilor (RMM) Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală. Factorul de emisie sau de eliberare/degajare în apă este < 0,001%.

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepărtare/eliminare de: 0 %
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de eliminare: 82,9 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 0 %
Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de toxicitatea secundară a elementului terestru. Dacă se evacuează la staţia de tratare a apelor menajere uzate, nu este necesară tratarea apelor reziduale de la amplasament. Preveniţi descărcarea substanţei nedizolvate în sau recuperaţi-o din apele reziduale de la amplasament.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	90,1 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	90,1 %
Tratarea nămolului	:	A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Valorificarea şi reciclarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1 : Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.

PROC2	:	**Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC3	:	**Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC8a	:	**Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate**
PROC8b	:	**Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate**
PROC15	:	**Utilizare ca reactiv de laborator**

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid
Presiune de vapori	:	Lichid, presiune de vapori la STP. < 0,5 kPa
Note	:	Presupune utilizarea la nu mai mult de 20°C peste temperatura ambiantă, dacă nu este menţionat altfel., Presupune implementarea unui standard de bază adecvat privind igiena profesională.

Cantitatea folosită

Neaplicabil	:	

Frecvenţa şi durata folosirii

Note	:	Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel)

Condiţii tehnice şi măsuri

G18 Măsuri generale (carcinogeni).
Luaţi în considerare progresele tehnice şi modernizarea procesului (inclusiv automatizarea) pentru eliminarea degajărilor/eliberărilor/emisiilor. Minimizaţi expunerea folosind măsuri precum sistemele închise, unităţile specializate şi ventilaţia de evacuare generală / locală adecvată. Goliţi sistemele şi curăţaţi liniile/conductele de transfer înainte de a afecta etanşeitatea. Curăţaţi / spălaţi echipamentul, unde este posibil, înainte de efectuarea lucrărilor de întreţinere.
CS15 Expuneri generale (sisteme închise).
Manipulaţi substanţa în cadrul unui sistem închis. Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea.
CS15 Expuneri generale (sisteme închise).
CS2 Eşantionare a procesului
Manipulaţi substanţa în cadrul unui sistem închis. Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea.
CS85 Depozitare produse în vrac
Depozitaţi substanţa în cadrul unui sistem închis.
CS137 Eşantionarea produselor
Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea.
CS36 Activităţi de laborator.
Manipulaţi în interiorul unei hote de tiraj sau implementaţi metode echivalente adecvate pentru a reduce la minimum expunerea.
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
Transferaţi prin linii/conducte închise. Goliţi liniile/conductele de transfer înainte de decuplare. Păstraţi substanţele provenite din golire în spaţii de depozitare etanşe până la eliminarea sau reciclarea ulterioară.
CS511 Încărcarea autocisternelor/vagoanelor de cale ferată
Asiguraţi-vă că transferurile de material se efectuează în condiţii izolate sau sub ventilaţie cu extragerea aerului.
CS8 Transferuri în canistre/în loturi
Asiguraţi un standard adecvat de ventilaţie generală (nu mai puţin de 3 - 5 schimburi de aer pe oră) Asiguraţi-vă că transferurile de material se efectuează în condiţii izolate sau sub ventilaţie cu extragerea aerului. Asiguraţi-vă că operaţiunea este efectuată în spaţiul exterior (în aer liber).
CS39 Curăţare şi întreţinere echipamente.
Păstraţi substanţele provenite din golire în spaţii de depozitare etanşe până la eliminarea sau reciclarea ulterioară. Goliţi şi spălaţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

G18 Măsuri generale (carcinogeni).
Acolo unde există potenţial de expunere: permiteţi accesul doar pentru personalul autorizat; asiguraţi instruirea operatorilor pentru activitatea specifică pentru a minimiza expunerile. Asiguraţi-vă că există sisteme sigure de lucru sau mecanisme echivalente pentru gestionarea riscurilor. Inspectaţi, testaţi şi menţineţi cu regularitate toate măsurile de control. Aveţi în vedere necesitatea măsurilor de supraveghere a sănătăţii în funcţie de riscuri.
CS15 Expuneri generale (sisteme închise).
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS15 Expuneri generale (sisteme închise).
CS2 Eşantionare a procesului
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 15 minute
CS85 Depozitare produse în vrac
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS137 Eşantionarea produselor
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 15 minute
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS8 Transferuri în canistre/în loturi
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 1 oră

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

G18 Măsuri generale (carcinogeni).
Acolo unde există potenţial de expunere: Purtaţi mănuşi corespunzătoare şi îmbrăcăminte de protecţie pentru a împiedica contaminarea pielii; purtaţi mască de protecţie respiratorie atunci când folosirea acesteia este identificată pentru anumite scenarii ajutătoare; curăţaţi imediat substanţele/materialele scurse/vărsate şi eliminaţi deşeurile în siguranţă.
CS15 Expuneri generale (sisteme închise).
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS15 Expuneri generale (sisteme închise).
CS2 Eşantionare a procesului
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS85 Depozitare produse în vrac
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS137 Eşantionarea produselor
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS36 Activităţi de laborator.
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS510 Încărcarea (descărcarea) navelor maritime/barjelor
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS511 Încărcarea autocisternelor/vagoanelor de cale ferată
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS8 Transferuri în canistre/în loturi
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS39 Curăţare şi întreţinere echipamente.
Purtarea mănuşilor rezistente la produse chimice (testate conform EN374) corelată cu instruirea pentru activitatea specifică.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:
Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL)/fără efect derivat (DNEL) atunci când sunt implementate măsurile de management al riscurilor (RMM)/condiţiile operaţionale (OC) descrise la secţiunea 2. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efecte carcinogene. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.
4.2. Mediu înconjurător:
Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).

1. Titlu scurt al Scenariului de expunere: 12a - Utilizare drept combustibil sau carburant: Industrial

Stadiul ciclului de viață	:	**IS:** Utilizare în spații industriale
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC16:** Utilizarea combustibililor
Categorie de eliberare în mediu	:	**ERC7:** Utilizarea unui fluid funcțional într-un spațiu industrial
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 7.12a.v1
Procese, sarcini, activităţi acoperite	:	Acoperă utilizarea ca şi / ori în combustibil sau carburant (sau aditivi sau componenţi de aditivi pentru combustibil sau carburant) şi include activităţi asociate cu transferul, utilizarea, întreţinerea echipamentelor şi manipularea deşeurilor acestora.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC7, Utilizarea unui fluid funcțional într-un spațiu industrial

Cantitatea folosită

Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
Tonaj pentru utilizare regională	:	1,3 10E5 t/an
Fracţiune de tonaj UE utilizată în regiune:	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	1
Tonaj anual la amplasament	:	1,3 10E5 t/an
Tonaj zilnic maxim la amplasament	:	4,4 10E5 kg/zi
MSafe (tonaj maxim permis la amplasament)	:	5,70 10E5 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	300 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,5 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %
Factor de emisie sau de eliberare/degajare: Sol	:	0 %
Note	:	Toţi factorii de eliberare/degajare se referă la eliberarea/degajarea iniţială, inainte de aplicarea măsurilor de management al riscurilor (RMM). Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală. Factorul de emisie sau de eliberare/degajare în apă este < 0,001%.

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepărtare/eliminare de: 95,0 %
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de îndepărtare/eliminare de >= (%):: 89,2 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 0 %
Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de sedimentul din apa dulce. Dacă se evacuează la staţia de tratare a apelor menajere uzate, nu este necesară tratarea apelor reziduale de la amplasament.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	90,1 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	90,1 %
Tratarea nămolului	:	A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Emisiile rezultate din ardere sunt limitate prin măsuri obligatorii de control al emisiilor de evacuare., Emisiile rezultate din ardere sunt avute în vedere în cadrul evaluării regionale a impactului., Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Această substanţă este consumată în timpul utilizării şi nu sunt generate deşeuri ale acesteia.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1 : Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.

PROC2	:	**Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC3	:	**Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC8a	:	**Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate**
PROC8b	:	**Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate**
PROC16	:	**Utilizarea combustibililor**

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid
Presiune de vapori	:	Lichid, presiune de vapori la STP. < 5 hPa
Note	:	Presupune utilizarea la nu mai mult de 20°C peste temperatura ambiantă, dacă nu este menţionat altfel., Presupune implementarea unui standard de bază adecvat privind igiena profesională.

Frecvenţa şi durata folosirii

Note	:	Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel)

Condiţii tehnice şi măsuri

G18 Măsuri generale (carcinogeni).
Luati în considerare progresele tehnice si modernizarea procesului(inclusiv automatizarea) pentru eliminarea degajărilor/eliberarilor/emisiilor. Reduceţi la minimum expunerea folosind măsuri precum sisteme închise, unităţi specializate şi ventilaţie de evacuare generală/locală adecvată. Goliţi sistemele şi curăţaţi liniile/conductele de transfer înainte de a afecta etanşeitatea. Curăţaţi/spălaţi echipamentele, acolo unde este posibil, înainte de efectuarea lucrărilor de întreţinere.
CS15 Expuneri generale (sisteme închise).
Manipulaţi substanţa în cadrul unui sistem închis. Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea.
CS15 Expuneri generale (sisteme închise).
CS137 Eşantionarea produselor
Manipulaţi substanţa în cadrul unui sistem închis. Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea. Asiguraţi un standard adecvat de ventilaţie controlată (10 - 15 schimburi de aer pe oră).
CS502 Descărcarea închisă a materialelor în vrac
OC9În exterior
Transferaţi prin linii/conducte închise.
CS8 Transferuri în canistre/în loturi
Asiguraţi un standard adecvat de ventilaţie generală (nu mai puţin de 3 - 5 schimburi de aer pe oră) Asiguraţi-vă că transferurile de material se efectuează în condiţii izolate sau sub ventilaţie cu extragerea aerului.
CS117 Utilizarea echipamentelor de filtrare a materialelor solide
Asiguraţi un standard adecvat de ventilaţie generală (nu mai puţin de 3 - 5 schimburi de aer pe oră)
CS85 Depozitare produse în vrac
Depozitaţi substanţa în cadrul unui sistem închis. Asiguraţi un standard adecvat de ventilaţie generală (nu mai puţin de 3 - 5 schimburi de aer pe oră)
CS39 Curăţare şi întreţinere echipamente.
Păstraţi substanţele provenite din golire în spaţii de depozitare etanşe până la eliminarea sau reciclarea ulterioară. Goliţi şi spălaţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

G18 Măsuri generale (carcinogeni).
Inspectaţi, testaţi şi menţineţi cu regularitate toate măsurile de control. Aveţi în vedere necesitatea măsurilor de supraveghere a sănătăţii în funcţie de riscuri. Acolo unde există potenţial de expunere: permiteţi accesul doar pentru personalul autorizat; asiguraţi instruirea operatorilor pentru activitatea specifică pentru a minimiza expunerile. Asiguraţi-vă că există sisteme sigure de lucru sau mecanisme echivalente pentru gestionarea riscurilor.
CS15 Expuneri generale (sisteme închise).
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS15 Expuneri generale (sisteme închise).
CS137 Eşantionarea produselor
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 1 oră
CS502 Descărcarea închisă a materialelor în vrac
OC9În exterior
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS8 Transferuri în canistre/în loturi
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 1 oră
CS117 Utilizarea echipamentelor de filtrare a materialelor solide
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore
CS85 Depozitare produse în vrac
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 4 ore

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

G18 Măsuri generale (carcinogeni).
Acolo unde există potenţial de expunere: Purtaţi mănuşi corespunzătoare şi îmbrăcăminte de protecţie pentru a împiedica contaminarea pielii; purtaţi mască de protecţie respiratorie atunci când folosirea acesteia este identificată pentru anumite scenarii ajutătoare; curăţaţi imediat substanţele/materialele scurse/vărsate şi eliminaţi deşeurile în siguranţă.
CS15 Expuneri generale (sisteme închise).
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS15 Expuneri generale (sisteme închise).
CS137 Eşantionarea produselor
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS502 Descărcarea închisă a materialelor în vrac
OC9În exterior
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS8 Transferuri în canistre/în loturi
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS117 Utilizarea echipamentelor de filtrare a materialelor solide
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS85 Depozitare produse în vrac
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
GEST_12l Utilizare drept combustibil/carburant, CS107 (sisteme închise)
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS39 Curăţare şi întreţinere echipamente.
Purtarea mănuşilor rezistente la produse chimice (testate conform EN374) corelată cu instruirea pentru activitatea specifică.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:
Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL)/fără efect derivat (DNEL) atunci când sunt implementate măsurile de management al riscurilor (RMM)/condiţiile operaţionale (OC) descrise la secţiunea 2. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efecte carcinogene. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.
4.2. Mediu înconjurător:
Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).

1. Titlu scurt al Scenariului de expunere: 12b - Utilizare drept combustibil sau carburant: Profesional

Stadiul ciclului de viață	:	**PW:** Utilizare larg răspândită de către lucrători profesioniști
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC16:** Utilizarea combustibililor
Categorie de eliberare în mediu	:	**ERC9a:** Utilizare larg răspândită a unui fluid funcțional (la interior) **ERC9b:** Utilizare larg răspândită a unui fluid funcțional (la exterior)
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 9.12b.v1
Procese, sarcini, activităţi acoperite	:	Acoperă utilizarea ca şi / ori în combustibil sau carburant (sau aditivi sau componenţi de aditivi pentru combustibil sau carburant) şi include activităţi asociate cu transferul, utilizarea, întreţinerea echipamentelor şi manipularea deşeurilor acestora.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC9a, Utilizare larg răspândită a unui fluid funcțional (la interior)
ERC9b, Utilizare larg răspândită a unui fluid funcțional (la exterior)

Cantitatea folosită

Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
Tonaj pentru utilizare regională (tone/an)	:	3,4 10E4
Fracţiune de tonaj UE utilizată în regiune:	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	0,0005
Tonaj anual la amplasament (tone/an)	:	17
Tonaj zilnic maxim la amplasament (kg/zi):	:	47
MSafe (tonaj maxim permis la amplasament)	:	789 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	365 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,01 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %
Factor de emisie sau de eliberare/degajare: Sol	:	0,001 %
Note	:	Toţi factorii de eliberare/degajare se referă la eliberare/degajare din proces de utilizare cu dispersie largă. Factorii de eliberare/degajare pentru aer şi sol se referă exclusiv la utilizarea regională.

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepartare/eliminare de: nu se aplică:
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de îndepărtare/eliminare de >= (%):: 0 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 0 %
Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de oameni prin expunere indirectă (în principal, ingerare). Dacă se evacuează la staţia de tratare a apelor menajere uzate, nu este necesară tratarea apelor reziduale de la amplasament.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	90,1 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	90,1 %
Tratarea nămolului	:	A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Emisiile rezultate din ardere sunt limitate prin măsuri obligatorii de control al emisiilor de evacuare., Emisiile rezultate din ardere sunt avute în vedere în cadrul evaluării regionale a impactului., Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Această substanţă este consumată în timpul utilizării şi nu sunt generate deşeuri ale acesteia.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1	:	**Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.**
PROC2	:	**Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC3	:	**Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC8a	:	**Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate**
PROC8b	:	**Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate**
PROC16	:	**Utilizarea combustibililor**

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid
Presiune de vapori	:	Presiunea vaporilor este dată la temperatură şi presiune standard (conditii STP). < 5 hPa
Note	:	Presupune utilizarea la nu mai mult de 20°C peste temperatura ambiantă, dacă nu este menţionat altfel., Presupune implementarea unui standard de bază adecvat privind igiena profesională.

Frecvenţa şi durata folosirii

Note	:	Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel)

Condiţii tehnice şi măsuri

G18 Măsuri generale (carcinogeni).
Luaţi în considerare progresele tehnice şi modernizarea procesului (inclusiv automatizarea) pentru eliminarea degajărilor/eliberărilor/emisiilor. Minimizaţi expunerea folosind măsuri precum sistemele închise, unităţile specializate şi ventilaţia de evacuare generală / locală adecvată. Goliţi sistemele şi curăţaţi liniile/conductele de transfer înainte de a afecta etanşeitatea. Curăţaţi / spălaţi echipamentul, unde este posibil, înainte de efectuarea lucrărilor de întreţinere.
CS15 Expuneri generale (sisteme închise).
CS137 Eşantionarea produselor
Manipulaţi substanţa în cadrul unui sistem închis. Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea. Asiguraţi un standard adecvat de ventilaţie controlată (10 - 15 schimburi de aer pe oră).
CS15 Expuneri generale (sisteme închise).
Manipulaţi substanţa în cadrul unui sistem închis. Eşantionaţi printr-o buclă închisă sau un alt sistem pentru a evita expunerea. Asiguraţi un standard adecvat de ventilaţie controlată (10 - 15 schimburi de aer pe oră).
CS502 Descărcarea închisă a materialelor în vrac
Asiguraţi un standard adecvat de ventilaţie controlată (10 - 15 schimburi de aer pe oră). Asiguraţi-vă că transferurile de material se efectuează în condiţii izolate sau sub ventilaţie cu extragerea aerului.
CS8 Transferuri în canistre/în loturi
Asiguraţi un standard adecvat de ventilaţie controlată (10 - 15 schimburi de aer pe oră). Asiguraţi-vă că transferurile de material se efectuează în condiţii izolate sau sub ventilaţie cu extragerea aerului.
CS507 Alimentare cu carburanţi
Asiguraţi-vă că transferurile de material se efectuează în condiţii izolate sau sub ventilaţie cu extragerea aerului.
CS39 Curăţare şi întreţinere echipamente.
Asiguraţi un standard adecvat de ventilaţie generală (nu mai puţin de 3 - 5 schimburi de aer pe oră) Păstraţi substanţele provenite din golire în spaţii de depozitare etanşe până la eliminarea sau reciclarea ulterioară. Curăţaţi imediat substanţele/materialele scurse/vărsate. Goliţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

G18 Măsuri generale (carcinogeni).
Inspectaţi, testaţi şi menţineţi cu regularitate toate măsurile de control. Aveţi în vedere necesitatea măsurilor de supraveghere a sănătăţii în funcţie de riscuri. Acolo unde există potenţial de expunere: permiteţi accesul doar pentru personalul autorizat; asiguraţi instruirea operatorilor pentru activitatea specifică pentru a minimiza expunerile. Asiguraţi-vă că există sisteme sigure de lucru sau mecanisme echivalente pentru gestionarea riscurilor.
CS15 Expuneri generale (sisteme închise).
CS137 Eşantionarea produselor
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 1 oră
CS15 Expuneri generale (sisteme închise).
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 1 oră
CS502 Descărcarea închisă a materialelor în vrac
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 1 oră
CS8 Transferuri în canistre/în loturi
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 1 oră
CS507 Alimentare cu carburanţi
A se evita desfăşurarea activităţilor care implică expunerea mai mult de 1 oră

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

G18 Măsuri generale (carcinogeni).
Acolo unde există potenţial de expunere: Purtaţi mănuşi corespunzătoare şi îmbrăcăminte de protecţie pentru a împiedica contaminarea pielii; purtaţi mască de protecţie respiratorie atunci când folosirea acesteia este identificată pentru anumite scenarii ajutătoare; curăţaţi imediat substanţele/materialele scurse/vărsate şi eliminaţi deşeurile în siguranţă.
CS15 Expuneri generale (sisteme închise).
CS137 Eşantionarea produselor
Purtarea mănuşilor rezistente la produse chimice (testate conform EN374) corelată cu instruirea pentru activitatea specifică.
CS15 Expuneri generale (sisteme închise).
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS502 Descărcarea închisă a materialelor în vrac
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS8 Transferuri în canistre/în loturi
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS507 Alimentare cu carburanţi
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
GEST_12I Utilizare drept combustibil/carburant, CS107 (sisteme închise)
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS39 Curăţare şi întreţinere echipamente.
Purtarea mănuşilor rezistente la produse chimice (testate conform EN374) corelată cu instruirea pentru activitatea specifică.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:

Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL)/fără efect derivat (DNEL) atunci când sunt implementate măsurile de management al riscurilor (RMM)/condiţiile operaţionale (OC) descrise la secţiunea 2. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efecte carcinogene. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.

4.2. Mediu înconjurător:

Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).

carboline®
Coatings - Linings - Fireproofing

Safety Data Sheet

Prepared in Accordance with HCS 29 C.F.R. 1910.1200

1. Identification of the Substance/Mixture and the Company/Undertaking

1.1 Product Identifier 0859A1NL

Product Name: CARBOTHANE 134 HG PART A

Revision Date: 05/08/2019

Supercedes Date: 12/06/2018

1.2 Relevant identified uses of the substance or mixture and uses advised against Component of multicomponent industrial coatings - Industrial use.

1.3 Details of the supplier of the safety data sheet

Manufacturer:
Carboline Company
2150 Schuetz Road
St. Louis, MO USA 63146

Regulatory / Technical Information:
Contact Carboline Technical Services at
1-800-848-4645

Datasheet Produced by: Alotta, Vicki - regulatory@carboline.com

1.4 Emergency telephone number:
CHEMTREC 1-800-424-9300 (Inside US)
CHEMTREC +1 703 5273887 (Outside US)
HEALTH - Pittsburgh Poison Control 1-412-681-6669

2. Hazard Identification

2.1 Classification of the substance or mixture

Carcinogenicity, category 1A
Eye Irritation, category 2
Flammable Liquid, category 2
Reproductive Toxicity, category 2
STOT, repeated exposure, category 1
Skin Irritation, category 2

2.2 Label elements

Symbol(s) of Product



Signal Word

Danger

Named Chemicals on Label

TOLUENE, MICROCRYSTALLINE SILICA

HAZARD STATEMENTS

Flammable Liquid, category 2	H225	Highly flammable liquid and vapour.
Skin Irritation, category 2	H315	Causes skin irritation.
Eye Irritation, category 2	H319	Causes serious eye irritation.
Carcinogenicity, category 1A	H350-1A	May cause cancer.
Reproductive Toxicity, category 2	H361	Suspected of damaging fertility or the unborn child.
STOT, repeated exposure, category 1	H372	Causes damage to organs through prolonged or repeated exposure.

PRECAUTION PHRASES

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P235	Keep cool.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/ face protection.
P284	Wear respiratory protection.
P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P308+313	IF exposed or concerned: Get medical advice/attention
P314	Get medical advice/attention if you feel unwell.
P332+313	If skin irritation occurs: Get medical advice/attention.
P403+233	Store in a well-ventilated place. Keep container tightly closed.

2.3 Other hazards

No Information

Results of PBT and vPvB assessment:

The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

3. Composition/Information On Ingredients

3.2 Mixtures

Hazardous ingredients

Name According to EEC	EINEC No.	CAS-No.	%	Classifications
TITANIUM DIOXIDE	236-675-5	13463-67-7	25 - <50	

MICROCRYSTALLINE SILICA	238-878-4	14808-60-7	25 - <50	H350-372
BISMUTH VANDATE	237-898-0	14059-33-7	10 - <25	H331
N-BUTYL ACETATE	204-658-1	123-86-4	2.5 - <10	H226-336
TOLUENE	203-625-9	108-88-3	2.5 - <10	H225-304-315-319-336-361-373
CARBON BLACK	215-609-9	1333-86-4	2.5 - <10	
META-XYLENE	203-576-3	108-38-3	2.5 - <10	H226-312-315-332
ALIPHATIC DIOL	203-489-0	PROPRIETARY	2.5 - <10	H315-319
ETHOXYPROPIONATE	212-112-9	763-69-9	1.0 - <2.5	H226
DISPERSING AGENT	247-556-2	26264-05-1	1.0 - <2.5	H302-315-318
ETHYL BENZENE	202-849-4	100-41-4	1.0 - <2.5	H225-304-315-319-332-351-373 -412
PARA-XYLENE	203-396-5	106-42-3	1.0 - <2.5	H226-304-312-315-332-335-371
1-METHOXY-2-PROPANOL ACETATE	203-603-9	108-65-6	1.0 - <2.5	H226
ORTHO-XYLENE	202-422-2	95-47-6	1.0 - <2.5	H226-312-315-332
STODDARD SOLVENT	232-489-3	8052-41-3	1.0 - <2.5	H226-304

CAS-No.	M-Factors
13463-67-7	0
14808-60-7	0
14059-33-7	0
123-86-4	0
108-88-3	0
1333-86-4	0
108-38-3	0
PROPRIETARY	0
763-69-9	0
26264-05-1	0
100-41-4	0
106-42-3	0
108-65-6	0
95-47-6	0
8052-41-3	0

Additional Information: The text for GHS Hazard Statements shown above (if any) is given in Section 16.

4. First-aid Measures

4.1 Description of First Aid Measures

AFTER INHALATION: Give oxygen or artificial respiration if needed. Remove person to fresh air. If signs/symptoms continue, get medical attention.

AFTER SKIN CONTACT: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If skin irritation persists, call a physician.

AFTER EYE CONTACT: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

AFTER INGESTION: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If swallowed, call a poison control centre or doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

Harmful if swallowed. Irritating to eyes and skin. Risk of serious damage to the lungs (by aspiration). Vapours may cause drowsiness and dizziness.

4.3 Indication of any immediate medical attention and special treatment needed

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11.
When symptoms persist or in all cases of doubt seek medical advice.

5. Fire-fighting Measures

5.1 Extinguishing Media:

Carbon Dioxide, Dry Chemical, Foam, Water Fog

UNUSUAL FIRE AND EXPLOSION HAZARDS: Flammable liquid. Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. Provide adequate ventilation. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Electrical installations / working materials must comply with the technological safety standards. Wear shoes with conductive soles.

FOR SAFETY REASONS NOT TO BE USED: No Information

5.2 Special hazards arising from the substance or mixture

No Information

5.3 Advice for firefighters

SPECIAL FIREFIGHTING PROCEDURES: In the event of fire, wear self-contained breathing apparatus. Cool containers / tanks with water spray. Flammable.

SPECIAL FIREFIGHTING PROTECTION EQUIPMENT: No Information

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Evacuate personnel to safe areas. Remove all sources of ignition. To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded. Wear personal protective equipment. For personal protection see section 8.

6.2 Environmental precautions

Do not allow material to contaminate ground water system. Prevent product from entering drains.

6.3 Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sections

Please refer to disposal requirements or country specific disposal requirements for this material. See Section 13 for further information.

7. Handling and Storage

7.1 Precautions for safe handling

INSTRUCTIONS FOR SAFE HANDLING : Keep containers dry and tightly closed to avoid moisture absorption and contamination. Prepare the working solution as given on the label(s) and/or the user instructions. Do not breathe vapours or spray mist. Ensure all equipment is electrically grounded before beginning transfer operations. Do not use sparking tools.

Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation/personal protection. Wash thoroughly after handling.
PROTECTION AND HYGIENE MEASURES : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke.

7.2 Conditions for safe storage, including any incompatibilities

CONDITIONS TO AVOID: Heat, flames and sparks.
STORAGE CONDITIONS: Keep container closed when not in use. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.

7.3 Specific end use(s)

No specific advice for end use available.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Ingredients with Occupational Exposure Limits (US)

Name	CAS-No.	ACGIH TWA	ACGIH STEL	ACGIH Ceiling
TITANIUM DIOXIDE	13463-67-7	10 mg/m3	N/E	N/E
MICROCRYSTALLINE SILICA	14808-60-7	0.025 MGM3	N/E	N/E
BISMUTH VANDATE	14059-33-7	N/E	N/E	N/E
N-BUTYL ACETATE	123-86-4	50 PPM	150 PPM	N/E
TOLUENE	108-88-3	20 PPM	N/E	N/E
CARBON BLACK	1333-86-4	3 MGM3	N/E	N/E
META-XYLENE	108-38-3	100 PPM	150 PPM	N/E
ALIPHATIC DIOL	PROPRIETARY	25 PPM	50 PPM	N/E
ETHOXYPROPIONATE	763-69-9	N/E	N/E	N/E
DISPERSING AGENT	26264-05-1	N/E	N/E	N/E
ETHYL BENZENE	100-41-4	20 PPM	125 ppm	
PARA-XYLENE	106-42-3	100 PPM	150 PPM	N/E
1-METHOXY-2-PROPANOL ACETATE	108-65-6	N/E	N/E	N/E
ORTHO-XYLENE	95-47-6	100 PPM	150 PPM	N/E
STODDARD SOLVENT	8052-41-3	100 ppm	N/E	N/E

Name	CAS-No.	OSHA PEL	OSHA STEL
TITANIUM DIOXIDE	13463-67-7	15 MGM3	N/E
MICROCRYSTALLINE SILICA	14808-60-7	0.05 MGM3	N/E
BISMUTH VANDATE	14059-33-7	N/E	N/E
N-BUTYL ACETATE	123-86-4	710 MGM3, 150 PPM	950 MGM3, 200 PPM
TOLUENE	108-88-3	200 ppm	560 MGM3, 150 PPM
CARBON BLACK	1333-86-4	3.5 MG/M3	N/E

META-XYLENE	108-38-3	100.00 PPM	N/E
ALIPHATIC DIOL	PROPRIETARY	N/E	N/E
ETHOXYPROPIONATE	763-69-9	N/E	N/E
DISPERSING AGENT	26264-05-1	N/E	N/E
ETHYL BENZENE	100-41-4	435 MGM3, 100 PPM	545 MGM3, 125 PPM
PARA-XYLENE	106-42-3	100.00 PPM	N/E
1-METHOXY-2-PROPANOL ACETATE	108-65-6	N/E	N/E
ORTHO-XYLENE	95-47-6	100.00 PPM	N/E
STODDARD SOLVENT	8052-41-3	525 MGM3, 100 PPM	N/E

FURTHER ADVICE: Refer to the regulatory exposure limits for the workforce enforced in each country. Some components may not have been classified at the EU level under the dangerous substances and preparations regulation.

8.2 Exposure controls

Personal Protection

RESPIRATORY PROTECTION: In order to avoid inhalation of spray-mist and sanding dust, all spraying and sanding must be done wearing adequate respirator. Use only with ventilation to keep levels below exposure guidelines reported in this document. User should test and monitor exposure levels to ensure all personnel are below guidelines. If not sure, or not able to monitor, use State or federally approved supplied air respirator. For silica containing coatings in a liquid state, and/or if no exposure limits are established above, air-supplied respirators are generally not required.

EYE PROTECTION: Ensure that eyewash stations and safety showers are close to the workstation location. Safety glasses with side-shields.

HAND PROTECTION: Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Impervious gloves. Request information on glove permeation properties from the glove supplier. Lightweight protective clothing

OTHER PROTECTIVE EQUIPMENT: No Information

ENGINEERING CONTROLS: Avoid contact with skin, eyes and clothing. Ensure adequate ventilation, especially in confined areas.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance:	Viscous Liquid, Various Colors
Physical State	Liquid
Odor	Solvent
Odor threshold	N/D
pH	N/D
Melting point / freezing point (°C)	N/D
Boiling point/range (°C)	232F (111C) - 284 F (140 C)
Flash Point (°C)	50F (10C)

Evaporation rate	Slower Than Ether
Flammability (solid, gas)	Not determined
Upper/lower flammability or explosive limits	0.6 - 10.4
Vapour Pressure, mmHg	N/D
Vapour density	Heavier than Air
Relative density	Not determined
Solubility in / Miscibility with water	N/D
Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature (°C)	Not determined
Decomposition temperature (°C)	Not determined
Viscosity	Unknown
Explosive properties	Not determined
Oxidising properties	Not determined

9.2 Other information

VOC Content g/l:	264
Specific Gravity (g/cm3)	app. 1.28

10. Stability and Reactivity

10.1 Reactivity
No reactivity hazards known under normal storage and use conditions.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
Hazardous polymerisation does not occur.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents.

10.6 Hazardous decomposition products
Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke.

11. Toxicological Information

11.1 Information on toxicological effects

Acute Toxicity:

Oral LD50: N/D

Inhalation LC50: N/D

Irritation: Eye Irritation and Skin Irritation, category 2

Corrosivity: Unknown

Sensitization: Unknown

Repeated dose toxicity: STOT Repeated Dose (lungs): Category 1

Carcinogenicity: Carcinogenicity, category 1A

Mutagenicity: Unknown

Toxicity for reproduction: Reproductive Toxicity, category 2

STOT-single exposure: Unknown

STOT-repeated exposure: STOT, repeated exposure, category 1

Aspiration hazard: Unknown

If no information is available above under Acute Toxicity then the acute effects of this product have not been tested. Data on individual components are tabulated below:

CAS-No.	Chemical Name	Oral LD50	Dermal LD50	Vapor LC50	Gas LC50	Dust/Mist LC50
13463-67-7	TITANIUM DIOXIDE	25000 mg/kg, oral (rat)	Not Available	Not Available	No Information	No Information
14808-60-7	MICROCRYSTALLINE SILICA	22500 mg/kg	Not Available	Not Available	0.000	0.000
14059-33-7	BISMUTH VANDATE	>5000 mg/kg		5.1 mg/L / 4 hr, INH, rat	0.000	0.000
123-86-4	N-BUTYL ACETATE	10760 mg/kg, rat, oral	14112 mg/kg (rabbit)	21 mg/l/4/h, Inh. rat		
108-88-3	TOLUENE	5000 mg/kg rat oral	12267 mg/kg, dermal, rabbit	8000 ppm/4 hrs, rat, inhalation	0.000	0.000
1333-86-4	CARBON BLACK	8000 mg/kg oral, rat	Not Available	Not Available		
108-38-3	META-XYLENE	Not Available	Not Available	Not Available	0.000	0.000
PROPRIETARY	ALIPHATIC DIOL	Not Available		Not Available	0.000	0.000
763-69-9	ETHOXYPROPIONATE	5000 mg/kg, oral, rat	4080 mg/kg, dermal, rat	Not Available	0.000	0.000
26264-05-1	DISPERSING AGENT	1836 MG/KG, ORAL, RAT		NOT AVAILABLE	0.000	0.000

100-41-4	ETHYL BENZENE	3500 mg/kg rat, oral	>5000 mg/l, dermal rabbit	17.2 mg/L Inh, Rat, 4Hr	0.000	0.000
106-42-3	PARA-XYLENE	Not Available	Not Available	Not Available	0.000	0.000
108-65-6	1-METHOXY-2-PROPANOL ACETATE	8532 mg/kg, oral (rat)	>5000 mg/kg	101 ppm/4 hr, rat, inh	0.000	0.000
95-47-6	ORTHO-XYLENE	Not Available	Not Available	Not Available	0.000	0.000
8052-41-3	STODDARD SOLVENT	6001 mg/kg, oral, rat	Not Available	5500 mg/m3, 4h, inhalation	0.000	0.000

Additional Information:

This product may contain Ethyl Benzene, which is listed by IARC as possibly carcinogenic to humans (Group 2B). This listing is based on inadequate evidence of carcinogenicity in humans and sufficient evidence in experimental animals. This product contains silica which is classified by IARC as a known human carcinogen (Group 1). Crystalline silica is known to cause silicosis. The classification(s) is/are relevant when exposed to these respirable substances in dust or powder form only, including cured product that is subject to sanding, grinding, cutting, or other surface preparation activities.

12. Ecological Information

12.1 Toxicity:

EC50 48hr (Daphnia): Unknown

IC50 72hr (Algae): Unknown

LC50 96hr (fish): Unknown

12.2 Persistence and degradability: Unknown

12.3 Bioaccumulative potential: Unknown

12.4 Mobility in soil: Unknown

12.5 Results of PBT and vPvB assessment: The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

12.6 Other adverse effects: Unknown

CAS-No.	Chemical Name	EC50 48hr	IC50 72hr	LC50 96hr
13463-67-7	TITANIUM DIOXIDE	No information	No information	No information
14808-60-7	MICROCRYSTALLINE SILICA	No information	No information	No information
14059-33-7	BISMUTH VANDATE	No information	No information	No information
123-86-4	N-BUTYL ACETATE	44 mg/l (Daphnia magna)	674.7 mg/L (Green Algae)	18 mg/l (Fathead minnow)
108-88-3	TOLUENE	6 mg/l (Daphnia magna)	12.5 mg/L (Algae)	5.8 mg/L (Fish)
1333-86-4	CARBON BLACK	No information	No information	No information
108-38-3	META-XYLENE	No information	No information	No information
PROPRIETARY	ALIPHATIC DIOL	No information	No information	No information
763-69-9	ETHOXYPROPIONATE	785 mg/l (daphnia magna)	115 mg/l (algae)	67.65 mg/l (fathead minnow)
26264-05-1	DISPERSING AGENT	No information	No information	No information
100-41-4	ETHYL BENZENE	1.8 mg/l (Daphnia Magna)	4.6 mg/l (Green Algae)	4.2 mg/l (Rainbow Trout)
106-42-3	PARA-XYLENE	No information	No information	No information

108-65-6	1-METHOXY-2-PROPANOL ACETATE	408 mg/l (Daphnia Magna)	>1000 mg/l (Green Algae)	161 mg/l (Fathead Minnow)
95-47-6	ORTHO-XYLENE	No information	No information	No information
8052-41-3	STODDARD SOLVENT	No information	No information	No information

13. Disposal Considerations

13.1 WASTE TREATMENT METHODS: Do not burn, or use a cutting torch on, the empty drum. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport Information

14.1	**UN number**	UN 1263
14.2	**UN proper shipping name**	Paint
	Technical name	N/A
14.3	**Transport hazard class(es)**	3
	Subsidiary shipping hazard	N/A
14.4	**Packing group**	II
14.5	**Environmental hazards**	Unknown
14.6	**Special precautions for user**	Unknown
	EmS-No.:	F-E, S-E
14.7	**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code**	Unknown

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation for the substance or mixture:

U.S. Federal Regulations: As follows -

CERCLA - Sara Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Flammable (gases, aerosols, liquids, or solids), Carcinogenicity, Reproductive toxicity, Skin Corrosion or Irritation, Serious eye damage or eye irritation, Specific target organ toxicity (single or repeated exposure)

Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS-No.	%
BISMUTH VANDATE	14059-33-7	20.03
TOLUENE	108-88-3	9.33
META-XYLENE	108-38-3	3.21
ETHYL BENZENE	100-41-4	1.49
PARA-XYLENE	106-42-3	1.42
ORTHO-XYLENE	95-47-6	1.05

Toxic Substances Control Act:

All components of this product are either listed on the TSCA Inventory or are exempt.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

Chemical Name	CAS-No.
PARA-XYLENE	106-42-3

U.S. State Regulations: As follows -

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product.

Chemical Name	CAS-No.
ACRYLIC COPOLYMER	TRADE SECRET
COLOR PIGMENT	5567-15-7

Pennsylvania Right-To-Know

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical Name	CAS-No.
ACRYLIC COPOLYMER	TRADE SECRET
COLOR PIGMENT	5567-15-7
YELLOW PIGMENT	31837-42-0
AZO PIGMENT	82199-12-0
YELLOW IRON OXIDE	51274-00-1
IRON OXIDE	1309-37-1
ACRYLIC POLYOL	TRADE SECRET
AZO PIGMENT	2786-76-7
RED PIGMENT	84632-65-5
COLOR PIGMENT	15793-73-4
QUINACRIDONE PIGMENT	1047-16-1
COLOR PIGMENT	1328-53-6

CALIFORNIA PROPOSITION 65

WARNING: Cancer and Reproductive Harm -- www.P65Warnings.ca.gov

International Regulations: As follows -

*** Canadian DSL:**

All chemical ingredients included on inventory (DSL)

15.2 Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

16. Other Information

Text for GHS Hazard Statements shown in Section 3 describing each ingredient:

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.

H312	Harmful in contact with skin.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H350	May cause cancer.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H371	May cause damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Reasons for revision

No Information

The information contained herein is, to the best of our knowledge and belief accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

SAFETY DATA SHEET
Carboline Urethane Converter 811

According to Regulation (EC) No 1907/2006, Annex II, as amended by Regulation (EU) No 453/2010

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name Carboline Urethane Converter 811

Product number 820UC811-B

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

Supplier
Akis Paint and Chemical Inc.
Ali Osman Sönmez Cad. No:4
DOSAB-BURSA/TURKEY
T: +902242610537
F:+902242610542
www.akisboya.com

Contact person Tolga Dıraz - Teknik Müdür,Resmiye Kovancı Savaş - Fabrika Müdürü,H.Tuğba Başkurt Fildişi - Kalite Güvence Sorumlusu

1.4. Emergency telephone number

Emergency telephone Company Tel: +90 224 261 05 37 (office hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification

Physical hazards Flam. Liq. 3 - H226

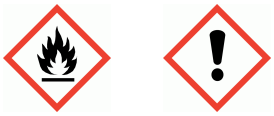
Health hazards Acute Tox. 4 - H332 Skin Sens. 1 - H317 STOT SE 3 - H335

Environmental hazards Aquatic Chronic 3 - H412

Classification (67/548/EEC or 1999/45/EC) Xn; R20. Xi; R37. R52/53, R10, R43

2.2. Label elements

Pictogram



Signal word Warning

Hazard statements
H226 Flammable liquid and vapour.
H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting effects.

Carboline Urethane Converter 811

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing vapour/spray.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P321 Specific treatment (see medical advice on this label).
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/container in accordance with national regulations.

Contains

hexamethylene-1,6-diisocyanate homopolymer, Low boiling point naphtha - unspecified, hexamethylene-di-isocyanate

2.3. Other hazards

No data available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

hexamethylene-1,6-diisocyanate homopolymer **80-95%**

CAS number: 28182-81-2 EC number: 500-060-2

Classification
Acute Tox. 4 - H332
Skin Sens. 1 - H317
STOT SE 3 - H335

Classification (67/548/EEC or 1999/45/EC)
Xn; R20. Xi; R37. R43

n-butyl acetate **1-5%**

CAS number: 123-86-4 EC number: 204-658-1

Classification
Flam. Liq. 3 - H226
STOT SE 3 - H336

Classification (67/548/EEC or 1999/45/EC)
R10, R66, R67

Carboline Urethane Converter 811

Low boiling point naphtha - unspecified		**1-5%**
CAS number: 64742-95-6	EC number: 265-199-0	

Classification	**Classification (67/548/EEC or 1999/45/EC)**
Flam. Liq. 3 - H226 STOT SE 3 - H335, H336 Asp. Tox. 1 - H304 Aquatic Chronic 2 - H411	Xn; R65. Xi; R37. N; R51/53. R10, R67

hexamethylene-di-isocyanate		**<1%**
CAS number: 822-06-0	EC number: 212-485-8	

Classification
Acute Tox. 4 - H302
Acute Tox. 1 - H330
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
Resp. Sens. 1 - H334
Skin Sens. 1 - H317
STOT SE 3 - H335

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information Remove affected person from source of contamination. Chemical burns must be treated by a physician.

Inhalation If it is suspected that volatile contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus. First aid personnel should wear appropriate protective equipment during any rescue. If spray/mist has been inhaled, proceed as follows. Remove person to fresh air and keep comfortable for breathing. Maintain an open airway. Rinse nose and mouth with water. Consult a physician for specific advice. Keep affected person warm and at rest. Get medical attention if symptoms are severe or persist.

Ingestion Rinse mouth thoroughly with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

Skin contact Remove affected person from source of contamination. Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.

Eye contact Remove affected person from source of contamination. Remove contact lenses, if present and easy to do. Continue rinsing. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes and get medical attention.

Protection of first aiders Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. First aid personnel should wear appropriate protective equipment during any rescue.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation The product contains organic solvents. Toxic if inhaled.

Carboline Urethane Converter 811

Ingestion This product is corrosive. Liquid irritates mucous membranes and may cause abdominal pain if swallowed. May cause chemical burns in mouth and throat.

Skin contact Causes severe burns.

Eye contact Redness. Conjunctivitis, irritation, tearing. May cause chemical eye burns.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor Treat symptomatically.

Specific treatments No specific chemical antidote is known to be required after exposure to this product.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Use foam, carbon dioxide, dry powder or water fog to extinguish.

5.2. Special hazards arising from the substance or mixture

Specific hazards Not known. Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.

Hazardous combustion products None known.

5.3. Advice for firefighters

Protective actions during firefighting Move containers from fire area if it can be done without risk. Control run-off water by containing and keeping it out of sewers and watercourses. Stop leak if safe to do so. Contain and collect extinguishing water. Ventilate closed spaces before entering them. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for firefighters Use air-supplied respirator, gloves and protective goggles.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure procedures and training for emergency decontamination and disposal are in place. Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Take care as floors and other surfaces may become slippery. Ensure suitable respiratory protection is worn during removal of spillages in confined areas.

6.2. Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground. The product contains substances which are toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment. May accumulate in soil and water systems.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Large Spillages: Collect spillage for reclamation or absorb in vermiculite, dry sand or similar material. Flush contaminated area with plenty of water. Small Spillages: Absorb small quantities with paper towels and evaporate in a safe place. Once evaporation is complete, place paper in a suitable waste disposal container and seal securely. Leave small quantities to evaporate, if safe to do so. Allow small quantities to evaporate to the atmosphere in a safe, open place.

6.4. Reference to other sections

Carboline Urethane Converter 811

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Obtain special instructions before use. Avoid contact with skin, eyes and clothing. Read label before use. Wear protective clothing as described in Section 8 of this safety data sheet. For professional users only.

Advice on general occupational hygiene Take off contaminated clothing. Promptly remove any clothing that becomes wet or contaminated. Remove contaminated clothing and wash the skin thoroughly with soap and water after work. Contaminated clothing should be placed in a closed container for disposal or decontamination. Good personal hygiene procedures should be implemented. Provide eyewash station. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry and cool place. Protect from sunlight. Keep away from food, drink and animal feeding stuffs. Keep containers upright.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

8.2. Exposure controls

Protective equipment



Appropriate engineering controls As this product contains ingredients with exposure limits, process enclosures, local exhaust ventilation or other engineering controls should be used to keep worker exposure below any statutory or recommended limits, if use generates dust, fumes, gas, vapour or mist.

Eye/face protection Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible.

Hand protection Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible.

Other skin and body protection Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact.

Hygiene measures Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Clean equipment and the work area every day.

Respiratory protection Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible.

Thermal hazards If there is a risk of contact with hot product, all protective equipment worn should be suitable for use with high temperatures.

Environmental exposure controls Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Carboline Urethane Converter 811

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Homogeneous
Colour	Clear.
Flash point	>23°C; <60°C
Relative density	1,08–1,13 gr/cm3 (20°C)

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

10.4. Conditions to avoid

Conditions to avoid Avoid exposure to high temperatures or direct sunlight.

10.5. Incompatible materials

10.6. Hazardous decomposition products

Hazardous decomposition products Decomposition at ambient temperatures may generate the following substances: Carbon monoxide (CO). Carbon dioxide (CO2).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects This product is toxic. Alergic skin reaction may be observerd in hypersensitive personel. Harmful if swallowed.

Acute toxicity - inhalation

ATE inhalation (vapours mg/l) 1,222.0

Skin corrosion/irritation

Skin corrosion/irritation No information available.

Respiratory sensitisation

Respiratory sensitisation Sensitising.

Skin sensitisation

Skin sensitisation Sensitising.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Specific target organ toxicity - single exposure

STOT - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Data lacking.

Carboline Urethane Converter 811

Inhalation	The product contains organic solvents. May cause drowsiness or dizziness.
Ingestion	May be harmful if swallowed. May cause stomach pain or vomiting.
Skin contact	Liquid may irritate skin.
Eye contact	May irritate eyes.

SECTION 12: Ecological Information

Ecotoxicity Dangerous for the environment. The product contains volatile organic compounds (VOCs) which have a photochemical ozone creation potential. May cause long lasting harmful effects to aquatic life. The product may have adverse effects on organisms in soil and water.

12.1. Toxicity

Toxicity No effects known.

12.2. Persistence and degradability

Persistence and degradability No data available.

12.3. Bioaccumulative potential

Bioaccumulative potential Not known.

12.4. Mobility in soil

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects Not known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Confirm disposal procedures with environmental engineer and local regulations. Product residues retained in emptied containers can be hazardous.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID)	1263
UN No. (IMDG)	1263
UN No. (ICAO)	1263
UN No. (ADN)	1263

14.2. UN proper shipping name

Proper shipping name (ADR/RID) PAINT RELATED MATERIAL

Carboline Urethane Converter 811

Proper shipping name (IMDG)	PAINT RELATED MATERIAL
Proper shipping name (ICAO)	PAINT RELATED MATERIAL
Proper shipping name (ADN)	PAINT RELATED MATERIAL

14.3. Transport hazard class(es)

ADR/RID class	3
ADR/RID classification code	F1
ADR/RID label	3
IMDG class	3
ICAO class/division	3
ADN class	3

Transport labels



14.4. Packing group

ADR/RID packing group	III
IMDG packing group	III
ADN packing group	III
ICAO packing group	III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

EmS	F-E, S-E
ADR transport category	3
Emergency Action Code	•3Y
Hazard Identification Number (ADR/RID)	30
Tunnel restriction code	(D/E)

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Carboline Urethane Converter 811

EU legislation	Commission Decision 2000/532/EC as amended by Decision 2001/118/EC establishing a list of wastes and hazardous waste pursuant to Council Directive 75/442/EEC on waste and Directive 91/689/EEC on hazardous waste with amendments. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Key literature references and sources for data	This SDS has been created as a result of observations, measurements on the product related to the product and the data that raw material suppliers provide
Revision comments	This is first issue.
Issued by	Mr. Tolga DIRAZ - Certified SDS Author - Certificate No: 01.40.08/06.03.2015 / tdiraz@iyigullu.com.tr / +90 224 261 05 37
Revision	0
Supersedes date	28/12/2015
SDS number	4923
Risk phrases in full	R10 Flammable. R20 Harmful by inhalation. R23 Toxic by inhalation. R36/37/38 Irritating to eyes, respiratory system and skin. R37 Irritating to respiratory system. R42/43 May cause sensitisation by inhalation and skin contact. R43 May cause sensitisation by skin contact. R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R65 Harmful: may cause lung damage if swallowed. R66 Repeated exposure may cause skin dryness or cracking. R67 Vapours may cause drowsiness and dizziness.
Hazard statements in full	H226 Flammable liquid and vapour. H302 Harmful if swallowed. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H332 Harmful if inhaled. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation. H336 May cause drowsiness or dizziness. H411 Toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects. EUH208 Contains hexamethylene-di-isocyanate. May produce an allergic reaction.

Carboline Urethane Converter 811

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

SAFETY DATA SHEET

Date of issue/Date of revision 17 August 2021
Version 4

Section 1. Identification

Product name : AMERLOCK 400C / 400GF CURE
Product code : 000001065894
Other means of identification : 00289015; 00317785; 00317786; 00320207; 00325467
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Professional applications, Used by spraying.
Use of the substance/ mixture : Coating.
Uses advised against : Not applicable.

Manufacturer : PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272
Emergency telephone number : (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
SETIQ Interior de la República: 800-00-214-00 (México)
SETIQ Ciudad de México: (55) 5559-1588 (México)

Technical Phone Number : 888-977-4762

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION - Category 1
SERIOUS EYE DAMAGE - Category 1
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 13.7% (oral), 59.4% (dermal), 70.3% (inhalation)

GHS label elements

Section 2. Hazards identification

Hazard pictograms :



Signal word : Danger

Hazard statements : Flammable liquid and vapor.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Harmful if inhaled.
May cause respiratory irritation.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response : IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Sanding and grinding dusts may be harmful if inhaled. Do not taste or swallow. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

Hazards not otherwise classified : Causes digestive tract burns. Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Product name : AMERLOCK 400C / 400GF CURE
Other means of identification : 00289015; 00317785; 00317786; 00320207; 00325467

Ingredient name	%	CAS number
Talc, not containing asbestiform fibers	≥20 - ≤50	14807-96-6
4-methylpentan-2-one	≥10 - ≤12	108-10-1
Polyaminoamide	≥5.0 - ≤10	68082-29-1
benzyl alcohol	≥1.0 - ≤5.0	100-51-6
cyclohexanone	≥1.0 - ≤5.0	108-94-1
3-aminomethyl-3,5,5-trimethylcyclohexylamine	≥1.0 - ≤5.0	2855-13-2
4-nonylphenol, branched	≥1.0 - ≤5.0	84852-15-3
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	≥1.0 - ≤5.0	38294-64-3
2-methylpropan-1-ol	≥1.0 - ≤4.0	78-83-1
2,4,6-tris(dimethylaminomethyl)phenol	≥0.10 - ≤2.7	90-72-2
salicylic acid	<1.0	69-72-7

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Harmful if inhaled. May cause respiratory irritation.

Skin contact : Causes severe burns. Defatting to the skin. May cause an allergic skin reaction.

Section 4. First aid measures

Ingestion : Corrosive to the digestive tract. Causes burns.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
dryness
cracking
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Section 5. Fire-fighting measures

Specific hazards arising from the chemical : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
halogenated compounds
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Special precautions : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store between the following temperatures: 0 to 35°C (32 to 95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Talc, not containing asbestiform fibers	**ACGIH TLV (United States, 3/2020).** TWA: 2 mg/m³ 8 hours. Form: Respirable **OSHA PEL Z3 (United States).** TWA: 2 mg/m³
4-methylpentan-2-one	**ACGIH TLV (United States, 3/2020).** STEL: 75 ppm 15 minutes. TWA: 20 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 410 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
Polyaminoamide	None.
benzyl alcohol	**IPEL (-).**

Section 8. Exposure controls/personal protection

	TWA: 5 ppm STEL: 10 ppm
cyclohexanone	**ACGIH TLV (United States, 3/2020).** **Absorbed through skin.** STEL: 50 ppm 15 minutes. TWA: 20 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 200 mg/m³ 8 hours. TWA: 50 ppm 8 hours.
3-aminomethyl-3,5,5-trimethylcyclohexylamine	None.
4-nonylphenol, branched	None.
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	None.
2-methylpropan-1-ol	**ACGIH TLV (United States, 3/2020).** TWA: 152 mg/m³ 8 hours. TWA: 50 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 300 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
2,4,6-tris(dimethylaminomethyl)phenol	None.
salicylic acid	None.

Key to abbreviations

A	=	Acceptable Maximum Peak	S	=	Potential skin absorption
ACGIH	=	American Conference of Governmental Industrial Hygienists.	SR	=	Respiratory sensitization
C	=	Ceiling Limit	SS	=	Skin sensitization
F	=	Fume	STEL	=	Short term Exposure limit values
IPEL	=	Internal Permissible Exposure Limit	TD	=	Total dust
OSHA	=	Occupational Safety and Health Administration.	TLV	=	Threshold Limit Value
R	=	Respirable	TWA	=	Time Weighted Average
Z	=	OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances			

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Section 8. Exposure controls/personal protection

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Chemical splash goggles and face shield.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : butyl rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.
The respiratory protection shall be in accordance to 29 CFR 1910.134.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Colorless.

Odor : Amine-like. [Strong]

Odor threshold : Not available.

pH : Not applicable.

Melting point : Not available.

Boiling point : >37.78°C (>100°F)

Flash point : Closed cup: 37°C (98.6°F)

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Evaporation rate : Not available.

Section 9. Physical and chemical properties

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 1.36

Density (lbs / gal) : 11.35

Solubility : Insoluble in the following materials: cold water.

Partition coefficient: n-octanol/water : Not applicable.

Viscosity : Kinematic (40°C (104°F)): >21 mm^2/s (>21 cSt)

Volatility : 28% (v/v), 17.186% (w/w)

% Solid. (w/w) : 82.814

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.

Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

Hazardous decomposition products : Depending on conditions, decomposition products may include the following materials: carbon oxides nitrogen oxides halogenated compounds metal oxide/oxides

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
4-methylpentan-2-one	LC50 Inhalation Vapor	Rat	12.3 mg/l	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	2.08 g/kg	-
benzyl alcohol	LC50 Inhalation Dusts and mists	Rat	>4178 mg/m^3	4 hours
	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	1.23 g/kg	-
cyclohexanone	LC50 Inhalation Gas.	Rat	8000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	11 mg/l	4 hours
	LD50 Dermal	Rabbit	1100 mg/kg	-
	LD50 Oral	Rat	1.62 g/kg	-
3-aminomethyl-3,5,5-trimethylcyclohexylamine	LC50 Inhalation Dusts and mists	Rat	>5.01 mg/l	4 hours
	LD50 Dermal	Rat	>2000 mg/kg	-

Section 11. Toxicological information

	LD50 Oral	Rat	1030 mg/kg	-
4-nonylphenol, branched	LD50 Dermal	Rabbit	2.14 g/kg	-
	LD50 Oral	Rat	1300 mg/kg	-
2-methylpropan-1-ol	LC50 Inhalation Vapor	Rat	24.6 mg/l	4 hours
	LD50 Dermal	Rabbit	2460 mg/kg	-
	LD50 Oral	Rat	2830 mg/kg	-
2,4,6-tris (dimethylaminomethyl)phenol	LD50 Dermal	Rabbit	1.28 g/kg	-
	LD50 Dermal	Rat	1280 mg/kg	-
	LD50 Oral	Rat	1200 mg/kg	-
salicylic acid	LD50 Oral	Rat	0.891 g/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
4-nonylphenol, branched	Skin - Erythema/Eschar	Rabbit	4	-	-
2,4,6-tris (dimethylaminomethyl)phenol	Skin - Visible necrosis	Rabbit	-	4 hours	7 days

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Product/ingredient name	Route of exposure	Species	Result
3-aminomethyl-3,5,5-trimethylcyclohexylamine	skin	Guinea pig	Sensitizing
2,4,6-tris (dimethylaminomethyl)phenol	skin	Guinea pig	Sensitizing

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Classification

Product/ingredient name	OSHA	IARC	NTP
4-methylpentan-2-one	-	2B	-
cyclohexanone	-	3	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Section 11. Toxicological information

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Talc, not containing asbestiform fibers	Category 3	-	Respiratory tract irritation
4-methylpentan-2-one	Category 3	-	Respiratory tract irritation
2-methylpropan-1-ol	Category 3	-	Respiratory tract irritation
	Category 3		Narcotic effects

Specific target organ toxicity (repeated exposure)

Not available.

Target organs : Contains material which causes damage to the following organs: blood, liver, heart, brain, skin, central nervous system (CNS).
Contains material which may cause damage to the following organs: kidneys, lungs, the reproductive system, cardiovascular system, upper respiratory tract, bones, eye, lens or cornea.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Causes serious eye damage.
Inhalation : Harmful if inhaled. May cause respiratory irritation.
Skin contact : Causes severe burns. Defatting to the skin. May cause an allergic skin reaction.
Ingestion : Corrosive to the digestive tract. Causes burns.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 11. Toxicological information

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
dryness
cracking
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
AMERLOCK 400C / 400GF CURE	4233.3	3428.6	55416.1	24.2	2.9
4-methylpentan-2-one	2080	N/A	N/A	12.3	1.5
benzyl alcohol	1230	2000	N/A	N/A	1.5
cyclohexanone	1620	1100	8000	11	N/A
3-aminomethyl-3,5,5-trimethylcyclohexylamine	1030	2500	N/A	N/A	N/A
4-nonylphenol, branched	1300	2140	N/A	N/A	N/A
2-methylpropan-1-ol	2830	2460	N/A	24.6	N/A
2,4,6-tris(dimethylaminomethyl)phenol	1200	1280	N/A	N/A	N/A
salicylic acid	891	N/A	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
4-methylpentan-2-one	Acute LC50 >179 mg/l	Fish	96 hours
4-nonylphenol, branched	Acute EC50 0.04 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 0.044 mg/l	Crustaceans - Moina macrocopa	48 hours
	Acute LC50 0.221 mg/l	Fish	96 hours
2-methylpropan-1-ol	Acute EC50 1100 mg/l	Daphnia	48 hours
2,4,6-tris (dimethylaminomethyl)phenol	Acute LC50 175 mg/l	Fish	96 hours
salicylic acid	Acute EC50 1147.57 mg/l Fresh water	Daphnia - Daphnia longispina - Neonate	48 hours
	Chronic NOEC 5.6 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
4-methylpentan-2-one	OECD 301F	83 % - Readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
4-methylpentan-2-one	-	-	Readily
benzyl alcohol	-	-	Readily

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	$LogP_{ow}$	BCF	Potential
4-methylpentan-2-one	1.9	-	low
benzyl alcohol	0.87	-	low
cyclohexanone	0.86	-	low
3-aminomethyl-3,5,5-trimethylcyclohexylamine	0.99	-	low
4-nonylphenol, branched	5.4	251.19	low
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	-	5.13	low
2-methylpropan-1-ol	1	-	low
2,4,6-tris (dimethylaminomethyl)phenol	0.219	-	low
salicylic acid	2.21 to 2.26	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	UN3469	UN3469	UN3469
UN proper shipping name	PAINT, FLAMMABLE, CORROSIVE	PAINT, FLAMMABLE, CORROSIVE	PAINT, FLAMMABLE, CORROSIVE
Transport hazard class (es)	3 (8)	3 (8)	3 (8)
Packing group	III	III	III
Environmental hazards	No.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Marine pollutant substances	Not applicable.	(4-nonylphenol, branched)	Not applicable.
Product RQ (lbs)	48637.6	Not applicable.	Not applicable.
RQ substances	(4-methylpentan-2-one)	Not applicable.	Not applicable.

Additional information

DOT : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : At least one component is inactive.

United States - TSCA 12(b) - Chemical export notification:

4-nonylphenol, branched	One time notification

United States - TSCA 5(a)2 - Proposed significant new use rules:

4-nonylphenol, branched	Listed

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Section 15. Regulatory information

Classification : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION - Category 1
SERIOUS EYE DAMAGE - Category 1
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
HNOC - Corrosive to digestive tract
HNOC - Defatting irritant

Composition/information on ingredients

Name	%	Classification
Talc, not containing asbestiform fibers	≥20 - ≤50	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
4-methylpentan-2-one	≥10 - ≤12	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 HNOC - Defatting irritant
Polyaminoamide	≥5.0 - ≤10	SERIOUS EYE DAMAGE - Category 1
benzyl alcohol	≥1.0 - ≤5.0	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A
cyclohexanone	≥1.0 - ≤5.0	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1
3-aminomethyl-3,5,5-trimethylcyclohexylamine	≥1.0 - ≤5.0	ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION - Category 1 SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1B
4-nonylphenol, branched	≥1.0 - ≤5.0	ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION - Category 1 SERIOUS EYE DAMAGE - Category 1 TOXIC TO REPRODUCTION - Category 2 HNOC - Corrosive to digestive tract
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine	≥1.0 - ≤5.0	SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1A
2-methylpropan-1-ol	≥1.0 - ≤4.0	FLAMMABLE LIQUIDS - Category 3 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1

Section 15. Regulatory information

		SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
2,4,6-tris(dimethylaminomethyl) phenol	≥0.10 - ≤2.7	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 SKIN CORROSION - Category 1C SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1B
salicylic acid	<1.0	COMBUSTIBLE DUSTS ACUTE TOXICITY (oral) - Category 4 SERIOUS EYE DAMAGE - Category 1 TOXIC TO REPRODUCTION - Category 2

SARA 313

Supplier notification

Chemical name	CAS number	Concentration
4-methylpentan-2-one	108-10-1	7 - 13
4-nonylphenol, branched	84852-15-3	1 - 5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

California Prop. 65

⚠ **WARNING**: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 3 * **Flammability** : 3 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 3 **Flammability** : 3 **Instability** : 0

Date of previous issue : **8/3/2021**

Organization that prepared the SDS : EHS

Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET

Date of issue/Date of revision 26 July 2021
Version 22

Section 1. Identification

Product name : AMERLOCK 2/400 PEARL GRAY RESIN
Product code : 00333561
Other means of identification : Not available.
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Professional applications, Used by spraying.
Use of the substance/ mixture : Coating.
Uses advised against : Not applicable.

Manufacturer : PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272
Emergency telephone number : (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
SETIQ Interior de la República: 800-00-214-00 (México)
SETIQ Ciudad de México: (55) 5559-1588 (México)

Technical Phone Number : 888-977-4762

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 31.8% (dermal), 90% (inhalation)

Section 2. Hazards identification

This product contains TiO2 which has been classified as a GHS Carcinogen Category 2 based on its IARC 2B classification. For many PPG products, TiO2 is utilized as a raw material in a liquid coating formulation. In this case, the TiO2 particles are bound in a matrix with no meaningful potential for human exposure to unbound particles of TiO2 when the product is applied with a brush or roller. Sanding the coating surface or mist from spray applications may be harmful depending on the duration and level of exposure and require the use of appropriate personal protective equipment and/or engineering controls (see Section 8).

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : Flammable liquid and vapor.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
May cause respiratory irritation.
Suspected of causing cancer.

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response : IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Storage : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

Hazards not otherwise classified : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Product name : AMERLOCK 2/400 PEARL GRAY RESIN

Ingredient name	%	CAS number
bis-[4-(2,3-epoxipropoxi)phenyl]propane	≥50 - ≤75	1675-54-3
Talc, not containing asbestiform fibers	≥20 - ≤50	14807-96-6
titanium dioxide	≥1.0 - ≤5.0	13463-67-7
Solvent naphtha (petroleum), light aromatic	≥1.0 - ≤5.0	64742-95-6
1,2,4-trimethylbenzene	≥1.0 - ≤3.0	95-63-6

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : May cause respiratory irritation.

Skin contact : Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Section 4. First aid measures

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 7. Handling and storage

Special precautions : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 50°C (122°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
bis-[4-(2,3-epoxipropoxi)phenyl]propane	None.
Talc, not containing asbestiform fibers	**ACGIH TLV (United States, 3/2020).** TWA: 2 mg/m³ 8 hours. Form: Respirable **OSHA PEL Z3 (United States).** TWA: 2 mg/m³
titanium dioxide	**OSHA PEL (United States, 5/2018).** TWA: 15 mg/m³ 8 hours. Form: Total dust **ACGIH TLV (United States, 3/2020).** TWA: 10 mg/m³ 8 hours.
Solvent naphtha (petroleum), light aromatic	None.
1,2,4-trimethylbenzene	**ACGIH TLV (United States, 3/2020).** TWA: 123 mg/m³ 8 hours. TWA: 25 ppm 8 hours.

Key to abbreviations

A	=	Acceptable Maximum Peak	S	=	Potential skin absorption
ACGIH	=	American Conference of Governmental Industrial Hygienists.	SR	=	Respiratory sensitization
C	=	Ceiling Limit	SS	=	Skin sensitization
F	=	Fume	STEL	=	Short term Exposure limit values
IPEL	=	Internal Permissible Exposure Limit	TD	=	Total dust
OSHA	=	Occupational Safety and Health Administration.	TLV	=	Threshold Limit Value
R	=	Respirable	TWA	=	Time Weighted Average
Z	=	OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances			

Consult local authorities for acceptable exposure limits.

Section 8. Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : butyl rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.
The respiratory protection shall be in accordance to 29 CFR 1910.134.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Gray.

Odor : Characteristic.

Odor threshold : Not available.

pH : Not applicable.

Melting point : Not available.

Boiling point : >37.78°C (>100°F)

Flash point : Closed cup: 55°C (131°F)

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Evaporation rate : 0.32 (butyl acetate = 1)

Vapor pressure : 1 kPa (7.8 mm Hg)

Vapor density : Not available.

Relative density : 1.43

Density (lbs / gal) : 11.93

Solubility : Insoluble in the following materials: cold water.

Partition coefficient: n-octanol/water : Not applicable.

Viscosity : Kinematic (40°C (104°F)): >21 mm^2/s (>21 cSt)

Volatility : 10% (v/v), 6.285% (w/w)

% Solid. (w/w) : 93.715

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.

Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

Hazardous decomposition products : Depending on conditions, decomposition products may include the following materials: carbon oxides metal oxide/oxides

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
bis-[4-(2,3-epoxipropoxi) phenyl]propane	LD50 Dermal	Rabbit	23000 mg/kg	-
	LD50 Oral	Rat	15000 mg/kg	-
titanium dioxide	LC50 Inhalation Dusts and mists	Rat	>6.82 mg/l	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
Solvent naphtha (petroleum), light aromatic	LD50 Dermal	Rabbit	3.48 g/kg	-
	LD50 Oral	Rat	8400 mg/kg	-
1,2,4-trimethylbenzene	LC50 Inhalation Vapor	Rat	18000 mg/m³	4 hours
	LD50 Oral	Rat	5 g/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
bis-[4-(2,3-epoxipropoxi) phenyl]propane	Eyes - Redness of the conjunctivae	Rabbit	0.4	24 hours	-
	Eyes - Mild irritant	Rabbit	-	24 hours	-
	Skin - Erythema/Eschar	Rabbit	0.8	4 hours	-
	Skin - Edema	Rabbit	0.5	4 hours	-
	Skin - Mild irritant	Rabbit	-	4 hours	-

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Product/ingredient name	Route of exposure	Species	Result
bis-[4-(2,3-epoxipropoxi) phenyl]propane	skin	Mouse	Sensitizing

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Classification

Section 11. Toxicological information

Product/ingredient name	OSHA	IARC	NTP
bis-[4-(2,3-epoxipropoxi) phenyl]propane	-	3	-
titanium dioxide	-	2B	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Talc, not containing asbestiform fibers	Category 3	-	Respiratory tract irritation
Solvent naphtha (petroleum), light aromatic	Category 3	-	Respiratory tract irritation
	Category 3		Narcotic effects
1,2,4-trimethylbenzene	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Target organs : Contains material which causes damage to the following organs: brain, central nervous system (CNS).
Contains material which may cause damage to the following organs: blood, lungs, cardiovascular system, upper respiratory tract, skin, eyes.

Aspiration hazard

Name	Result
Solvent naphtha (petroleum), light aromatic	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : May cause respiratory irritation.
Skin contact : Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Section 11. Toxicological information

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. This product contains TiO2 which has been classified as a GHS Carcinogen Category 2 based on its IARC 2B classification. For many PPG products, TiO2 is utilized as a raw material in a liquid coating formulation. In this case, the TiO2 particles are bound in a matrix with no meaningful potential for human exposure to unbound particles of TiO2 when the product is applied with a brush or roller. Sanding the coating surface or mist from spray applications may be harmful depending on the duration and level of exposure and require the use of appropriate personal protective equipment and/or engineering controls (see Section 8). Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
AMERLOCK 2/400 PEARL GRAY RESIN	297283.9	81091.6	N/A	107.5	9
bis-[4-(2,3-epoxipropoxi)phenyl]propane	15000	23000	N/A	N/A	N/A
Solvent naphtha (petroleum), light aromatic	8400	3480	N/A	N/A	N/A
1,2,4-trimethylbenzene	5000	N/A	N/A	18	1.5

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
bis-[4-(2,3-epoxipropoxi) phenyl]propane	Acute LC50 1.8 mg/l Fresh water	Daphnia - daphnia magna	48 hours
	Chronic NOEC 0.3 mg/l	Daphnia	21 days
titanium dioxide	Acute LC50 >100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
Solvent naphtha (petroleum), light aromatic	Acute LC50 8.2 mg/l	Fish	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
bis-[4-(2,3-epoxipropoxi) phenyl]propane	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
1,2,4-trimethylbenzene	3.63	120.23	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been

Section 13. Disposal considerations

cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class (es)	3	3	3
Packing group	III	III	III
Environmental hazards	No.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Marine pollutant substances	Not applicable.	(bis-[4-(2,3-epoxipropoxi) phenyl]propane, Solvent naphtha (petroleum), light aromatic)	Not applicable.

Additional information

DOT : This product may be re-classified as "Combustible Liquid," unless transported by vessel or aircraft. Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials.

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are active or exempted.

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 3
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
HNOC - Defatting irritant

Composition/information on ingredients

Name	%	Classification
bis-[4-(2,3-epoxipropoxi)phenyl] propane	≥50 - ≤75	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1B
Talc, not containing asbestiform fibers	≥20 - ≤50	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
titanium dioxide	≥1.0 - ≤5.0	CARCINOGENICITY - Category 2
Solvent naphtha (petroleum), light aromatic	≥1.0 - ≤5.0	FLAMMABLE LIQUIDS - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
1,2,4-trimethylbenzene	≥1.0 - ≤3.0	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 HNOC - Defatting irritant

SARA 313

	Chemical name	CAS number	Concentration
Supplier notification :	1,2,4-trimethylbenzene	95-63-6	1 - 5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

California Prop. 65

Section 15. Regulatory information

⚠ **WARNING**: Reproductive Harm - www.P65Warnings.ca.gov.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 2 * **Flammability** : 2 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 2 **Flammability** : 2 **Instability** : 0

Date of previous issue : **5/29/2021**

Organization that prepared the SDS : EHS

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET

Date of issue/Date of revision 12 August 2021
Version 18

Section 1. Identification

Product name : AMERLOCK 2/400 LIGHT TINT RESIN
Product code : AK2-T2B/05
Other means of identification : Not available.
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications, Used by spraying.
Use of the substance/ mixture : Coating.
Uses advised against : Not applicable.

Manufacturer : PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272
Emergency telephone number : (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
SETIQ Interior de la República: 800-00-214-00 (México)
SETIQ Ciudad de México: (55) 5559-1588 (México)
Technical Phone Number : 888-977-4762

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 20.9% (dermal), 80.7% (inhalation)

Section 2. Hazards identification

This product contains TiO2 which has been classified as a GHS Carcinogen Category 2 based on its IARC 2B classification. For many PPG products, TiO2 is utilized as a raw material in a liquid coating formulation. In this case, the TiO2 particles are bound in a matrix with no meaningful potential for human exposure to unbound particles of TiO2 when the product is applied with a brush or roller. Sanding the coating surface or mist from spray applications may be harmful depending on the duration and level of exposure and require the use of appropriate personal protective equipment and/or engineering controls (see Section 8).

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : Flammable liquid and vapor.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
May cause respiratory irritation.
Suspected of causing cancer.

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response : IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Storage : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

Hazards not otherwise classified : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Product name : AMERLOCK 2/400 LIGHT TINT RESIN

Ingredient name	%	CAS number
bis-[4-(2,3-epoxipropoxi)phenyl]propane	≥50 - ≤75	1675-54-3
Talc, not containing asbestiform fibers	≥10 - ≤20	14807-96-6
titanium dioxide	≥10 - ≤20	13463-67-7
Solvent naphtha (petroleum), light aromatic	≥1.0 - ≤5.0	64742-95-6
1,2,4-trimethylbenzene	≥1.0 - ≤5.0	95-63-6

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : May cause respiratory irritation.

Skin contact : Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Section 4. First aid measures

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 7. Handling and storage

Special precautions : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 50°C (122°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
bis-[4-(2,3-epoxipropoxi)phenyl]propane	None.
Talc, not containing asbestiform fibers	**ACGIH TLV (United States, 3/2020).** TWA: 2 mg/m³ 8 hours. Form: Respirable **OSHA PEL Z3 (United States).** TWA: 2 mg/m³
titanium dioxide	**OSHA PEL (United States, 5/2018).** TWA: 15 mg/m³ 8 hours. Form: Total dust **ACGIH TLV (United States, 3/2020).** TWA: 10 mg/m³ 8 hours.
Solvent naphtha (petroleum), light aromatic	None.
1,2,4-trimethylbenzene	**ACGIH TLV (United States, 3/2020).** TWA: 123 mg/m³ 8 hours. TWA: 25 ppm 8 hours.

Key to abbreviations

A	=	Acceptable Maximum Peak	S	=	Potential skin absorption
ACGIH	=	American Conference of Governmental Industrial Hygienists.	SR	=	Respiratory sensitization
C	=	Ceiling Limit	SS	=	Skin sensitization
F	=	Fume	STEL	=	Short term Exposure limit values
IPEL	=	Internal Permissible Exposure Limit	TD	=	Total dust
OSHA	=	Occupational Safety and Health Administration.	TLV	=	Threshold Limit Value
R	=	Respirable	TWA	=	Time Weighted Average
Z	=	OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances			

Consult local authorities for acceptable exposure limits.

Section 8. Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : butyl rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.
The respiratory protection shall be in accordance to 29 CFR 1910.134.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Characteristic.

Odor threshold : Not available.

pH : Not applicable.

Melting point : Not available.

Boiling point : >37.78°C (>100°F)

Flash point : Closed cup: 55°C (131°F)

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Evaporation rate : 0.36 (butyl acetate = 1)

Vapor pressure : 1.1 kPa (8 mm Hg)

Vapor density : Not available.

Relative density : 1.46

Density (lbs / gal) : 12.18

Solubility : Insoluble in the following materials: cold water.

Partition coefficient: n-octanol/water : Not applicable.

Viscosity : Kinematic (40°C (104°F)): >21 mm^2/s (>21 cSt)

Volatility : 9% (v/v), 5.151% (w/w)

% Solid. (w/w) : 94.849

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.

Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

Hazardous decomposition products : Depending on conditions, decomposition products may include the following materials: carbon oxides metal oxide/oxides

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
bis-[4-(2,3-epoxipropoxi) phenyl]propane	LD50 Dermal	Rabbit	23000 mg/kg	-
	LD50 Oral	Rat	15000 mg/kg	-
titanium dioxide	LC50 Inhalation Dusts and mists	Rat	>6.82 mg/l	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
Solvent naphtha (petroleum), light aromatic	LD50 Dermal	Rabbit	3.48 g/kg	-
	LD50 Oral	Rat	8400 mg/kg	-
1,2,4-trimethylbenzene	LC50 Inhalation Vapor	Rat	18000 mg/m³	4 hours
	LD50 Oral	Rat	5 g/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
bis-[4-(2,3-epoxipropoxi) phenyl]propane	Eyes - Redness of the conjunctivae	Rabbit	0.4	24 hours	-
	Eyes - Mild irritant	Rabbit	-	24 hours	-
	Skin - Erythema/Eschar	Rabbit	0.8	4 hours	-
	Skin - Edema	Rabbit	0.5	4 hours	-
	Skin - Mild irritant	Rabbit	-	4 hours	-

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Product/ingredient name	Route of exposure	Species	Result
bis-[4-(2,3-epoxipropoxi) phenyl]propane	skin	Mouse	Sensitizing

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Classification

Section 11. Toxicological information

Product/ingredient name	OSHA	IARC	NTP
bis-[4-(2,3-epoxipropoxi) phenyl]propane	-	3	-
titanium dioxide	-	2B	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Talc, not containing asbestiform fibers	Category 3	-	Respiratory tract irritation
Solvent naphtha (petroleum), light aromatic	Category 3	-	Respiratory tract irritation
	Category 3		Narcotic effects
1,2,4-trimethylbenzene	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Target organs : Contains material which causes damage to the following organs: brain, central nervous system (CNS).
Contains material which may cause damage to the following organs: blood, lungs, cardiovascular system, upper respiratory tract, skin, eyes.

Aspiration hazard

Name	Result
Solvent naphtha (petroleum), light aromatic	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : May cause respiratory irritation.
Skin contact : Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Section 11. Toxicological information

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. This product contains TiO2 which has been classified as a GHS Carcinogen Category 2 based on its IARC 2B classification. For many PPG products, TiO2 is utilized as a raw material in a liquid coating formulation. In this case, the TiO2 particles are bound in a matrix with no meaningful potential for human exposure to unbound particles of TiO2 when the product is applied with a brush or roller. Sanding the coating surface or mist from spray applications may be harmful depending on the duration and level of exposure and require the use of appropriate personal protective equipment and/or engineering controls (see Section 8). Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
AMERLOCK 2/400 LIGHT TINT RESIN	386791.2	122322.8	N/A	269.1	22.4
bis-[4-(2,3-epoxipropoxi)phenyl]propane	15000	23000	N/A	N/A	N/A
Solvent naphtha (petroleum), light aromatic	8400	3480	N/A	N/A	N/A
1,2,4-trimethylbenzene	5000	N/A	N/A	18	1.5

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
bis-[4-(2,3-epoxipropoxi) phenyl]propane	Acute LC50 1.8 mg/l Fresh water	Daphnia - daphnia magna	48 hours
	Chronic NOEC 0.3 mg/l	Daphnia	21 days
titanium dioxide	Acute LC50 >100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
Solvent naphtha (petroleum), light aromatic	Acute LC50 8.2 mg/l	Fish	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
bis-[4-(2,3-epoxipropoxi) phenyl]propane	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
1,2,4-trimethylbenzene	3.63	120.23	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been

Section 13. Disposal considerations

cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class (es)	3	3	3
Packing group	III	III	III
Environmental hazards	No.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Marine pollutant substances	Not applicable.	(bis-[4-(2,3-epoxipropoxi) phenyl]propane, Solvent naphtha (petroleum), light aromatic)	Not applicable.

Additional information

DOT : This product may be re-classified as "Combustible Liquid," unless transported by vessel or aircraft. Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials.

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are active or exempted.

U.S. Federal regulations :

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 3
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
HNOC - Defatting irritant

Composition/information on ingredients

Name	%	Classification
bis-[4-(2,3-epoxipropoxi)phenyl] propane	≥50 - ≤75	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1B
Talc, not containing asbestiform fibers	≥10 - ≤20	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
titanium dioxide	≥10 - ≤20	CARCINOGENICITY - Category 2
Solvent naphtha (petroleum), light aromatic	≥1.0 - ≤5.0	FLAMMABLE LIQUIDS - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
1,2,4-trimethylbenzene	≥1.0 - ≤5.0	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 HNOC - Defatting irritant

SARA 313

	Chemical name	CAS number	Concentration
Supplier notification :	1,2,4-trimethylbenzene	95-63-6	0.5 - 1.5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

Section 15. Regulatory information

California Prop. 65

⚠ **WARNING**: Reproductive Harm - www.P65Warnings.ca.gov.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 2 * **Flammability** : 2 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 2 **Flammability** : 2 **Instability** : 0

Date of previous issue : **6/9/2021**

Organization that prepared the SDS : EHS

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET

Date of issue/Date of revision 7 June 2021
Version 13.01

Section 1. Identification

Product name : AMERCOAT 450H CURE
Product code : AT45H-BA
Other means of identification : Not available.
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications.
Use of the substance/ mixture : Coating.
Uses advised against : Not applicable.

Manufacturer : PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272
Emergency telephone number : (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
SETIQ Interior de la República: 800-00-214-00 (México)
SETIQ Ciudad de México: (55) 5559-1588 (México)

Technical Phone Number : 888-977-4762

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (inhalation) - Category 4
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 1% (dermal), 1.8% (inhalation)

GHS label elements

Section 2. Hazards identification

Hazard pictograms :



Signal word : Danger

Hazard statements : Flammable liquid and vapor.
May cause an allergic skin reaction.
Harmful if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.
May cause drowsiness or dizziness.

Precautionary statements

Prevention : Wear protective gloves, protective clothing and eye or face protection. Wear respiratory protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Contaminated work clothing must not be allowed out of the workplace.

Response : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention.

Storage : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Moisture-sensitive material. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Skin contact to isocyanate monomer may lead to allergic lung reaction. Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

Hazards not otherwise classified : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Product name : AMERCOAT 450H CURE

Ingredient name	%	CAS number
Hexamethylene diisocyanate, oligomers (isocyanurate type)	≥50 - ≤75	28182-81-2
n-butyl acetate	≥20 - ≤50	123-86-4
Solvent naphtha (petroleum), light aromatic	≥1.0 - ≤3.5	64742-95-6
1,2,4-trimethylbenzene	≤2.0	95-63-6
hexamethylene-di-isocyanate	<1.0	822-06-0

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.

Ingestion : Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

Eye contact : No specific data.

Section 4. First aid measures

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
Cyanate and isocyanate.
hydrogen cyanide

Section 5. Fire-fighting measures

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Special provisions : Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Place in a suitable container. The contaminated area should be cleaned immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises (by volume): water (45 parts), ethanol or isopropyl alcohol (50 parts) and concentrated (d: 0,880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) and water (95 parts). Add the same decontaminant to the remnants and let stand for several days until no further reaction in an unsealed container. Once this stage is reached, close container and dispose of according to local regulations (see section 13). Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Special precautions : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 35°C (95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Precautions should be taken to minimize exposure to atmospheric humidity or water. CO_2 will be formed, which, in closed containers, could result in pressurization.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Hexamethylene diisocyanate, oligomers (isocyanurate type)	**IPEL (-).** TWA: 0.5 mg/m³ STEL: 1 mg/m³
n-butyl acetate	**OSHA PEL (United States, 5/2018).** TWA: 710 mg/m³ 8 hours. TWA: 150 ppm 8 hours. **ACGIH TLV (United States, 3/2020).** STEL: 150 ppm 15 minutes. TWA: 50 ppm 8 hours.
Solvent naphtha (petroleum), light aromatic	None.

Section 8. Exposure controls/personal protection

1,2,4-trimethylbenzene	**ACGIH TLV (United States, 3/2020).** TWA: 123 mg/m³ 8 hours. TWA: 25 ppm 8 hours.
hexamethylene-di-isocyanate	**ACGIH TLV (United States, 3/2020).** TWA: 0.03 mg/m³ 8 hours. TWA: 0.005 ppm 8 hours. **OSHA PEL (United States, 5/2018).** **Absorbed through skin.** TWA: 5 mg/m³, (as CN) 8 hours.

Key to abbreviations

A	=	Acceptable Maximum Peak	S	=	Potential skin absorption
ACGIH	=	American Conference of Governmental Industrial Hygienists.	SR	=	Respiratory sensitization
C	=	Ceiling Limit	SS	=	Skin sensitization
F	=	Fume	STEL	=	Short term Exposure limit values
IPEL	=	Internal Permissible Exposure Limit	TD	=	Total dust
OSHA	=	Occupational Safety and Health Administration.	TLV	=	Threshold Limit Value
R	=	Respirable	TWA	=	Time Weighted Average
Z	=	OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances			

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety glasses with side shields.

Skin protection

Section 8. Exposure controls/personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : butyl rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use an air-fed respirator unless a site-specific assessment determines that an air-fed respirator is not necessary, in which case the results of the risk assessment should be utilized to determine whether respiratory protection is necessary and what type of protection is appropriate. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
The respiratory protection shall be in accordance to 29 CFR 1910.134.

Restrictions on use : Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Characteristic.

Odor threshold : Not available.

pH : Not applicable.

Melting point : Not available.

Boiling point : >37.78°C (>100°F)

Flash point : Closed cup: 33.33°C (92°F)

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Evaporation rate : 0.93 (butyl acetate = 1)

Vapor pressure : 1.4 kPa (10.7 mm Hg)

Vapor density : Not available.

Relative density : 1.03

Density (lbs / gal) : 8.6

Section 9. Physical and chemical properties

Solubility : Insoluble in the following materials: cold water.

Partition coefficient: n-octanol/water : Not applicable.

Viscosity : Kinematic (40°C (104°F)): >21 mm^2/s (>21 cSt)

Volatility : 45% (v/v), 38.423% (w/w)

% Solid. (w/w) : 61.577

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : In a fire, hazardous decomposition products may be produced.
Refer to protective measures listed in sections 7 and 8.

Incompatible materials : Keep away from: oxidizing agents, strong alkalis, strong acids, amines, alcohols, water.
Uncontrolled exothermic reactions occur with amines and alcohols.

Hazardous decomposition products : Depending on conditions, decomposition products may include the following materials:
Cyanate and isocyanate. carbon oxides nitrogen oxides hydrogen cyanide

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Hexamethylene diisocyanate, oligomers (isocyanurate type)	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat - Female	>2500 mg/kg	-
n-butyl acetate	LC50 Inhalation Vapor	Rat	>21.1 mg/l	4 hours
	LC50 Inhalation Vapor	Rat	2000 ppm	4 hours
	LD50 Dermal	Rabbit	>17600 mg/kg	-
	LD50 Oral	Rat	10.768 g/kg	-
Solvent naphtha (petroleum), light aromatic	LD50 Dermal	Rabbit	3.48 g/kg	-
	LD50 Oral	Rat	8400 mg/kg	-
1,2,4-trimethylbenzene	LC50 Inhalation Vapor	Rat	18000 mg/m^3	4 hours
	LD50 Oral	Rat	5 g/kg	-
hexamethylene-di-isocyanate	LC50 Inhalation Dusts and mists	Rat	124 mg/m^3	4 hours
	LC50 Inhalation Vapor	Rat	151 mg/m^3	4 hours
	LC50 Inhalation Vapor	Rat	22 ppm	4 hours
	LD50 Dermal	Rabbit	0.57 g/kg	-
	LD50 Oral	Rat	0.71 g/kg	-

Section 11. Toxicological information

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Hexamethylene diisocyanate, oligomers (isocyanurate type)	Category 3	-	Respiratory tract irritation
n-butyl acetate	Category 3	-	Narcotic effects
Solvent naphtha (petroleum), light aromatic	Category 3	-	Respiratory tract irritation
	Category 3		Narcotic effects
1,2,4-trimethylbenzene	Category 3	-	Respiratory tract irritation
hexamethylene-di-isocyanate	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Target organs : Contains material which causes damage to the following organs: brain, central nervous system (CNS).
Contains material which may cause damage to the following organs: blood, lungs, upper respiratory tract, skin, eye, lens or cornea.

Aspiration hazard

Name	Result
Solvent naphtha (petroleum), light aromatic	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Potential acute health effects

Section 11. Toxicological information

Eye contact : No known significant effects or critical hazards.

Inhalation : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.

Ingestion : Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Conclusion/Summary : There are no data available on the mixture itself. Skin contact to isocyanate monomer may lead to allergic lung reaction. Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Repeated exposure may lead to permanent respiratory disability. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Section 11. Toxicological information

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
AMERCOAT 450H CURE	4034	3984.5	N/A	1753.9	2.4
Hexamethylene diisocyanate, oligomers (isocyanurate type)	2500	2500	N/A	N/A	1.5
n-butyl acetate	10768	N/A	N/A	N/A	N/A
Solvent naphtha (petroleum), light aromatic	8400	3480	N/A	N/A	N/A
1,2,4-trimethylbenzene	5000	N/A	N/A	18	1.5
hexamethylene-di-isocyanate	710	570	N/A	0.151	0.124

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Hexamethylene diisocyanate, oligomers (isocyanurate type)	Acute EC50 >1000 mg/l	Algae - scenedesmus subspicatus	72 hours
	Acute EC50 >100 mg/l	Daphnia - daphnia magna	48 hours
	Acute LC50 >100 mg/l	Fish - Danio rerio (zebra fish)	96 hours
n-butyl acetate	Acute LC50 18 mg/l	Fish	96 hours
Solvent naphtha (petroleum), light aromatic	Acute LC50 8.2 mg/l	Fish	96 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
n-butyl acetate	TEPA and OECD 301D	83 % - Readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Hexamethylene diisocyanate, oligomers (isocyanurate type)	-	-	Not readily
n-butyl acetate	-	-	Readily

Section 12. Ecological information

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Hexamethylene diisocyanate, oligomers (isocyanurate type)	5.54	3.2	low
n-butyl acetate	2.3	-	low
1,2,4-trimethylbenzene	3.63	120.23	low
hexamethylene-di-isocyanate	0.02	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class (es)	3	3	3
Packing group	III	III	III
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.

14. Transport information

Product RQ (lbs)	14335.1	Not applicable.	Not applicable.
RQ substances	(n-butyl acetate)	Not applicable.	Not applicable.

Additional information

DOT : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

IMDG : None identified.

IATA : None identified.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are active or exempted.

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (inhalation) - Category 4
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
HNOC - Defatting irritant

Composition/information on ingredients

Name	%	Classification
Hexamethylene diisocyanate, oligomers (isocyanurate type)	≥50 - ≤75	COMBUSTIBLE DUSTS ACUTE TOXICITY (inhalation) - Category 4 SKIN SENSITIZATION - Category 1A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
n-butyl acetate	≥20 - ≤50	FLAMMABLE LIQUIDS - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
Solvent naphtha (petroleum),	≥1.0 - ≤3.5	FLAMMABLE LIQUIDS - Category 3

Section 15. Regulatory information

light aromatic		SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
1,2,4-trimethylbenzene	≤2.0	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 HNOC - Defatting irritant
hexamethylene-di-isocyanate	<1.0	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 1 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1A SKIN SENSITIZATION - Category 1A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

SARA 313

	Chemical name	CAS number	Concentration
Supplier notification :	1,2,4-trimethylbenzene	95-63-6	0.5 - 1.5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 3 * **Flammability** : 3 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 3 **Flammability** : 3 **Instability** : 0

Date of previous issue : **9/18/2020**

Organization that prepared the SDS : EHS

Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET

Date of issue/Date of revision 7 November 2015
Version 4

Section 1. Identification

Product name : ACRYLIC LACQUER THINNER
Product code : DTL16
Other means of identification : Not available.
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications.
Use of the substance/ mixture : Coating. Paints. Painting-related materials.
Uses advised against : Not applicable.

Supplier : PPG Industries, Inc.
One PPG Place,
Pittsburgh, PA 15272
Emergency telephone number : (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
01-800-00-21-400 (Mexico)
Technical Phone Number : 1-800-647-6050

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
ACUTE TOXICITY (oral) - Category 4
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 2
TOXIC TO REPRODUCTION (Unborn child) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS), hearing organs, kidneys and liver) - Category 2

GHS label elements

Section 2. Hazards identification

Hazard pictograms :



Signal word : Danger

Hazard statements : Highly flammable liquid and vapor.
Harmful if swallowed.
Causes serious eye irritation.
Causes skin irritation.
Suspected of damaging the unborn child.
Suspected of causing cancer.
May cause respiratory irritation.
May cause drowsiness and dizziness.
May cause damage to organs through prolonged or repeated exposure. (central nervous system (CNS), hearing organs, kidneys, liver)

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

Hazards not otherwise classified : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Product name : ACRYLIC LACQUER THINNER

Ingredient name	%	CAS number
acetone	≥33 - <50	67-64-1
isobutyl acetate	≥10 - <25	110-19-0
Isopropyl alcohol	≥9.2 - <25	67-63-0
toluene	≥8.4 - <25	108-88-3
Solvent naphtha (petroleum), light aliph.	≥7 - <25	64742-89-8
heptane	≥3 - <25	142-82-5
methylcyclohexane	≥7 - <25	108-87-2
xylene	≥6.1 - <25	1330-20-7
2-methoxy-1-methylethyl acetate	≥0.1 - <25	108-65-6
ethylbenzene	≥1.1 - <4.5	100-41-4

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.

Skin contact : Causes skin irritation. Defatting to the skin.

Ingestion : Harmful if swallowed. Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

Section 4. First aid measures

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Section 5. Fire-fighting measures

Specific hazards arising from the chemical : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 6. Accidental release measures

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Special precautions : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 35°C (95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
acetone	**ACGIH TLV (United States, 4/2014).** STEL: 1782 mg/m³ 15 minutes. STEL: 750 ppm 15 minutes. TWA: 1188 mg/m³ 8 hours. TWA: 500 ppm 8 hours. **OSHA PEL (United States, 2/2013).** TWA: 2400 mg/m³ 8 hours. TWA: 1000 ppm 8 hours.

Section 8. Exposure controls/personal protection

isobutyl acetate	**ACGIH TLV (United States, 4/2014).** TWA: 713 mg/m³ 8 hours. TWA: 150 ppm 8 hours. **OSHA PEL (United States, 2/2013).** TWA: 700 mg/m³ 8 hours. TWA: 150 ppm 8 hours.
Isopropyl alcohol	**ACGIH TLV (United States, 4/2014).** STEL: 400 ppm 15 minutes. TWA: 200 ppm 8 hours. **OSHA PEL (United States, 2/2013).** TWA: 980 mg/m³ 8 hours. TWA: 400 ppm 8 hours.
toluene	**OSHA PEL Z2 (United States, 2/2013).** AMP: 500 ppm 10 minutes. CEIL: 300 ppm TWA: 200 ppm 8 hours. **ACGIH TLV (United States, 4/2014).** TWA: 20 ppm 8 hours.
Solvent naphtha (petroleum), light aliph.	None.
heptane	**ACGIH TLV (United States, 4/2014).** STEL: 2050 mg/m³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 1640 mg/m³ 8 hours. TWA: 400 ppm 8 hours. **OSHA PEL (United States, 2/2013).** TWA: 2000 mg/m³ 8 hours. TWA: 500 ppm 8 hours.
methylcyclohexane	**ACGIH TLV (United States, 4/2014).** TWA: 1610 mg/m³ 8 hours. TWA: 400 ppm 8 hours. **OSHA PEL (United States, 2/2013).** TWA: 2000 mg/m³ 8 hours. TWA: 500 ppm 8 hours.
xylene	**ACGIH TLV (United States, 4/2014).** STEL: 651 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m³ 8 hours. TWA: 100 ppm 8 hours. **OSHA PEL (United States, 2/2013).** TWA: 435 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
2-methoxy-1-methylethyl acetate	**IPEL (PPG, 4/2009).** TWA: 50 ppm
ethylbenzene	**ACGIH TLV (United States, 4/2014).** TWA: 20 ppm 8 hours. **OSHA PEL (United States, 2/2013).** TWA: 435 mg/m³ 8 hours. TWA: 100 ppm 8 hours.

Key to abbreviations

A = Acceptable Maximum Peak
ACGIH = American Conference of Governmental Industrial Hygienists.
C = Ceiling Limit
S = Potential skin absorption
SR = Respiratory sensitization
SS = Skin sensitization

Section 8. Exposure controls/personal protection

F	=	Fume	STEL	=	Short term Exposure limit values
IPEL	=	Internal Permissible Exposure Limit	TD	=	Total dust
OSHA	=	Occupational Safety and Health Administration.	TLV	=	Threshold Limit Value
R	=	Respirable	TWA	=	Time Weighted Average
Z	=	OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances			

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : For prolonged or repeated handling, use the following type of gloves:

May be used: Chloroprene
Recommended: butyl rubber, nitrile rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : >37.78°C (>100°F)

Flash point : Closed cup: -12.22°C (10°F)

Material supports combustion. : Yes.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Lower: 1.9%

Evaporation rate : 5.31 (butyl acetate = 1)

Vapor pressure : 16.4 kPa (122.8 mm Hg) [room temperature]

Vapor density : Not available.

Relative density : 0.8

Density (lbs / gal) : 6.68

Solubility : Insoluble in the following materials: cold water.

Partition coefficient: n-octanol/water : Not available.

Viscosity : Kinematic (40°C (104°F)): >0.21 cm^2/s (>21 cSt)

Volatility : 100% (v/v), 100% (w/w)

% Solid. (w/w) : 0

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Section 10. Stability and reactivity

Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.

Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
acetone	LC50 Inhalation Vapor	Rat	76000 mg/m³	4 hours
	LD50 Dermal	Rabbit	20 g/kg	-
	LD50 Oral	Rat	1.8 g/kg	-
isobutyl acetate	LD50 Dermal	Rabbit	>17400 mg/kg	-
	LD50 Oral	Rat	13400 mg/kg	-
Isopropyl alcohol	LC50 Inhalation Vapor	Rat	72600 mg/m³	4 hours
	LD50 Dermal	Rabbit	12800 mg/kg	-
	LD50 Oral	Rat	4.396 g/kg	-
toluene	LC50 Inhalation Vapor	Rat	49 g/m³	4 hours
	LC50 Inhalation Vapor	Rat	8000 ppm	4 hours
	LD50 Dermal	Rabbit	8.39 g/kg	-
	LD50 Oral	Rat	636 mg/kg	-
heptane	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	103 g/m³	4 hours
methylcyclohexane	LD50 Oral	Rat	4 g/kg	-
xylene	LC50 Inhalation Gas.	Rat	6670 ppm	4 hours
	LC50 Inhalation Vapor	Rat	5000 ppm	4 hours
	LD50 Dermal	Rabbit	>1.7 g/kg	-
	LD50 Oral	Rat	4.3 g/kg	-
2-methoxy-1-methylethyl acetate	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	8532 mg/kg	-
ethylbenzene	LC50 Inhalation Vapor	Rat	4000 ppm	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
	LD50 Oral	Rat	3.5 g/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Section 11. Toxicological information

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Classification

Product/ingredient name	OSHA	IARC	NTP
Isopropyl alcohol	-	3	-
toluene	-	3	-
xylene	-	3	-
ethylbenzene	-	2B	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Name	Category
acetone	Category 3
isobutyl acetate	Category 3
Isopropyl alcohol	Category 3
toluene	Category 3
Solvent naphtha (petroleum), light aliph.	Category 3
heptane	Category 3
methylcyclohexane	Category 3
xylene	Category 3

Specific target organ toxicity (repeated exposure)

Name	Category
toluene	Category 2
xylene	Category 2
ethylbenzene	Category 2

Target organs : Contains material which causes damage to the following organs: brain, central nervous system (CNS).
Contains material which may cause damage to the following organs: blood, kidneys, lungs, the nervous system, the reproductive system, liver, heart, spleen, gastrointestinal tract, upper respiratory tract, skin, ears, eye, lens or cornea.

Aspiration hazard

Section 11. Toxicological information

Name	Result
toluene	ASPIRATION HAZARD - Category 1
Solvent naphtha (petroleum), light aliph.	ASPIRATION HAZARD - Category 1
heptane	ASPIRATION HAZARD - Category 1
methylcyclohexane	ASPIRATION HAZARD - Category 1
xylene	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.

Skin contact : Causes skin irritation. Defatting to the skin.

Ingestion : Harmful if swallowed. Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Section 11. Toxicological information

Conclusion/Summary : There are no data available on the mixture itself. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : Suspected of damaging the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	1879.6 mg/kg
Dermal	17213.5 mg/kg
Inhalation (gases)	82671.8 ppm
Inhalation (vapors)	146.2 mg/l
Inhalation (dusts and mists)	19.94 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
2-methoxy-1-methylethyl acetate	Acute LC50 161 mg/l Fresh water	Fish	96 hours
ethylbenzene	Acute LC50 150 to 200 mg/l Fresh water	Fish - Lepomis macrochirus - Young of the year	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
acetone	-	-	Readily
toluene	-	-	Readily
xylene	-	-	Readily
ethylbenzene	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
acetone	-0.24	3	low
isobutyl acetate	1.78	-	low
Isopropyl alcohol	0.05	-	low
toluene	2.73	8.32	low
heptane	4.66	-	high
methylcyclohexane	3.61	186.21	low
xylene	3.16	7.4 to 18.5	low
2-methoxy-1-methylethyl acetate	0.56	-	low
ethylbenzene	3.15	79.43	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact

Section 13. Disposal considerations

with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL
Transport hazard class (es)	3	3	3
Packing group	II	II	II
Environmental hazards	No.	Yes.	No.
Marine pollutant substances	Not applicable.	(methylcyclohexane, heptane)	Not applicable.
Product RQ (lbs)	1564.9	Not applicable.	Not applicable.
RQ substances	(xylene, toluene)	Not applicable.	Not applicable.

Additional information

DOT : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are listed or exempted.

U.S. Federal regulations :

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Section 15. Regulatory information

Classification : Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
acetone	Yes.	No.	No.	Yes.	No.
isobutyl acetate	Yes.	No.	No.	Yes.	No.
Isopropyl alcohol	Yes.	No.	No.	Yes.	No.
toluene	Yes.	No.	No.	Yes.	Yes.
Solvent naphtha (petroleum), light aliph.	No.	No.	No.	Yes.	No.
heptane	Yes.	No.	No.	Yes.	No.
methylcyclohexane	Yes.	No.	No.	Yes.	No.
xylene	Yes.	No.	No.	Yes.	Yes.
2-methoxy-1-methylethyl acetate	Yes.	No.	No.	No.	No.
ethylbenzene	Yes.	No.	No.	Yes.	Yes.

SARA 313

Supplier notification :

Chemical name	CAS number	Concentration
Isopropyl alcohol	67-63-0	5 - 10
toluene	108-88-3	5 - 10
xylene	1330-20-7	3 - 7
ethylbenzene	100-41-4	0.5 - 1.5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 2 * **Flammability** : 3 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 2 **Flammability** : 3 **Instability** : 0

Date of previous issue : **8/14/2015**

Section 16. Other information

Organization that prepared the MSDS : EHS

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET

Date of issue/Date of revision 30 May 2021
Version 13

Section 1. Identification

Product name : THINNER 21-25
Product code : 00948780
Chemical name : Stoddard solvent
Other means of identification : Not available.
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications.
Use of the substance/ mixture : Thinner.
Uses advised against : Not applicable.

Manufacturer : PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272
Emergency telephone number : (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
SETIQ Interior de la República: 800-00-214-00 (México)
SETIQ Ciudad de México: (55) 5559-1588 (México)

Technical Phone Number : 888-977-4762

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (inhalation) - Category 4
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
ASPIRATION HAZARD - Category 1

Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 97.8% (dermal), 86.3% (inhalation)

GHS label elements

Section 2. Hazards identification

Hazard pictograms :



Signal word : Danger

Hazard statements : Flammable liquid and vapor.
May be fatal if swallowed and enters airways.
Causes skin irritation.
Causes serious eye irritation.
Harmful if inhaled.
Suspected of causing cancer.
Causes damage to organs through prolonged or repeated exposure. (central nervous system (CNS))

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Response : IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

Hazards not otherwise classified : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Product name : THINNER 21-25

Chemical name : Stoddard solvent

Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
Stoddard solvent	≥75 - ≤90	8052-41-3
1,2,4-trimethylbenzene	≥5.0 - ≤9.3	95-63-6
mesitylene	≥1.0 - ≤4.5	108-67-8
xylene	≤1.8	1330-20-7
ethylbenzene	<1.0	100-41-4

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Harmful if inhaled.

Skin contact : Causes skin irritation. Defatting to the skin.

Ingestion : May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : Adverse symptoms may include the following:
nausea or vomiting

Section 4. First aid measures

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Section 6. Accidental release measures

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Special precautions : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 50°C (122°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Stoddard solvent	**ACGIH TLV (United States, 3/2020).** TWA: 525 mg/m³ 8 hours. TWA: 100 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 2900 mg/m³ 8 hours. TWA: 500 ppm 8 hours.
1,2,4-trimethylbenzene	**ACGIH TLV (United States, 3/2020).** TWA: 123 mg/m³ 8 hours. TWA: 25 ppm 8 hours.
mesitylene	**ACGIH TLV (United States, 3/2020).** TWA: 123 mg/m³ 8 hours. TWA: 25 ppm 8 hours.
xylene	**ACGIH TLV (United States, 3/2020).** STEL: 651 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m³ 8 hours. TWA: 100 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 435 mg/m³ 8 hours. TWA: 100 ppm 8 hours.
ethylbenzene	**ACGIH TLV (United States, 3/2020).** TWA: 20 ppm 8 hours. **OSHA PEL (United States, 5/2018).** TWA: 435 mg/m³ 8 hours. TWA: 100 ppm 8 hours.

Key to abbreviations

A	=	Acceptable Maximum Peak	S	=	Potential skin absorption
ACGIH	=	American Conference of Governmental Industrial Hygienists.	SR	=	Respiratory sensitization
C	=	Ceiling Limit	SS	=	Skin sensitization
F	=	Fume	STEL	=	Short term Exposure limit values
IPEL	=	Internal Permissible Exposure Limit	TD	=	Total dust
OSHA	=	Occupational Safety and Health Administration.	TLV	=	Threshold Limit Value
R	=	Respirable	TWA	=	Time Weighted Average
Z	=	OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances			

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Section 8. Exposure controls/personal protection

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : For prolonged or repeated handling, use the following type of gloves:

Recommended: polyvinyl alcohol (PVA), Viton®
May be used: nitrile rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.
The respiratory protection shall be in accordance to 29 CFR 1910.134.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Characteristic.

Odor threshold : Not available.

pH : Not applicable.

Melting point : Not available.

Section 9. Physical and chemical properties

Boiling point	:	>37.78°C (>100°F)
Flash point	:	Closed cup: 44.5°C (112.1°F)
Auto-ignition temperature	:	Not available.
Decomposition temperature	:	Not available.
Flammability (solid, gas)	:	Not available.
Lower and upper explosive (flammable) limits	:	Not available.
Evaporation rate	:	Not available.
Vapor pressure	:	Not available.
Vapor density	:	Not available.
Relative density	:	0.79
Density (lbs / gal)	:	6.59
Solubility	:	Insoluble in the following materials: cold water.
Partition coefficient: n-octanol/water	:	Not applicable.
Viscosity	:	Kinematic (40°C (104°F)): <14 mm^2/s (<14 cSt)
Volatility	:	100% (v/v), 100% (w/w)
% Solid. (w/w)	:	0

Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.
Incompatible materials	:	Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.
Hazardous decomposition products	:	Depending on conditions, decomposition products may include the following materials: carbon oxides

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
Stoddard solvent	LD50 Oral	Rat	>5 g/kg	-
1,2,4-trimethylbenzene	LC50 Inhalation Vapor	Rat	18000 mg/m³	4 hours
	LD50 Oral	Rat	5 g/kg	-
mesitylene	LC50 Inhalation Vapor	Rat	24000 mg/m³	4 hours
	LD50 Oral	Rat	5000 mg/kg	-
xylene	LD50 Dermal	Rabbit	1.7 g/kg	-
	LD50 Oral	Rat	4.3 g/kg	-
ethylbenzene	LC50 Inhalation Vapor	Rat	17.8 mg/l	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
	LD50 Oral	Rat	3.5 g/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
xylene	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Classification

Product/ingredient name	OSHA	IARC	NTP
xylene	-	3	-
ethylbenzene	-	2B	-

Carcinogen Classification code:

IARC: 1, 2A, 2B, 3, 4
NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen
OSHA: +
Not listed/not regulated: -

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
1,2,4-trimethylbenzene	Category 3	-	Respiratory tract irritation
mesitylene	Category 3	-	Respiratory tract irritation
xylene	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Stoddard solvent	Category 1	-	central nervous system (CNS)
ethylbenzene	Category 2	-	hearing organs

Target organs : Contains material which causes damage to the following organs: brain.
Contains material which may cause damage to the following organs: blood, kidneys, lungs, the nervous system, liver, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea, testes.

Aspiration hazard

Name	Result
Stoddard solvent	ASPIRATION HAZARD - Category 1
xylene	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : Harmful if inhaled.
Skin contact : Causes skin irritation. Defatting to the skin.
Ingestion : May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : Adverse symptoms may include the following:
nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Section 11. Toxicological information

Conclusion/Summary : There are no data available on the mixture itself. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : Causes damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Stoddard solvent	37127.5	2210.8	N/A	21.9	2
1,2,4-trimethylbenzene	5000	N/A	N/A	18	1.5
mesitylene	5000	N/A	N/A	24	N/A
xylene	4300	1700	N/A	11	1.5
ethylbenzene	3500	17800	N/A	17.8	1.5

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
ethylbenzene	Acute LC50 150 to 200 mg/l Fresh water	Fish	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
xylene	-	-	Readily
ethylbenzene	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Stoddard solvent	3.16 to 7.06	-	high
1,2,4-trimethylbenzene	3.63	120.23	low
mesitylene	3.42	186.21	low
xylene	3.12	7.4 to 18.5	low
ethylbenzene	3.6	79.43	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	IMDG	IATA
UN number	UN1300	UN1300	UN1300
UN proper shipping name	TURPENTINE SUBSTITUTE	TURPENTINE SUBSTITUTE	TURPENTINE SUBSTITUTE
Transport hazard class (es)	3	3	3
Packing group	III	III	III
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.
Product RQ (lbs)	5911.2	Not applicable.	Not applicable.
RQ substances	(xylene)	Not applicable.	Not applicable.

Additional information

DOT : This product may be re-classified as "Combustible Liquid," unless transported by vessel or aircraft. Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials in package sizes less than the product reportable quantity.

IMDG : None identified.

IATA : None identified.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

United States

United States inventory (TSCA 8b) : All components are active or exempted.

SARA 302/304

SARA 304 RQ : Not applicable.

Composition/information on ingredients

No products were found.

SARA 311/312

Section 15. Regulatory information

Classification : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (inhalation) - Category 4
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
ASPIRATION HAZARD - Category 1
HNOC - Defatting irritant

Composition/information on ingredients

Name	%	Classification
Stoddard solvent	≥75 - ≤90	FLAMMABLE LIQUIDS - Category 3 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
1,2,4-trimethylbenzene	≥5.0 - ≤9.3	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 HNOC - Defatting irritant
mesitylene	≥1.0 - ≤4.5	FLAMMABLE LIQUIDS - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 HNOC - Defatting irritant
xylene	≤1.8	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 ASPIRATION HAZARD - Category 1
ethylbenzene	<1.0	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant

SARA 313

Supplier notification :

Chemical name	CAS number	Concentration
1,2,4-trimethylbenzene	95-63-6	5 - 10
xylene	1330-20-7	1 - 5
ethylbenzene	100-41-4	0.1 - 1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

Section 15. Regulatory information

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

California Prop. 65

⚠ **WARNING**: Cancer - www.P65Warnings.ca.gov.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 2 * **Flammability** : 2 **Physical hazards** : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Health : 2 **Flammability** : 2 **Instability** : 0

Date of previous issue : **10/8/2020**

Organization that prepared the SDS : EHS

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

SAFETY DATA SHEET

Revision: 06/22/2015

1. Identification of the substance/preparation and of the company/undertaking

Trade Name: Super Mud Dry

Intended use:

Viscosifier

Data on the Company:

Manufacturer:

PDSCo, Inc.
105 W. Sharp St
El Dorado, AR 71730
USA
Tel – 870 863 5707
Fax – 870 863 0603
sales@pdscoinc.com
www.pdscoinc.com

2. Hazards Identification

Product not classified as hazardous according to US/EU regulations.

Human health effects: May cause slight skin irritation, especially with prolonged or repeated exposure. May cause irritation to the eyes that should cease on removal of the product. Inhalation of dust may cause irritation to the respiratory system.

Physicochemical effects: Very slippery underfoot when wet. If handled roughly dust may be created - as with many organic powders airborne dust clouds may cause a dust explosion hazard.

3. Composition/information on ingredients

Chemical characterization: Anionic Polyacrylamide

The products contain no substances classified as hazardous that need to be taken into account according to EC directives/CHIP.

4. First-aid measures

Inhalation: Remove the source of contamination or remove the casualty to fresh air. Clear any blocked airways. Seek medical advice if recovery is delayed, or symptoms are experienced.

Ingestion: Do not make the casualty vomit. Never give anything by mouth to an unconscious person. If the casualty is conscious, have them rinse their mouth thoroughly with water to remove as much of the product as possible. Do not swallow the water but spit it out. Repeat several times. Give the casualty 240-300ml of water to drink in small sips. Do not make the casualty drink a lot of water at once as this may cause vomiting. Obtain medical attention.

Skin contact:	In cases of local contamination e.g. to the hands, wash the skin with plenty of lukewarm water and soap. For large areas, remove all contaminated clothing and footwear immediately and flush the affected parts with plenty of lukewarm water to remove all traces of product. If any irritation persists seek medical attention.
Eye contact:	Do not allow the casualty to rub the eye(s). Quickly and gently brush the product off the face and away from the eyes. Immediately wash the affected eye(s) with plenty of eyewash solution or running water (preferably lukewarm), holding the eyelids apart to ensure complete removal of the product. Continue irrigation for 5 minutes. If there are any signs of irritation seek medical attention immediately.

5. Fire-fighting measures

Suitable extinguishing media:	Foam, dry powder, carbon dioxide, water-spray / fog – use as appropriate for the surrounding fire and other materials present. It should be noted that the products become very slippery when wet.
Extinguishing media which must not be used for safety reasons:	None known
Special exposure hazards:	The products become very slippery underfoot when wet.
Special protective equipment For fire-fighters:	As for all fires involving chemicals; chemical protection suit, suitable gloves and boots and self-contained breathing apparatus.

6. Accidental release measures

Personal precautions:	Use personal protective equipment suitable for the task in hand – see section 8. Respiratory protection may be required if dust is created during cleanup operations. Avoid formation of airborne dust clouds. The products become very slippery underfoot when wet.
Environmental precautions:	No special environmental precautions required.
Methods for cleaning up:	Shovel and sweep up into suitable containers for disposal. Flush away remaining traces completely with plenty of water.

7. Handling and storage

Handling:	Do not eat, drink or smoke whilst handling the products. Do not breathe in any dust formed. Immediately remove clothing that becomes contaminated and launder before re-use. Avoid formation of dust and airborne dust clouds. Keep work area dust free by regular cleaning. Any airborne dust formed during use must be kept away from sources of ignition.
Storage:	Avoid wet, damp and humid storage conditions. Keep in a dry, cool place.

8. Exposure controls/personal protection

Exposure limit values:	UK HSE workplace exposure limit for dust: Less than 10 mg/m^3 8-hour TWA of inhalable dust Less than 4 mg/m^3 8-hour TWA of respirable dust
Occupational exposure control	
Personal protective equipment:	Personal protective equipment (PPE) should be chosen in consultation with the PPE manufacturer and take into account the application e.g. scale of operation, temperature and other chemicals used.

Respiratory protection:	Ensure good ventilation. Local exhaust ventilation may be required to keep airborne dust below the workplace exposure limits. If dust is likely to be created when cleaning up spillages, respiratory protection such as a disposable filtering facepiece respirator (FFP2) or half-mask or full-face respirator with a particle filter type P2, may be required.
Hand protection:	Rubber or plastic gloves.
Eye protection:	Goggles or safety glasses depending on type of use.
Skin protection:	Lightweight protective clothing
Environmental exposure controls:	No special requirements.

9. Physical and chemical properties

Appearance:	White powder
Odor:	None/slight
PH (0.5% solution):	6.5-8.5
Melting point	Not determined.
Boiling point:	Not determined.
Flash point:	Not applicable
Explosive properties:	Not determined
Oxidizing properties:	Not applicable
Vapor pressure:	Not applicable
Vapor density:	Not applicable
Relative density:	0.7 – 0.8 g/cm^3
Solubility	
- water solubility:	Dissolves in water to form a highly viscous solution
- fat solubility:	Not determined
Partition coefficient:	
n-octanol/water:	Not determined
Viscosity:	Not applicable
Evaporation rate:	Not applicable

10. Stability and reactivity

Stability:	Stable under normal conditions of use.
Conditions to avoid:	No special precautions other than good housekeeping of chemicals.
Materials to avoid:	Reactive chemicals.
Hazardous decomposition products:	Oxides of carbon produced on combustion.

11. Toxicological information

Low toxicity products. Tests carried out on similar products show acute oral LD_{50} (rat) >5000 mg/kg and products not to be classified as irritating to the skin and eyes.

12. Ecological information

The products are not classified as dangerous for the environment. Tests carried out on other anionic polyacrylamides showed:

Effects on fish:	96 hour LC_{50} >300 mg/l
Effects on Daphnia:	48 hour EC_{50} >200 mg/l
Effects on algae:	72 hour EC_{50} >1000 mg/l
Biodegradability:	Not expected to be readily biodegradable

13. Disposal considerations

Surplus or waste product and contaminated packaging should be disposed of in accordance with local regulations.

14. Transport information

Land transport:	Not classified as dangerous for transport.
Sea transport (IMDG):	Not classified as dangerous for transport.
Air transport (ICAO):	Not classified as dangerous for transport.
Road transport (ADR):	Not classified as dangerous for transport.

15. Regulatory information

SARA Title III Section 311 Categories
Immediate (Acute) Health Effects: Yes
Delayed (Chronic) Health Effects: No
Fire Hazard: No
Sudden Release of Pressure Hazard: No
Reactivity Hazard: No

SARA 302 Extremely Hazardous Substances
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
None Present ()

SARA 313 – Specific Toxic Chemical Lisitings
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
None Present ()

16. Other information

HMIS Rating
Health: 0
Flammability: 1
Reactivity: 0

NFPA Rating
Health: 0
Fire: 1
Reacivity: 0

Training advice
Read the safety data sheet before using the product.

Further Information
The information provided in this safety data sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBILGREASE 28**
Product Description: Synthetic Base Stocks and Additives
Product Code: 201550402020, 530626-85
Intended Use: Grease

COMPANY IDENTIFICATION

Supplier: **Aviall Australia Pty. Limited**
20-22 Lindaway Place
Tullamarine
Victoria 3043 Australia

Product Technical Information	(8:00am to 4:30pm Mon to Fri)	1300 919 904
Supplier General Contact	(03) 9339 3000	

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Contains: N-PHENYL-1-NAPHTHYLAMINE May produce an allergic reaction.

Other hazard information:

Physical / Chemical Hazards:
No significant hazards.

Health Hazards:
High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation. Secondary amines or materials containing secondary amines should not be added to this product due to the risk of forming nitrosamines, some of which have been shown to be carcinogenic in lab animals.

Environmental Hazards:
Expected to be harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
N-PHENYL-1-NAPHTHYLAMINE	90-30-2	0.1 - < 1%	H302, H317, H373, H400(M factor 1), H410(M factor 1)
N-OLEYLSARCOSINE	110-25-8	0.1 - < 1%	H315, H318, H332, H400(M factor 1), H412
PENTAERYTHRITOL	115-77-5	1 - < 5%	None
SODIUM NITRITE	7632-00-0	0.1 - < 1%	H272(2)(S), H301, H319(2A), H400(M factor 1)
SODIUM PHOSPHATE, TRIBASIC	10101-89-0	0.1 - < 1%	H315, H319(2A), H335

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. Other ingredients determined not to be hazardous up to 100%.

SECTION 4 FIRST AID MEASURES

INHALATION

Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

NOTE TO PHYSICIAN

None

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulphur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >204°C (400°F) [EST. FOR OIL, ASTM D-92 (COC)]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do so without risk. Scrape up spilled material with shovels into a suitable container for recycle or disposal.

Water Spill: Stop leak if you can do so without risk. Confine the spill immediately with booms. Warn other shipping. Skim from surface

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard. Contains Sodium nitrite. Do not add amines which may form cancer causing nitrosamines.

Static Accumulator: This material is not a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit/Standard			Note	Source
PENTAERYTHRITOL	Inhalable dust.	TWA	10 mg/m3			Australia WES
PENTAERYTHRITOL		TWA	10 mg/m3			ACGIH
SODIUM PHOSPHATE, TRIBASIC		STEL	5 mg/m3			OARS WEEL

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

Biological limits

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:
No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:
Particulate
No protection is ordinarily required under normal conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:
Nitrile,Viton

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:
No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practise good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Solid
Form: Semi-fluid
Colour: Dark Red
Odour: Characteristic
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15.6 °C): 0.945 [Calculated]
Flammability (Solid, Gas): N/A
Flash Point [Method]: >204°C (400°F) [EST. FOR OIL, ASTM D-92 (COC)]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F) [Estimated]
Decomposition Temperature: N/D
Vapour Density (Air = 1): > 2 at 101 kPa
Vapour Pressure: < 0.013 kPa (0.1 mm Hg) at 20 ºC
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 29.3 cSt (29.3 mm2/sec) at 40 ºC | 5.7 cSt (5.7 mm2/sec) at 100°C [Estimated]
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/D

NOTE: Most physical properties above are for the oil component in the material.

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

INCOMPATIBLE MATERIALS: Strong oxidisers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitisation	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.

Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY
N-PHENYL-1-NAPHTHYLAMINE	Oral Lethality: LD 50 1625 mg/kg (Rat)

OTHER INFORMATION

For the product itself:

Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.

Contains:

Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not sensitising in test animals and humans. N-phenyl-1-naphthylamine (PAN): A single oral overexposure may result in clinical signs/symptoms of cyanosis, headache, shallow respiration, dizziness, confusion, low blood pressure, convulsions, coma, or jaundice. Hematuria may occur due to bladder and kidney irritation, and anemia may develop later. Repeated exposure in laboratory animals caused liver and kidney damage and depressed bone marrow activity. Undiluted PAN is a skin sensitiser. Human testing of lubricants containing 1.0% PAN resulted in no reactions indicative of sensitisation. Phenyl-alpha-naphthylamine (PAN): Undiluted PAN is a skin sensitizer. Human testing with lubricants containing 1.0% PAN caused no reactions indicative of sensitization. SODIUM NITRITE: Ingestion of sodium nitrite may reduce the oxygen-carrying capacity of blood and may cause cyanosis (bluish skin), shortness of breath, palpitations, coma, and/or death.

IARC Classification:

The following ingredients are cited on the lists below:

--REGULATORY LISTS SEARCHED--

1 = IARC 1 2 = IARC 2A 3 = IARC 2B

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY

Material -- Expected to be harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable

laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Suitable routes of disposal are supervised incineration, preferentially with energy recovery, or appropriate recycling methods in accordance with applicable regulations and material characteristics at the time of disposal.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (ADG) : Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

This material is not considered hazardous according to Australia Model Work Health and Safety Regulations.

Product is not regulated according to Australian Dangerous Goods Code.

No Poison Schedule number allocated by the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) established under the Therapeutic Goods Act.

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Listed or exempt from listing/notification on the following chemical inventories (May contain substance(s) subject to notification to the EPA Active TSCA inventory prior to import to USA): AIIC, DSL, ENCS, IECSC, ISHL, TCSI, TSCA

Special Cases:

Inventory	Status
KECI	Restrictions Apply

SECTION 16 OTHER INFORMATION

KEY TO ABBREVIATIONS AND ACRONYMS:

N/D = Not determined, N/A = Not applicable, STEL = Short-Term Exposure Limit, TWA = Time-Weighted Average

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H272(2): May intensify fire; oxidizer; Oxidizing Solid, Cat 2
H301: Toxic if swallowed; Acute Tox Oral, Cat 3
H302: Harmful if swallowed; Acute Tox Oral, Cat 4
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
H317: May cause allergic skin reaction; Skin Sensitisation, Cat 1
H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1
H319(2A): Causes serious eye irritation; Serious Eye Damage/Irr, Cat 2A
H335: May cause respiratory irritation; Target Organ Single, Resp Irr
H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1
H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Composition: Component Table information was modified.
Perkal Pty Ltd Trading as Statewide Oil (South Australia): Section 01: Supplier Mailing Address information was deleted.
Perkal Pty Ltd Trading as Statewide Oil (Western Australia): Section 01: Supplier Mailing Address information was deleted.
Section 01: Company Contact Methods information was modified.
Section 01: Company Mailing Address information was deleted.
Section 01: Company Mailing Address information was modified.
Section 11: Tox List Cited Table information was deleted.
Section 16: HCode Key information was modified.
Southern Cross Lubes (Victoria and Tasmania, New South Wales and Australian Capital Territory): Section 01: Supplier Mailing Address information was deleted.

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DGN: 2006172DAU (553106)

Prepared by: Exxon Mobil Corporation
EMBSI, Clinton NJ USA
Contact Point: See Section 1 for Local Contact number

End of (M)SDS

carboline®
Coatings - Linings - Fireproofing

Safety Data Sheet

Prepared in Accordance with HCS 29 C.F.R. 1910.1200

1. Identification of the Substance/Mixture and the Company/Undertaking

1.1 Product Identifier 0522S1NL

Product Name: THINNER 2

Revision Date: 02/26/2019

Supercedes Date: 12/07/2018

1.2 Relevant identified uses of the substance or mixture and uses advised against Thinner for industrial coatings - Industrial use

1.3 Details of the supplier of the safety data sheet

Manufacturer:
Carboline Company
2150 Schuetz Road
St. Louis, MO USA 63146

Regulatory / Technical Information:
Contact Carboline Technical Services at
1-800-848-4645

Datasheet Produced by: Schlereth, Ken - ehs@stoncor.com

1.4 Emergency telephone number:
CHEMTREC 1-800-424-9300 (Inside US)
CHEMTREC +1 703 5273887 (Outside US)
HEALTH - Pittsburgh Poison Control 1-412-681-6669

2. Hazard Identification

2.1 Classification of the substance or mixture

Aspiration Hazard, category 1
Eye Irritation, category 2
Flammable Liquid, category 2
Reproductive Toxicity, category 2
STOT, repeated exposure, category 2
STOT, single exposure, category 3, NE
Skin Irritation, category 2

2.2 Label elements

Symbol(s) of Product



Signal Word

Danger

Named Chemicals on Label

METHYL ETHYL KETONE, TOLUENE

HAZARD STATEMENTS

Flammable Liquid, category 2	H225	Highly flammable liquid and vapour.
Aspiration Hazard, category 1	H304	May be fatal if swallowed and enters airways.
Skin Irritation, category 2	H315	Causes skin irritation.
Eye Irritation, category 2	H319	Causes serious eye irritation.
STOT, single exposure, category 3, NE	H336	May cause drowsiness or dizziness.
Reproductive Toxicity, category 2	H361	Suspected of damaging fertility or the unborn child.
STOT, repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.

PRECAUTION PHRASES

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P235	Keep cool.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/ face protection.
P284	Wear respiratory protection.
P301+310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P308+313	IF exposed or concerned: Get medical advice/attention
P314	Get medical advice/attention if you feel unwell.
P331	Do NOT induce vomiting.
P332+313	If skin irritation occurs: Get medical advice/attention.
P403+233	Store in a well-ventilated place. Keep container tightly closed.

2.3 Other hazards

No Information

Results of PBT and vPvB assessment:

The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

3. Composition/Information On Ingredients

3.2 Mixtures

Hazardous Ingredients

CAS-No.	Chemical Name	%
108-88-3	TOLUENE	75 - 100
78-93-3	METHYL ETHYL KETONE	10 - <25

CAS-No.	GHS Symbols	GHS Hazard Statements	M-Factors
108-88-3	GHS02-GHS07-GHS08	H225-304-315-319-336-361-373	0
78-93-3	GHS02-GHS07	H225-319-336	0

Additional Information: The text for GHS Hazard Statements shown above (if any) is given in Section 16.

4. First-aid Measures

4.1 Description of First Aid Measures

AFTER INHALATION: Give oxygen or artificial respiration if needed. Remove person to fresh air. If signs/symptoms continue, get medical attention.
AFTER SKIN CONTACT: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If skin irritation persists, call a physician.
AFTER EYE CONTACT: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
AFTER INGESTION: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If swallowed, call a poison control centre or doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

Harmful if swallowed. Irritating to eyes and skin. Risk of serious damage to the lungs (by aspiration). Vapours may cause drowsiness and dizziness.

4.3 Indication of any immediate medical attention and special treatment needed

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11.
When symptoms persist or in all cases of doubt seek medical advice.

5. Fire-fighting Measures

5.1 Extinguishing Media:

Carbon Dioxide, Dry Chemical, Foam, Water Fog

UNUSUAL FIRE AND EXPLOSION HAZARDS: Flammable liquid. Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. Provide adequate ventilation. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Electrical installations / working materials must comply with the technological safety standards. Wear shoes with conductive soles.

5.2 Special hazards arising from the substance or mixture

No Information

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. Cool containers / tanks with water spray. Flammable.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Evacuate personnel to safe areas. Remove all sources of ignition. To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded. Wear personal protective equipment. For personal protection see section 8.

6.2 Environmental precautions

Do not allow material to contaminate ground water system. Prevent product from entering drains.

6.3 Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations

(see section 13).

6.4 Reference to other sections

Please refer to disposal requirements or country specific disposal requirements for this material. See Section 13 for further information.

7. Handling and Storage

7.1 Precautions for safe handling

INSTRUCTIONS FOR SAFE HANDLING : Keep containers dry and tightly closed to avoid moisture absorption and contamination. Prepare the working solution as given on the label(s) and/or the user instructions. Do not breathe vapours or spray mist. Ensure all equipment is electrically grounded before beginning transfer operations. Do not use sparking tools. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation/personal protection. Wash thoroughly after handling.

PROTECTION AND HYGIENE MEASURES : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke.

7.2 Conditions for safe storage, including any incompatibilities

CONDITIONS TO AVOID: Heat, flames and sparks.

STORAGE CONDITIONS: Keep container closed when not in use. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.

7.3 Specific end use(s)

No specific advice for end use available.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Ingredients with Occupational Exposure Limits (US)

Name	CAS-No.	ACGIH TWA	ACGIH STEL	ACGIH Ceiling
TOLUENE	108-88-3	20 PPM	N/E	N/E
METHYL ETHYL KETONE	78-93-3	200 PPM	300 PPM	N/E

Name	CAS-No.	OSHA PEL	OSHA STEL
TOLUENE	108-88-3	200 ppm	560 MGM3, 150 PPM
METHYL ETHYL KETONE	78-93-3	590 MGM3, 200 PPM	885 MGM3, 300 PPM

FURTHER INFORMATION: Refer to the regulatory exposure limits for the workforce enforced in each country.

8.2 Exposure controls

Personal Protection

RESPIRATORY PROTECTION: In order to avoid inhalation of spray-mist and sanding dust, all spraying and sanding must be done wearing adequate respirator. Use only with ventilation to keep levels below exposure guidelines reported in this document. User should test and monitor exposure levels to ensure all personnel are below guidelines. If not sure, or not able to monitor, use State or federally approved supplied air respirator. For silica containing coatings in a liquid state, and/or if no exposure limits are established above, air-supplied respirators are generally not required.

EYE PROTECTION: Ensure that eyewash stations and safety showers are close to the workstation location. Safety glasses with side-shields.

HAND PROTECTION: Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Impervious gloves. Request information on glove permeation properties from the glove supplier. Lightweight

protective clothing

OTHER PROTECTIVE EQUIPMENT: No Information

ENGINEERING CONTROLS: Avoid contact with skin, eyes and clothing. Ensure adequate ventilation, especially in confined areas.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance:	Clear Liquid
Physical State	Liquid
Odor	Solvent
Odor threshold	N/D
pH	N/D
Melting point / freezing point (°C)	N/D
Boiling point/range	173 F (78 C) - 232 F (111 C)
Flash Point	24F (-4C)
Evaporation rate	Slower Than Ether
Flammability (solid, gas)	Not determined
Upper/lower flammability or explosive limits	1.3 - 10.1
Vapour Pressure, mmHg	36.3
Vapour density	Heavier than Air
Relative density	Not determined
Solubility in / Miscibility with water	N/D
Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature (°C)	Not determined
Decomposition temperature (°C)	Not determined
Viscosity	Unknown
Explosive properties	Not determined
Oxidising properties	Not determined

9.2 Other information

VOC Content g/l:	850
Specific Gravity (g/cm3)	0.85

10. Stability and Reactivity

10.1 Reactivity

No reactivity hazards known under normal storage and use conditions.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerisation does not occur.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents.

10.6 Hazardous decomposition products
Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke.

11. Toxicological Information

11.1 Information on toxicological effects

Acute Toxicity:

Oral LD50: N/D

Inhalation LC50: N/D

Irritation: Eye irritation and Skin irritation, Category 2

Corrosivity: Unknown

Sensitization: Unknown

Repeated dose toxicity: Unknown

Carcinogenicity: Unknown

Mutagenicity: Unknown

Toxicity for reproduction: Category 2

STOT-single exposure: STOT, single exposure, category 3, NE

STOT-repeated exposure: STOT repeated exposure (Auditory system, eyes) Category 2

Aspiration hazard: Aspiration Hazard, category 1

If no information is available above under Acute Toxicity then the acute effects of this product have not been tested. Data on individual components are tabulated below:

CAS-No.	Chemical Name	Oral LD50	Dermal LD50	Vapor LC50	Gas LC50	Dust/Mist LC50
108-88-3	TOLUENE	5000 mg/kg rat oral	12267 mg/kg, dermal, rabbit	8000 ppm/4 hrs, rat, inhalation	0.000	0.000
78-93-3	METHYL ETHYL KETONE	2194 mg/kg rat, oral	Not Available	34.5 mg/L/ 4 hour rat, inhalation	0.000	0.000

Additional Information:
No Information

12. Ecological Information

12.1 Toxicity:

EC50 48hr (Daphnia):	Unknown
IC50 72hr (Algae):	Unknown
LC50 96hr (fish):	Unknown

12.2 Persistence and degradability: Unknown

12.3 Bioaccumulative potential: Unknown

12.4 Mobility in soil: Unknown

12.5 Results of PBT and vPvB assessment: The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

12.6 Other adverse effects: Unknown

CAS-No.	Chemical Name	EC50 48hr	IC50 72hr	LC50 96hr
108-88-3	TOLUENE	6 mg/l (Daphnia magna)	12.5 mg/L (Algae)	5.8 mg/L (Fish)
78-93-3	METHYL ETHYL KETONE	308 mg/l (Daphnia magna)	No information	2993 mg/l (Pimephales promelas)

13. Disposal Considerations

13.1 WASTE TREATMENT METHODS: Do not burn, or use a cutting torch on, the empty drum. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport Information

14.1	**UN number**	UN1263
14.2	**UN proper shipping name**	Paint Related Material
	Technical name	N/A
14.3	**Transport hazard class(es)**	3
	Subsidiary shipping hazard	N/A
14.4	**Packing group**	II
14.5	**Environmental hazards**	Unknown
14.6	**Special precautions for user**	Unknown
	EmS-No.:	F-E, S-E
14.7	**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code**	Unknown

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation for the substance or mixture:

U.S. Federal Regulations: As follows -

CERCLA - Sara Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Flammable (gases, aerosols, liquids, or solids), Reproductive toxicity, Skin Corrosion or Irritation, Serious eye damage or eye irritation, Specific target organ toxicity (single or repeated exposure), Aspiration Hazard

Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS-No.
TOLUENE	108-88-3

Toxic Substances Control Act:

All components of this product are either listed on the TSCA Inventory or are exempt.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA 12(b) components exist in this product.

U.S. State Regulations: As follows -

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product.

No NJ Right-To-Know components exist in this product.

Pennsylvania Right-To-Know

The following non-hazardous ingredients are present in the product at greater than 3%.

No PA Right-To-Know components exist in this product.

CALIFORNIA PROPOSITION 65

WARNING: Cancer and Reproductive Harm -- www.P65Warnings.ca.gov

International Regulations: As follows -

*** Canadian DSL:**

All chemical ingredients included on inventory (DSL)

15.2 Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

16. Other Information

Text for GHS Hazard Statements shown in Section 3 describing each ingredient:

H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.

H336	May cause drowsiness or dizziness.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

Reasons for revision

No Information

The information contained herein is, to the best of our knowledge and belief accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

Safety Data Sheet

Prepared in Accordance with HCS 29 C.F.R. 1910.1200

1. Identification of the Substance/Mixture and the Company/Undertaking

1.1 Product Identifier 0557S1NL

Product Name: THINNER 215

Revision Date: 01/23/2019

Supercedes Date: 02/16/2018

1.2 Relevant identified uses of the substance or mixture and uses advised against Thinner for industrial coatings - Industrial use

1.3 Details of the supplier of the safety data sheet

Manufacturer:

Carboline Company
2150 Schuetz Road
St. Louis, MO USA 63146

Regulatory / Technical Information:
Contact Carboline Technical Services at
1-800-848-4645

Datasheet Produced by: Schlereth, Ken - ehs@stoncor.com

1.4 Emergency telephone number:

CHEMTREC 1-800-424-9300 (Inside US)
CHEMTREC +1 703 5273887 (Outside US)
HEALTH - Pittsburgh Poison Control 1-412-681-6669

2. Hazard Identification

2.1 Classification of the substance or mixture

Flammable Liquid, category 3

2.2 Label elements

Symbol(s) of Product



Signal Word

Warning

Named Chemicals on Label

HAZARD STATEMENTS

Flammable Liquid, category 3	H226	Flammable liquid and vapour.

PRECAUTION PHRASES

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P403+233	Store in a well-ventilated place. Keep container tightly closed.

2.3 Other hazards

No Information

Results of PBT and vPvB assessment:

The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

3. Composition/Information On Ingredients

3.2 Mixtures

Hazardous Ingredients

CAS-No.	Chemical Name	%
108419-32-5	ACETIC ACID ESTERS (C7-C9)	75 - 100
142-92-7	HEXYL ACETATE	2.5 - <10
64742-82-1	PETROLEUM DISTILLATE	1.0 - <2.5

CAS-No.	GHS Symbols	GHS Hazard Statements	M-Factors
108419-32-5			0
142-92-7	GHS02	H226	0
64742-82-1	GHS02-GHS07-GHS08-GHS09	H226-304-312-336-411	0

Additional Information: The text for GHS Hazard Statements shown above (if any) is given in Section 16.

4. First-aid Measures

4.1 Description of First Aid Measures

AFTER INHALATION: Give oxygen or artificial respiration if needed. Remove person to fresh air. If signs/symptoms continue, get medical attention.

AFTER SKIN CONTACT: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If skin irritation persists, call a physician.

AFTER EYE CONTACT: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

AFTER INGESTION: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If swallowed, call a poison control centre or doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

Harmful if swallowed. Irritating to eyes and skin. Risk of serious damage to the lungs (by aspiration). Vapours may cause drowsiness and dizziness.

4.3 Indication of any immediate medical attention and special treatment needed

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11.

When symptoms persist or in all cases of doubt seek medical advice.

5. Fire-fighting Measures

5.1 Extinguishing Media:

Carbon Dioxide, Dry Chemical, Foam, Water Fog

UNUSUAL FIRE AND EXPLOSION HAZARDS: Flammable liquid. Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. Provide adequate ventilation. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. Keep away from heat/sparks/open

flames/hot surfaces. - No smoking. Electrical installations / working materials must comply with the technological safety standards. Wear shoes with conductive soles.

5.2 Special hazards arising from the substance or mixture

No Information

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. Cool containers / tanks with water spray. Flammable.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Evacuate personnel to safe areas. Remove all sources of ignition. To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded. Wear personal protective equipment. For personal protection see section 8.

6.2 Environmental precautions

Do not allow material to contaminate ground water system. Prevent product from entering drains.

6.3 Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sections

Please refer to disposal requirements or country specific disposal requirements for this material. See Section 13 for further information.

7. Handling and Storage

7.1 Precautions for safe handling

INSTRUCTIONS FOR SAFE HANDLING : Keep containers dry and tightly closed to avoid moisture absorption and contamination. Prepare the working solution as given on the label(s) and/or the user instructions. Do not breathe vapours or spray mist. Ensure all equipment is electrically grounded before beginning transfer operations. Do not use sparking tools. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation/personal protection. Wash thoroughly after handling.
PROTECTION AND HYGIENE MEASURES : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. When using, do not eat, drink or smoke.

7.2 Conditions for safe storage, including any incompatibilities

CONDITIONS TO AVOID: Heat, flames and sparks.
STORAGE CONDITIONS: Keep container closed when not in use. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.

7.3 Specific end use(s)

No specific advice for end use available.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Ingredients with Occupational Exposure Limits (US)

Name	CAS-No.	ACGIH TWA	ACGIH STEL	ACGIH Ceiling
ACETIC ACID ESTERS (C7-C9)	108419-32-5	N/E	N/E	N/E
HEXYL ACETATE	142-92-7	N/E	N/E	N/E

PETROLEUM DISTILLATE	64742-82-1	NE	NE	N/E

Name	CAS-No.	OSHA PEL	OSHA STEL
ACETIC ACID ESTERS (C7-C9)	108419-32-5	N/E	N/E
HEXYL ACETATE	142-92-7	N/E	N/E
PETROLEUM DISTILLATE	64742-82-1	NE	N/E

FURTHER INFORMATION: Refer to the regulatory exposure limits for the workforce enforced in each country.

8.2 Exposure controls

Personal Protection

RESPIRATORY PROTECTION: In order to avoid inhalation of spray-mist and sanding dust, all spraying and sanding must be done wearing adequate respirator. Use only with ventilation to keep levels below exposure guidelines reported in this document. User should test and monitor exposure levels to ensure all personnel are below guidelines. If not sure, or not able to monitor, use State or federally approved supplied air respirator. For silica containing coatings in a liquid state, and/or if no exposure limits are established above, air-supplied respirators are generally not required.

EYE PROTECTION: Ensure that eyewash stations and safety showers are close to the workstation location. Safety glasses with side-shields.

HAND PROTECTION: Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Impervious gloves. Request information on glove permeation properties from the glove supplier. Lightweight protective clothing

OTHER PROTECTIVE EQUIPMENT: No Information

ENGINEERING CONTROLS: Avoid contact with skin, eyes and clothing. Ensure adequate ventilation, especially in confined areas.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance:	Clear Liquid
Physical State	Liquid
Odor	Solvent
Odor threshold	N/D
pH	N/D
Melting point / freezing point (°C)	N/D
Boiling point/range	265 F (129 C) - 435 F (224 C)
Flash Point	95F (35C)
Evaporation rate	Slower Than Ether
Flammability (solid, gas)	Not determined
Upper/lower flammability or explosive limits	1.0 - 8.0
Vapour Pressure, mmHg	0.6 mmHg @20 C
Vapour density	Heavier than Air
Relative density	Not determined
Solubility in / Miscibility with water	N/D

Partition coefficient: n-octanol/water	Not determined
Auto-ignition temperature (°C)	Not determined
Decomposition temperature (°C)	Not determined
Viscosity	Unknown
Explosive properties	Not determined
Oxidising properties	Not determined

9.2 Other information

VOC Content g/l:	864
Specific Gravity (g/cm3)	0.87

10. Stability and Reactivity

10.1 Reactivity
No reactivity hazards known under normal storage and use conditions.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
Hazardous polymerisation does not occur.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents.

10.6 Hazardous decomposition products
Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke.

11. Toxicological Information

11.1 Information on toxicological effects

Acute Toxicity:

Oral LD50: N/D

Inhalation LC50: N/D

Irritation: Unknown

Corrosivity: Unknown

Sensitization: Unknown

Repeated dose toxicity: Unknown

Carcinogenicity: Unknown

Mutagenicity: Unknown

Toxicity for reproduction: Unknown

If no information is available above under Acute Toxicity then the acute effects of this product have not been tested. Data on individual components are tabulated below:

CAS-No.	Chemical Name	Oral LD50	Dermal LD50	Vapor LC50	Gas LC50	Dust/Mist LC50
108419-32-5	ACETIC ACID ESTERS (C7-C9)	5000 mg/kg, oral, rat		Not Available	0.000	0.000
142-92-7	HEXYL ACETATE	36230 mg/kg, oral, rat	5000 mg/kg, dermal, rat	Not Available	0.000	0.000
64742-82-1	PETROLEUM DISTILLATE	5000 mg/kg, oral, rat	2000 mg/kg, dermal, rabbit	5610 ppm / 4h, rat, Inh	0.000	0.000

Additional Information:

No Information

12. Ecological Information

12.1 Toxicity:

EC50 48hr (Daphnia): Unknown

IC50 72hr (Algae): Unknown

LC50 96hr (fish): Unknown

12.2 Persistence and degradability: Unknown

12.3 Bioaccumulative potential: Unknown

12.4 Mobility in soil: Unknown

12.5 Results of PBT and vPvB assessment: The product does not meet the criteria for PBT/VPvB in accordance with Annex XIII.

12.6 Other adverse effects: Unknown

CAS-No.	Chemical Name	EC50 48hr	IC50 72hr	LC50 96hr
108419-32-5	ACETIC ACID ESTERS (C7-C9)	No information	No information	No information
142-92-7	HEXYL ACETATE	No information	No information	3.7 mg/L (fish)
64742-82-1	PETROLEUM DISTILLATE	4.5 mg/l (Daphnia Magna)	No information	8.2 mg/l (Fathead Minnow)

13. Disposal Considerations

13.1 WASTE TREATMENT METHODS: Do not burn, or use a cutting torch on, the empty drum. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport Information

14.1	**UN number**	UN 1263
14.2	**UN proper shipping name**	Paint Related Material
	Technical name	N/A
14.3	**Transport hazard class(es)**	3
	Subsidiary shipping hazard	N/A
14.4	**Packing group**	III
14.5	**Environmental hazards**	Unknown
14.6	**Special precautions for user**	Unknown
	EmS-No.:	F-E, S-E
14.7	**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code**	Unknown

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation for the substance or mixture:

U.S. Federal Regulations: As follows -

CERCLA - Sara Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Flammable (gases, aerosols, liquids, or solids)

Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS-No.

No Sara 313 components exist in this product.

Toxic Substances Control Act:

All components of this product are either listed on the TSCA Inventory or are exempt.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

Chemical Name	CAS-No.

No TSCA 12(b) components exist in this product.

U.S. State Regulations: As follows -

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product.

Chemical Name	CAS-No.
ADDITIVE	TRADE SECRET

Pennsylvania Right-To-Know

The following non-hazardous ingredients are present in the product at greater than 3%.

No PA Right-To-Know components exist in this product.

CALIFORNIA PROPOSITION 65

WARNING: Cancer and Reproductive Harm -- www.P65Warnings.ca.gov

International Regulations: As follows -

* Canadian DSL:

All chemical ingredients included on inventory (DSL)

15.2 Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

16. Other Information

Text for GHS Hazard Statements shown in Section 3 describing each ingredient:

H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Reasons for revision

No Information

The information contained herein is, to the best of our knowledge and belief accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

Revision Number: 006.0

Issue date: 08/01/2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **Loctite® Clear Silicone Sealant**
Product type: Silicone
Restriction of Use: None identified
Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

IDH number: 908570
Item number: 013080803
Region: United States
Contact information:
Telephone: +1 (800) 624-7767
MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING: CAUSES SKIN IRRITATION.
MAY CAUSE AN ALLERGIC SKIN REACTION.
CAUSES SERIOUS EYE IRRITATION.

HAZARD CLASS	HAZARD CATEGORY
SKIN IRRITATION	2
EYE IRRITATION	2A
SKIN SENSITIZATION	1

PICTOGRAM(S)



Precautionary Statements

Prevention: Avoid breathing vapors, mist, or spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear eye and face protection. Wear protective gloves.

Response: IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to remove. Continue rinsing. If skin irritation or rash occurs: Get medical attention. If eye irritation persists: Get medical attention. Take off contaminated clothing.

Storage: Not prescribed

Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Substituted Silane	Proprietary	1 - 5

Distillates (petroleum), hydrotreated middle	64742-46-7	10 - 30
Silicon dioxide	7631-86-9	10 - 30
Acetic acid	64-19-7	1 - 5

* Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms develop and persist, get medical attention.

Skin contact: Wipe off paste with paper towel or cloth. Wash with soap and water. If symptoms develop and persist, get medical attention.

Eye contact: Rinse thoroughly with plenty of water, also under the eyelids. If eye irritation persists, consult a specialist.

Ingestion: Do not induce vomiting. If a person feels unwell or symptoms of skin irritation appear, consult a physician.

Symptoms: See Section 11.

5. FIRE FIGHTING MEASURES

Extinguishing media: Foam, dry chemical or carbon dioxide.

Special firefighting procedures: None

Unusual fire or explosion hazards: None

Hazardous combustion products: Formaldehyde. Silica mist. Acrid smoke and fumes.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Do not allow product to enter sewer or waterways.

Clean-up methods: Scrape up as much material as possible. Spilled material will solidify. Store in a partly filled, closed container until disposal. Maintain good ventilation for large spills.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Do not handle contact lenses until all sealant has been removed from hands. Residual sealant may transfer to lenses and cause eye irritation.

Storage: Store in a dry area below 90° F. Keep container closed.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Substituted Silane	None	None	None	None
Distillates (petroleum), hydrotreated middle	None	5 mg/m3 PEL Mist.	None	None
Silicon dioxide	6 mg/m3 TWA	20 MPPCF TWA 0.8 mg/m3 TWA	None	3 mg/m3 TWA Respirable fraction.
Acetic acid	15 ppm STEL 10 ppm TWA	10 ppm (25 mg/m3) PEL	None	None

Engineering controls: Ensure adequate ventilation, especially in confined areas. Use local ventilation if general ventilation is insufficient to maintain vapor concentration below established exposure limits.

Respiratory protection: Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Eye/face protection: Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists.

Skin protection: Chemical resistant, impermeable gloves. Nitrile gloves. Butyl rubber gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Paste
Color: Translucent
Odor: Acetic acid
Odor threshold: Not available.
pH: Not available.
Vapor pressure: < 10 mm hg (20 °C (68°F))
Boiling point/range: Not available.
Melting point/ range: Not available.
Specific gravity: 1.01 at 20 °C (68°F)
Vapor density: Heavier than air.
Flash point: > 93 °C (> 199.4 °F)
Flammable/Explosive limits - lower: 4 %
Flammable/Explosive limits - upper: 19.9 %
Autoignition temperature: Not available.
Evaporation rate: Not available.
Solubility in water: Not determined
Partition coefficient (n-octanol/water): Not available.
VOC content: 3.0 %; 30 g/l
Viscosity: Not available.
Decomposition temperature: Not available.

10. STABILITY AND REACTIVITY

Stability: Stable

Hazardous reactions: Will not occur.

Hazardous decomposition products: Acetic acid is liberated slowly upon contact with moisture. Formaldehyde.

Incompatible materials: Acids. Bases. Oxidizing agents. Water.

Reactivity: Not available.

Conditions to avoid: Prolonged heating at temperatures above 150 °C. Exposure to moisture.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects/Symptoms

Inhalation: Acetic acid produced during cure may irritate eyes, nose and throat. When heated to temperatures exceeding 300° F (150° C) in the presence of air, silicones may form formaldehyde vapors. Formaldehyde is a potential cancer hazard and a known skin and respiratory sensitizer. Vapors irritate the eyes, nose and throat. Safe handling conditions may be maintained by keeping formaldehyde vapor concentrations below the OSHA permissible limit.

Skin contact: Causes skin irritation. May cause allergic skin reaction.

Eye contact: Causes serious eye irritation.

Ingestion: Not expected to be harmful by ingestion.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Substituted Silane	None	Irritant, Allergen
Distillates (petroleum), hydrotreated middle	None	Irritant
Silicon dioxide	Oral LD50 (RAT) = > 22,500 mg/kg	Nuisance dust
Acetic acid	Oral LD50 (RABBIT) = 1,200 mg/kg Oral LD50 (RAT) = 3.53 g/kg Oral LD50 (RAT) = 3.31 g/kg Dermal LD50 (RABBIT) = 1,060 mg/kg Inhalation LC50 (RAT, 4 h) = 11.4 mg/l	Allergen, Corrosive, Eyes, Gastrointestinal, Immune system, Irritant, Kidney

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Substituted Silane	No	No	No
Distillates (petroleum), hydrotreated middle	No	No	No
Silicon dioxide	No	No	No
Acetic acid	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal. Cured rubber can be incinerated or landfilled following EPA and local regulations.

Hazardous waste number: Not a RCRA hazardous waste.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name:	Not regulated
Hazard class or division:	None
Identification number:	None
Packing group:	None

Water Transportation (IMO/IMDG)

Proper shipping name:	Not regulated
Hazard class or division:	None
Identification number:	None
Packing group:	None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status:	All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12 (b) Export Notification:	None above reporting de minimis
CERCLA/SARA Section 302 EHS:	None above reporting de minimis
CERCLA/SARA Section 311/312:	Immediate Health
CERCLA/SARA Section 313:	None above reporting de minimis
California Proposition 65:	No California Proposition 65 listed chemicals are known to be present.

Canada Regulatory Information

CEPA DSL/NDSL Status:	All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Catherine Bimler, Regulatory Affairs Specialist

Issue date: 08/01/2014

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Revision Number: 004.0 **Issue date:** 04/20/2021

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **Loctite PL Premium Max Construction Adhesive**
IDH number: 2292244
Product type/use: Adhesive
Restriction of Use: None identified
Region: United States
Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067
Contact information:
Telephone: +1 (860) 571-5100
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER:
CAUSES SKIN IRRITATION.
MAY CAUSE AN ALLERGIC SKIN REACTION.
CAUSES SERIOUS EYE DAMAGE.
HARMFUL IF INHALED.
MAY CAUSE ALLERGY OR ASTHMA SYMPTOMS OR BREATHING DIFFICULTIES IF INHALED.
MAY CAUSE CANCER.
CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

HAZARD CLASS	HAZARD CATEGORY
ACUTE TOXICITY INHALATION	4
SKIN IRRITATION	2
SERIOUS EYE DAMAGE	1
RESPIRATORY SENSITIZATION	1
SKIN SENSITIZATION	1
CARCINOGENICITY	1A
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	1

PICTOGRAM(S)



Precautionary Statements

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust or fumes. Wash affected area thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves, clothing, eye and face protection. In case of inadequate ventilation wear respiratory protection.

Response: IF ON SKIN: Wash with plenty of water. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical attention. If skin irritation or rash occurs: Get medical attention. Take off contaminated clothing.

Storage: Store locked up.

Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Quartz (SiO2), <1% respirable	14808-60-7	50 - 60
Limestone	1317-65-3	10 - 20
Trimethoxyphenylsilane	2996-92-1	1 - 5
Trimethoxyvinylsilane	2768-02-7	1 - 5
Isophorone diamine diisocyanate	4098-71-9	1 - 5
Gamma-glycidoxypropyl trimethoxysilane	2530-83-8	0.1 - 1
N-[3-(Trimethoxysilyl)propyl]butylamine	31024-56-3	1 - 5
3-(Trimethoxysilyl)propylamine	13822-56-5	0.1 - 1

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

Exposure to moisture during cure will release 1-2% methanol.

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If symptoms persist, seek medical advice.

Skin contact: Wash with soap and water. If skin irritation persists, call a physician. Wipe off paste with paper towel or cloth.

Eye contact: Flush with copious amounts of water, preferably, lukewarm water for at least 15 minutes, holding eyelids open all the time. If symptoms develop and persist, get medical attention.

Ingestion: Do not induce vomiting. If a person feels unwell or symptoms of skin irritation appear, consult a physician.

Symptoms: See Section 11.

5. FIRE FIGHTING MEASURES

Extinguishing media: carbon dioxide, foam, powder, water spray jet, fine water spray

Special firefighting procedures: Wear protective equipment. Wear self-contained breathing apparatus.

Unusual fire or explosion hazards: None identified.

Hazardous combustion products: Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Do not allow product to enter sewer or waterways.

Clean-up methods: Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up. Store in a partly filled, closed container until disposal. Spilled material will solidify. Scrape up as much material as possible. Maintain good ventilation for large spills.

7. HANDLING AND STORAGE

Handling: Do not wear contact lenses. Avoid contact with eyes, skin and clothing. Keep out of the reach of children. Protect from moisture. Use only with adequate ventilation.

Storage: For safe storage, store between -20 °C (-4°F) and 40 °C (104°F) Store in a cool, dry area. Avoid moisture.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Quartz (SiO2), <1% respirable	0.025 mg/m3 TWA Respirable fraction.	0.05 mg/m3 TWA (Respirable dust.) (Respirable dust.) 0.025 mg/m3 OSHA_ACT (Respirable dust.) 0.05 mg/m3 PEL Respirable dust. 2.4 MPPCF TWA Respirable. 0.1 mg/m3 TWA Respirable.	None	None
Limestone	10 mg/m3 TWA Total dust.	5 mg/m3 PEL Respirable fraction. 15 mg/m3 PEL Total dust.	None	None
Trimethoxyphenylsilane	None	None	None	None
Trimethoxyvinylsilane	None	None	None	None
Isophorone diamine diisocyanate	0.005 ppm TWA	None	None	None
Gamma-glycidoxypropyl trimethoxysilane	None	None	None	None
N-[3-(Trimethoxysilyl)propyl]butylamine	None	None	None	None
3-(Trimethoxysilyl)propylamine	None	None	None	None

Engineering controls: Local exhaust ventilation is recommended when general ventilation is not sufficient to control airborne contamination below occupational exposure limits.

Respiratory protection: Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Eye/face protection: Safety goggles or safety glasses with side shields.

Skin protection: Use impermeable gloves and protective clothing as necessary to prevent skin contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid
Color: Gray
Odor: Characteristic
Odor threshold: Not available.
pH: Not applicable
Vapor pressure: Not applicable
Boiling point/range: Not applicable
Melting point/ range: Not applicable
Specific gravity: 1.6 - 1.7
Vapor density: Heavier than air.
Flash point: 107 °C (224.6 °F)
Flammable/Explosive limits - lower: Not available.
Flammable/Explosive limits - upper: Not available.
Autoignition temperature: Not applicable
Flammability: Not applicable
Evaporation rate: Not applicable

Solubility in water:	Insoluble
Partition coefficient (n-octanol/water):	Not available.
VOC content:	4 %; 64 g/l (by weight, calculated using CARB method; g/L less water, less exempts calculated using SCAQMD method)
Viscosity:	1,200,000 mPa.s
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of storage and use.
Hazardous reactions:	Will not occur.
Hazardous decomposition products:	Methanol is liberated slowly upon exposure to moisture.
Incompatible materials:	Oxidizing agents.
Reactivity:	Not available.
Conditions to avoid:	Exposure to moisture.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Inhalation, Skin contact, Eye contact

Potential Health Effects/Symptoms

Inhalation: May be harmful if inhaled. Methanol is released during application and cure, which may affect the nervous system causing dizziness, headache or nausea. Abrasion of cured material such as by sanding or grinding could release respirable particles of silica quartz, a cancer hazard by inhalation. Normal use of this product causes no such release.

Skin contact: Prolonged and/or repeated skin contact with this product may cause irritation/dermatitis.

Eye contact: Vapors may irritate eyes. Contact with eyes will cause irritation. Symptoms include itching, burning, redness and tearing.

Ingestion: Harmful if swallowed. Not expected under normal conditions of use.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Quartz (SiO2), <1% respirable	None	Immune system, Lung, Some evidence of carcinogenicity
Limestone	None	Nuisance dust
Trimethoxyphenylsilane	None	Irritant, Allergen
Trimethoxyvinylsilane	Inhalation LC50 (Rat, 4 h) = 2773 ppm	Irritant, Allergen
Isophorone diamine diisocyanate	Oral LD50 (Mouse) > 2,500 mg/kg Oral LD50 (Rat) > 1,000 mg/kg Oral LD50 (Rat) = > 1,000 mg/kg Oral LD50 (Mouse) = > 2,500 mg/kg Dermal LD50 (Rat) = 1,060 mg/kg Dermal LD50 (Rat) = 1,060 mg/kg Inhalation LC50 (Rat, 4 h) = 41.4 mg/m3 Inhalation LC50 (Rat, 4 h) = 123 mg/m3 Inhalation LC50 (Rat, 4 h) = 31 mg/m3 Inhalation LC50 (Rat, 4 h) = 135 - 160 mg/m3 Inhalation LC50 (Rat, 4 h) = 100 mg/m3 Inhalation LC50 (Rat, 4 h) = 40 mg/m3	Irritant, Allergen, Respiratory
Gamma-glycidoxypropyl trimethoxysilane	Inhalation LC50 (Rat, 4 h) = > 5.3 mg/l	Allergen, Irritant
N-[3-(Trimethoxysilyl)propyl]butylamine	None	No Data
3-(Trimethoxysilyl)propylamine	None	Irritant, Allergen

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Quartz (SiO2), <1% respirable	Known To Be Human Carcinogen.	Group 1	Yes
Limestone	No	No	No
Trimethoxyphenylsilane	No	No	No
Trimethoxyvinylsilane	No	No	No
Isophorone diamine diisocyanate	No	No	No
Gamma-glycidoxypropyl trimethoxysilane	No	No	No
N-[3-(Trimethoxysilyl)propyl]butylamine	No	No	No
3-(Trimethoxysilyl)propylamine	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name:	Not regulated
Hazard class or division:	None
Identification number:	None
Packing group:	None

Water Transportation (IMO/IMDG)

Proper shipping name:	Not regulated
Hazard class or division:	None
Identification number:	None
Packing group:	None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status:	All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.
TSCA 12 (b) Export Notification:	None above reporting de minimis
CERCLA/SARA Section 302 EHS:	Isophorone diamine diisocyanate (CAS# 4098-71-9).
CERCLA/SARA Section 311/312:	Delayed Health, Immediate Health
CERCLA/SARA Section 313:	This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Isophorone diamine diisocyanate (CAS# 4098-71-9).
California Proposition 65:	This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDSL Status:	Contains one or more components listed on the Non-Domestic Substances List. All other components are listed on or are exempt from listing on the Domestic Substances List. Components listed on the NDSL must be tracked by all Canadian Importers of Record as required by Environment Canada. They may be imported into Canada in limited quantities. Please contact Regulatory Affairs for additional details.
CEPA DSL/NDSL Status:	All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: This Safety Data Sheet contains changes from the previous version in Section(s): 11

Prepared by: Product Safety and Regulatory Affairs

Issue date: 04/20/2021

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SAFETY DATA SHEET

Product Trade Name: **BARA-KADE® BENTONITE**

Revision Date: 02-Apr-2015 **Revision Number:** 10

1. Identification

1.1. Product Identifier

Product Trade Name: BARA-KADE® BENTONITE
Synonyms: None
Chemical Family: Mineral
Internal ID Code HM005230

1.2 Recommended use and restrictions on use

Application: Additive
Uses Advised Against No information available

1.3 Manufacturer's Name and Contact Details

Manufacturer/Supplier BENTONITE Performance Minerals LLC
3000 N Sam Houston Parkway East
Houston, TX 77032

Telephone: (281) 871-7900
Fax: (281) 871-7940
Emergency Telephone: (281) 575-5000

Prepared By Chemical Stewardship
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

1.4. Emergency telephone number

Emergency Telephone Number (281) 575-5000

2. Hazard(s) Identification

2.1 Classification in accordance with paragraph (d) of §1910.1200

Carcinogenicity	Category 1A - H350
Specific Target Organ Toxicity - (Repeated Exposure)	Category 1 - H372

2.2. Label Elements

Hazard Pictograms



Signal Word Danger

Hazard Statements
H350 - May cause cancer by inhalation
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled

Precautionary Statements

Prevention
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves/eye protection/face protection

Response
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P314 - Get medical attention/advice if you feel unwell

Storage
P405 - Store locked up

Disposal
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

Contains

Substances	**CAS Number**
Bentonite	1302-78-9
Crystalline silica, quartz	14808-60-7
Crystalline silica, cristobalite	14464-46-1
Crystalline silica, tridymite	15468-32-3

2.3 Hazards not otherwise classified
None known

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Bentonite	1302-78-9	60 - 100%	Not classified
Crystalline silica, quartz	14808-60-7	1 - 5%	Carc. 1A (H350) STOT RE 1 (H372)
Crystalline silica, cristobalite	14464-46-1	0.1 - 1%	Carc. 1A (H350) STOT RE 1 (H372)
Crystalline silica, tridymite	15468-32-3	0.1 - 1%	Carc. 1A (H350) STOT RE 1 (H372)

The exact percentage (concentration) of the composition has been withheld as proprietary.

4. First-Aid Measures

4.1. Description of first aid measures
Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
Skin	Wash with soap and water. Get medical attention if irritation persists.
Ingestion	Under normal conditions, first aid procedures are not required.

4.2 Most important symptoms/effects, acute and delayed

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. Fire-fighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

All standard fire fighting media

Extinguishing media which must not be used for safety reasons

None known.

5.2 Specific hazards arising from the substance or mixture

Special Exposure Hazards

Decomposition in fire may produce toxic gases.

5.3 Special protective equipment and precautions for fire-fighters

Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid creating and breathing dust.
See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

7. Handling and storage

7.1. Precautions for Safe Handling

Handling Precautions

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.

8. Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Bentonite	1302-78-9	Not applicable	TWA: 1 mg/m³
Crystalline silica, quartz	14808-60-7	$\frac{10 \text{ mg/m}^3}{\%SiO2 + 2}$	TWA: 0.025 mg/m³
Crystalline silica, cristobalite	14464-46-1	1/2 x $\frac{10 \text{ mg/m}^3}{\%SiO2 + 2}$	TWA: 0.025 mg/m³
Crystalline silica, tridymite	15468-32-3	1/2 x $\frac{10 \text{ mg/m}^3}{\%SiO2 + 2}$	0.05 mg/m³

8.2 Appropriate engineering controls

Engineering Controls Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

8.3 Individual protection measures, such as personal protective equipment

Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)

Hand Protection Normal work gloves.

Skin Protection Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

Eye Protection Wear safety glasses or goggles to protect against exposure.

Other Precautions None known.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Solid
Color: Various
Odor: Odorless
Odor Threshold: No information available

Property Remarks/ - Method	Values
pH:	8-10
Freezing Point/Range	No information available.
Melting Point/Range	No data available
Boiling Point/Range	No data available
Flash Point	No data available
Flammability (solid, gas)	No data available
upper flammability limit	No data available
lower flammability limit	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	2.65
Water Solubility	Insoluble in water
Solubility in other solvents	No data available

Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%)	No data available

10. Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical Stability

Stable

10.3. Possibility of Hazardous Reactions

Will Not Occur

10.4. Conditions to Avoid

None anticipated

10.5. Incompatible Materials

Hydrofluoric acid.

10.6. Hazardous Decomposition Products

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

11. Toxicological Information

11.1 Information on likely routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation.

11.2 Symptoms related to the physical, chemical and toxicological characteristics

Acute Toxicity

Inhalation	Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A). Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).
Eye Contact	May cause mechanical irritation to eye.
Skin Contact	May cause mechanical skin irritation.
Ingestion	None known

Chronic Effects/Carcinogenicity Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

11.3 Toxicity data

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Bentonite	1302-78-9	> 5000 mg/kg (Rat) > 2000 mg/kg (Rat)	No data available	> 5.27 mg/L (Rat)
Crystalline silica, quartz	14808-60-7	500 mg/kg (Rat) >15,000 mg/kg (Human)	No data available	No data available
Crystalline silica, cristobalite	14464-46-1	500 mg/kg (Rat)	No data available	No data available
Crystalline silica, tridymite	15468-32-3	500 mg/kg (Rat)	No data available	No data available

Substances	CAS Number	Skin corrosion/irritation
Bentonite	1302-78-9	Non-irritating to the skin (Rabbit)
Crystalline silica, quartz	14808-60-7	Non-irritating to the skin
Crystalline silica, cristobalite	14464-46-1	Non-irritating to the skin
Crystalline silica, tridymite	15468-32-3	Non-irritating to the skin

Substances	CAS Number	Eye damage/irritation
Bentonite	1302-78-9	Non-irritating to the eye (Rabbit)
Crystalline silica, quartz	14808-60-7	Mechanical irritation of the eyes is possible.
Crystalline silica, cristobalite	14464-46-1	Mechanical irritation of the eyes is possible.
Crystalline silica, tridymite	15468-32-3	Mechanical irritation of the eyes is possible.

Substances	CAS Number	Skin Sensitization
Bentonite	1302-78-9	Did not cause sensitization on laboratory animals (mouse)
Crystalline silica, quartz	14808-60-7	Not regarded as a sensitizer.
Crystalline silica, cristobalite	14464-46-1	Not regarded as a sensitizer.
Crystalline silica, tridymite	15468-32-3	Not regarded as a sensitizer.

Substances	CAS Number	Respiratory Sensitization
Bentonite	1302-78-9	No information available
Crystalline silica, quartz	14808-60-7	No information available

Crystalline silica, cristobalite	14464-46-1	No information available
Crystalline silica, tridymite	15468-32-3	No information available

Substances	CAS Number	Mutagenic Effects
Bentonite	1302-78-9	In vitro tests did not show mutagenic effects
Crystalline silica, quartz	14808-60-7	Not regarded as mutagenic.
Crystalline silica, cristobalite	14464-46-1	Not regarded as mutagenic.
Crystalline silica, tridymite	15468-32-3	Not regarded as mutagenic.

Substances	CAS Number	Carcinogenic Effects
Bentonite	1302-78-9	Did not show carcinogenic effects in animal experiments (similar substances)
Crystalline silica, quartz	14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.
Crystalline silica, cristobalite	14464-46-1	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.
Crystalline silica, tridymite	15468-32-3	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.

Substances	CAS Number	Reproductive toxicity
Bentonite	1302-78-9	Did not show teratogenic effects in animal experiments.
Crystalline silica, quartz	14808-60-7	No information available
Crystalline silica, cristobalite	14464-46-1	No information available
Crystalline silica, tridymite	15468-32-3	No information available

Substances	CAS Number	STOT - single exposure
Bentonite	1302-78-9	None under normal use conditions
Crystalline silica, quartz	14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.
Crystalline silica, cristobalite	14464-46-1	No significant toxicity observed in animal studies at concentration requiring classification.
Crystalline silica, tridymite	15468-32-3	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Bentonite	1302-78-9	None under normal use conditions
Crystalline silica, quartz	14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)
Crystalline silica, cristobalite	14464-46-1	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)
Crystalline silica, tridymite	15468-32-3	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)

Substances	CAS Number	Aspiration hazard
Bentonite	1302-78-9	Not applicable
Crystalline silica, quartz	14808-60-7	Not applicable
Crystalline silica, cristobalite	14464-46-1	Not applicable
Crystalline silica, tridymite	15468-32-3	Not applicable

12. Ecological Information

12.1. Toxicity

Ecotoxicity Effects

Product Ecotoxicity Data

No data available

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Bentonite	1302-78-9	EC50(72h): > 100 mg/L (freshwater algae)	TLM96 10,000 ppm (Oncorhynchus mykiss) LC50 (96h) 16,000 - 19,000 mg/L (Oncorhynchus mykiss) LC50 (24h) 2800 – 3200 mg/L (black bass, warmouth bass, blue gill and sunfish)	No information available	EC50 (96h) 81.6 mg/L (Metacarcinus magister) EC50 (96h) 24.8 mg/L (Pandalus danae) EC50 (48h) > 100 mg/L (Daphnia magna)
Crystalline silica, quartz	14808-60-7	No information available	LL50 (96h) 10,000 mg/L (Danio rerio) (similar substance)	No information available	LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance)
Crystalline silica, cristobalite	14464-46-1	No information available	LL0 (96h) 10,000 mg/L (Danio rerio) (similar substance)	No information available	LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance)
Crystalline silica, tridymite	15468-32-3	No information available	LL0 (96h) 10,000 mg/L(Danio rerio) (similar substance)	No information available	LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Bentonite	1302-78-9	The methods for determining biodegradability are not applicable to inorganic substances.
Crystalline silica, quartz	14808-60-7	The methods for determining biodegradability are not applicable to inorganic substances.
Crystalline silica, cristobalite	14464-46-1	The methods for determining biodegradability are not applicable to inorganic substances.
Crystalline silica, tridymite	15468-32-3	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Bentonite	1302-78-9	No information available
Crystalline silica, quartz	14808-60-7	No information available
Crystalline silica, cristobalite	14464-46-1	No information available
Crystalline silica, tridymite	15468-32-3	No information available

12.4. Mobility in soil

12.5 Other adverse effects

No information available

13. Disposal Considerations

13.1. Waste treatment methods

Disposal Method Bury in a licensed landfill according to federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. Transport Information

US DOT

UN Number: Not restricted

UN Proper Shipping Name: Not restricted

Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

US DOT Bulk
DOT (Bulk) Not applicable

Canadian TDG
UN Number: Not restricted
UN Proper Shipping Name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

IMDG/IMO
UN Number: Not restricted
UN Proper Shipping Name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

IATA/ICAO
UN Number: Not restricted
UN Proper Shipping Name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable
Special Precautions for User: None

15. Regulatory Information

US Regulations

US TSCA Inventory	All components listed on inventory or are exempt.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Chronic Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	The California Proposition 65 regulations apply to this product.
MA Right-to-Know Law	One or more components listed.

NJ Right-to-Know Law One or more components listed.

PA Right-to-Know Law One or more components listed.

Canadian Regulations

Canadian DSL Inventory All components listed on inventory or are exempt.

16. Other information

Preparation Information

Prepared By Chemical Stewardship
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

Revision Date: 02-Apr-2015

Reason for Revision Update to Format SECTION: 2

Additional information
For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key or legend to abbreviations and acronyms
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
ErC50 – Effective Concentration growth rate 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
UN – United Nations
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
www.ChemADVISOR.com/

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBIL 1 5W-30**
Product Description: Synthetic Base Stocks and Additives
Product Code: 201510101040, 481119-00
Intended Use: Engine oil

COMPANY IDENTIFICATION

Supplier: **AMPOL AUSTRALIA PTY LTD**
ABN 17 000 032 128
2 Market Street
Sydney
New South Wales 2000 Australia

24 Hour Emergency Telephone	1800 033 111
Product Technical Information	1300364169
Supplier General Contact	+612 9250-5000
FAX	+612 9250-5742

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

Physical / Chemical Hazards:
No significant hazards.

Health Hazards:
High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

Environmental Hazards:
No significant hazards.

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
1-DECENE, HOMOPOLYMER HYDROGENATED	68037-01-4	5 - < 10%	H304
2-PENTANOL, 4-METHYL-, HYDROGEN PHOSPHORODITHIOATE, ZINC SALT	2215-35-2	0.1 - < 1%	H303, H315, H318, H401, H411
DISTILLATES, HEAVY, C18-50 - BRANCHED, CYCLIC AND LINEAR	848301-69-9	10 - < 20%	H304
PHOSPHORODITHIOIC ACID, MIXED 0,0 BIS (1,3-DIMETHYLBUTYL AND ISO-PR)ESTERS, ZINC SALTS	84605-29-8	0.1 - < 1%	H303, H315, H318, H401, H411

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. Other ingredients determined not to be hazardous up to 100%.

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

NOTE TO PHYSICIAN

None

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulphur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >200°C (392°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do so without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do so without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Avoid contact with used product. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or earthing procedures. However, bonding and earthing may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers. Keep away from incompatible materials.

Material is defined under the National Standard [NOHSC:1015] Storage and Handling of Workplace Dangerous Goods.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit/Standard			Note	Source
1-DECENE, HOMOPOLYMER HYDROGENATED	Aerosols (thoracic fraction)	TWA	5 mg/m3			ExxonMobil
DISTILLATES, HEAVY, C18-50 - BRANCHED, CYCLIC AND LINEAR		TWA	480 mg/m3			Australia WES

Exposure limits/standards for materials that can be formed when handling this product:

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

Biological limits

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Particulate

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Nitrile,Viton

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practise good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Colour: Brown
Odour: Characteristic
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15.6 °C): 0.852
Flammability (Solid, Gas): N/A
Flash Point [Method]: >200°C (392°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (601°F)
Decomposition Temperature: N/D
Vapour Density (Air = 1): > 2 at 101 kPa
Vapour Pressure: < 0.013 kPa (0.1 mm Hg) at 20 ºC
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 64.2 cSt (64.2 mm2/sec) at 40 ºC | 11.1 cSt (11.1 mm2/sec) at 100°C [ASTM D 445]
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -39°C (-38°F)

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

INCOMPATIBLE MATERIALS: Strong oxidisers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.

Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitisation	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY
2-PENTANOL, 4-METHYL-, HYDROGEN PHOSPHORODITHIOATE, ZINC SALT	Oral Lethality: LD 50 2230 mg/kg (Rat)

OTHER INFORMATION

For the product itself:

Diesel engine oils: Not carcinogenic in animals tests. Used and unused diesel engine oils did not produce any carcinogenic effects in chronic mouse skin painting studies. Oils that are used in gasoline engines may become hazardous and display the following properties: Carcinogenic in animal tests. Caused mutations in vitro. Possible allergen and photoallergen. Contains polycyclic aromatic compounds (PAC) from combustion products of gasoline and/or thermal degradation products.

Contains:

Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not sensitising in test animals and humans.

IARC Classification:

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = IARC 1 2 = IARC 2A 3 = IARC 2B

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (ADG) : Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

This material is not considered hazardous according to Australia Model Work Health and Safety Regulations.

Product is not regulated according to Australian Dangerous Goods Code.

No Poison Schedule number allocated by the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) established under the Therapeutic Goods Act.

AS1940 COMBUSTIBLE CLASS: C2

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Listed or exempt from listing/notification on the following chemical inventories : AIIC, DSL, ENCS, IECSC, ISHL, KECI, PICCS, TCSI, TSCA

SECTION 16 OTHER INFORMATION

KEY TO ABBREVIATIONS AND ACRONYMS:

N/D = Not determined, N/A = Not applicable, STEL = Short-Term Exposure Limit, TWA = Time-Weighted Average

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H303: May be harmful if swallowed; Acute Tox Oral, Cat 5
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1
H401: Toxic to aquatic life; Acute Env Tox, Cat 2
H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Section 15: National Chemical Inventory Listing information was modified.
Section 15: Special Cases Table information was deleted.

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DGN: 7004736DAU (1030711)

Prepared by: Exxon Mobil Corporation
EMBSI, Clinton NJ USA
Contact Point: See Section 1 for Local Contact number

End of (M)SDS

Appendix I. Chemicals Safety Data Sheets

3 – Safety Data Sheets of chemicals used during operation phase

Triethylene Glycol

Date of Preparation: 06/15

SDS No. 30261
Revision: 0

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: Triethylene Glycol
Synonyms: Di-beta-hydroxyethoxyethane; 2,2'-Ethylene dioxybis(ethanol); 2,2'-Ethylene dioxydiethanol; Ethylene glycol dihydroxydiethyl ether; Glycol bis(hydroxyethyl)ether; TEG; Triglycol
CAS Number: 112-27-6
Chemical Formula: (CH2OCH2CH2OH)2 (C_6 $H_{14}O_4$)
General Use: Antifreeze
Manufacturer: KMCO, 16503 Ramsey Road, Crosby, Texas 77532
KMTEX, 2450 S. Gulfway Drive, Port Arthur, Texas 77641
24-HOUR EMERGENCY NUMBER - CHEMTREC: 1-800-424-9300
KMCO PHONE: (281) 328-3501
FAX: (281) 328-9528

KMTEX PHONE: (409) 985-4200
FAX: (409) 985-6350

Restrictions on Use:

SECTION 2: HAZARD(S) IDENTIFICATION

Hazard Classification:

OSHA Hazards: No OSHA Hazards

Target Organs: May cause damage to kidneys through prolonged or repeated exposure.

GHS Classification:
Eye irritation (Category 2B)
Skin irritation (Category 3)
Specific target organ toxicity – single exposure (Category 3)
Specific target organ toxicity – repeated exposure (Category 2)

Signal Word: *WARNING*



Hazard Statements:

H302	Harmful if swallowed
H316	Causes mild skin irritation.
H320	Causes eye irritation.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements:

P261	Avoid breathing dust/fumes/gas/mist/vapors.
P264	Wash thoroughly after handling.
P270	Do not eat drink or smoke when using this product.
P301 + P312	IF SWALLOWED: Call a POISION CENTER or doctor / physician if you feel unwell.
P330	Rinse mouth.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P314	Get medical advice/attention if you feel unwell.

NFPA Rating

Health hazard:	1
Fire:	1
Reactivity:	0

Description of Any Other Hazards Not Otherwise Classified: none known

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT Name:	CAS NUMBER	%wt. or %v
Triethylene Glycol	112-27-6	95
Diethylene Glycol	111-46-6	4
Tetraethylene Glycol	112-60-7	1

SECTION 4: FIRST AID MEASURES

EYES: Throughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention.

SKIN: Wash skin with soap and copious amounts of water. Seek medical attention.

INGESTION: NEVER give anything by mouth to an unconscious person. If vomiting does occur, have victim lean forward to prevent aspiration. Rinse mouth with water. Immediately have victim drink several glasses of water to dilute. Seek medical attention.

INHALATION: Remove person to fresh air. If signs/symptoms continue, get medical attention. Give oxygen or artificial respiration as needed.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Treat in accordance to symptoms (decontamination, vital functions), no know specific antidote

SECTION 5: FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Dry chemical, foam or carbon dioxide. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak, and disperse vapors.

UNSUITABLE EXTINGUISHING MEDIA: Direct water stream.

SPECIAL FIRE FIGHTING PROCEDURES: Evacuate area. Do not use direct water stream to extinguish fires. Product may travel with water and reignite. Vapors can flow along surfaces to distant ignition source and flash back. Do not release runoff from fire control methods to sewers or waterways.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Above flash point, vapor-air mixtures are explosive within flammable limits. Contact with strong oxidizers may cause fire. Containers may explode when involved in a fire.

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide, carbon dioxide

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS: Wear full protective clothing and NIOSH – approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive breathing mode.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Use appropriate personal protective equipment. Avoid breathing vapors, mist or gas. Avoid contact with spilled material. Insure adequate ventilation. Remove all sources of ignition. Use non-sparking tools and equipment.

PROTECTIVE CLOTHING: Standard work uniform. Impervious gloves. Safety glasses. Personnel should increase PPE level as deemed appropriate in any given situation.

EMERGENCY PROCEDURES:

SMALL SPILLS: Contain and recover liquid when possible. Collect liquid in appropriate container or absorb with an inert material (such as vermiculite or dry sand) and place in chemical waste container. Do not use combustible materials such as sawdust for the cleanup.

LARGE SPILLS:
Containment: Shut off source of leak if safe to do so. Dike far ahead of liquid spill for later disposal. Do not allow material to enter sewers or waterways.
Cleanup: Contain and recover liquid when possible. Collect liquid in appropriate container. Absorb residue with an inert material (such as vermiculite or dry sand) and place in chemical waste container. Do not use combustible materials such as sawdust for the cleanup.

SECTION 7: HANDLING AND STORAGE

HANDLING PRECAUTIONS: Do not get on skin or in eyes. Do not inhale vapor or mist. Take normal fire prevention measures.

STORAGE REQUIREMENTS: Keep container tightly closed in a cool, dry and well-ventilated place. Product is hygroscopic.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Controls should be such that adequate ventilation is provided.

VENTILATION: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work place by controlling it at its source.

RESPIRATORY PROTECTION: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA / NIOSH approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (e.g. cleaning spills, reactor vessels, or storage tanks), wear an SCBA. *Warning! Air purifying respirators do not protect workers in oxygen-deficient atmospheres.* If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

EYE PROTECTION: Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133) Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with, contact lenses.

SKIN PROTECTION: Wear chemically protective gloves, boots, aprons and gauntlets to prevent prolonged or repeated skin contact.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Make emergency eyewash stations, safety/quick drench showers and washing facilities available in work areas.

WORK HYGIENIC PRACTICES: Never eat, drink or smoke in work areas. Practice good personal hygiene after using this material especially before eating, drinking, smoking, using the toilet, or applying cosmetics. Separate contaminate work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment. Discard belts and shoes that cannot be cleaned.

EXPOSURE GUIDELINES:

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		USA
	TWA	STEL	TWA	STEL	TWA	STEL	WEEL OR IDLH
Triethylene Glycol	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Tetraethylene Glycol	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.
Diethylene Glycol	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid
APPEARANCE AND COLOR: Clear/Colorless
ODOR: Mild odor
FLASH POINT: 350° F (176.6° C)
UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: N/A
AUTO IGNITION TEMPERATURE: 700 °F (371 °C)
DECOMPOSITION TEMPERATURE: N/A
VAPOR PRESSURE: <0.01 mm Hg @ 20 C
ODOR THRESHOLD: N/A
VAPOR DENSITY (air = 1): 5.2
pH: 6-9
RELATIVE DENSITY: 9.3 lbs/gal @ 20°C
SPECIFIC GRAVITY (H2O =1 AT 4 C): 1.125
MELTING POINT / FREEZING POINT: -5° C (23° F)
WATER SOLUBILITY: Soluble
OTHER SOLUBILITIES: Alcohols, methyl isosbutyl carbitol
INITIAL BOILING POINT AND BOILING RANGE: 285° C (545° F)
EVAPORATION RATE (BuAc = 1): N/A
PARTITION COEFFICIENT: n-OCTANOL/WATER: N/A
VISCOSITY: 29cP @ 20° C
REFRACTIVE INDEX: 1.447 @ 20° C
FORMULA WEIGHT: 150.7 g/mol

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: none under normal handling

STABILITY: stable at room temperature under normal storage and handling conditions

CONDITIONS TO AVOID (STABILITY): N/A

INCOMPATIBILITY (MATERIAL TO AVOID): Strong oxidizing agents, strong acids

HAZARDOUS DECOMPOSITION BY-PRODUCTS: Carbon oxides are expected to be, under fire conditions, the primary hazardous decomposition products.

HAZARDOUS POLYMERIZATION: N/A

CONDITIONS TO AVOID (POLYMERIZATION): N/A

HAZARDOUS POLYMERICATION BY-PRODUCTS: N/A

SECTION 11: TOXICOLOGICAL INFORMATION

SIGNS AND SYMPTOMS OF OVEREXPOSURE: N/A

ACUTE EFFECTS:

EYE CONTACT: Can be irritating to the eyes.

SKIN CONTACT: Can cause skin irritation if absorbed through skin.

INHALATION: Can cause respiratory tract irritation if inhaled.

INGESTION: Harmful if ingested.

TARGET ORGAN EFFECTS: May cause damage to organs through prolonged or repeated exposure.

CHRONIC EFFECTS: May cause severe kidney problems through prolonged or repeated exposure. Brain damage may also occur. Skin allergy can develop.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Persons with pre-existing skin disorders, eye problem or impaired liver, kidney or respiratory function may be more susceptible to the effects of this substance

ACUTE TOXICITY VALUES

ORAL LD50 (Rabbit): 15000 mg/kg
DERMAL LD50 (Rabbit): >20 g/kg
INHALATION LC50 (state animal): N/A

LISTED CARCINOGEN:

No component of this product present at levels greater than or equal to 0.1 % is identified as a carcinogen or potential carcinogen by NTP / IARC / OSHA.

REPRODUCTIVE TOXICITY: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals

TERATOGENICITY: Laboratory experiments have shown teratogenic effects

SECTION 12: ECOLOGICAL INFORMATION

DATA FROM TOXICITY TESTS ON AQUATIC AND/OR TERRESTERIAL ORGANISMS:

Ectoxicity (aquatic and terrestrial, where available):
Acute Daphnia Toxicity (Triethylene Glycol)
EC50 / 48h / Water flea – 46500 mg/l

Acute Fish Toxicity (Triethylene Glycol)
LC50 / 24 hours / Goldfish - >5000 mg/l

Acute Fish Toxicity (Triethylene Glycol)
LC50 / 96 h / Golden orfe - >100 mg/l

Acute Fish Toxicity (Tetraethylene Glycol)
LC50 / 96 h / Onocorhynchus mykisss - >1000 mg/l

Acute Daphnia Toxicity (Tetraethylene Glycol)
EC50 / 48 h / Daphnia magna - >1000 mg/l

Acute Fish Toxicity (Diethylene Glycol)
LC50 / 96 h / Pimephales promelas – 75200 mg/l

Acute Daphnia Toxicity (Diethylene Glycol)
EC50 / 48 h / Daphnia magna – 84000 mg/l

ENVIRONMENTAL FATE: Biodegradation is expected.

BIOACCUMULATION POTENTIAL: Does not bioaccumulate

POTENTIAL TO MOVE FROM SOIL TO GROUNDWATER: No specific data avaliable

OTHER ADVERSE ENVIRONMENTAL EFFECTS: No data available

SECTION 13: DISPOSAL CONSIDERATIONS

CONTAINERS TO USE: No specific recommendations

RECOMMENDED DISPOSAL METHODS: Whatever cannot be saved for recovery or recycling should be disposed of in an approved waste facility in accordance with Federal, State/Provincial and Local requirements.

PHYSICAL AND CHEMICAL PROPERTIES THAT MAY AFFECT DISPOSAL ACTIVITIES: No specific information available

WHENEVER POSSIBLE, MATERIAL SHOULD NOT BE ALLOWED TO ENTER SEWAGE DISPOSAL SYSTEMS.

SPECIAL PRECAUTIONS FOR LANDFILL OR INCINERATION ACTIVITIES: No specific information available

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (49 CFR 172.101)

PROPER SHIPPING NAME: Triethylene Glycol
SHIPPING SYMBOLS: N/A
HAZARD CLASS: N/A

UN/NA NUMBER: N/A
PACKING GROUP: N/A
LABELS REQUIRED: N/A
SPECIAL PROVISIONS (172.102): none

PACKAGING AUTHORIZATIONS
- **A) EXCEPTIONS:** N/A
- **B) NON-BULK PACKAGING:** N/A
- **C) BULK PACKAGING:** N/A

QUANTITY LIMITATIONS:
- **A) PASSENGER, AIRCRAFT OR RAILCAR:** no limit
- **B) CARGO AIRCRAFT ONLY:** no limit

VESSEL STOWAGE REQUIREMENTS
- **A) VESSEL STOWAGE:** N/A
- **B) OTHER:** none

IATA

UN NUMBER: N/A

PROPER SHIPPING NAME: N/A
CLASS: N/A
PACKAGING GROUP: N/A
SPECIAL PROVISIONS: N/A

EXCEPTED QUANTITY
MAXIMUM PER INNER PACKAGE: N/A
MAXIMUM PER PACKAGE: N/A

LIMITED QUANTITY
PACKING INSTRUCTION: N/A
MAXIMUM PER PACKAGE: N/A

PASSENGER AIRCRAFT
PACKING INSTRUCTION: N/A
MAXIMUM PER PACKAGE: N/A

CARGO AIRCRAFT: N/A
PACKING INSTRUCTION: N/A
MAXIMUM PER PACKAGE: N/A

ERG CODE: N/A

IMDG

UN NUMBER: N/A
PROPER SHIPPING NAME: N/A
CLASS OR DIVISION: N/A
SUBSIDARY RISK(S): N/A
PACKING GROUP: N/A
SPECIAL PROVISIONS: N/A
LIMITED AND EXCEPTED QUANTITY PROVISIONS
LIMITED QUANTITIES: N/A
EXCEPTED QUANTITIES: N/A
PACKING
INSTRUCTIONS: N/A
PROVISIONS: N/A
IBC
INSTRUCTIONS: N/A
PROVISIONS: N/A
PORTABLE TANKS AND BULK CONTAINERS
TANK INSTRUCTIONS: N/A

PROVISIONS: N/A
EmS:
STOWAGE AND SEGREGATION: N/A

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT): All of the components of this material are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for this product, based on the RQ for Ethylene Glycol (94% maximum) of 5,000 pounds, is 5,319 pounds. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulation.

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT): This product contains the following chemicals subject to annual release reporting requirements under SARA Title III, Section 313 (40 CFR 372); Ethylene Glycol 112-60-7 80-100%

311/312 HAZARD CATEGORIES: Acute health, Chronic health
Immediate Hazard: Skin and eye irritation
Delayed Hazard: Repeated exposures over long term can cause kidney problems
Fire Hazard: No
Pressure Hazard: No
Reactivity Hazard: No

313 REPORTABLE INGREDIENTS: This product contains the following chemicals subject to annual release reporting requirements under SARA Title III, Section 313 (40 CFR 372); Ethylene Glycol 112-60-7 80-100%

CLEAN WATER ACT (CWA): none of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

CLEAN AIR ACT (CAA): This product is not known to contain or to have been manufactured with ozone depleting substances as defined in 40 CFR Part 82, Appendix A to Subpart A.

STATE REGULATIONS:

California: This product may contain the following substances known to the State of California to cause cancer and/or reproductive harm: 1,4-Dioxane (trace amount).
Massachusetts: N/A

INTERNATIONAL REGULATIONS:

Persistent Organic Pollutants (United Nations): N/A
Initial List of Prior Informed Consent Chemicals (United Nations): N/A
Ozone Depleting Substances (Montreal Protocol): N/A
Greenhouse Gases (Intergovernmental Panel on Climate Change): N/A

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES: All of the ingredients of this product are listed on the Australian Inventory of Chemical Substances.

CANADA: DOMESTIC SUBSTANCES LIST: N/A

CANADA WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS): Class D - Division 2 - Subdivision B - (a toxic material causing other chronic effects).

CANADIAN ENVIRONMENTAL PROTECTION AGENCY TOXICS LIST: All of the ingredients are listed on the Canadian Domestic Substances List.

EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES: All of the ingredients are listed on the EINECS inventory

EU CLASSIFICATION: N/A

EU RISK (R) AND SAFETY (S) PHRASES: N/A

NEW ZEALAND: N/A

PHILLIPPINE INVENTORY OF CHEMICALS AND CHEMICAL SUBSTANCES: N/A

SECTION 16: OTHER INFORMATION

Prepared by: KMCO

Disclaimer: This product if FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN. DO NOT TAKE INTERNALLY.

KMCO believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. No warranty of fitness for any particular purpose, warranty of merchantability, or any other warranty expressed or implied, is made concerning the information provided herein. The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with any other materials or in any process. Further, since the conditions and methods of use of the product and of the information referred to herein are beyond the control of KMCO, KMCO expressly disclaims any and all liability as to any results obtained or arising from any of the product or reliance on such information.

For additional product information, please contact the KMCO Sales Office at (281) 272-4100.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name
MULTITREAT 15439

Material number: 304405

Chemical nature: multi-functional product

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture

Industry sector :	Oilfield
Type of use :	Industrial use

1.3. Details of the supplier of the safety data sheet

Identification of the company
Clariant Produkte (Deutschland) GmbH
65926 Frankfurt am Main
Telephone no. : +49 69 305 18000

Information about the substance/mixture
BU Oil & Mining Services
Product Stewardship
e-mail: SDS.Europe@clariant.com

1.4. Emergency telephone number

00800-5121 5121 (24 h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, Category 1	H290: May be corrosive to metals.
Acute toxicity, Category 4	H302: Harmful if swallowed.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through prolonged or repeated exposure.
Chronic aquatic toxicity, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements :
H290 May be corrosive to metals.
H302 Harmful if swallowed.
H318 Causes serious eye damage.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P273 Avoid release to the environment.
P280 Wear eye protection/ face protection.

Response:

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P314 Get medical advice/ attention if you feel unwell.
P390 Absorb spillage to prevent material damage.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

Ethanediol
N-Methyl dialkanol amine and oleic fatty acid diacid copolymer, methyl quaternised

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
No additional hazards are known except those derived from the labelling.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Ethanediol	107-21-1 203-473-3	STOT RE 2; H373 Acute Tox. 4; H302	>= 30 - < 50

	603-027-00-1 01-2119456816-28 01-2119456816-28-0000 01-2119456816-28-0003 01-2119456816-28-0038 01-2119456816-28-XXXX		
N-Methyl dialkanol amine and oleic fatty acid diacid copolymer, methyl quaternised	1421663-75-3	Acute Tox. 4; H302 Eye Dam. 1; H318	>= 3 - < 10
2-(2-Butoxyethoxy)ethanol	112-34-5 203-961-6 603-096-00-8 01-2119475104-44 01-2119475104-44-0000 01-2119475104-44-0001 01-2119475104-44-0004 01-2119475104-44-0005 01-2119475104-44-0006 01-2119475104-44-XXXX	Eye Irrit. 2; H319	>= 1 - < 10
Conversion product of tallow fatty propylene diamine with 23 EO and coconut fatty acid	Not Assigned	Skin Irrit. 2; H315 Aquatic Chronic 2; H411	>= 2,5 - < 10
Reaction mass of [[(2-hydroxyethyl)imino]dimethylene]bisphosphonic acid, sodium salt and 4-(Phosphonomethyl)-2-hydroxy-2-oxo-1,4,2-oxazaphosphorinane, sodium salt	22036-78-8 01-2119972938-15-XXXX	Met. Corr. 1; H290 Aquatic Chronic 3; H412	>= 2,5 - < 10

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Remove/Take off immediately all contaminated clothing.
Get medical advice/ attention if you feel unwell.

If inhaled : If inhaled, remove to fresh air.
Get medical advice/ attention.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.

In case of eye contact	:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Consult a physician.
If swallowed	:	If swallowed do not induce vomiting,seek medical advice and show safety datasheet or label

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	Damage corrosive effects
Risks	:	Harmful if swallowed. Causes serious eye damage. May cause damage to organs through prolonged or repeated exposure.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Water spray jet Alcohol-resistant foam Dry powder Carbon dioxide (CO2)
Unsuitable extinguishing media	:	High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	In case of fires, hazardous combustion gases are formed: Carbon monoxide (CO) Carbon dioxide (CO2) Formaldehyde Nitrogen oxides (NOx) Oxides of phosphorus

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Self-contained breathing apparatus
Further information	:	Wear suitable protective equipment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Wear suitable protective equipment.
Ensure adequate ventilation.

6.2 Environmental precautions

Environmental precautions : The product should not be allowed to enter drains, water courses or the soil.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Treat recovered material as described in the section "Disposal considerations".

6.4 Reference to other sections

Information regarding Safe handling, see chapter 7., For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : When used and handled appropriately no special measures are needed

Advice on protection against fire and explosion : Observe the general rules of industrial fire protection

Hygiene measures : Wash hands before breaks and at the end of workday. Use protective skin cream before handling the product. Take off immediately all contaminated clothing and wash it before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Further information on storage conditions : Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care.

7.3 Specific end use(s)

Specific use(s) : No further recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Ethanediol CAS-No.: 107-21-1	Workers	Dermal	Long-term systemic effects	106 mg/kg bw/day
Remarks:	DNEL			
	Workers	Inhalation	Long-term local effects	35 mg/m3
Remarks:	DNEL			
	General population	Dermal	Long-term systemic effects	53 mg/kg bw/day
Remarks:	DNEL			
	General population	Inhalation	Long-term local effects	7 mg/m3
2-(2-Butoxyethoxy)ethanol CAS-No.: 112-34-5	Workers	Inhalation	Acute systemic effects	101,2 mg/m3
Remarks:	DNEL			
	Workers	Dermal	Long-term systemic effects	83 mg/kg bw/day
Remarks:	DNEL			
	Workers	Inhalation	Long-term systemic effects	67,5 mg/m3
Remarks:	DNEL			
	General population	Inhalation	Acute systemic effects	60,7 mg/m3
Remarks:	DNEL			
	General population	Dermal	Long-term systemic effects	50 mg/kg bw/day
Remarks:	DNEL			
	General population	Inhalation	Long-term systemic effects	40,5 mg/m3
Remarks:	DNEL			
	General population	Oral	Long-term systemic effects	5 mg/kg bw/day
Remarks:	DNEL			
	Workers	Inhalation	Long-term local effects	67,5 mg/m3 10 ppm
Sodium thiosulphate CAS-No.: 7772-98-7	Workers	Inhalation	Long-term systemic effects	374 mg/m3
	General population	Inhalation	Long-term systemic effects	110 mg/m3
	General population	Oral	Long-term systemic effects	14 mg/m3
Reaction mass of [[(2-hydroxyethyl)imino]dimethylene]bisphosphonic acid, sodium salt	Workers	Inhalation	Long-term systemic effects	9,4 mg/m3

and 4-(Phosphonomethyl)-2-hydroxy-2-oxo-1,4,2-oxazaphosphorinane, sodium salt CAS-No.: 22036-78-8				
Remarks:	DNEL			
	Workers	Skin contact	Long-term systemic effects	2,7 mg/kg
Remarks:	DNEL			
	Consumers	Inhalation	Long-term systemic effects	2,3 mg/m3
Remarks:	DNEL			
	Consumers	Skin contact	Long-term systemic effects	1,3 mg/kg
Remarks:	DNEL			
	Consumers	Ingestion	Long-term systemic effects	1,3 mg/kg
Remarks:	DNEL			
	Workers	Inhalation	Acute systemic effects	9,4 mg/m3
Remarks:	DNEL			
	Workers	Skin contact	Acute systemic effects	2,7 mg/kg
Remarks:	DNEL			
	Consumers	Inhalation	Acute systemic effects	2,3 mg/m3
Remarks:	DNEL			
	Consumers	Skin contact	Acute systemic effects	1,3 mg/kg
Remarks:	DNEL			
	Consumers	Ingestion	Acute systemic effects	1,3 mg/kg
Remarks:	DNEL			

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Ethanediol CAS-No.: 107-21-1	Fresh water	10 mg/l
	salt water	1 mg/l
	Water (intermittent release)	10 mg/l
	Fresh water sediment	37 mg/kg dry weight (d.w.)
	Soil	1,53 mg/kg dry weight (d.w.)
	Sewage treatment plant	199,5 mg/l
	Marine sediment	3,7 mg/kg dry weight (d.w.)
2-(2-Butoxyethoxy)ethanol CAS-No.: 112-34-5	Fresh water	1,1 mg/l
	Marine water	0,11 mg/l
	Fresh water sediment	4,4 mg/kg

	Marine sediment	0,44 mg/kg
	Sewage treatment plant	200 mg/l
	Soil	0,32 mg/kg dry weight (d.w.)
	Water (intermittent release)	11 mg/l
	Secondary Poisoning	56 mg/kg food
Sodium thiosulphate CAS-No.: 7772-98-7	Water	0,8 mg/l
	salt water	0,08 mg/l
	Sewage treatment plant	102,6 mg/l
Reaction mass of [[(2-hydroxyethyl)imino]dimethylene]bisphosphonic acid, sodium salt and 4-(Phosphonomethyl)-2-hydroxy-2-oxo-1,4,2-oxazaphosphorinane, sodium salt CAS-No.: 22036-78-8	Fresh water	0,032 mg/l
	Marine water	0,0032 mg/l
	Sewage treatment plant	46 mg/l
	Fresh water sediment	8,9 mg/kg
	Marine sediment	0,89 mg/kg
	Soil	3,5 mg/kg

8.2 Exposure controls

Personal protective equipment

Eye protection : Depending on the risk, wear sufficient eye protection (safety glasses with side protection or goggles, and if necessary, face shield.)

Hand protection
- Break through time : 480 min
- Glove thickness : 0,7 mm
- Remarks : Long-term exposure Impervious butyl rubber gloves

- Break through time : 30 min
- Glove thickness : 0,4 mm
- Remarks : For short-term exposure (splash protection): Nitrile rubber gloves.

- Remarks : These types of protective gloves are offered by various manufacturers. Please note the manufacturers´ detailed statements, especially about the minimum thickness and the minimum breakthrough time. Consider also the particular working conditions under which the gloves are being used.

Skin and body protection : Wear suitable protective equipment.

Respiratory protection : Use respiratory protection in case of insufficient exhaust ventilation or prolonged exposure

Protective measures : Observe the usual precautions for handling chemicals.

Avoid contact with skin and eyes.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	Liquid
Colour	:	amber
Odour	:	characteristic
Odour Threshold	:	not tested.
pH	:	ca. 5,11 (undiluted)
Solidification point	:	< -10 °C
Boiling point	:	ca. 100 °C Based on water-content.
Flash point	:	> 97 °C Method: Setaflash (closed cup)
Evaporation rate	:	not tested.
Burning number	:	Not applicable
Upper explosion limit	:	ca. 28 %(V) Data relate to solvent
Lower explosion limit	:	ca. 3 %(V) Data relate to solvent
Vapour pressure	:	ca. 0,123 hPa (25 °C) Data relate to solvent
Relative vapour density	:	not tested.
Density	:	ca. 1,095 g/cm3 (20 °C) Method: DIN 12791
Bulk density	:	Not applicable
Solubility(ies)		
Water solubility	:	miscible
Solubility in other solvents	:	not tested. Solvent: fat
Partition coefficient: n-octanol/water	:	Not applicable

Auto-ignition temperature	:	not tested.
Decomposition temperature	:	not tested.
Viscosity		
Viscosity, dynamic	:	ca. 48,3 mPa.s (4 °C) Method: ASTM D 2196 ca. 19,5 mPa.s (25 °C) Method: ASTM D 2196
Viscosity, kinematic	:	not tested.
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing. The product does not contain organic peroxide-groups which result from either the manufacturing process or from added ingredients.

9.2 Other information

Metal corrosion rate	:	Corrosive to metals
Minimum ignition energy	:	not tested.
Particle size	:	Not applicable
Self-ignition	:	Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

See section 10.3. "Possibility of hazardous reactions"

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	No dangerous reaction known under conditions of normal use. The substance or mixture does not emit flammable gases in contact with water.

10.4 Conditions to avoid

Conditions to avoid	:	None known.

10.5 Incompatible materials

Materials to avoid	:	Strong acids and oxidizing agents Carbon steel

10.6 Hazardous decomposition products

When handled and stored appropriately, no dangerous decomposition products are known

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity	:	Acute toxicity estimate: 1.308 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Remarks: no data available
Acute dermal toxicity	:	Remarks: no data available

Components:

Ethanediol:

Acute oral toxicity	:	LD50 (Rat, male and female): 22.000 mg/kg Method: Other GLP: no
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 2,5 mg/l Exposure time: 6 h Method: Other GLP: yes
Acute dermal toxicity	:	LD50 (Mouse, male and female): > 3.500 mg/kg Method: Other GLP: yes

N-Methyl dialkanol amine and oleic fatty acid diacid copolymer, methyl quaternised:

Acute oral toxicity	:	LD50 (Rat): > 300 - 2.000 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	:	Remarks: no data available
Acute dermal toxicity	:	Remarks: no data available

2-(2-Butoxyethoxy)ethanol:

Acute oral toxicity	:	LD50 (Mouse, male): 2.410 mg/kg Method: OECD Test Guideline 401 GLP: no
Acute inhalation toxicity	:	LC50 (Rat): > 0,2 mg/l Exposure time: 2 h Method: BASF test GLP: no Remarks: Not relevant

Acute dermal toxicity : LD50 (Rabbit, male): 2.764 mg/kg
Method: OECD Test Guideline 402
GLP: no

Skin corrosion/irritation

Product:

Remarks: no data available

Components:

Ethanediol:

Species: Rabbit
Exposure time: 20 h
Method: BASF test
Result: No skin irritation
GLP: no

N-Methyl dialkanol amine and oleic fatty acid diacid copolymer, methyl quaternised:

Result: No skin irritation

2-(2-Butoxyethoxy)ethanol:

Species: Rabbit
Exposure time: 1 h
Method: OECD Test Guideline 404
Result: Mild skin irritation
GLP: no

Serious eye damage/eye irritation

Product:

Remarks: no data available

Components:

Ethanediol:

Species: rabbit eye
Exposure time: 24 h
Method: BASF test
Result: non-irritant
GLP: no

N-Methyl dialkanol amine and oleic fatty acid diacid copolymer, methyl quaternised:

Result: Risk of serious damage to eyes.

2-(2-Butoxyethoxy)ethanol:

Species: rabbit eye
Method: OECD Test Guideline 405
Result: Severe eye irritation

GLP: no

Respiratory or skin sensitisation

Product:

Remarks: no data available

Components:

Ethanediol:

Test Type: Maximisation Test
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitisation.
GLP: yes

N-Methyl dialkanol amine and oleic fatty acid diacid copolymer, methyl quaternised:

Result: Does not cause skin sensitisation.

2-(2-Butoxyethoxy)ethanol:

Test Type: Guinea pig maximization test
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitisation.
GLP: No information available.

Germ cell mutagenicity

Product:

Germ cell mutagenicity-Assessment : No information available.

Components:

Ethanediol:

Genotoxicity in vitro : Test Type: Ames test
Species: Salmonella typhimurium
Concentration: 33 - 5000 µg/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

: Test Type: Ames test
Species: Escherichia coli
Concentration: 33 - 5000 µg/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

GLP: yes

Genotoxicity in vivo : Test Type: Dominant lethal assay
Species: Rat (male and female)
Strain: Fischer F344
Application Route: oral (feed)
Exposure time: 3 generation
Dose: 40 - 200 - 1000 mg/kg
Method: Other
Result: negative
GLP: no

Germ cell mutagenicity-Assessment : It is concluded that the product is not mutagenic based on evaluation of several mutagenicity tests.

N-Methyl dialkanol amine and oleic fatty acid diacid copolymer, methyl quaternised:

Germ cell mutagenicity-Assessment : No information available.

2-(2-Butoxyethoxy)ethanol:

Genotoxicity in vitro : Test Type: Ames test
Species: Salmonella typhimurium
Concentration: 02 - 20 µl/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: No information available.

: Test Type: Chromosome aberration test in vitro
Species: Chinese hamster ovary cells
Concentration: 1,06 - 10,56 µl/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
GLP: No information available.

: Test Type: HGPRT assay
Species: Chinese hamster lung cells
Concentration: 1000 - 5000 µg/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes

Genotoxicity in vivo : Test Type: Chromosome Aberration Test
Species: Mouse (male and female)
Strain: CD1
Cell type: Bone marrow
Application Route: oral (gavage)
Exposure time: single dosis
Dose: 330 - 1100 - 3300 mg/kg
Method: OECD Test Guideline 475

Result: negative
GLP: yes

Germ cell mutagenicity-Assessment : It is concluded that the product is not mutagenic based on evaluation of several mutagenicity tests.

Carcinogenicity

Product:

Carcinogenicity - Assessment : No information available.

Components:

Ethanediol:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

N-Methyl dialkanol amine and oleic fatty acid diacid copolymer, methyl quaternised:

Carcinogenicity - Assessment : No information available.

2-(2-Butoxyethoxy)ethanol:

Carcinogenicity - Assessment : No information available.

Reproductive toxicity

Product:

Reproductive toxicity - Assessment : No information available.
No information available.

Components:

Ethanediol:

Effects on fertility : Species: Rat, male and female
Strain: Fischer F344
Application Route: oral (feed)
Dose: 40 - 200 - 1000
General Toxicity - Parent: NOAEL: > 1.000 mg/kg body weight
General Toxicity F1: NOAEL: > 1.000 mg/kg body weight
General Toxicity F2: NOAEL: > 1.000 mg/kg body weight
Method: Other
GLP: no

Effects on foetal development : Species: Rat
Strain: Sprague-Dawley
Application Route: oral (gavage)
Dose: 150 - 500 - 1000 - 2500 mg/kg
General Toxicity Maternal: NOAEL: 1.000 mg/kg body weight
Teratogenicity: NOAEL: 500 mg/kg body weight

Method: Other
GLP: yes

Reproductive toxicity - Assessment : No reproductive toxicity to be expected.
No teratogenic effects to be expected.

N-Methyl dialkanol amine and oleic fatty acid diacid copolymer, methyl quaternised:

Reproductive toxicity - Assessment : No information available.
No information available.

2-(2-Butoxyethoxy)ethanol:

Effects on fertility : Test Type: Two-generation study
Species: Mouse, male and female
Strain: CD1
Application Route: Drinking water
Dose: 0,5 - 1 - 2 %
General Toxicity - Parent: NOAEL: 720 mg/kg body weight
General Toxicity F1: NOAEL: 720 mg/kg body weight
General Toxicity F2: NOAEL: 720 mg/kg body weight
Method: Other
GLP: yes
Remarks: By analogy with a product of similar composition

Effects on foetal development : Species: Rat
Strain: wistar
Application Route: oral (feed)
Dose: 0,04 - 0,2 - 1 % in diet
General Toxicity Maternal: NOAEL: 633 mg/kg body weight
Teratogenicity: NOAEL: 633 mg/kg body weight
Method: OECD Test Guideline 414
GLP: No information available.

Reproductive toxicity - Assessment : No reproductive toxicity to be expected.
No teratogenic effects to be expected.

STOT - single exposure

Product:

Remarks: no data available

Components:

Ethanediol:

Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

N-Methyl dialkanol amine and oleic fatty acid diacid copolymer, methyl quaternised:

Remarks: no data available

2-(2-Butoxyethoxy)ethanol:

Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Product:

Remarks: no data available

Components:

Ethanediol:

Target Organs: Kidney
Assessment: May cause damage to organs through prolonged or repeated exposure.

N-Methyl dialkanol amine and oleic fatty acid diacid copolymer, methyl quaternised:

Remarks: no data available

2-(2-Butoxyethoxy)ethanol:

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Product:

Remarks: no data available

Components:

Ethanediol:

Species: Rat, male
NOAEL: 150 mg/kg
Application Route: oral (feed)
Exposure time: 16 w
Number of exposures: daily
Dose: 50 - 150 - 500 - 1000 mg/kg
Group: yes
Method: OECD Test Guideline 408
GLP: yes

Species: Dog, male
NOAEL: ca. 2.200 mg/kg
Application Route: Skin contact
Exposure time: 4 w
Number of exposures: daily
Dose: 0,5 - 2 - 8 ml/kg
Group: yes
Method: OECD Test Guideline 410
GLP: yes

2-(2-Butoxyethoxy)ethanol:

Species: Rat, male and female
NOAEL: 250 mg/kg
Application Route: Drinking water
Exposure time: 90 d
Number of exposures: continuously
Dose: 50 - 250 - 1000 mg/kg
Group: yes
Method: OECD Test Guideline 408
GLP: yes

Species: Rat, male and female
NOAEL: 0,094 mg/l
Application Route: Inhalation
Exposure time: 90 d
Number of exposures: 6 hours/day
Dose: 13 - 40 - 94 mg/m3
Group: yes
Method: OECD Test Guideline 413
GLP: yes

Species: Rat, male and female
NOAEL: > 2.000 mg/kg
Application Route: Skin contact
Exposure time: 13 w
Number of exposures: 6 hours/day, 5 days/week
Dose: 200 - 600 - 2000 mg/kg
Group: yes
Method: OECD Test Guideline 411
GLP: No information available.

Aspiration toxicity

Product:

no data available

Components:

Ethanediol:

No aspiration toxicity classification

N-Methyl dialkanol amine and oleic fatty acid diacid copolymer, methyl quaternised:

no data available

2-(2-Butoxyethoxy)ethanol:

No aspiration toxicity classification

Further information

Product:

Remarks: The product has not been tested. The information is derived from the properties of the individual components.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	Remarks: no data available
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: no data available
Toxicity to algae	:	Remarks: no data available
Toxicity to microorganisms	:	Remarks: no data available

Components:

Ethanediol:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 72.860 mg/l Exposure time: 96 h Test Type: static test Analytical monitoring: yes Method: EPA GLP: no Remarks: The details of the toxic effect relate to the nominal concentration.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 202 GLP: yes
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 6.500 - 13.000 mg/l End point: Growth rate Exposure time: 7 d Test Type: static test Analytical monitoring: no data available Method: EPA GLP: No information available.
Toxicity to microorganisms	:	EC20 (activated sludge, domestic): > 1.995 mg/l End point: Bacteria toxicity (respiration inhibition) Exposure time: 0,5 h Analytical monitoring: no

Method: ISO 8192
GLP: no
Remarks: By analogy with a product of similar composition

Toxicity to fish (Chronic toxicity)	:	Chronic Toxicity Value: 2.629 mg/l End point: Other Exposure time: 30 d Species: Fish Method: Other GLP: no Remarks: The details of the toxic effect relate to the nominal concentration.
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 8.590 mg/l End point: Reproduction rate Exposure time: 7 d Species: Ceriodaphnia spec. Test Type: semi-static test Analytical monitoring: yes Method: Other GLP: No information available. Remarks: The details of the toxic effect relate to the nominal concentration.
Toxicity to soil dwelling organisms	:	Remarks: The study is not necessary from a scientific perspective.
Plant toxicity	:	Remarks: The study is not necessary from a scientific perspective.
Sediment toxicity	:	Remarks: The study is not necessary from a scientific perspective.
Toxicity to terrestrial organisms	:	Remarks: The study is not necessary from a scientific perspective.

N-Methyl dialkanol amine and oleic fatty acid diacid copolymer, methyl quaternised:

Toxicity to fish	:	LC50 (Cyprinodon variegatus (sheepshead minnow)): > 1 - 10 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Acartia tonsa): > 10 - 100 mg/l Exposure time: 48 h
Toxicity to algae	:	EC50 (Skeletonema costatum (marine diatom)): > 1 - 10 mg/l Exposure time: 72 h

2-(2-Butoxyethoxy)ethanol:

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 1.300 mg/l Exposure time: 96 h Test Type: static test

Analytical monitoring: no data available
Method: OECD Test Guideline 203
GLP: no
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: static test
Analytical monitoring: no
Method: Directive 67/548/EEC, Annex V, C.2.
GLP: yes
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
End point: Growth rate
Exposure time: 96 h
Test Type: static test
Analytical monitoring: no
Method: OECD Test Guideline 201
GLP: yes
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to microorganisms : EC10 (activated sludge, industrial): > 1.995 mg/l
End point: Bacteria toxicity (respiration inhibition)
Exposure time: 0,5 h
Test Type: aquatic
Analytical monitoring: no
Method: OECD Test Guideline 209
GLP: no
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to fish (Chronic toxicity) : Remarks: not required

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: not required

Toxicity to soil dwelling organisms :
Remarks: Not applicable

Plant toxicity : Remarks: Not applicable

Sediment toxicity : Remarks: Not applicable

Toxicity to terrestrial organisms : Remarks: Not applicable

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: Not applicable

Components:

Ethanediol:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Concentration: 53 mg/l
Result: Readily biodegradable.
Biodegradation: 90 - 100 %
Related to: DOC decrease
Exposure time: 10 d
Method: OECD Test Guideline 301A
GLP: yes

N-Methyl dialkanol amine and oleic fatty acid diacid copolymer, methyl quaternised:

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 306

2-(2-Butoxyethoxy)ethanol:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge, domestic, non-adapted
Concentration: 100 mg/l
Result: Readily biodegradable.
Biodegradation: ca. 85 %
Related to: BOD in % of theoretical OD
Exposure time: 28 d
Method: OECD Test Guideline 301C
GLP: no

Physico-chemical removability : Remarks: Biodegradable

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: no data available

Components:

Ethanediol:

Bioaccumulation : Remarks: Due to the low logPow bioaccumulation is not expected

N-Methyl dialkanol amine and oleic fatty acid diacid copolymer, methyl quaternised:

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

2-(2-Butoxyethoxy)ethanol:

Bioaccumulation	:	Remarks: Due to the low logPow bioaccumulation is not expected

12.4 Mobility in soil

Product:

Distribution among environmental compartments	:	Remarks: no data available

Components:

Ethanediol:

Distribution among environmental compartments	:	Adsorption/Soil Medium: water - soil Koc: log Koc: 0 Method: other (calculated)

2-(2-Butoxyethoxy)ethanol:

Distribution among environmental compartments	:	Remarks: Not applicable

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

Components:

Ethanediol:

Assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT)..

N-Methyl dialkanol amine and oleic fatty acid diacid copolymer, methyl quaternised:

Assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT).. This substance is not considered to be very persistent and very bioaccumulating (vPvB)..

2-(2-Butoxyethoxy)ethanol:

Assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT)..

12.6 Other adverse effects

Product:

Additional ecological	:	The product has not been tested. The information is derived

information from the properties of the individual components.

Components:

Ethanediol:

Environmental fate and pathways : not available

Additional ecological information : Do not allow to enter ground water, waterways or waste water.

2-(2-Butoxyethoxy)ethanol:

Environmental fate and pathways : not available

Additional ecological information : Do not allow to enter ground water, waterways or waste water.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Product should be taken to a suitable and authorized waste disposal site in accordance with relevant regulations and if necessary after consultation with the waste disposal operator and/or the competent Authorities

Contaminated packaging : Packaging that cannot be cleaned should be disposed of as product waste

SECTION 14: Transport information

Section 14.1. to 14.5.

ADR

UN no.	UN 1760
Proper shipping name:	Corrosive liquid, n.o.s.
Hazard inducer(s):	Phosphonic acid derivative
Class:	8
Primary risk:	8
Packing group:	III
Hazard no. :	80
Remarks	Shipment permitted

ADN

UN no.	UN 1760
Proper shipping name:	Corrosive liquid, n.o.s.
Hazard inducer(s):	Phosphonic acid derivative
Class:	8
Primary risk:	8
Packing group:	III
Remarks	Shipment permitted

RID

UN no.	UN 1760
Proper shipping name:	Corrosive liquid, n.o.s.
Hazard inducer(s):	Phosphonic acid derivative
Class:	8
Primary risk:	8
Packing group:	III
Hazard no. :	80
Remarks	Shipment permitted

IATA

UN no.	UN 1760
Proper shipping name:	Corrosive liquid, n.o.s.
Hazard inducer(s):	Phosphonic acid derivative
Class:	8
Primary risk:	8
Packing group:	III
Remarks	Shipment permitted

IMDG

UN no.	UN 1760
Proper shipping name:	Corrosive liquid, n.o.s.
Hazard inducer(s):	Phosphonic acid derivative
Class:	8
Primary risk:	8
Packing group:	III
Remarks	Shipment permitted
EmS :	F-A S-B

14.6. Special precautions for user

See sections 6 to 8 of this Safety Data Sheet.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code (International Bulk Chemicals Code)

No transport as bulk according IBC - Code.

Further information

corrosive on steel and / or aluminium

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EC) No 850/2004 on persistent organic pollutants	:	Not applicable

Other regulations:

Apart from the data/regulations specified in this chapter, no further information is available concerning safety, health and environmental protection.

Take note of Dir 94/33/EC on the protection of young people at work.
Occupational restrictions for pregnant and breast feeding women

15.2 Chemical safety assessment

No Chemical Safety Assessment (CSA) is yet available for the substance, or for the component substances, contained in this product.

SECTION 16: Other information

Full text of H-Statements

H290	:	May be corrosive to metals.
H302	:	Harmful if swallowed.
H315	:	Causes skin irritation.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H373	:	May cause damage to organs through prolonged or repeated exposure if swallowed.
H411	:	Toxic to aquatic life with long lasting effects.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Chronic	:	Chronic aquatic toxicity
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Met. Corr.	:	Corrosive to metals
Skin Irrit.	:	Skin irritation
STOT RE	:	Specific target organ toxicity - repeated exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal

inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information : Observe national and local legal requirements

Classification of the mixture:		**Classification procedure:**
Met. Corr. 1	H290	Based on product data or assessment
Acute Tox. 4	H302	Calculation method
Eye Dam. 1	H318	Calculation method
STOT RE 2	H373	Calculation method
Aquatic Chronic 3	H412	Calculation method

This information corresponds to the present state of our knowledge and is intended as a general description of our products and their possible applications. Clariant makes no warranties, express or implied, as to the information's accuracy, adequacy, sufficiency or freedom from defect and assumes no liability in connection with any use of this information. Any user of this product is responsible for determining the suitability of Clariant's products for its particular application. Nothing included in this information waives any of Clariant's General Terms and Conditions of Sale, which control unless it agrees otherwise in writing. Any existing intellectual/industrial property rights must be observed. Due to possible changes in our products and applicable national and international regulations and laws, the status of our products could change. Material Safety Data Sheets providing safety precautions, that should be observed when handling or storing Clariant products, are available upon request and are provided in compliance with applicable law. You should obtain and review the applicable Material Safety Data Sheet information before handling any of these products. For additional information, please contact Clariant.

SAFETY DATA SHEET

Nitrogen

Airgas
an Air Liquide company

Section 1. Identification

GHS product identifier : Nitrogen

Chemical name : nitrogen

Other means of identification : nitrogen (dot); nitrogen gas; Nitrogen NF, Nitrogen FG

Product type : Gas.

Product use : Synthetic/Analytical chemistry.

Synonym : nitrogen (dot); nitrogen gas; Nitrogen NF, Nitrogen FG

SDS # : 001040

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

24-hour telephone : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : GASES UNDER PRESSURE - Compressed gas
SIMPLE ASPHYXIANTS

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction.

Prevention : Not applicable.

Response : Not applicable.

Storage : Protect from sunlight. Store in a well-ventilated place.

Disposal : Not applicable.

Supplemental label elements : Keep container tightly closed. Use only with adequate ventilation. Do not enter storage areas and confined spaces unless adequately ventilated.

Hazards not otherwise classified : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : nitrogen

Other means of identification : nitrogen (dot); nitrogen gas; Nitrogen NF, Nitrogen FG

Product code : 001040

CAS number/other identifiers

CAS number : 7727-37-9

Ingredient name	%	CAS number
Nitrogen	100	7727-37-9

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Immediately contact emergency personnel. Stop leak if without risk.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Avoid contact with eyes, skin and clothing. Empty containers retain product residue and can be hazardous.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F). Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Nitrogen	**ACGIH TLV (United States, 3/2017). Oxygen Depletion [Asphyxiant].**

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Section 8. Exposure controls/personal protection

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : The gas can cause asphyxiation without warning by replacing the oxygen in the air. Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. If operating conditions cause high gas concentrations to be produced or any recommended or statutory exposure limit is exceeded, use an air-fed respirator or self-contained breathing apparatus. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Gas. [Compressed gas.]

Color : Colorless.

Odor : Odorless.

Odor threshold : Not available.

pH : Not available.

Melting point : -210.01°C (-346°F)

Boiling point : -196°C (-320.8°F)

Critical temperature : -146.95°C (-232.5°F)

Flash point : [Product does not sustain combustion.]

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : 0.967 (Air = 1) Liquid Density@BP: 50.46 lb/ft3 (808.3 kg/m3)

Specific Volume (ft^3/lb) : 13.8889

Gas Density (lb/ft^3) : 0.072

Relative density : Not applicable.

Solubility : Not available.

Solubility in water : Not available.

Partition coefficient: n-octanol/water : 0.67

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Not applicable.

Flow time (ISO 2431) : Not available.

Molecular weight : 28.02 g/mole

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Do not allow gas to accumulate in low or confined areas.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.

Section 11. Toxicological information

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Ingestion : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Nitrogen	0.67	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Section 12. Ecological information

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1066	UN1066	UN1066	UN1066	UN1066
UN proper shipping name	NITROGEN, COMPRESSED	NITROGEN, COMPRESSED	NITROGEN, COMPRESSED	NITROGEN, COMPRESSED	NITROGEN, COMPRESSED
Transport hazard class(es)	2.2 	2.2 	2.2 	2.2 	2.2 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Additional information

DOT Classification : **Limited quantity** Yes.
Quantity limitation Passenger aircraft/rail: 75 kg. Cargo aircraft: 150 kg.

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2).
Explosive Limit and Limited Quantity Index 0.125
Passenger Carrying Road or Rail Index 75

IATA : **Quantity limitation** Passenger and Cargo Aircraft: 75 kg. Cargo Aircraft Only: 150 kg.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Refer to Section 2: Hazards Identification of this SDS for classification of substance.

State regulations

Massachusetts : This material is listed.

New York : This material is not listed.

New Jersey : This material is listed.

Pennsylvania : This material is listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : This material is listed or exempted.

Canada : This material is listed or exempted.

China : This material is listed or exempted.

Europe : This material is listed or exempted.

Japan : **Japan inventory (ENCS)**: Not determined.
Japan inventory (ISHL): Not determined.

Malaysia : Not determined.

New Zealand : This material is listed or exempted.

Philippines : This material is listed or exempted.

Republic of Korea : This material is listed or exempted.

Section 15. Regulatory information

Taiwan : This material is listed or exempted.

Thailand : Not determined.

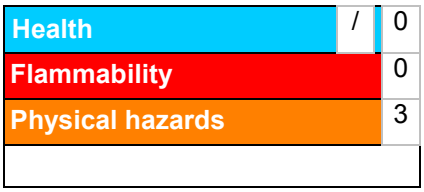
Turkey : Not determined.

United States : This material is listed or exempted.

Viet Nam : Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
GASES UNDER PRESSURE - Compressed gas SIMPLE ASPHYXIANTS	Expert judgment Expert judgment

History

Date of printing : 4/30/2019

Date of issue/Date of revision : 4/30/2019

Date of previous issue : 4/30/2019

Version : 1.03

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973

Section 16. Other information

as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Section: 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier: **STEA06348A**
Substance type: CLP Mixture

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Use of the Substance/Mixture : CORROSION/SCALE INHIBITOR

Recommended restrictions on use : Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet:

COMPANY IDENTIFICATION
NALCO EUROPE B.V.
Postbus 627
2300 AP Leiden, The Netherlands
TEL: 0031 71 5241100

LOCAL COMPANY IDENTIFICATION
Nalco Ltd.
P.O. BOX 11, WINNINGTON AVENUE
NORTHWICH, CHESHIRE, U.K. CW8 4DX
TEL: +44 (0)1606 74488

For Product Safety information please contact: msdseame@nalco.com

1.4 Emergency telephone number: +32-(0)3-575-5555 Trans-European

Date of Compilation/Revision: 29.06.2017
Version Number: 1.0

Section: 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2	H315
Eye irritation, Category 2	H319
Specific target organ toxicity - repeated exposure, Category 2	H373

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal Word : Warning

Hazard Statements :

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements : **Prevention:**

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/ eye protection/ face

protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P314 Get medical advice/ attention if you feel unwell.

P332+P313 If skin irritation occurs: Get medical advice/attention.

Hazardous components which must be listed on the label:
Ethylene Glycol

2.3 Other hazards

None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous components

Chemical Name	CAS-No. EC-No. REACH No.	Classification (REGULATION (EC) No 1272/2008)	Concentration: [%]
Ethylene Glycol	107-21-1 203-473-3 01-2119456816-28	Acute toxicity Category 4; H302 Specific target organ toxicity - repeated exposure Category 2; H373	10 - < 20
C10-16 alkyl alcohol ethoxylate phosphate diethanolamine salt.	69011-83-2	Skin irritation Category 2; H315 Eye irritation Category 2; H319	10 - < 20

For the full text of the H-Statements mentioned in this Section, see Section 16.

Section: 4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled : Get medical attention if symptoms occur.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.
Use a mild soap if available.
Get medical attention if irritation develops and persists.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
Get medical attention.

If swallowed : Rinse mouth.
Get medical attention if symptoms occur.

Protection of first-aiders : In event of emergency assess the danger before taking action.

Do not put yourself at risk of injury. If in doubt, contact emergency responders.Use personal protective equipment as required.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Indication of immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

Section: 5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : Do not use water unless flooding amounts are available.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.

Hazardous combustion products : Decomposition products may include the following materials:
Carbon oxides
nitrogen oxides (NOx)
Sulphur oxides
Oxides of phosphorus

5.3 Advice for firefighters

Special protective equipment for firefighters : Use personal protective equipment.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel : Remove all sources of ignition.
Ensure clean-up is conducted by trained personnel only.
Refer to protective measures listed in sections 7 and 8.

Advice for emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

6.2 Environmental precautions

Environmental precautions : Do not allow contact with soil, surface or ground water.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	:	Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

6.4 Reference to other sections

See Section 1 for emergency contact information.
For personal protection see section 8.
See Section 13 for additional waste treatment information.

Section: 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling	:	Avoid contact with skin and eyes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from fire, sparks and heated surfaces. Wash hands thoroughly after handling. Use only with adequate ventilation.
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Keep away from heat and sources of ignition. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
Suitable material	:	The following compatibility data is suggested based on similar product data and/or industry experience: Viton, TFE, FEP (encapsulated), Neoprene, Stainless Steel 304, Stainless Steel 316L, Nitrile, EPDM, Perfluoroelastomer, PTFE, HDPE (high density polyethylene), MDPE (medium density polyethylene), Teflon
Unsuitable material	:	The following compatibility data is suggested based on similar product data and/or industry experience: Carbon Steel C1018, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

7.3 Specific end uses

Specific use(s)	:	CORROSION/SCALE INHIBITOR

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethylene Glycol	107-21-1	TWA (Vapour.)	20 ppm 52 mg/m3	UKCOSSTD
Further information	Sk	Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
		STEL (Vapour.)	40 ppm 104 mg/m3	UKCOSSTD
Further information	Sk	Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
		TWA (particles)	10 mg/m3	UKCOSSTD
Further information	Sk	Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		

DNEL

Ethylene Glycol	:	End Use: Workers Exposure routes: Skin contact Potential health effects: Long-term systemic effects Value: 106 mg/cm2
		End Use: Workers Exposure routes: Dermal Potential health effects: long term - systemic
		End Use: Workers Exposure routes: Inhalation Potential health effects: Long-term systemic effects Value: 35 mg/m3
		End Use: Workers Exposure routes: Inhalation Potential health effects: long-term - local Value: 35 mg/m3
		End Use: Consumers Exposure routes: Skin contact Potential health effects: Long-term systemic effects Value: 53 mg/cm2
		End Use: Consumers Exposure routes: Inhalation Potential health effects: Long-term systemic effects Value: 7 mg/m3

PNEC

Ethylene Glycol	:	Fresh water Value: 10 mg/l
		Marine water Value: 1 mg/l
		Water Value: 10 mg/l
		Intermittent release Value: 10 mg/l
		Fresh water sediment Value: 20.9 mg/kg
		Water Value: 1995.5 mg/l

		Soil Value: 1.53 mg/kg

8.2 Exposure controls

Appropriate engineering controls

Effective exhaust ventilation system.
Maintain air concentrations below occupational exposure standards.

Individual protection measures

Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice.Remove and wash contaminated clothing before re-use.Wash face, hands and any exposed skin thoroughly after handling.
Eye/face protection (EN 166)	:	Safety glasses with side-shields
Hand protection (EN 374)	:	Wear the following personal protective equipment: Nitrile rubber butyl-rubber Impervious gloves Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Skin and body protection (EN 14605)	:	Wear suitable protective clothing.
Respiratory protection (EN 143, 14387)	:	Where concentrations in air may exceed the limits given in this section, the use of a half face filter mask or air supplied breathing apparatus is recommended.A suitable filter material depends on the amount and type of chemicals being handled.Consider the use of filter type:A-PIn event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used.If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

Environmental exposure controls

General advice	:	Consider the provision of containment around storage vessels.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	:	Liquid
Colour	:	amber
Odour	:	Slight
Flash point	:	80 °C Method: Pensky-Martens closed cup Does not sustain combustion.

pH	:	7.3
Odour Threshold	:	no data available
Melting point/freezing point	:	no data available
Initial boiling point and boiling range	:	100 °C
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	no data available
Relative vapour density	:	no data available
Relative density	:	1.089 (20 °C)
Solubility(ies)		
Water solubility	:	completely soluble
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition	:	no data available
Viscosity		
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	6 mm2/s (40 °C) Method: ASTM D 445
Explosive properties	:	no data available
Oxidizing properties	:	no data available

9.2 Other information

no data available

Section: 10. STABILITY AND REACTIVITY

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid	:	Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.

10.6 Hazardous decomposition products

Hazardous decomposition products	:	Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus

Section: 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on likely routes of exposure	:	Inhalation, Eye contact, Skin contact

Toxicity

Product

Acute oral toxicity	:	Acute toxicity estimate : > 2,000 mg/kg
Acute inhalation toxicity	:	There is no data available for this product.
Acute dermal toxicity	:	There is no data available for this product.
Skin corrosion/irritation	:	There is no data available for this product.
Serious eye damage/eye irritation	:	There is no data available for this product.
Respiratory or skin sensitization	:	There is no data available for this product.
Carcinogenicity	:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive effects	:	No toxicity to reproduction
Germ cell mutagenicity	:	Contains no ingredient listed as a mutagen
Teratogenicity	:	There is no data available for this product.
STOT - single exposure	:	Based on available data, the classification criteria are not met.
STOT - repeated exposure	:	There is no data available for this product.
Aspiration toxicity	:	No aspiration toxicity classification

Components

Acute dermal toxicity	:	Ethylene Glycol LD50 rabbit: 10,600 mg/kg

Potential Health Effects

Eyes	:	Causes serious eye irritation.
Skin	:	Causes skin irritation.
Ingestion	:	Health injuries are not known or expected under normal use.
Inhalation	:	Health injuries are not known or expected under normal use.
Chronic Exposure	:	May cause damage to organs through prolonged or repeated exposure.

Experience with human exposure

Eye contact	:	Redness, Pain, Irritation
Skin contact	:	Redness, Irritation
Ingestion	:	No symptoms known or expected.
Inhalation	:	No symptoms known or expected.
Further information	:	no data available

Section: 12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Product

Environmental Effects	:	This product has no known ecotoxicological effects.
Toxicity to fish	:	96 hrs LC50 Turbot: > 1,800 mg/l
		96 hrs NOEC Turbot: 1,800 mg/l
Toxicity to daphnia and other aquatic invertebrates	:	240 hrs LC50 Corophium volutator: > 1,228.5 mg/l
Toxicity to algae	:	no data available

Components

Toxicity to fish	:	Ethylene Glycol 96 h LC50: 72,860 mg/l

Components

Toxicity to daphnia and other aquatic invertebrates	:	Ethylene Glycol 48 h EC50: > 100 mg/l

Components

Toxicity to algae	:	Ethylene Glycol 96 h EC50: 6,500 mg/l

Components

Toxicity to bacteria : Ethylene Glycol
> 1,995 mg/l
Method: ISO 8192

Components

Toxicity to fish (Chronic toxicity) : Ethylene Glycol
7 d NOEC: 15,380 mg/l

Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Ethylene Glycol
7 d NOEC: 8,590 mg/l

12.2 Persistence and degradability

Product

Biodegradability : The organic portion of this preparation is expected to be readily biodegradable.

Components

Biodegradability : Ethylene Glycol
Result: Readily biodegradable.

C10-16 alkyl alcohol ethoxylate phosphate diethanolamine salt.
Result: no data available

12.3 Bioaccumulative potential

Product

Bioaccumulation : This preparation or material is not expected to bioaccumulate.

12.4 Mobility in soil

Product

This substance is water soluble and is expected to remain primarily in water.

12.5 Results of PBT and vPvB assessment

Product

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

No adverse effects expected.

Section: 13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with the European Directives on waste and hazardous waste.Waste codes should

be assigned by the user, preferably in discussion with the waste disposal authorities.

13.1 Waste treatment methods

Product	:	Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
Contaminated packaging	:	Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.
Guidance for Waste Code selection	:	16 03 05*- OFF SPECIFICATION BATCHES AND UNUSED PRODUCTS - Organic wastes containing dangerous substances. If this product is used in any further processes, the final user must redefine and assign the most appropriate European Waste Catalogue Code.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (ADR/ADN/RID)

14.1 UN number:	Not applicable.
14.2 UN proper shipping name:	PRODUCT IS NOT REGULATED DURING TRANSPORTATION
14.3 Transport hazard class(es):	Not applicable.
14.4 Packing group:	Not applicable.
14.5 Environmental hazards:	No
14.6 Special precautions for user:	Not applicable.

Air transport (IATA)

14.1 UN number:	Not applicable.
14.2 UN proper shipping name:	PRODUCT IS NOT REGULATED DURING TRANSPORTATION
14.3 Transport hazard class(es):	Not applicable.
14.4 Packing group:	Not applicable.
14.5 Environmental hazards:	No
14.6 Special precautions for user:	Not applicable.

Sea transport (IMDG/IMO)

14.1 UN number:	Not applicable.
14.2 UN proper shipping name:	PRODUCT IS NOT REGULATED DURING TRANSPORTATION
14.3 Transport hazard class(es):	Not applicable.
14.4 Packing group:	Not applicable.
14.5 Environmental hazards:	No
14.6 Special precautions for user:	Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:	Not applicable.

Section: 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

INTERNATIONAL CHEMICAL CONTROL LAWS

CANADA
This product contains substance(s) which are found on the Non-Domestic Substances List (NDSL), or are not in compliance with other Canadian Acts.

United States TSCA Inventory
The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

15.2 Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out on the product.

Section: 16. OTHER INFORMATION

Procedure used to derive the classification according to REGULATION (EC) No 1272/2008

Classification	Justification
Skin irritation 2, H315	Calculation method
Eye irritation 2, H319	Calculation method
Specific target organ toxicity - repeated exposure 2, H373	Calculation method

Full text of H-Statements

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure.

Full text of other abbreviations

ADN – European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS – Australian Inventory of Chemical Substances; ASTM – American Society for the Testing of Materials; bw – Body weight; CLP – Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR – Carcinogen, Mutagen or Reproductive Toxicant; DIN – Standard of the German Institute for Standardisation; DSL – Domestic Substances List (Canada); ECHA – European Chemicals Agency; EC-Number – European Community number; ECx – Concentration associated with x% response; ELx – Loading rate associated with x% response; EmS – Emergency Schedule; ENCS – Existing and New Chemical Substances (Japan); ErCx – Concentration associated with x% growth rate response; GHS – Globally Harmonized System; GLP – Good Laboratory Practice; IARC – International Agency for Research on Cancer; IATA – International Air Transport Association; IBC – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 – Half maximal inhibitory concentration; ICAO – International Civil Aviation Organization; IECSC – Inventory of Existing Chemical Substances in China; IMDG – International Maritime Dangerous Goods; IMO – International Maritime Organization; ISHL – Industrial Safety and Health Law (Japan); ISO – International Organisation for Standardization; KECI – Korea Existing Chemicals Inventory; LC50 – Lethal Concentration to 50 % of a test population; LD50 – Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL – International Convention for the Prevention of Pollution from Ships; n.o.s. – Not Otherwise Specified; NO(A)EC – No Observed (Adverse) Effect Concentration; NO(A)EL – No Observed (Adverse) Effect Level; NOELR – No Observable Effect Loading Rate; NZIoC – New Zealand Inventory of Chemicals; OECD – Organization for Economic Co-operation and Development; OPPTS – Office of Chemical Safety and Pollution Prevention; PBT – Persistent, Bioaccumulative and Toxic substance; PICCS – Philippines Inventory of Chemicals and

Chemical Substances; (Q)SAR – (Quantitative) Structure Activity Relationship; REACH – Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID – Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT – Self-Accelerating Decomposition Temperature; SDS – Safety Data Sheet; TCSI – Taiwan Chemical Substance Inventory; TRGS – Technical Rule for Hazardous Substances; TSCA – Toxic Substances Control Act (United States); UN – United Nations; vPvB – Very Persistent and Very Bioaccumulative

Further information

Sources of key data used to compile the Safety Data Sheet	:	IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer. The possible key literature references and data sources which may have been used in conjunction with the consideration of expert judgment to compile this Safety Data Sheet: European regulations/directives (including (EC) No. 1907/2006, (EC) No. 1272/2008), supplier data, inter-net, ESIS, IUCLID, ERIcards, Non European official regulatory data and other data sources.
Prepared By	:	Regulatory Affairs

Numbers quoted in the MSDS are given in the format: 1,000,000 = 1 million and 1,000 = 1 thousand. 0.1 = 1 tenth and 0.001 = 1 thousandth

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SAFETY DATA SHEET

Version 3

DFW43013 Defoamer

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Product name : DFW43013 Defoamer

Product code : DFW43013

Product type : Liquid. [Clear. to Hazy]

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use : Not available

1.3 Details of the supplier of the safety data sheet

Baker Hughes
Kirkby Bank Road,
Knowsley Industrial Park,
Liverpool,
L33 7SY, UK

Tel: +44 (0)151 545 3899
Fax: +44 (0)151 547 3590

e-mail address of person responsible for this SDS : paul.chapman2@bakerhughes.com

1.4 Emergency telephone number

Supplier

Telephone number : CHEMTREC Emergency Telephone within UK: 0870 820 0418
CHEMTREC Emergency Telephone outside UK: +44 870 820 0418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Eye Irrit. 2, H319

2.2 Label elements

Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms :



GHS07

Signal word : Warning

Hazard statements : Causes serious eye irritation.

Precautionary statements

Prevention : Wear eye or face protection: Recommended: Chemical splash goggles.. Wash hands thoroughly after handling.

Response : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

SECTION 2: Hazards identification

Storage : Not applicable.

Disposal : Not applicable.

Supplemental label elements : Not applicable.

Hazardous ingredients :

Hazard statements (Code) : H319

Precautionary statements (Code) : P280, P264, P305 + P351 + P338

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII

Not applicable.

P: Not available. B: Not available. T: Not available.

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

Not applicable.

vP: Not available. vB: Not available.

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	% by weight	Classification Regulation (EC) No. 1272/2008 [CLP]	Type
2-(2-butoxyethoxy)ethanol	REACH #: 01-2119475104-44 EC: 203-961-6 CAS: 112-34-5 Index: 603-096-00-8	≥50 - ≤75	Eye Irrit. 2, H319 **See Section 16 for the full text of the H statements declared above.**	[1] [2]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
[5] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention. Continue to rinse for at least 15 minutes.

Inhalation : Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following: pain or irritation watering redness

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to medical doctor : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : Not available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable : Use water spray for extinction.

Not suitable : None known.

5.2 Special hazards arising from the substance or mixture

Special exposure hazards : In a fire or if heated, a pressure increase will occur and the container may burst.

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

5.3 Advice for fire-fighters

SECTION 5: Firefighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment.

Additional information : Not available.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

6.2 Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

6.4 Reference to other sections : Note: see section 8 for personal protective equipment and section 13 for waste disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Storage : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Recommended Packaging materials : Use original container.

7.3 Specific end use(s) : Not available

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

SECTION 8: Exposure controls/personal protection

Product/ingredient name	Exposure limit values
2-(2-butoxyethoxy)ethanol	**EH40/2005 WELs (United Kingdom (UK), 12/2011).** TWA: 10 ppm 8 hours. STEL: 15 ppm 15 minutes. TWA: 67.5 mg/m³ 8 hours. STEL: 101.2 mg/m³ 15 minutes.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

Occupational exposure controls : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Wear suitable gloves tested to EN374.

Chemical-resistant gloves: butyl rubber or nitrile rubber Gloves

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Recommended: Chemical splash goggles.

Skin protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	Liquid. [Clear. to Hazy]
Colour	:	Colourless.
Odour	:	Mild.
Odour threshold	:	Not available.
pH	:	7
Initial boiling point and boiling range	:	Not available.
Melting point/freezing point	:	Not available.
Flammability (solid, gas)	:	May be combustible at high temperature.
Flash point	:	Closed cup: 100°C (212°F) [PMCC]
Explosive properties	:	Not available.
Upper/lower flammability or explosive limits	:	Not available.
Oxidising properties	:	Not available.
Vapour pressure	:	Not available.
Density	:	Not available.
Relative density	:	0.955 to 1.025 (20°C)
Solubility	:	Not available.
Partition coefficient: n-octanol/water	:	Not available.
Viscosity	:	Dynamic: 40 cP
Vapour density	:	Not available.
Evaporation rate (butyl acetate = 1)	:	Not available.
Decomposition temperature	:	Not available.
Auto-ignition temperature	:	210°C (410°F)

9.2 Other information

Pour point	:	Not available.

SECTION 10: Stability and reactivity

10.1 Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	:	The product is stable.
10.3 Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	:	No specific data.
10.5 Incompatible materials	:	No specific data.
10.6 Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-(2-butoxyethoxy)ethanol	LD50 Dermal LD50 Oral	Rabbit Rat	2700 mg/kg 4500 mg/kg	- -

Conclusion/Summary : Not available.

Acute toxicity estimates

Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitisation

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Inhalation : No known significant effects or critical hazards.

Ingestion : Irritating to mouth, throat and stomach.

Skin contact : No known significant effects or critical hazards.

Eye contact : Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : No specific data.

Ingestion : No specific data.

Skin contact : No specific data.

Eye contact : Adverse symptoms may include the following: pain or irritation watering redness

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

SECTION 11: Toxicological information

Potential delayed effects : Not available.

Potential chronic health effects

Conclusion/Summary : Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Interactive effects : Not available.

Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity : No known significant effects or critical hazards.

Product/ingredient name	Result	Species	Exposure
2-(2-butoxyethoxy)ethanol	Acute LC50 1300000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
2-(2-butoxyethoxy)ethanol	1	-	low

12.4 Mobility in soil : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

P: Not available. B: Not available. T: Not available.

vPvB : Not applicable.

vP: Not available. vB: Not available.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

SECTION 13: Disposal considerations

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

13.2 Additional information

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

International transport regulations

Regulatory information	14.1 UN number	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	Label
ADR/RID Class	Not regulated.		-	-	
ADN Class	Not regulated.		-	-	
IMDG Class	Not regulated.		-	-	
IATA Class	Not regulated.		-	-	

PG* : Packing group

Regulatory information	14.5 Environmental hazards	Additional information
ADR/RID Class	No.	-
ADN Class	No.	-
IMDG Class	No.	-
IATA Class	No.	-

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code : Not available.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

SECTION 15: Regulatory information

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Europe inventory : Not determined.

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Eye Irrit. 2, H319	Calculation method

SECTION 16: Other information

Full text of abbreviated H statements

H319	Causes serious eye irritation.

Full text of classifications [CLP/GHS]

Eye Irrit. 2, H319	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2

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Version : 3

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

NALCO Champion
An Ecolab Company

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

METHANOL

Section: 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier: **METHANOL**

Substance name:	Methanol
Index-No.:	603-001-00-X
EC-No.:	200-659-6
CAS-No.:	67-56-1
REACH Registration Number:	01-2119433307-44

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Use of the Substance/Mixture : SOLVENT

Recommended restrictions on use : Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet:

COMPANY IDENTIFICATION
NALCO EUROPE B.V.
Postbus 627
2300 AP Leiden, The Netherlands
TEL: 0031 71 5241100

LOCAL COMPANY IDENTIFICATION
Nalco Ltd.
P.O. BOX 11, WINNINGTON AVENUE
NORTHWICH, CHESHIRE, U.K. CW8 4DX
TEL: +44 (0)1606 74488

For Product Safety information please contact: msdseame@nalco.com

1.4 Emergency telephone number: +32-(0)3-575-5555 Trans-European

Date of Compilation/Revision:	02.05.2016
Version Number:	1.1

Section: 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquid, Category 2	H225
Acute toxicity, Category 3	H331
Acute toxicity, Category 3	H311
Acute toxicity, Category 3	H301
Specific target organ toxicity - single exposure, Category 1	H370

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H225 Highly flammable liquid and vapour.
H331 Toxic if inhaled.

		H311	Toxic in contact with skin.
		H301	Toxic if swallowed.
		H370	Causes damage to organs.
Supplemental Hazard Statements	:	EUH031	Contact with acids liberates toxic gas.
Precautionary Statements	:	**Prevention:**	
		P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
		P260	Do not breathe dust/fume/gas/mist/vapours/spray.
		Response:	
		P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
		P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
		P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
		Storage:	
		P405	Store locked up.

2.3 Other hazards

None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	CAS-No. EC-No. REACH No.	Concentration: [%]
Methanol	67-56-1 200-659-6 01-2119433307-44	90 - 100

Section: 4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled : Remove to fresh air.
Treat symptomatically.
Get medical attention immediately.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.
Use a mild soap if available.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.
Get medical attention.

In case of eye contact : Rinse with plenty of water.
Get medical attention if symptoms occur.

If swallowed : Rinse mouth with water.

Do NOT induce vomiting.
Never give anything by mouth to an unconscious person.
Get medical attention immediately.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders.Use personal protective equipment as required.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Indication of immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

Section: 5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media : Foam
Carbon dioxide
Dry powder
Other extinguishing agent suitable for Class B fires
For large fires, use water spray or fog, thoroughly drenching the burning material.

Unsuitable extinguishing media : Do NOT use water jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Exposure to decomposition products may be a hazard to health.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Hazardous combustion products : Decomposition products may include the following materials:
Carbon oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : Use personal protective equipment.

Further information : Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel : Ensure adequate ventilation.
Remove all sources of ignition.

Keep people away from and upwind of spill/leak.
Avoid inhalation, ingestion and contact with skin and eyes.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Ensure clean-up is conducted by trained personnel only.
Refer to protective measures listed in sections 7 and 8.

Advice for emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

6.2 Environmental precautions

Environmental precautions : Do not allow contact with soil, surface or ground water.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : Eliminate all ignition sources if safe to do so.
Stop leak if safe to do so.
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Flush away traces with water.
For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

6.4 Reference to other sections

See Section 1 for emergency contact information.
For personal protection see section 8.
See Section 13 for additional waste treatment information.

Section: 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling : Open drum carefully as content may be under pressure. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Do not ingest. Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.

Suitable material	:	The following compatibility data is suggested based on similar product data and/or industry experience: HDPE (high density polyethylene), Natural rubber, Carbon Steel C1018, Stainless Steel 304, Stainless Steel 316L
Unsuitable material	:	The following compatibility data is suggested based on similar product data and/or industry experience: Aluminum

7.3 Specific end uses

Specific use(s)	:	SOLVENT

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure guidelines have not been established for this product. However there may be exposure limits for the substance(s) for your country listed below.

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Methanol	67-56-1	TWA	200 ppm 266 mg/m3	UKCOSSTD
		STEL	250 ppm 333 mg/m3	UKCOSSTD

DNEL

Methanol	:	End Use: Workers Exposure routes: Dermal Potential health effects: short-term - systemic 40 mg/kg
		End Use: Workers Exposure routes: Dermal Potential health effects: Acute systemic effects Value: 40 mg/cm2
		End Use: Workers Exposure routes: Inhalation Potential health effects: Acute systemic effects Value: 260 mg/m3
		End Use: Workers Exposure routes: Inhalation Potential health effects: Acute local effects Value: 260 mg/m3
		End Use: Workers Exposure routes: Dermal Potential health effects: Long-term systemic effects Value: 40 mg/cm2
		End Use: Workers Exposure routes: Inhalation Potential health effects: Long-term systemic effects Value: 260 mg/m3
		End Use: Workers Exposure routes: Inhalation Potential health effects: Long-term local effects Value: 260 mg/m3

PNEC

Methanol	:	Fresh water Value: 154 mg/l
		Marine water Value: 15.4 mg/l
		Intermittent use/release Value: 1540 mg/l
		Sediment Value: 570.4 mg/kg
		Soil Value: 23.5 mg/kg
		Sewage treatment plant Value: 100 mg/l

8.2 Exposure controls

Appropriate engineering controls

Effective exhaust ventilation system.
Maintain air concentrations below occupational exposure standards.

Individual protection measures

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.Remove and wash contaminated clothing before re-use.Wash face, hands and any exposed skin thoroughly after handling.

Eye/face protection (EN 166) : Safety goggles
Face-shield

Hand protection (EN 374) : Recommended preventive skin protection
Gloves
Viton
butyl-rubber
Breakthrough time: 1 – 4 hours
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin and body protection (EN 14605) : Wear suitable protective clothing.

Respiratory protection (EN 143, 14387) : When respiratory risks cannot be avoided or sufficiently limited by technical means of collective protection or by measures, methods or procedures of work organization, consider the use of certified respiratory protection equipment meeting EU requirements (89/656/EEC, 89/686/EEC), or equivalent, with filter type:AX

Environmental exposure controls

General advice : Consider the provision of containment around storage vessels.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	:	Liquid
Colour	:	Colorless Clear
Odour	:	Alcoholic
Flash point	:	14 °C Method: ASTM D 1310, open cup
pH	:	no data available
Odour Threshold	:	no data available
Melting point/freezing point	:	FREEZING POINT: -23 °C, <
Initial boiling point and boiling range	:	64 °C (760 mm Hg) Method: ASTM D 86
Evaporation rate	:	5.9 (ether = 1)
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	36 V%
Lower explosion limit	:	7.3 V%
Vapour pressure	:	97 mm Hg (16 °C)
Relative vapour density	:	1.1 (Air = 1)
Relative density	:	0.79 (16 °C) ASTM D-1298
Density	:	0.79 g/cm3
Solubility(ies)		
Water solubility	:	completely soluble
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	464 °C
Thermal decomposition temperature	:	no data available
Viscosity		
Viscosity, dynamic	:	0.6 mPa.s (20 °C)
Viscosity, kinematic	:	no data available
Explosive properties	:	no data available
Oxidizing properties	:	no data available

9.2 Other information

no data available

Section: 10. STABILITY AND REACTIVITY

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Strong oxidizing agents
Strong acids
Alkali metals

10.6 Hazardous decomposition products

Hazardous decomposition products : Decomposition products may include the following materials:
Carbon oxides

Section: 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Toxicity

Product

Acute oral toxicity	:	There is no data available for this product.
Acute inhalation toxicity	:	There is no data available for this product.
Acute dermal toxicity	:	There is no data available for this product.
Skin corrosion/irritation	:	There is no data available for this product.
Serious eye damage/eye irritation	:	Result: Mild eye irritation
Respiratory or skin sensitization	:	There is no data available for this product.
Carcinogenicity	:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible

or confirmed human carcinogen by IARC.

Reproductive effects	:	No toxicity to reproduction
Germ cell mutagenicity	:	Contains no ingredient listed as a mutagen
Teratogenicity	:	There is no data available for this product.
STOT - single exposure	:	Causes damage to organs.
STOT - repeated exposure	:	There is no data available for this product.
Aspiration toxicity	:	No aspiration toxicity classification

Potential Health Effects

Eyes	:	Health injuries are not known or expected under normal use.
Skin	:	Toxic in contact with skin.
Ingestion	:	May cause blindness if swallowed. Toxic if swallowed.
Inhalation	:	Toxic if inhaled.
Chronic Exposure	:	Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact	:	No information available.
Skin contact	:	No information available.
Ingestion	:	No information available.
Inhalation	:	Respiratory irritation, Cough
Further information	:	no data available

Section: 12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Product

Environmental Effects	:	This product has no known ecotoxicological effects.
Environmental Effects - Acute aquatic toxicity Assessment	:	This product has no known ecotoxicological effects.
Environmental Effects - Chronic aquatic toxicity Assessment	:	This product has no known ecotoxicological effects.
Toxicity to fish	:	no data available
Toxicity to daphnia and other	:	no data available

aquatic invertebrates

Toxicity to algae : no data available

Components

Toxicity to fish : Methanol
96 h LC50: 15,400 mg/l

Components

Toxicity to daphnia and other aquatic invertebrates : Methanol
48 h EC50: > 10,000 mg/l

Components

Toxicity to algae : Methanol
72 h EC50: 22,000 mg/l

Components

Toxicity to bacteria : Methanol
> 1,000 mg/l
Method: OECD Test Guideline 209

Components

Toxicity to fish (Chronic toxicity) : Methanol
8.3 d NOEC: 7,900 mg/l

12.2 Persistence and degradability

Product

Biodegradability : The organic portion of this preparation is expected to be readily biodegradable.

Biodegradation Assessment : The organic portion of this preparation is expected to be readily biodegradable.

Components

Biodegradability : Methanol
Result: Readily biodegradable.

12.3 Bioaccumulative potential

Product

Bioaccumulation : This preparation or material is not expected to bioaccumulate.

Components

Bioaccumulation : Methanol
Carp, Exposure time: 72 d, Bioconcentration factor (BCF): 1 - 4.5, Bioaccumulation is unlikely.

12.4 Mobility in soil

Product

The portion in water is expected to be soluble or dispersible.

12.5 Results of PBT and vPvB assessment

Product

Assessment	:	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)., This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Other adverse effects

No adverse effects expected.

Section: 13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with the European Directives on waste and hazardous waste.Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

13.1 Waste treatment methods

Product	:	Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
Contaminated packaging	:	Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.
Guidance for Waste Code selection	:	16 03 05*- OFF SPECIFICATION BATCHES AND UNUSED PRODUCTS - Organic wastes containing dangerous substances. If this product is used in any further processes, the final user must redefine and assign the most appropriate European Waste Catalogue Code.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (ADR/ADN/RID)

14.1 UN number:	UN 1230
14.2 UN proper shipping name:	METHANOL
14.3 Transport hazard class(es):	3, 6.1
14.4 Packing group:	II
14.5 Environmental hazards:	No
14.6 Special precautions for user:	Not applicable.

Air transport (IATA)

14.1 UN number:	UN 1230
14.2 UN proper shipping name:	METHANOL
14.3 Transport hazard class(es):	3 , 6.1
14.4 Packing group:	II

14.5 Environmental hazards: No
14.6 Special precautions for user: Not applicable.

Sea transport (IMDG/IMO)
14.1 UN number: UN 1230
14.2 UN proper shipping name: METHANOL
14.3 Transport hazard class(es): 3 , 6.1
14.4 Packing group: II
14.5 Environmental hazards: No
14.6 Special precautions for user: Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.

Section: 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture **:**

INTERNATIONAL CHEMICAL CONTROL LAWS

CANADA
The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

UNITED STATES
The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

NATIONAL REGULATIONS GERMANY
Water contaminating class (Germany) : WGK 1
Classification according VwVwS, Annex 4.

15.2 Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out.

Section: 16. OTHER INFORMATION

Full text of H-Statements

H225	Highly flammable liquid and vapour.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H370	Causes damage to organs.

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute

for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Sources of key data used to compile the Safety Data Sheet	:	IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer. The possible key literature references and data sources which may have been used in conjunction with the consideration of expert judgment to compile this Safety Data Sheet: European regulations/directives (including (EC) No. 1907/2006, (EC) No. 1272/2008, 67/548/EEC, 1999/45/EC), supplier data, inter-net, ESIS, IUCLID, ERIcards, Non European official regulatory data and other data sources.
Prepared By	:	Regulatory Affairs

Numbers quoted in the MSDS are given in the format: 1,000,000 = 1 million and 1,000 = 1 thousand. 0.1 = 1 tenth and 0.001 = 1 thousandth

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Fişă cu Date de Securitate conform Regulamentului (CE) nr.1907/2006

Motorina Standard
Nr. produs 450000

Data emiterii: 01.10.1991
Data revizuirii: 05.03.2018

SECTIUNEA 1. IDENTIFICAREA SUBSTANŢEI/AMESTECULUI ŞI A SOCIETĂŢII/ÎNTREPRINDERII

1.1 Element de identificare a produsului

Denumire comercială	:	Motorina Standard

1.2 Utilizări relevante identificate ale substanţei sau amestecului şi utilizări contraindicate

Utilizări relevante identificate

Utilizări relevante	:	Funcţionarea motoarelor Diesel ale vehiculelor.
Utilizari identificate conform raportului de securitate chimică (CSR)	:	Utilizare în spaţii industriale 01a - Distribuţia substanţei/materialului 12a - Utilizare drept combustibil sau carburant: Industrial Formulare sau reambalare 02 - Formularea & (re)ambalarea substanţelor/materialelor şi amestecurilor Utilizare larg răspândită de către lucrători profesionişti 12b - Utilizare drept combustibil sau carburant: Profesional Utilizare de către consumatori 12c - Utilizare drept combustibil sau carburant - Consumatori

Pentru detalii privind utilizările, a se vedea Anexa

1.3 Detalii privind furnizorul fişei cu date de securitate

Adresă completă **Producător, importator, distribuitor**	:	S.C. OMV PETROM Marketing S.R.L. Str. Coralilor Nr. 22, Cladirea Infinity, Et.1, Oval B, Sect. 1 013329 Bucuresti Romania
Telefon	:	0 800 0 800 11
Adresa de e-mail a persoanei competente	:	info.msds@petrom.com

1.4 Număr de telefon care poate fi apelat în caz de urgenţă

+40 (0) 725 16 16 16	Centrul de urgenta HSSE/ tarif normal / 24/7 / română/engleză
+40 21 318 36 06	Biroul pentru Regulamentul Sanitar International si Informare Toxicologica / tarif normal; L-V; 8:00-15:00; limba română

SECTIUNEA 2. IDENTIFICAREA PERICOLELOR

2.1 Clasificarea substanţei sau a amestecului

Clasificare (Regulamentul (CE) Nr. 1272/2008)

Flam. Liq. 3 H226, Acute Tox. 4 H332, Skin Irrit. 2 H315, Asp. Tox. 1 H304, Carc. 2 H351, STOT RE 2 H373, Aquatic Chronic 2 H411,
Pentru textul complet al frazelor de pericol H menţionate în această Secţiune, consultaţi Secţiunea 16.

2.2 Elemente pentru etichetă

Etichetare (Regulamentul (CE) Nr. 1272/2008)

Pictograme de pericol :



Cuvânt de avertizare : Pericol

Fraze de pericol :
H226 Lichid şi vapori inflamabili.
H304 Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii.
H315 Provoacă iritarea pielii.
H332 Nociv în caz de inhalare.
H351 Susceptibil de a provoca cancer.
H373 Poate provoca leziuni ale organelor (timus, ficat, măduvă osoasă) in caz de expunere prelungită sau repetată.
H411 Toxic pentru viaţa acvatică având efecte de lungă durată.

Fraze de precauţie :
Prevenire:
P210 A se păstra departe de surse de căldură, suprafeţe fierbinţi, scântei, flăcări şi alte surse de aprindere. Fumatul interzis.
P260 Nu inspiraţi ceaţa/vaporii/spray-ul.
P273 Evitaţi dispersarea în mediu.
P280 Purtaţi mănuşi de protecţie/îmbrăcăminte de protecţie/echipament de protecţie a ochilor/ echipament de protecţie a feţei.
Interventie:
P301 + P310 ÎN CAZ DE ÎNGHIŢIRE: sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ sau un medic.
P331 NU provocaţi voma.
Eliminare:
P501 Eliminaţi conţinutul/recipientele conform prevederilor legale în vigoare

2.3 Alte pericole

Note : Pericol ridicat de alunecare ca urmare a deversării accidentale a produsului.
Nu sunt cunoscute pericole suplimentare generate de produs pentru oameni şi mediu.
Conform informatiilor de pana acum, nu contine compusi care indeplinesc criteriile de PBT sau vPvB.

SECTIUNEA 3. COMPOZIŢIE/INFORMAŢII PRIVIND COMPONENŢII

3.1 Substanţe

Nu se aplică

3.2 Amestecuri

Natura chimică	hidrocarburi Conţine aditivi pentru îmbunătăţirea performanţelor, în cantităţi mici (max. 0,1% m/m.).

Ingrediente periculoase

Denumirea substanţei chimice	Număr Index Nr. CAS Nr. EINECS/Nr. ELINCS (Lista Europeană a Substanţelor Chimice Notificate) Număr de înregistrare	Clasificare (Regulamentul (CE) Nr. 1272/2008)	Concentraţie [% m/m]
combustibili, diesel; motorina - fara specificatii	649-224-00-6 68334-30-5 269-822-7 01-2119484664-27-0165	Flam. Liq. 3; H226 Acute Tox. 4; H332 Skin Irrit. 2; H315 Asp. Tox. 1; H304 Carc. 2; H351 STOT RE 2; H373 Aquatic Chronic 2; H411	<= 95,00
metanol	603-001-00-X 67-56-1 200-659-6 01-2119433307-44	Flam. Liq. 2; H225 Acute Tox. 3; H331 Acute Tox. 3; H311 Acute Tox. 3; H301 STOT SE 1; H370	<= 0,014

Nu reprezintă specificaţie a produsului / procente greutate max. posibile
Pentru textul complet al frazelor de pericol H menţionate în această Secţiune, consultaţi Secţiunea 16.

SECTIUNEA 4. MĂSURI DE PRIM AJUTOR

4.1 Descrierea măsurilor de prim ajutor

Indicaţii generale	:	Din cauza materialelor vărsate, suprafaţa devine alunecoasă. Înainte de a încerca să salvaţi victimele, izolaţi zona de toate sursele potenţiale de aprindere, incluzând deconectarea alimentării cu energie electrică. Asiguraţi o ventilaţie suficientă şi verificaţi dacă este prezentă o atmosferă sigură şi respirabilă înainte de intrarea în spaţii închise. Este necesară protecţia proprie a persoanelor care acordă măsurile de prim ajutor.
Inhalare	:	După inhalarea accidentală a vaporilor, persoana (persoanele) afectată (afectate) trebuie transportată (transportate) la aer curat. A se solicita asistenţă medicală de urgenţă. Dacă victima este inconştientă şi nu respiră: asiguraţi-vă că nu există obstrucţii ale respiraţiei şi dispuneţi administrarea respiraţiei artificiale de către personal instruit. Dacă este necesar, aplicaţi masaj cardiac extern şi cereţi sfatul medicului. Dacă victima este inconştientă şi respiră: aşezaţi-o în poziţia de recuperare. Administraţi oxigen dacă este necesar. În cazul unor simptome persistente este necesară consultarea medicului.
Contact cu pielea	:	După contactul cu pielea se spală bine zona cu apă şi săpun. Daca a fost expus intreg corpul, persoana trebuie spalata in intregime, mai ales parul acesteia. Îndepărtaţi îmbrăcămintea contaminată, încălţămintea contaminată şi eliminaţi-le în siguranţă. Se acopera zonele corpului afectate cu haine curate si care nu adera la aceste zone. Cereţi sfatul medicului dacă apar şi persistă iritaţii, umflături sau înroşire a pielii. Atunci când utilizaţi echipamente de înaltă presiune, se poate produce injectarea produsului. Dacă se produc leziuni la presiuni mari, solicitaţi imediat asistenţă medicală profesionistă. Nu aşteptaţi să apară simptomele. În caz de arsuri termice minore: răciţi zona afectată. Ţineţi zona arsă sub un jet de apă rece timp de cel puţin cinci minute sau până când durerea scade în intensitate. În orice caz, hipotermia trebuie să fie evitată.
Contact cu ochii	:	După contactul cu ochii clătiţi timp de 10-15 minute, ţinând pleoapele deschise cu jet de apă sau cu soluţie din recipientul pentru spălarea ochilor. Îndepărtaţi lentilele de contact, dacă sunt prezente şi sunt uşor de scos. Continuaţi clătirea. În cazul unor simptome de durată, este necesară consultarea unui oftalmolog.
Ingerare, Absorbţie substanţă în plămâni	:	În caz de ingerare, presupuneţi întotdeauna că a avut loc aspiraţia. Victima trebuie trimisă imediat la spital. Nu aşteptaţi să apară simptomele. Nu induceţi voma deoarece există un risc ridicat de aspiraţie. Nu administraţi nimic pe gură unei persoane inconştiente.

4.2 Cele mai importante simptome şi efecte, atât acute cât şi întârziate

Simptome	:	Greţuri, vărsături şi diaree, precum şi pericolul unei pneumonite de origine chimică din cauza aspiraţiei pe parcursul inghiţirii sau al vomei. Vaporii produsului în concentraţie ridicată pot conduce la apariţia unor iritaţii ale ochilor şi ale mucoaselor (nas, gat). După inhalarea pe termen lung a vaporilor concentraţi este posibilă apariţia durerilor de cap, a ameţelilor, a stărilor euforice, de nervozitate, a tremurului, a spasmelor tonico-clonice, pierderea cunoştinţei, insuficienţa circulatorie şi paralizia centrală a sistemului respirator. Concentraţii foarte ridicate pot provoca pierderea cunoştinţei chiar şi după perioade foarte scurte de expunere. Simptome la contactul cu pielea: înroşire, iritaţie. Simptome la contactul cu ochii: iritatie uşoară (nespecifica).
Efecte	:	În caz de aspiraţie, există riscul de apariţie a pneumonitei chimice.

4.3 Indicaţii privind orice fel de asistenţă medicală imediată şi tratamente speciale necesare

Tratament	:	Tratament simptomatic. Dacă este necesar, solicitaţi spitalizarea persoanei. După înghiţirea unor cantităţi mai mari de 1-2 ml/kg greutate corporală este necesară administrarea de cărbune activ (aproximativ 50 g) şi spitalizarea persoanei. În cazul unei stări puternice de agitaţie, este necesară sedarea persoanei (la indicaţia medicului).

SECTIUNEA 5. MĂSURI DE COMBATERE A INCENDIILOR

5.1 Mijloace de stingere a incendiilor

Mijloace de stingere corespunzătoare	:	Pentru focarele mici de incendiu: pulbere uscata de stingere, Spumă (numai personal special instruit); Ceată de apă (numai personal special instruit); bioxid de carbon (CO2); Alte gaze inerte (în conformitate cu reglementările); Nisip sau pământ. În cazul unui focar de incendiu extins: spumă sau apa pulverizata.
Mijloace de stingere necorespunzătoare	:	Jet direct/compact de apă; (poate cauza extinderea focarului de ardere prin stropire); Se va evita utilizarea simultană de spumă şi apă pe aceeaşi suprafaţă deoarece apa distruge spuma.

5.2 Pericole speciale cauzate de substanţa sau amestecul în cauză

Pericol specific din cauza substanței sau amestecului, din cauza produselor de combustie sau din cauza gazelor generate prin ardere.	:	Produsul evaporat este mai greu decât aerul şi se acumulează la nivelul solului. În amestec cu aerul, vaporii pot forma un amestec exploziv. Prevenirea pătrunderii în canalizare şi în subsoluri. Prevenirea pătrunderii în sol şi în ape. Această substanţă pluteşte şi se poate reaprinde la suprafaţa apei. A se feri de sursele de aprindere. Este permisă numai utilizarea sculelor, dispozitivelor si echipamentelor care nu produc scântei sau realizate in construcţie antiexplozivă şi rezistente la solvenţi. Trebuie avuţi în vedere potenţialii produşi de combustie, cum ar fi CO, SOx sau NOx. Combustia incompletă poate genera un amestec complex de particule solide şi lichide aeropurtate şi gaze, inclusiv monoxid de carbon şi compuşi organici şi anorganici neidentificati.

5.3 Recomandări destinate pompierilor

Echipament special de protecţie	:	În cazul unui incendiu de proporţii sau în spaţiile închise şi insuficient aerisite, purtaţi îmbrăcăminte de protecţie ignifugă completă şi un aparat de respirat autonom (SCBA) cu o mască pentru întreaga faţă acţionat în modul de presiune pozitivă.
Informaţii suplimentare	:	Răcirea imediată a recipientelor şi a ambalajelor din apropiere cu apă pulverizată, şi, dacă este posibil, îndepărtarea acestora din zona de pericol. Reziduurile de ardere şi apa contaminată utilizată la stingerea incendiilor trebuie eliminate conform prevederilor impuse de autorităţile locale. Asiguraţi o rezervă de apă pentru stingere.

SECTIUNEA 6. MĂSURI DE LUAT ÎN CAZ DE DISPERSIE ACCIDENTALĂ

6.1 Precauţii personale, echipament de protecţie şi proceduri de urgenţă

Precauţii pentru personal	:	Se acţionează din aceeaşi direcţie cu direcţia vântului (atenţie la schimbarea direcţiei vântului). Alertaţi personalul de urgenţă. Dacă se poate efectua în siguranţă, opriţi sau izolaţi scurgerea la sursă. Îndepartati toate sursele de foc din apropiere. Identificarea, marcarea si limitarea accesului in zona cu pericol de explozie. Nu este permis accesul persoanelor neautorizate. Exceptând deversările de mică amploare: Fezabilitatea oricăror acţiuni trebuie întotdeauna evaluată şi avizată, dacă este posibil, de o persoană competentă instruită responsabilă cu gestionarea situaţiei de urgenţă. În cazul unei emisii de amploare, alertaţi locuitorii aflaţi în direcţia de bătaie a vântului. Dacă este necesar, notificaţi autorităţile competente în conformitate cu toate reglementările în vigoare. Personalul de prim-ajutor trebuie să poarte echipament individual de protecţie. Aerisirea corespunzătoare a încăperilor contaminate. Evitaţi contactului cu pielea. Deversări de mică amploare: hainele de lucru antistatice normale sunt, de obicei, suficiente. Deversări de amploare: costum pentru întregul corp din material antistatic şi rezistent la substanţe chimice; Mănuşi de lucru care asigură rezistenţă adecvată la substanţe chimice, în special la hidrocarburi aromatice. Notă: mănuşile din PVA (alcool polivinilic) nu sunt impermeabile şi nu sunt potrivite pentru utilizare în caz de urgenţă. Cască de lucru. Pantofi sau cizme de siguranţă antistatice nederapante. Ochelari de protecţie şi/sau mască de protecţie a feţei, dacă este posibil(ă) sau se anticipează stropirea sau contactul cu ochii. Protecţie respiratorie: Se poate utiliza mască, pentru protecţia parţială sau totală a feţei, cu filtru pentru vapori organici sau un aparat de respirat autonom (SCBA), în funcţie de amploarea deversării şi de nivelul estimat de expunere. Dacă situaţia nu poate fi evaluată complet sau dacă este posibilă lipsa oxigenului, trebuie utilizate doar aparate SCBA. A se evita contactul direct cu materialul degajat. Evitaţi formarea de scântei. În zona de pericol, este recomandată oprirea utilajelor, echipamentelor şi a autovehiculelor care nu sunt realizate în construcţie antiexplozivă. Fumatul este interzis. Nu este permisă acţionarea întrerupătoarelor şi pornirea echipamentelor electrice care pot conduce la formarea de scântei. Produsul evaporat este mai greu decât aerul şi se acumulează la nivelul solului.

6.2 Precauţii pentru mediul înconjurător

Precauţii pentru mediul înconjurător	:	Se va opri scurgerea produsului in conditii de siguranta. Prevenirea scurgerii în canalizari, cursuri de apa, subsoluri sau spatii închise prin realizarea unor diguri de nisip si/sau pamânt sau prin alte masuri adecvate de stopare scurgere (bariere plutitoare, skimming sau alte tehnici de ordin mecanic). Materialul absorbant contaminat poate să prezinte acelasi grad de periculozitate ca şi produsul scurs. Deversarea in mediu trebuie evitată. Dacă produsul deversat a poluat mediul (a ajuns în canalizări, cursuri de apă, sol sau aer) este necesară informarea autorităţilor relevante.

6.3 Metode şi materiale pentru izolarea incendiilor şi pentru curăţenie

Procedee adecvate pentru curăţare sau absorbţie sau izolare	:	Aspirarea /evacuarea prin pompare a cantităţilor mari. Colectarea cantităţilor reziduale cu materiale absorbante neinflamabile, de exemplu nisip, pământ sau liant pentru ulei, respectiv îndiguirea acestora. Deversările de amploare pot fi acoperite atent cu spumă, dacă este disponibilă, pentru a limita formarea norilor de vapori. Nu utilizaţi jeturi directe. Observaţie: pe măsură ce creşte cantitatea de substantă absorbită în liant, creşte viteza de evaporare şi, prin aceasta, pericolul de incendiu. În caz de contaminare a solului, îndepărtaţi solul contaminat şi trataţi în conformitate cu reglementările locale. În cazul deversărilor de mică amploare în ape închise (cum ar fi porturile), izolaţi produsul cu bariere plutitoare sau alte echipamente. Colectaţi produsul vărsat cu materiale absorbante plutitoare adecvate/specifice. Deversările mari în ape deschise trebuie izolate cu bariere plutitoare sau alte mijloace mecanice Dacă acest lucru nu este posibil, controlaţi propagarea şi colectaţi produsul prin separare mecanică (skimming) sau alte mijloace mecanice. Utilizarea agenţilor de dispersie trebuie avizată de un expert şi, dacă este necesar, aprobată de autorităţile locale. Colectaţi produsul recuperat şi alte materiale în rezervoare sau containere adecvate în vederea revalorificării sau eliminării în siguranţă. Colectarea deşeurilor în containere etichetate adecvat pentru deşeuri periculoase şi eliminarea ulterioară conform normelor şi legislaţiei în vigoare.
Procedee neadecvate pentru curăţare sau absorbţie sau izolare	:	Fără date disponibile

6.4 Trimitere la alte secţiuni

A se vedea şi Secţiunea 8 (Controale ale expunerii/Protecţia personală) şi Secţiunea 13 (Consideraţii privind eliminarea).

6.5 Informaţii suplimentare

Adoptaţi măsuri corespunzătoare condiţiilor şi reglementărilor locale.

SECTIUNEA 7. MANIPULARE ŞI DEPOZITARE

7.1 Precauţii pentru manipularea în condiţii de securitate

Recomandări pentru manipularea în condiţii de securitate	:	Procuraţi instrucţiuni speciale înainte de utilizare. Se va utiliza numai în sistem închis. Aspirarea vaporilor la locul de emisie. În cazul în care este disponibil, pentru evacuarea în aer liber a gazelor de ardere şi a aerului uzat se va folosi un separator, respectiv epurator de aer. Dacă este posibil, se va face aerisirea încăperii la nivelul solului. Evitarea contactului cu pielea, cu ochii şi cu îmbrăcămintea. A nu se ingera. Nu este permisă inhalarea vaporilor. Evitaţi scurgerea produsului. A se utiliza şi depozita doar în exterior sau într-un spaţiu bine aerisit. Utilizaţi echipamentul de protecţie individuală conform cerinţelor. Pentru mai multe informaţii despre echipamentele de protecţie şi condiţiile de operare, a se vedea scenariile de expunere.
Recomandări de prevenire a incendiului şi a exploziei	:	Produsul evaporat este mai greu decât aerul şi se acumulează la nivelul solului. Aveţi grijă la acumularea în puţuri şi spaţiile închise. A nu se utiliza aer comprimat pentru operaţiuni de umplere, descărcare sau manipulare. În amestec cu aerul, vaporii pot forma un amestec exploziv. Prevenirea pătrunderii în canalizare şi în subsoluri. Prevenirea pătrunderii în sol şi în ape. Adoptaţi măsuri împotriva încărcării electrostatice. Legaţi la centura de împământare toate echipamentele de lucru. A se feri de sursele de aprindere. Utilizarea de echipamente / armături protejate împotriva exploziilor şi a unor instrumente care nu produc scântei. Fumatul interzis. Asiguraţi-vă că toate reglementările relevante privind facilităţile de manipulare şi depozitare a produselor inflamabile sunt respectate.

A se vedea şi Secţiunea 8 (Controale ale expunerii/Protecţia personală) şi Secţiunea 13 (Consideraţii privind eliminarea).

7.2 Condiţii de depozitare în condiţii de securitate, inclusiv eventuale incompatibilităţi

Cerinţe pentru spaţiile de depozitare şi containere	:	Dispunerea zonei de depozitare, construcţia rezervoarelor, echipamentele şi procedurile de operare trebuie să respecte legislaţia europeană, naţională sau locală relevantă. Instalaţiile de depozitare trebuie proiectate cu împrejmuiri adecvate pentru a preveni poluarea solului şi apelor în caz de scurgeri sau deversări. Recipientele vor fi păstrate închise etanş şi într-un loc bine ventilat. Este permisă numai utilizarea unor recipiente staţionare autorizate. Toate rezervoarele şi echipamentele se vor lega la centura de împământare. Depozitaţi într-un spaţiu corespunzător. De regulă este necesară existenţa unui spaţiu de depozitare etanşat şi rezistent. Curăţarea, inspectarea şi întreţinerea structurii interne a rezervoarelor de depozitare trebuie efectuate doar de personal calificat şi echipat corespunzător, conform prevederilor din reglementările naţionale, locale sau ale companiei. Înainte de intrarea în rezervoarele de stocare sau a începerii unor lucrări în spaţii închise, trebuie efectuată proba de gaze (prezenţa hidrocarburilor, conţinutul de oxigen) respectiv testată prezenţa atmosferei explozive. Materialele recomandate pentru containere sau căptuşelile containerelor includ oţel moale, oţel inoxidabil. Materiale nepotrivite: Anumite materiale sintetice pot fi nepotrivite pentru containere sau căptuşeala containerelor, în funcţie de specificaţiile şi utilizarea materialului. Compatibilitatea trebuie verificată împreună cu producătorul. Dacă produsul se livrează în containere: Păstraţi produsul numai în ambalajul (recipientul) original. Etichetaţi containerele în mod corespunzător . A se proteja de lumina solară. Vapori de hidrocarburi uşoare se pot acumula în spaţiile libere ale containerelor. Aceştia pot cauza pericole de inflamabilitate/explozie. Containerele golite pot conţine reziduuri inflamabile ale produsului. Nu sudaţi, lipiţi, perforaţi, tăiaţi sau incineraţi containerele goale, cu excepţia cazului în care au fost curăţate corespunzător.
Informaţii suplimentare asupra condiţiilor de depozitare	:	Evitarea efectului termic. A se feri de sursele de aprindere.

Măsuri de protecţie în cazul depozitării în comun	:	A nu se depozita împreună cu: substanţe periculoase explozive, gaze, alte substanţe periculoase explozive, substanţe solide periculoase inflamabile, substanţe periculoase piroforice sau care se autoîncălzesc, substanţe periculoase care, în contact cu apa, degajă gaze inflamabile, substanţe periculoase puternic oxidante, azotat de amoniu şi produse care conţin azotat de amoniu, peroxizi organici şi substanţe periculoase auto-reactive, substanţe periculoase necombustibile încadrate în categoriile de toxicitate acută 1 şi 2 / foarte toxice, substanţe infecţioase, substanţe radioactive, Restricţii la depozitarea împreună cu: substanţe periculoase oxidante, substanţe periculoase necombustibile, cu toxicitate acuta cat. 3 / toxice sau cu efecte cronice, solide combustibile, alte substanţe combustibile şi necombustibile, Ca urmare a normelor specifice de depozitare şi din cauza caracteristicilor speciale ale substanţelor/amestecurilor dintr-un depozit, în urma evaluării riscurilor, pot rezulta şi alte limitări (restricţii).

7.3 Utilizare finală specifică (utilizări finale specifice)

Instrucţiuni legate de utilizări specifice	:	Se va utiliza numai în scopurile relevante menţionate în Secţiunea 1.2. Pentru informaţii referitoare la aplicaţii specifice, consultaţi scenariile de expunere din anexă.

SECTIUNEA 8. CONTROALE ALE EXPUNERII / PROTECŢIA PERSONALĂ

8.1 Parametri de control

Valoare limită de expunere profesională pentru produs

Nu se cunosc date

Valoare limită de expunere profesională pentru componenţi

Componenţi: Ingredienţi intenţionaţi ai amestecurilor si/sau markeri pentru clasificarea substanţelor

combustibili, diesel; motorina - fara specificatii - Nr. CAS: 68334-30-5 - Nr. EINECS: 269-822-7

Tip	mg/m3	ppm	Coeficient de depasire	Notă	Sursă
Valoare limită maximă la locul de muncă (8 h)	700	-	-	-	Hotarâre Guvern 1218/2006

Tip	mg/m3	ppm	Coeficient de depasire	Notă	Sursă
Valoare limită maximă la locul de muncă (15 min)	1.000	-	-	-	Hotarâre Guvern 1218/2006

metanol - Nr. CAS: 67-56-1 - Nr. EINECS: 200-659-6

Tip	mg/m3	ppm	Coeficient de depasire	Notă	Sursă
Valoare limită maximă la locul de muncă (15 min)	-	5	-	H	Hotarâre Guvern 1218/2006
Valoare limită maximă la locul de muncă (8 h)	260	200	-	H	Hotarâre Guvern 1218/2006; Directiva 2006/15/CE

A	Fracţiune care trece prin alveole
E	Fracţiune inhalabilă
H	Se absoarbe prin piele
Y	Nu există un risc de afectare a capacităţii de reproducere în cazul respectării valorilor limită de expunere profesională si limită biologică.
Z	Nu poate fi exclus riscul afectării capacităţii de reproducere chiar în cazul respectării valorilor limită de expunere profesională si limită biologică.
Sh	Pericol de sensibilizare a pielii
SP	Pericol de sensibilizare în urma contactului cu lumina
Sa	Sensibilizant pentru căile respiratorii
Sah	Risc de sensibilizare a căilor respiratorii si a pielii
X	substanta cancerigena din cat. 1A/1B

Valori limită biologice pentru produs

Nu se cunosc date

Valori limită biologice pentru componenţi

metanol 67-56-1

Tip	Valoare	Parametri	Material biologic	Momentul prelevării probelor	Sursă
Valoare limită biologică obligatorie	6 mg/l	Metanol	Urină	sfârşit de schimb	Hotarâre Guvern 1218/2006

DNEL/DMEL pentru produs

Utilizare finală: muncitor
Rute de expunere: expunere acută, inhalare, sistemic
Valoare: 4300 mg/m3
Cel mai sensibil criteriu: Toxicitate acută (inhalare) NOEC 6000 mg/m3, DNEL, CAS-NR.: 68334-30-5

Utilizare finală: muncitor
Rute de expunere: expunere cronică, inhalare, sistemic
Valoare: 68,3 mg/m3

Cel mai sensibil criteriu: Dezvoltare (dermic) NOEL 125 mg/kg/zi, DNEL, CAS-NR.: 68334-30-5

Utilizare finală: muncitor
Rute de expunere: Cronică dermică, sistemic
Valoare: 2,9 mg/kg g.c./zi
Cel mai sensibil criteriu: Toxicitate cu doze repetate (dermic) NOAEL 30/kg/zi, DNEL, CAS-NR.: 68334-30-5

Utilizare finală: Populaţie generală
Rute de expunere: expunere acută, inhalare, sistemic
Valoare: 2600 mg/m3
Cel mai sensibil criteriu: Toxicitate acută (inhalare) NOEC 6000 mg/m3, DNEL, CAS-NR.: 68334-30-5

Utilizare finală: Populaţie generală
Rute de expunere: expunere cronică, inhalare, sistemic
Valoare: 20 mg/m3
Cel mai sensibil criteriu: Dezvoltare (dermic) NOEL 125 mg/kg/zi, DNEL, CAS-NR.: 68334-30-5

Utilizare finală: Populaţie generală
Rute de expunere: Cronică dermică, sistemic
Valoare: 1,3 mg/kg g.c./zi
Cel mai sensibil criteriu: Toxicitate cu doze repetate (dermic) NOAEL 30/kg/zi, DNEL, CAS-NR.: 68334-30-5

PNEC pentru produs

Substanţa component principal al produsului este un complex de hidrocarburi cu structură variabilă sau necunoscută. Metodele tradiţionale pentru determinarea PNEC nu sunt aplicabile, nefiind astfel posibilă determinarea unei singure valori PNEC reprezentative pentru astfel de substanţe.

8.2 Controale ale expunerii

Se va utiliza numai în scopurile relevante menţionate în Secţiunea 1.2., Pentru informaţii referitoare la aplicaţii specifice, consultaţi scenariile de expunere din anexă.

Măsuri generale de protecţie

Măsuri de igienă	:	Asiguraţi-vă că sunt instituite măsuri de administrare adecvate. Evitarea contactului cu ochii, cu pielea şi cu îmbrăcămintea. Hainele contaminate cu produs trebuie schimbate imediat şi curăţate înainte de reutilizare.

Echipament personal de protecţie

Protecţie respiratorie	:	Când se produc vapori: utilizaţi protecţie respiratorie cu filtru A pentru gaz, culoare caracteristică maro (A1 până la 0,1 vol%, A2 până la 0,5 vol%, A3 până la 1 vol%). În cazul unor concentraţii ridicate şi în situaţia în care nu există informaţii suficiente, se va utiliza numai aparat pentru protecţia respiraţiei autonom (izolant).
Protecţia mâinilor	:	În practică, durata de utilizare a mănuşilor recomandate pentru protecţia împotriva substanţelor chimice poate fi mai redusă decât timpul de penetrare determinat conform normelor EN 374 din cauza numărului mare de factori de influenţă (de exemplu temperatură, sarcină mecanică). În cazul unui posibil contact cu mâinile, a se purta mănuşi de protecţie rezistente împotriva pătrunderii lichidelor. **Material: Nitril;** Timpul de penetrare: 480 min Grosimea materialului: 0,40 mm Metodă de verificare: EN 374 **Material: Viton;** Timpul de penetrare: 480 min Grosimea materialului: 0,70 mm Metodă de verificare: EN 374 **Material: Butil;** Timpul de penetrare: 120 min Grosimea materialului: 0,70 mm Metodă de verificare: EN 374 **Material: Policloropren;** Timpul de penetrare: 60 min Grosimea materialului: 0,60 mm Metodă de verificare: EN 374
Protecţia ochilor / feţei	:	Ochelari de protecţie cu ecrane laterale. Ochelari de protecţie şi/sau mască de protecţie a feţei, dacă este posibil(ă) sau se anticipează stropirea sau contactul cu ochii.
Protecţia corpului	:	Utilizarea, în toate cazurile, de îmbrăcăminte rezistentă la foc şi antistatică pe termen lung. Cască de lucru. Pantofi sau cizme de siguranţă antistatice nederapante. Dacă este necesar, termorezistente.

Controlul expunerii mediului

Controlul expunerii mediului	:	Se va utiliza pe cât posibil aparatură închisă. Dacă există risc de expunere, trebuie asigurată extracţia/ventilaţia adecvată. Respectarea valorilor limită cu privire la emisii, dacă este cazul, asigurând o ventilaţie cu evacuare a aerului (dacă este necesar). A se vedea şi Secţiunea 6 " Măsuri de luat in caz de dispersie accidentala ".

8.3 Informaţii suplimentare

În situaţia concretă de utilizare, ca urmare a evaluării individuale de pericol poate fi necesară utilizarea de echipamente diferite de protecţie a persoanei.

SECTIUNEA 9. PROPRIETĂŢI FIZICE ŞI CHIMICE

9.1 Informaţii privind proprietăţile fizice şi chimice de bază

Aspect	:	lichid
Stare de agregare	:	lichid
Culoare	:	uşor gălbui
Miros	:	specific de produs petrolier
Prag de acceptare a mirosului	:	miros clar perceptibil

Caracteristica	Valori	Metodă	Notă
pH			nu se aplică
punct de topire/punct de congelare			punct de curgere, Nedeterminat
punctul iniţial de distilare	cca. 160 °C	SR EN ISO 3405	
punctul final de distilare	cca. 370 °C	SR EN ISO 3405	
Punct de inflamabilitate	> 55 °C	EN ISO 2719	
Viteză de evaporare			Nedeterminat
Tranziţie de fază solid/gaz			---
Limită inferioară de explozie	cca. 0,6 %(V)		Date literatura
Limită superioară de explozie	cca. 6,5 %(V)		Date literatura
Presiune de vapori	<= 1 kPa la 37,8 °C	EN 13016-1	
Densitatea vaporilor			Nedeterminat
Densitate	820 - 845 kg/m3 la 15 °C	EN ISO 12185, EN ISO 3675	
Densitate relativă			nu este relevant;
Solubilitate în apă			practic insolubil
solubilitate (solubilităţi)			Solubilitatea în grăsimi: Nedeterminat
Coeficient de partiţie (n-octanol/apă)			nu există date

Temperatură de autoaprindere	>= 200 °C		Date literatura
Temperatura de descompunere			Nedeterminat
Vâscozitate cinematică	2,0 - 4,5 mm2/s la 40 °C	EN ISO 3104	
Vâscozitate dinamică			Nedeterminat
Proprietăţi explozive		Derivaţie din structura chimică	nu este exploziv
Proprietăţi oxidante		Derivaţie din structura chimică	neoxidant

9.2 Alte informaţii

nu există date

SECTIUNEA 10. STABILITATE SI REACTIVITATE

10.1 Reactivitate

Stabil chimic in condiţii normale de depozitare şi manipulare, cu respectarea prevederilor din Secţiunea 7.

10.2 Stabilitate chimică

Stabil chimic in condiţii normale de depozitare şi manipulare, cu respectarea prevederilor din Secţiunea 7.

10.3 Posibilitatea de reacţii periculoase

Reacţii potenţial periculoase : Amestecurile de vapori / aer care prezintă pericol de explozie pot fi prezente, chiar şi în recipiente goale, necurăţate.
Dacă este puternic încălzit: Pericol de ardere spontană
Reacţii cu substanţele oxidante.

10.4 Condiţii de evitat

Condiţii de evitat : A se feri de surse de căldură, flacără deschisă şi alte surse similare de foc.

10.5 Materiale incompatibile

Materiale de evitat : acizi tari şi agenţi oxidanţi;

10.6 Produşi de descompunere periculoşi

Produşi de descompunere periculoşi : Nedeterminat

10.7 Informaţii suplimentare

vapori invizibili, mai grei decât aerul

SECTIUNEA 11. INFORMAŢII TOXICOLOGICE

11.1 Informaţii privind efectele toxicologice

Toxicitate acută

Efect oral acut	:	LD50 şobolan Metodă: OECD 420 Substanţă de test: 68334-30-5 Doză: aprox. 7.600 mg/kg g.c.
Efect acut la inhalare	:	LC50 şobolan Doză: 3,6 mg/l / 4 o Metodă: OECD 403 Substanţă de test: 68334-30-5
Efect acut cutanat	:	LD50 iepure Doză: > 5 ml/kg gc Metodă: OECD 434 Substanţă de test: 68334-30-5 (aprox. >4.300 mg/kg g.c./zi)
Alte efecte acute	:	nu există date
Alte efecte	:	nicio informaţie

Corodarea/iritarea pielii

Iritaţia pielii	:	iepure Rezultat: Iritant pentru piele Metodă: OECD 404 Substanţă de test: 68334-30-5

Lezarea gravă/iritarea ochilor

Iritaţia ochilor	:	iepure Rezultat: nu este iritant Metodă: OECD 405 Substanţă de test:68334-30-5 posibilă iritaţie temporară

Sensibilizarea căilor respiratorii sau a pielii

sensibilizare	:	Metodă: OECD 406 Substanţă de test: 68334-30-5 Nu există informaţii cu privire la posibile efecte de sensibilizare

Mutagenitatea celulelor germinative

Genotoxicitate in vitro	:	testul Ames Rezultat: negativ cu activare metabolica Metodă: Test Ames modificat conform ASTM E 1687 Substanţă de test: 68334-30-5
Genotoxicitate in vivo	:	încercare micronucleară (clastogenicitate) Substanţă de test: 68476-30-2 Metodă: OECD 475 Rezultat: negativ
	:	Test de aberatie cromozomiala Substanţă de test: 64741-44-2 Metodă: OECD 475 Rezultat: negativ
Evaluare toxicologică / Mutagenitatea celulelor germinative	:	Pe baza datelor disponibile, nu este clasificat ca mutagen.

Cancerogenitatea

Efect cancerigen	:	Substanţă de test: 10 distilate medii Metodă: Nedeterminat Studii privind efectele cancerigene la şoareci dermic Rezultat: pozitiv LOAEL Doză: 25 mg/kg/gc/zi cronic şoarece
Evaluare toxicologică / Cancerogenitatea	:	Clasificat în conformitate cu Regulamentul CLP (CE) a UE nr. 1272/2008 la categoria 2 H351

Toxicitate pentru reproducere

Toxicitate pentru reproducere/fertilitate	:	Mod de aplicare: orală; şobolan Substanţă de test: distilate, grele, C18-50 - ramificate, ciclice şi liniare Metodă: US EPA Ghidul de testare a efectelor asupra sănătăţii OPPTS 870.3800 şi OECD 416 NOAEL (F1); Dozã: 1000 mg/kg gc/zi
Toxicitate pentru dezvoltare/teratogenicitate	:	Mod de aplicare: piele; şobolan Substanţă de test: 64741-49-7 Metodă: OECD 414 NOAEL Doză: 125 mg/kg/zi (toxicitate maternală/la dezvoltare)
Evaluare toxicologică / Toxicitate pentru dezvoltare/teratogenicitate Toxicitate pentru reproducere/fertilitate	:	În baza datelor disponibile, nu este clasificat ca fiind toxic pentru dezvoltare sau teratogenic.

Toxicitate asupra unui organ ţintă specific - expunere unică

Toxicitate asupra unui organ ţintă specific - expunere unică	:	Rute de expunere: nu există date

Toxicitate asupra unui organ ţintă specific - expunere repetată

Efecte în cazul expunerii repetate sau de lungă durată	:	Poate provoca leziuni ale organelor (timus, ficat, măduvă osoasă) in caz de expunere prelungită sau repetată.

Pericol prin aspirare

Toxicitate prin aspirare	:	Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii.

Efecte neurologice

Efecte neurologice	:	nu există date
Efecte narcotice	:	Concentraţiile ridicate pot avea efecte narcotice.

Evaluare toxicologică /

Toxicitate la doză repetată	:	NOEL dermic; Doză: 0,5 ml/kg (sistemic); 0,0001 ml/kg (local); Metodă: OECD 410
	:	NOAEC (inhalare) doză: >1,71 mg/l/90d (sistemic); 0,88 mg/l/90 d (local); metodă: OECD 413; substanţă de test: cel mai probabil 68334-30-6

11.2 Informaţii suplimentare

Datele de mai sus sunt pentru componentul principal, CAS-Nr. 68334-30-5
(dacă nu se menţionează altfel)

SECTIUNEA 12. INFORMAŢII ECOLOGICE

12.1 Toxicitatea

Toxicitate acută

Toxicitate acută la peşti	:	LL50 Specii: Oncorhynchus mykiss (pastrav curcubeu) Doză: 65 mg/l Durată de expunere: 96 o Metodă: OECD 203

		NOEL Specii: Oncorhynchus mykiss (pastrav curcubeu) Doză: 10 mg/l Durată de expunere: 96 o Metodă: OECD 203
Toxicitate acută în cazul nevertebratelor acvatice	:	NOEL Specii: Daphnia magna (Purici de apă mari) Doză: 46 mg/l Durată de expunere: 48 o Metodă: OECD 202
Toxicitatea pentru alge şi plantele acvatice	:	ErL50 Specii: Pseudokirchneriella subcapitata Doză: 22 mg/l Durată de expunere: 72 o Metodă: OECD 201
Toxicitate la microorganisme	:	NOEL Specii: Tetrahymena pyriformis Doză: 3.217 mg/l Durată de expunere: 40 o Substanţă de test: motorină de vid, motorina hidrocracată si combustibili distilati Metodă: QSAR
		EL50 Specii: Tetrahymena pyriformis Doză: > 1.000 mg/l Durată de expunere: 40 o Substanţă de test: motorină de vid, motorina hidrocracată si combustibili distilati Metodă: QSAR
Toxicitate pentru organismele edafice	:	nu există date
Toxicitate în cazul plantelor terestre	:	nu există date
Toxicitate asupra altor organisme terestre (care nu sunt mamifere)	:	nu există date

Toxicitate cronică

Toxicitate pentru peşti (Toxicitate cronică)	:	NOEL Specii: Oncorhynchus mykiss (pastrav curcubeu) Doză: 0,083 mg/l Durată de expunere: 14 z Substanţă de test: motorină de vid, motorina hidrocracată si combustibili distilati Metodă: QSAR

Toxicitate la daphnia şi alte nevertebrate acvatice. (Toxicitate cronică)	:	NOEL Specii: Daphnia magna Doză: 0,2 mg/l Durată de expunere: 21 z Substanţă de test: motorină de vid, motorina hidrocracată si combustibili distilati Metodă: (Q)SAR
Acvatică acută	:	EL50: >1000 mg/l/ 40h; NOEL: 3,217 mg/l, nu există criterii de clasificare pentru toxicitate acvatică acută
Acvatică cronică	:	Toxic pentru organismele acvatice, poate provoca efecte adverse pe termen lung asupra mediului acvatic
Date de toxicitate în sol	:	nu există date
Alte organisme relevante din punct de vedere al mediului	:	nu există date

12.2 Persistenţă şi degradabilitate

Persistenţă,Biodegradare	:	Greu biodegradabil.

12.3 Potenţial de bioacumulare

Bioacumulare	:	Nu sunt disponibile date relevante. Potenţial de bioacumulare (Coeficient de partiţie (n-octanol/apă)): nu există date

12.4 Mobilitate în sol

Mobilitate	:	Note: Nu lăsaţi produsul să fie eliberat necontrolat în mediu.
Transport între diferite medii	:	nu există date
Capacitate de eliminare fizico-chimică	:	Acest produs este insolubil în apă şi pluteşte la suprafaţa acesteia. Poate fi separat mecanic, în staţii de tratare a apelor uzate.

12.5 Rezultate ale evaluării PBT şi vPvB

Rezultate ale evaluării PBT şi vPvB	:	Conform informatiilor de pana acum, nu contine compusi care indeplinesc criteriile de PBT sau vPvB.

12.6 Alte efecte adverse

Efecte asupra staţiilor de epurare	:	nicio informaţie
Alte efecte adverse	:	Nu evacuaţi produsul în sistemul de canalizare, cursuri de apă şi pe sol. În caz de accident, contactaţi echipele speciale de intervenţie şi anunţaţi autorităţile locale competente.

12.7 Alte informaţii

Alte informaţii	:	Datele de mai sus sunt pentru componentul principal, CAS-Nr. 68334-30-5 (dacă nu se menţionează altfel)

SECTIUNEA 13. CONSIDERAŢII PRIVIND ELIMINAREA

13.1 Metode de tratare a deşeurilor

Instrucţiuni privind eliminarea deşeului de produs	:	Reziduurile de produs vor fi eliminate conform prevederilor legale.
Instrucţiuni privind eliminarea deşeului de ambalaj	:	În măsura în care produsul a fost livrat în ambalaj, de preferat, ambalajele goale vor fi refolosite sau, dacă nu există această posibilitate, vor fi transportate la un punct de valorificare / eliminare finală a deşeurilor periculoase. Nu sudaţi, lipiţi, perforaţi, tăiaţi sau incineraţi containerele goale, cu excepţia cazului în care au fost curăţate corespunzător.
Codul deşeului conform Catalogului european al deşeurilor în cazul utilizării conform Secţiunii 1:		
Cod deşeu de produs	:	13 07 01* ulei combustibil si combustibil diesel
Cod deşeu de ambalaj	:	15 01 10* ambalaje care conţin reziduuri de substanţe periculoase sau sunt contaminate cu substanţe periculoase

13.2 Informaţii suplimentare

Codul de deşeu depinde de originea deşeului şi, în situaţii individuale, poate diferi de informaţiile de mai sus.

Legislaţia privind eliminarea deşeurilor de produs:
Legea nr 211/2011 privind regimul deseurilor, cu modificarile si completarile ulterioare ;
HG 235/2007 privind gestionarea uleiurilor uzate;
OMAPM nr.756/2004 pentru aprobarea Normativului tehnic privind incinerarea deşeurilor;
HG 349/2005 privind depozitarea deşeurilor, cu modificarile si completarile ulterioare;
HG 856/2002 privind evidenţa gestiunii deşeurilor şi pentru aprobarea listei cuprinzând deşeurile, inclusiv deşeurile periculoase, cu modificarile si completarile ulterioare;
HG 1061/2008 privind transportul deşeurilor periculoase şi nepericuloase pe teritoriul României.

Legislaţia pentru deşeurile de ambalaje:
Ordinul nr. 794/2012 privind procedura de raportare a datelor referitoare la ambalaje si deseuri de ambalaje;
Legea nr. 249/2015 privind modalitatea de gestionare a ambalajelor şi deşeurilor de ambalaje, cu modificările si completările ulterioare.

SECTIUNEA 14. INFORMATII REFERITOARE LA TRANSPORT



Transport rutier (ADR)

14.1	**Nr. ONU**	:	1202
14.2	**Denumirea corectă ONU pentru expediţie**	:	CARBURANT DIESEL
14.3	**Clasa (clasele) de pericol pentru transport**	:	3
14.4	**Grupa de ambalare**	:	III
14.5	**Pericole pentru mediul înconjurător**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.

Alte informaţii

Număr de marcare a pericolului	:	30
Etichete ADR/RID	:	3
Cod de clasificare	:	F1
Cod de restricţionare a accesului în tunel	:	(D/E)
Observaţii	:	Model etichetă de pericole nr. 3, Marcaj peşte şi copac pentru materiale periculoase pentru mediu, Dispoziţie specială 640L

Transport feroviar (RID)

14.1	**Nr. ONU**	:	1202
14.2	**Denumirea corectă ONU pentru expediţie**	:	CARBURANT DIESEL
14.3	**Clasa (clasele) de pericol pentru transport**	:	3
14.4	**Grupa de ambalare**	:	III
14.5	**Pericole pentru mediul înconjurător**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.

Alte informaţii

Număr de marcare a pericolului	:	30
Etichete ADR/RID	:	3
Cod de clasificare	:	F1
Observaţii	:	Model etichetă de pericole nr. 3, Marcaj peşte şi copac pentru materiale periculoase pentru mediu, Dispoziţie specială 640L

Navigaţie interioară cu barje-cisternă (ADN)

14.1	**Nr. ONU**	:	1202
14.2	**Denumirea corectă ONU pentru expediţie**	:	CARBURANT DIESEL
14.3	**Clasa (clasele) de pericol pentru transport**	:	3
14.4	**Grupa de ambalare**	:	III
14.5	**Pericole pentru mediul înconjurător**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.

Alte informaţii

Observaţii	:	(N2+F)

Transport maritim (IMDG)

14.1	**Nr. ONU**	:	1202
14.2	**Denumirea corectă ONU pentru expediţie**	:	DIESEL FUEL
14.3	**Clasa (clasele) de pericol pentru transport**	:	3
14.4	**Grupa de ambalare**	:	III
14.5	**Poluant marin**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.
14.7	**Transport în vrac, în conformitate cu anexa II la Conventia MARPOL si cu Codul IBC**	:	MARPOL Anexa 1

Alte informaţii

Etichete ale Organizaţiei Internaţionale de Aviaţie Civilă (ICAO)	:	3
Ghid de Urgenţă (EmS)	:	F-E, S-E

Transport aerian (ICAO-TI/IATA-DGR)

14.1	**Nr. ONU**	:	1202

14.2	**Denumirea corectă ONU pentru expediţie**	:	DIESEL FUEL
14.3	**Clasa (clasele) de pericol pentru transport**	:	3
14.4	**Grupa de ambalare**	:	III
14.5	**Pericole pentru mediul înconjurător**	:	da
14.6	**Precauţii speciale pentru utilizatori**	:	A se vedea secţiunea 7 şi referinţele menţionate acolo.

Alte informaţii

Etichete ale Organizaţiei Internaţionale de Aviaţie Civilă (ICAO)	:	3

Informaţii suplimentare

La cerere, producătorul vă oferă informaţii suplimentare referitoare la clasificarea produsului pentru transport.

SECTIUNEA 15. INFORMAŢII DE REGLEMENTARE

15.1 Regulamente/legislaţie în domeniul securităţii, sănătăţii şi al mediului specifice (specifică) pentru substanţa sau amestecul în cauză

Dispoziţii comunitare privind protecţia sănătăţii şi a mediului

Directiva 2010/75/UE privind emisiile industriale (prevenirea şi controlul integrat al poluării) - Capitolul V - Dispoziţii speciale aplicabile instalaţiilor şi activităţilor care utilizează solvenţi organici.	:	Produsul nu face obiectul directivei COV dacă se utilizează în scopurile prevăzute (vezi secţiunea 1.2).
Regulamentul (CE) nr. 1907/2006, Anexa XVII	:	nr. 3 - Substanţe sau amestecuri lichide considerate periculoase conform definiţiilor din Directiva 67/548/CEE şi Directiva 1999/45/CE;
Directiva 2012/18/UE a Parlamentului European şi a Consiliului din 4 iulie 2012 privind controlul pericolelor de accidente majore care implică substanţe periculoase, de modificare şi ulterior de abrogare a Directivei 96/82/CE a Consiliului (SEVESO III).	:	Anexă I, Partea 1: P5c LICHIDE INFLAMABILE E2 Periculoase pentru mediul acvatic în categoria cronic 2. Anexa I Partea 2: 34. Produse petroliere şi carburanţi alternativi. (c) distilate de petrol, exclusiv fracţia grea (inclusiv motorină, combustibil gazos pentru încălzirea locuinţelor şi amestecurile).
Directiva 92/85/CEE a Consiliului din 19 octombrie 1992 privind introducerea de măsuri pentru promovarea îmbunătătirii securitătii si a sănătătii la locul de muncă în cazul lucrătoarelor gravide, care au născut de curând sau care alăptează [a zecea directivă specială în sensul articolului 16 alineatul (1) din Directiva 89/391/CEE]	:	Produsul face obiectul restrictiilor stabilite prin legislatia nationala de transpunere a Directivei.

Directiva 94/33/CE a Consiliului din 22 iunie 1994 privind protectia tinerilor la locul de muncă	:	Produsul face obiectul restrictiilor stabilite prin legislatia nationala de transpunere a Directivei.

Alte reglementări:
Regulamentul (CE) nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a Directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1907/2006, cu modificarile si completarile ulterioare.
Legea 360/2003 privind regimul substanţelor şi preparatelor chimice periculoase, cu modificările şi completările ulterioare;
HG 1093/2006 privind stabilirea cerinţelor minime de securitate şi sănătate pentru protecţia lucrătorilor împotriva riscurilor legate de expunerea la agenţi cancerigeni sau mutageni la locul de muncă, cu modificarile si completarile ulterioare;
Regulamentul (CE) nr.1907/2006 privind înregistrarea, evaluarea, autorizarea si restrictionarea substantelor chimice (REACH), cu modificarile si completarile ulterioare.
HG 477/2009 privind stabilirea sanctiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) nr. 1.907/2006 al Parlamentului European şi al Consiliului privind inregistrarea, evaluarea, autorizarea şi restrictionarea substantelor chimice (REACH), de infiintare a Agentiei Europene pentru Produse Chimice, de modificare a Directivei 1999/45/CE şi de abrogare a Regulamentului (CEE) nr. 793/93 al Consiliului şi a Regulamentului (CE) nr. 1.488/94 al Comisiei, precum şi a Directivei 76/769/CEE a Consiliului şi a directivelor 91/155/CEE, 93/67/CEE, 93/105/CE şi 2000/21/CE ale Comisiei
HG 398 /2010 privind stabilirea unor măsuri pentru aplicarea prevederilor Regulamentului (CE) nr. 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substantelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1.999/45/CE, precum şi de modificare a Regulamentului (CE) nr. 1.907/2006
Legea 319/2006 privind Securitatea şi sănătatea în muncă, cu modificările şi completările ulterioare;
HG 1218/2006 privind stabilirea cerinţelor minime de securitate şi sănătate în muncă pentru asigurarea protecţiei lucrătorilor împotriva riscurilor legate de prezenţa agenţilor chimici, cu modificarile si completarile ulterioare;
OUG 122/2010 privind stabilirea sancţiunilor aplicabile pentru încălcarea prevederilor Regulamentului (CE) 1.272/2008 al Parlamentului European şi al Consiliului din 16 decembrie 2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor, de modificare şi de abrogare a directivelor 67/548/CEE şi 1999/45/CE, precum şi de modificare a Regulamentului (CE) 1.907/2006, cu modificările şi completările ulterioare.
Legea nr.59/2016 privind controlul asupra pericolelor de accident major în care sunt implicate substanţe periculoase.
OUG 96/2003 privind protectia maternitatii la locul de munca, cu modificarile si completarile ulterioare.
HG 600/2007 privind protecţia tinerilor la locul de muncă, cu modificarile si completarile ulterioare
Hotarârea nr. 893/2006 pentru modificarea Hotarârii Guvernului nr. 1.593/2002 privind aprobarea Planului national de pregatire, raspuns si cooperare în caz de poluare marina cu hidrocarburi.

15.2 Evaluarea securităţii chimice

S-a efectuat evaluarea privind siguranţa chimică pentru componenta principală, în cadrul procesului de înregistrare REACH. S-a confirmat faptul, că în caz de controlare a componentei principale ca substanţă primară se poate asigura controlul corespunzător şi pentru celelalte componente ale amestecului. În consecinţă, în Anexă sunt listate scenariile de expunere elaborate pentru componenta principală. CAS-NR.: 68334-30-5

SECTIUNEA 16. ALTE INFORMAŢII

Textul integral al frazelor de pericol H menţionate la Secţiunile 2 şi 3

Acute Tox.	Toxicitate acută
Aquatic Chronic	Toxicitate acvatică cronică
Asp. Tox.	Pericol de aspirare
Carc.	Carcinogenicitate
Flam. Liq.	Lichide inflamabile
Skin Irrit.	Corodarea/Iritarea pielii
STOT RE	Toxicitate asupra unui organ ţintă specific - expunere repetată

STOT SE	Toxicitate asupra unui organ ţintă specific - o singură expunere
H225	Lichid şi vapori foarte inflamabili.
H226	Lichid şi vapori inflamabili.
H301	Toxic în caz de înghiţire.
H304	Poate fi mortal în caz de înghiţire şi de pătrundere în căile respiratorii.
H311	Toxic în contact cu pielea.
H315	Provoacă iritarea pielii.
H331	Toxic în caz de inhalare.
H332	Nociv în caz de inhalare.
H351	Susceptibil de a provoca cancer.
H370	Provoacă leziuni ale organelor (nerv optic (nervus opticus), sistem nervos central).
H373	Poate provoca leziuni ale organelor (timus, ficat, măduvă osoasă) in caz de expunere prelungită sau repetată.
H411	Toxic pentru viaţa acvatică având efecte de lungă durată.

Alte informaţii

Alte Informaţii :	Actualizările fata de versiunea principală precedentă (nemarcate precum este mentionat mai jos) au fost efectuate în: Secţiunea 1 şi Anexă Secţiunea 4 - 8 Secţiunile 11 - 16
	Listă de acronime: (Q)SAR = relatie cantitativă structură-activitate ADN = Acordul european privind transportul international al mărfurilor periculoase pe căile navigabile interioare ADR = Acordul european privind transportul rutier international al mărfurilor periculoase ATE = Estimare a toxicităţii acute BCF = Factor de bioconcentrare CAS# = Numărul Chemical Abstracts Service CMR = Cancerigen, mutagen sau toxic pentru reproducere CSA = Evaluarea securităţii chimice CSR = Raport de securitate chimică DMEL = Nivel calculat cu efect minim DNEL = Nivel calculat fără efect EC50 = concentraţie efectivă 50% - concentraţia cu efect a substanţei asociată cu un raspuns de 50% ECHA = Agentia Europeană pentru Produse Chimice Număr CE = Număr EINECS si ELINCS (a se vedea, de asemenea, EINECS si ELINCS) EINECS = Inventarul european al substantelor chimice existente introduse pe piată EL50 = Nivel efectiv 50% ELINCS = Lista europeană a substantelor chimice notificate EPA = Agentia pentru Protectia Mediului (SUA) GES = Scenariu generic de expunere IATA = Asociatia Internatională pentru Transport Aerian IC50 = concentraţie de inhibare 50% ICAO-TI = Instrucţiuni tehnice privind siguranţa transportului aerian al bunurilor periculoase IMDG = Codul maritim international pentru mărfuri periculoase Kow = coeficient de partitie octanol / apă Koc = coeficient de partitie carbon organic din sol / apa LC50 = Concentratie letală până la 50 % din populatia-test LD50 = Doză letală până la 50 % din populatia-test (doză letală medie) LL50 = Incarcare letala 50% LOAEC = Concentratia cea mai scazuta cu efect advers observat

	LOAEL = Nivelul cel mai scazut cu efect advers observat NOAEC = Concentratie fara efect advers observat NOAEL = Nivel fara efect advers observat NOEC = Concentratie fara efect observat NOEL = Nivel fara efect observat OECD = Organizatia pentru cooperare si dezvoltare economică OSHA = Organizatia europeana pentru securitate si sanatate la locul de munca PBT = Substantă persistentă, bioacumulativă si toxică PEC = Concentratie predictibilă în mediu PNEC = Concentratie predictibilă fără efect RID = Regulamentele privind transportul international feroviar al mărfurilor periculoase RMM = Masuri de management al riscului SVHC = Substante care prezintă motive de îngrijorare deosebite TRA = Evaluare de risc directionata TLV = valoare limita maxima STEL = Limita de expunere de durata scurta TWA = Medie ponderata in timp UVCB = substanţă cu compoziţie necunoscută sau variabilă, produse de reacţie complexă sau materiale biologice vPvB = (substanta) foarte persistenta si foarte bioacumulativa LGK = Clasa de depozitare TRGS = Reguli tehnice pentru substante periculoase (Germania)

Surse de informaţii	:	Raport de securitate chimica (CSR)
		Clasificarea si procedura utilizate pentru realizarea clasificării pentru amestecuri în conformitate cu Regulamentul (CE) nr. 1272/2008 [CLP]: Flam. Liq. 3 H226 - Pe baza datelor colectate în timpul testului Acute Tox. 4 H332 - Metoda de calcul Skin Irrit. 2 H315 - Metoda de calcul Asp. Tox. 1 H304 - Pe baza datelor colectate în timpul testului Carc. 2 H351 - Metoda de calcul STOT RE 2 H373 - Metoda de calcul Aquatic Chronic 2 H411 - Metoda de calcul

Linia verticală (|) la capătul din stânga şi/sau textul de culoare roşie indică modificarea faţă de versiunea principală anterioară.
Aceste date sunt conforme informaţiilor şi experienţei de care dispunem la data menţionată a prelucrării fişei şi se referă exclusiv la produsul care poate fi identificat cu claritate în baza codului de produs, în starea de livrare a acestuia. În cazul utilizării diferite faţă de cele menţionate la secţiunea 1, sau dacă produsul este amestecat cu alte materiale ori este alterat în cursul procesului de producţie, există posibilitatea ca declaraţiile specificate în fişa cu date de securitate să nu fie valabile fără restricţii sau să nu mai fie valabile deloc. Informaţiile nu pot fi aplicate asupra altor produse cu denumiri identice sau similare. Această fişă nu scuteşte în niciun caz utilizatorul de cunoaşterea şi aplicarea tuturor textelor care reglementează activitatea sa.
Acest produs nu trebuie utilizat pentru altă aplicaţie sau aplicaţii decât cele specificate, fără consultarea prealabilă a furnizorului.
Este obligaţia utilizatorului să evalueze şi să folosească acest produs în siguranţă şi conform cu toate legile şi reglementările aplicabile.
Puteţi contacta furnizorul pentru a vă asigura că acest document este cea mai nouă versiune.
Modificarea acestui document este strict interzisă.

Anexă

Scenariile de expunere pentru cele mai frecvente utilizari sunt enumerate mai jos. Dacă este necesar, se pot furniza la cerere şi alte scenarii de expunere.

1. Titlu scurt al Scenariului de expunere: 01a - Distribuţia substanţei/materialului

Stadiul ciclului de viaţă	:	**IS:** Utilizare în spaţii industriale
Domeniu de utilizare	:	nu se aplică
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC4:** Producţie chimică în cadrul căreia există posibilitatea de expunere **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC9:** Transferul de substanţă sau amestecuri în recipiente mici (linie de umplere dedicată, inclusiv cu cântărire) **PROC15:** Utilizare ca reactiv de laborator
Categorie de eliberare în mediu	:	**ERC4:** Utilizarea unui aditiv de prelucrare nereactiv într-un spatiu industrial (fără includere în sau pe un articol) **ERC5:** Utilizare într-un spațiu industrial care conduce la includerea în sau pe un articol **ERC6a:** Utilizarea unui intermediar **ERC6b:** Utilizarea unui aditiv de prelucrare reactiv într-un spațiu industrial (fără includere în sau pe un articol) **ERC6c:** Utilizarea unui monomer în procese de polimerizare într-un spațiu industrial (cu sau fără includere în sau pe un articol) **ERC6d:** Utilizarea de regulatori de proces reactivi în procese de polimerizare într-un spaţiu industrial (cu sau fără includere în sau pe un articol) **ERC7:** Utilizarea unui fluid funcțional într-un spațiu industrial
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 1.1b.v1
Procese, sarcini, activităţi acoperite	:	Încărcarea în vrac (incluzând încărcarea în nave maritime/barje, vagoane de cale ferată/autocisterne şi containere intermediare de transport în vrac) şi reambalarea (incluzând canistre şi recipiente mici) a substanţei/materialului, inclusiv eşantionarea, depozitarea, descărcarea şi activităţile de laborator asociate. Nu include emisiile din timpul transportului.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC4, Utilizarea unui aditiv de prelucrare nereactiv într-un spatiu industrial (fără includere în sau pe un articol)

ERC5, Utilizare într-un spațiu industrial care conduce la includerea în sau pe un articol

ERC6a, Utilizarea unui intermediar

ERC6b, Utilizarea unui aditiv de prelucrare reactiv într-un spațiu industrial (fără includere în sau pe un articol)

ERC6c, Utilizarea unui monomer în procese de polimerizare într-un spațiu industrial (cu sau fără includere în sau pe un articol)

ERC6d, Utilizarea de regulatori de proces reactivi în procese de polimerizare într-un spaţiu industrial (cu sau fără includere în sau pe un articol)

ERC7, Utilizarea unui fluid funcțional într-un spațiu industrial

Cantitatea folosită

Tonaj pentru utilizare regională	:	31 10E6 t/an
Tonaj anual la amplasament (tone/an)	:	61.000
Tonaj zilnic maxim la amplasament (kg/zi)	:	200.000
Fracţiune de tonaj UE utilizată în regiune	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	0,002
Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
MSafe (tonaj maxim permis la amplasament)	:	670.000 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	300 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,1 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %
Factor de emisie sau de eliberare/degajare: Sol	:	0,001 %
Note	:	Toţi factorii de eliberare/degajare se referă la eliberarea/degajarea iniţială, inainte de aplicarea măsurilor de management al riscurilor (RMM). Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală.

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepărtare/eliminare de: 90,0 %
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de eliminare: 83,3 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 0 %

Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de toxicitatea secundară a elementului apă dulce. Dacă se evacuează la staţia de tratare a apelor menajere uzate, nu este necesară tratarea apelor reziduale de la amplasament.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	94,9 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	94,9 %
Tratarea nămolului	:	Măsuri organizaţionale pentru prevenirea/limitarea degajărilor de la amplasament: A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Valorificarea şi reciclarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1 : Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.

PROC2 : Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente

PROC3 : Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente

PROC4 : Producţie chimică în cadrul căreia există posibilitatea de expunere

PROC8a : Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate

PROC8b : Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate

PROC9 : Transferul de substanţă sau amestecuri în recipiente mici (linie de umplere dedicată, inclusiv cu cântărire)

PROC15 : Utilizare ca reactiv de laborator

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid, cu potenţial de generare a aerosolilor
Presiune de vapori	:	Presiunea vaporilor este dată la temperatură şi presiune standard (conditii STP). < 5 hPa
Note	:	Presupune implementarea unui standard de bază adecvat privind igiena profesională., Presupune utilizarea la nu mai mult de 20°C peste temperatura ambiantă, dacă nu este menţionat altfel.

Frecvenţa şi durata folosirii

Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel) : 8 o

Condiţii tehnice şi măsuri

CS135 Măsuri generale aplicabile tuturor activităţilor
Controlaţi orice potenţială expunere folosind măsuri precum sisteme izolate sau închise, unităţi proiectate şi întreţinute corespunzător şi un standard adecvat de ventilaţie generală. Goliţi sistemele şi liniile de transfer înainte de a afecta etanşeitatea. Goliţi şi spălaţi echipamentele, acolo unde este posibil, înainte de efectuarea lucrărilor de întreţinere.
G19 Măsuri generale (substanţe iritante pentru piele)
Nu au fost identificate alte măsuri specifice.
CS15 Expuneri generale (sisteme închise).
Manipulaţi substanţa în cadrul unui sistem închis.
CS16 Expuneri generale (sisteme deschise).
Nu au fost identificate alte măsuri specifice.
CS2 Eşantionare a procesului
Nu au fost identificate alte măsuri specifice.
CS36 Activităţi de laborator.
Nu au fost identificate alte măsuri specifice.
CS501 Încărcare şi descărcare închisă în vrac.
Manipulaţi substanţa în cadrul unui sistem închis.
CS503 Încărcare şi descărcare deschisă în vrac
Nu au fost identificate alte măsuri specifice.
CS6 Umplere a canistrelor şi a recipientelor mici
Nu au fost identificate alte măsuri specifice.
CS39 Curăţare şi întreţinere echipamente.
Goliţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.
CS67 Depozitare.
Manipulaţi substanţa în cadrul unui sistem închis.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

CS135 Măsuri generale aplicabile tuturor activităţilor
Acolo unde există potenţial de expunere: Asiguraţi-vă că personalul relevant este informat cu privire la potenţialul expunerii şi cunoaşte acţiunile de bază pentru reducerea la minimum a expunerilor; monitorizaţi eficacitatea măsurilor de control; asiguraţi examinări medicale regulate, după cum este necesar; identificaţi şi implementaţi acţiuni corective.
G19 Măsuri generale (substanţe iritante pentru piele)
Asiguraţi instruirea de bază a angajaţilor astfel încât să prevină / minimizeze expunerile şi să raporteze orice efecte asupra pielii care ar putea să se producă.
CS15 Expuneri generale (sisteme închise).
Nu au fost identificate alte măsuri specifice.
CS16 Expuneri generale (sisteme deschise).
Nu au fost identificate alte măsuri specifice.
CS2 Eşantionare a procesului
Nu au fost identificate alte măsuri specifice.
CS36 Activităţi de laborator.
Nu au fost identificate alte măsuri specifice.
CS501 Încărcare şi descărcare închisă în vrac.
Nu au fost identificate alte măsuri specifice.
CS503 Încărcare şi descărcare deschisă în vrac
Nu au fost identificate alte măsuri specifice.
CS6 Umplere a canistrelor şi a recipientelor mici
Nu au fost identificate alte măsuri specifice.
CS39 Curăţare şi întreţinere echipamente.
Nu au fost identificate alte măsuri specifice.
CS67 Depozitare.
Nu au fost identificate alte măsuri specifice.

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

CS135 Măsuri generale aplicabile tuturor activităţilor
Când există posibilitatea de expunere: asiguraţi-vă că este disponibil echipament de protecţie adecvat, curăţaţi scurgerile de produs şi eliminaţi deşeurile in conformitate cu cerinţele legale.
G19 Măsuri generale (substanţe iritante pentru piele)
Evitaţi contactul direct al pielii cu produsul. Identificaţi suprafeţele potenţiale de contact indirect cu pielea Purtaţi mănuşi (testate conform EN374) dacă este posibil un contact al mâinilor cu substanţa/materialul. Curăţaţi contaminarea/substanţele/materialele scurse/vărsate de îndată ce acestea apar. Îndepărtaţi imediat prin spălare contaminarea pielii.
CS15 Expuneri generale (sisteme închise).
Nu au fost identificate alte măsuri specifice.
CS16 Expuneri generale (sisteme deschise).
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS2 Eşantionare a procesului
Nu au fost identificate alte măsuri specifice.
CS36 Activităţi de laborator.
Nu au fost identificate alte măsuri specifice.
CS501 Încărcare şi descărcare închisă în vrac.
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS503 Încărcare şi descărcare deschisă în vrac
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS6 Umplere a canistrelor şi a recipientelor mici
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS39 Curăţare şi întreţinere echipamente.
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374) şi efectuaţi instruirea la nivel de bază a angajatului.
CS67 Depozitare.
Nu au fost identificate alte măsuri specifice.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:
Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL)/fără efect derivat (DNEL) atunci când sunt implementate măsurile de management al riscurilor (RMM)/condiţiile operaţionale (OC) descrise la secţiunea 2. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efectele iritante asupra pielii. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.
4.2. Mediu înconjurător:
Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).
Rata maximă de caracterizare a riscului pentru emisiile de aer RCRair
0,024
Rata maximă de caracterizare a riscurilor pentru emisiile de ape reziduale RCRwater
0,2

1. Titlu scurt al Scenariului de expunere: 02 - Formularea & (re)ambalarea substanţelor/materialelor şi amestecurilor

Stadiul ciclului de viaţă	:	**F:** Formulare sau reambalare
Domeniu de utilizare	:	nu se aplică
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC4:** Producţie chimică în cadrul căreia există posibilitatea de expunere **PROC5:** Amestecare sau combinare în procese discontinue **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC9:** Transferul de substanţă sau amestecuri în recipiente mici (linie de umplere dedicată, inclusiv cu cântărire) **PROC14:** Tabletare, comprimare, extrudare, peletizare, granulare **PROC15:** Utilizare ca reactiv de laborator
Categorie de eliberare în mediu	:	**ERC2:** Formulare în amestec
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 2.2.v1
Procese, sarcini, activităţi acoperite	:	Formularea, ambalarea şi reambalarea substanţei şi a amestecurilor acesteia în loturi sau prin operaţiuni continue, inclusiv depozitarea, transferurile de materiale, amestecarea, tabletarea, comprimarea, peletizarea, extrudarea, ambalarea la scară mare şi mică, întreţinerea, eşantionarea şi activităţile de laborator asociate.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC2, Formulare în amestec

Cantitatea folosită

Tonaj pentru utilizare regională	:	30 10E6 t/an
Tonaj anual la amplasament (tone/an)	:	30.000
Tonaj zilnic maxim la amplasament (kg/zi)	:	100.000
Fracţiune de tonaj UE utilizată în regiune	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	0,001
Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
MSafe (tonaj maxim permis la amplasament)	:	100.000 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	300 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	1,00 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,02 %
Factor de emisie sau de eliberare/degajare: Sol	:	0,01 %
Note	:	Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală. Fracţie degajată din proces în aer (după măsuri tipice de management al riscurilor la amplasament în conformitate cu cerinţele Directivei UE privind emisiile de solvenţi) Factorii de eliberare/degajare in apă si sol se referă la eliberarea/degajarea iniţială, inainte de aplicarea măsurilor de management al riscurilor (RMM)

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepărtare/eliminare de: 0 %
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de îndepărtare/eliminare de >= (%):: 96,7 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 35,1 %
Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de sedimentul din apa dulce. Preveniţi descărcarea substanţei nedizolvate în sau recuperaţi-o din apele reziduale de la amplasament. Dacă se evacuează la staţia de tratare a apelor menajere uzate, este necesară tratarea suplimentara a apelor reziduale de la amplasament.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	94,9 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	96,7 %
Tratarea nămolului	:	Măsuri organizaţionale pentru prevenirea/limitarea degajărilor de la amplasament: A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Valorificarea şi reciclarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1	:	**Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.**
PROC2	:	**Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC3	:	**Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC4	:	**Producţie chimică în cadrul căreia există posibilitatea de expunere**
PROC5	:	**Amestecare sau combinare în procese discontinue**
PROC8a	:	**Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate**
PROC8b	:	**Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate**
PROC9	:	**Transferul de substanţă sau amestecuri în recipiente mici (linie de umplere dedicată, inclusiv cu cântărire)**
PROC14	:	**Tabletare, comprimare, extrudare, peletizare, granulare**
PROC15	:	**Utilizare ca reactiv de laborator**

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid, cu potenţial de generare a aerosolilor
Presiune de vapori	:	Presiunea vaporilor este dată la temperatură şi presiune standard (conditii STP). < 5 hPa
Note	:	Presupune implementarea unui standard de bază adecvat privind igiena profesională., Presupune utilizarea la nu mai mult de 20°C peste temperatura ambiantă, dacă nu este menţionat altfel.

Frecvenţa şi durata folosirii

Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel)	:	8 o

Condiţii tehnice şi măsuri

CS135 Măsuri generale aplicabile tuturor activităţilor
Controlaţi orice potenţială expunere folosind măsuri precum sisteme izolate sau închise, unităţi proiectate şi întreţinute corespunzător şi un standard adecvat de ventilaţie generală. Goliţi sistemele şi liniile de transfer înainte de a afecta etanşeitatea. Goliţi şi spălaţi echipamentele, acolo unde este posibil, înainte de efectuarea lucrărilor de întreţinere.

CS136 Procese discontinue la temperaturi ridicate
Asiguraţi ventilaţie cu extragerea aerului la punctele unde apar emisii.

G19 Măsuri generale (substanţe iritante pentru piele)
Nu au fost identificate măsuri specifice.

CS15 Expuneri generale (sisteme închise).
Manipulaţi substanţa în cadrul unui sistem închis.

CS16 Expuneri generale (sisteme deschise).
Nu au fost identificate alte măsuri specifice.

CS2 Eşantionare a procesului
Nu au fost identificate alte măsuri specifice.

CS8 Transferuri în canistre/în loturi
Nu au fost identificate măsuri specifice.

CS14 Transferuri în vrac.
Manipulaţi substanţa în cadrul unui sistem închis.

CS30 Operaţiuni de amestecare (sisteme deschise).
Asiguraţi ventilaţie cu extragerea aerului la punctele unde apar emisii.

CS100 Producţia sau prepararea articolelor prin tabletare, comprimare, extrudare sau peletizare
Nu au fost identificate alte măsuri specifice.

CS6 Umplere a canistrelor şi a recipientelor mici
Nu au fost identificate alte măsuri specifice.

CS36 Activităţi de laborator.
Nu au fost identificate alte măsuri specifice.

CS39 Curăţare şi întreţinere echipamente.
Goliţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.

CS67 Depozitare.
Depozitaţi substanţa în cadrul unui sistem închis.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

CS135 Măsuri generale aplicabile tuturor activităţilor
Acolo unde există potenţial de expunere: Asiguraţi-vă că personalul relevant este informat cu privire la potenţialul expunerii şi cunoaşte acţiunile de bază pentru reducerea la minimum a expunerilor; monitorizaţi eficacitatea măsurilor de control; asiguraţi examinări medicale regulate, după cum este necesar; identificaţi şi implementaţi acţiuni corective.

CS136 Procese discontinue la temperaturi ridicate
Nu au fost identificate alte măsuri specifice.

G19 Măsuri generale (substanţe iritante pentru piele)
Asiguraţi instruirea de bază a angajaţilor astfel încât să prevină / minimizeze expunerile şi să raporteze orice efecte asupra pielii care ar putea să se producă.

CS15 Expuneri generale (sisteme închise).
Nu au fost identificate alte măsuri specifice.

CS16 Expuneri generale (sisteme deschise).
Nu au fost identificate alte măsuri specifice.

CS2 Eşantionare a procesului
Nu au fost identificate alte măsuri specifice.

CS8 Transferuri în canistre/în loturi
Utilizaţi pompe pentru canistre sau turnaţi cu atenţie din container/recipient.

CS14 Transferuri în vrac.
Nu au fost identificate măsuri specifice.

CS30 Operaţiuni de amestecare (sisteme deschise).
Nu au fost identificate alte măsuri specifice.

CS100 Producţia sau prepararea articolelor prin tabletare, comprimare, extrudare sau peletizare
Nu au fost identificate alte măsuri specifice.

CS6 Umplere a canistrelor şi a recipientelor mici
Nu au fost identificate alte măsuri specifice.

CS36 Activităţi de laborator.
Nu au fost identificate alte măsuri specifice.

CS39 Curăţare şi întreţinere echipamente.
Nu au fost identificate alte măsuri specifice.

CS67 Depozitare.
Nu au fost identificate alte măsuri specifice.

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

CS135 Măsuri generale aplicabile tuturor activităţilor
Când există posibilitatea de expunere: asiguraţi-vă că este disponibil echipament de protecţie adecvat, curăţaţi scurgerile de produs şi eliminaţi deşeurile in conformitate cu cerinţele legale.
CS136 Procese discontinue la temperaturi ridicate
Nu au fost identificate alte măsuri specifice.
G19 Măsuri generale (substanţe iritante pentru piele)
Evitaţi contactul direct al pielii cu produsul. Identificaţi suprafeţele potenţiale de contact indirect cu pielea Purtaţi mănuşi (testate conform EN374) dacă este posibil un contact al mâinilor cu substanţa/materialul. Curăţaţi contaminarea/substanţele/materialele scurse/vărsate de îndată ce acestea apar. Îndepărtaţi imediat prin spălare contaminarea pielii.
CS15 Expuneri generale (sisteme închise).
Nu au fost identificate alte măsuri specifice.
CS16 Expuneri generale (sisteme deschise).
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS2 Eşantionare a procesului
Nu au fost identificate alte măsuri specifice.
CS8 Transferuri în canistre/în loturi
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374) şi efectuaţi instruirea la nivel de bază a angajatului.
CS14 Transferuri în vrac.
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS30 Operaţiuni de amestecare (sisteme deschise).
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374) şi efectuaţi instruirea la nivel de bază a angajatului.
CS100 Producţia sau prepararea articolelor prin tabletare, comprimare, extrudare sau peletizare
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS6 Umplere a canistrelor şi a recipientelor mici
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS36 Activităţi de laborator.
Nu au fost identificate alte măsuri specifice.
CS39 Curăţare şi întreţinere echipamente.
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374) şi efectuaţi instruirea la nivel de bază a angajatului.
CS67 Depozitare.
Nu au fost identificate alte măsuri specifice.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:
Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL)/fără efect derivat (DNEL) atunci când sunt implementate măsurile de management al riscurilor (RMM)/condiţiile operaţionale (OC) descrise la secţiunea 2. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efectele iritante asupra pielii. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.
4.2. Mediu înconjurător:

Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).
Rata maximă de caracterizare a riscului pentru emisiile de aer RCRair
0,027
Rata maximă de caracterizare a riscurilor pentru emisiile de ape reziduale RCRwater
0,91

1. Titlu scurt al Scenariului de expunere: 12a - Utilizare drept combustibil sau carburant: Industrial

Stadiul ciclului de viață	:	**IS:** Utilizare în spații industriale
Domeniu de utilizare	:	nu se aplică
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC16:** Utilizarea combustibililor
Categorie de eliberare în mediu	:	**ERC7:** Utilizarea unui fluid funcțional într-un spațiu industrial
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 7.12a.v1
Procese, sarcini, activităţi acoperite	:	Acoperă utilizarea ca şi / ori în combustibil sau carburant (sau aditivi sau componenţi de aditivi pentru combustibil sau carburant) şi include activităţi asociate cu transferul, utilizarea, întreţinerea echipamentelor şi manipularea deşeurilor acestora.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC7, Utilizarea unui fluid funcțional într-un spațiu industrial

Cantitatea folosită

Tonaj pentru utilizare regională	:	3,7 10E6 t/an
Tonaj anual la amplasament	:	1,5 10E6 t/an
Tonaj zilnic maxim la amplasament (kg/zi)	:	5 10E6
Fracţiune de tonaj UE utilizată în regiune	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	0,4
Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
MSafe (tonaj maxim permis la amplasament)	:	5 10E6 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	300 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10

Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,500 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %
Factor de emisie sau de eliberare/degajare: Sol	:	0 %
Note	:	Toţi factorii de eliberare/degajare se referă la eliberarea/degajarea iniţială, inainte de aplicarea măsurilor de management al riscurilor (RMM). Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală.

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepărtare/eliminare de: 95,0 %
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de îndepărtare/eliminare de >= (%):: 98,7 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 74,1 %
Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de sedimentul din apa dulce. Dacă se evacuează la staţia de tratare a apelor menajere uzate, este necesară tratarea suplimentara a apelor reziduale de la amplasament.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	94,9 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	98,7 %
Tratarea nămolului	:	Măsuri organizaţionale pentru prevenirea/limitarea degajărilor de la amplasament: A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Emisiile rezultate din ardere sunt limitate prin măsuri obligatorii de control al emisiilor de evacuare., Emisiile rezultate din ardere sunt avute în vedere în cadrul evaluării regionale a impactului., Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Această substanţă este consumată în timpul utilizării şi nu sunt generate deşeuri ale acesteia.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1 : Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.

PROC2	:	**Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC3	:	**Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente**
PROC8a	:	**Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate**
PROC8b	:	**Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate**
PROC16	:	**Utilizarea combustibililor**

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid, cu potenţial de generare a aerosolilor
Presiune de vapori	:	Presiunea vaporilor este dată la temperatură şi presiune standard (conditii STP). < 5 hPa
Note	:	Presupune implementarea unui standard de bază adecvat privind igiena profesională., Presupune utilizarea la nu mai mult de 20°C peste temperatura ambiantă, dacă nu este menţionat altfel.

Frecvenţa şi durata folosirii

Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel)	:	8 o

Condiţii tehnice şi măsuri

CS135 Măsuri generale aplicabile tuturor activităţilor
Controlaţi orice potenţială expunere folosind măsuri precum sisteme izolate sau închise, unităţi proiectate şi întreţinute corespunzător şi un standard adecvat de ventilaţie generală. Goliţi sistemele şi liniile de transfer înainte de a afecta etanşeitatea. Goliţi şi spălaţi echipamentele, acolo unde este posibil, înainte de efectuarea lucrărilor de întreţinere.
G19 Măsuri generale (substanţe iritante pentru piele)
Nu au fost identificate alte măsuri specifice.
CS14 Transferuri în vrac.
Nu au fost identificate alte măsuri specifice.
CS8 Transferuri în canistre/în loturi
Nu au fost identificate alte măsuri specifice.
GEST_12I Utilizare drept combustibil/carburant, CS107 (sisteme închise)
Nu au fost identificate alte măsuri specifice.
CS39 Curăţare şi întreţinere echipamente
Goliţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.
CS67 Depozitare.
Manipulaţi substanţa în cadrul unui sistem închis.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

CS135 Măsuri generale aplicabile tuturor activităţilor
Acolo unde există potenţial de expunere: Asiguraţi-vă că personalul relevant este informat cu privire la potenţialul expunerii şi cunoaşte acţiunile de bază pentru reducerea la minimum a expunerilor; monitorizaţi eficacitatea măsurilor de control; asiguraţi examinări medicale regulate, după cum este necesar; identificaţi şi implementaţi acţiuni corective.
G19 Măsuri generale (substanţe iritante pentru piele)
Asiguraţi instruirea de bază a angajaţilor astfel încât să prevină / minimizeze expunerile şi să raporteze orice efecte asupra pielii care ar putea să se producă.
CS14 Transferuri în vrac.
Nu au fost identificate alte măsuri specifice.
CS8 Transferuri în canistre/în loturi
Nu au fost identificate alte măsuri specifice.
GEST_12l Utilizare drept combustibil/carburant, CS107 (sisteme închise)
Nu au fost identificate alte măsuri specifice.
CS39 Curăţare şi întreţinere echipamente
Nu au fost identificate alte măsuri specifice.
CS67 Depozitare.
Nu au fost identificate alte măsuri specifice.

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

CS135 Măsuri generale aplicabile tuturor activităţilor
Când există posibilitatea de expunere: asiguraţi-vă că este disponibil echipament de protecţie adecvat, curăţaţi scurgerile de produs şi eliminaţi deşeurile in conformitate cu cerinţele legale.
G19 Măsuri generale (substanţe iritante pentru piele)
Evitaţi contactul direct al pielii cu produsul. Identificaţi suprafeţele potenţiale de contact indirect cu pielea Purtaţi mănuşi (testate conform EN374) dacă este posibil un contact al mâinilor cu substanţa/materialul. Curăţaţi contaminarea/substanţele/materialele scurse/vărsate de îndată ce acestea apar. Îndepărtaţi imediat prin spălare contaminarea pielii.
CS14 Transferuri în vrac.
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS8 Transferuri în canistre/în loturi
Purtaţi mănuşi corespunzătoare testate conform EN374.
GEST_12l Utilizare drept combustibil/carburant, CS107 (sisteme închise)
Nu au fost identificate alte măsuri specifice.
CS39 Curăţare şi întreţinere echipamente
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374)şi efectuaţi instruirea la nivel de bază a angajaţilor.
CS67 Depozitare.
Nu au fost identificate alte măsuri specifice.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:

Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL)/fără efect derivat (DNEL) atunci când sunt implementate măsurile de management al riscurilor (RMM)/condiţiile operaţionale (OC) descrise la secţiunea 2. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efectele iritante asupra pielii. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.
4.2. Mediu înconjurător:
Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).
Rata maximă de caracterizare a riscului pentru emisiile de aer RCRair
0,028
Rata maximă de caracterizare a riscurilor pentru emisiile de ape reziduale RCRwater
0,91

1. Titlu scurt al Scenariului de expunere: 12b - Utilizare drept combustibil sau carburant: Profesional

Stadiul ciclului de viață	:	**PW:** Utilizare larg răspândită de către lucrători profesioniști
Domeniu de utilizare	:	nu se aplică
Categorie proces	:	**PROC1:** Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente. **PROC2:** Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC3:** Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente **PROC8a:** Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate **PROC8b:** Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate **PROC16:** Utilizarea combustibililor
Categorie de eliberare în mediu	:	**ERC9a:** Utilizare larg răspândită a unui fluid funcțional (la interior)
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 9.12b.v1 Scenariul de expunere este, de asemenea, aplicabil ERC9b: Utilizare larg răspândită a unui fluid funcțional (la exterior)
Procese, sarcini, activităţi acoperite	:	Acoperă utilizarea ca şi / ori în combustibil sau carburant (sau aditivi sau componenţi de aditivi pentru combustibil sau carburant) şi include activităţi asociate cu transferul, utilizarea, întreţinerea echipamentelor şi manipularea deşeurilor acestora.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC9a, Utilizare larg răspândită a unui fluid funcțional (la interior)
ERC9b, Utilizare larg răspândită a unui fluid funcțional (la exterior)

Cantitatea folosită

Tonaj pentru utilizare regională	:	6,9 10E6 t/an
Tonaj anual la amplasament (tone/an)	:	3.400
Tonaj zilnic maxim la amplasament (kg/zi)	:	9.400
Fracţiune de tonaj UE utilizată în regiune	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	0,0005
Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
MSafe (tonaj maxim permis la amplasament)	:	69.000 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	365 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,1 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %
Factor de emisie sau de eliberare/degajare: Sol	:	0,001 %
Note	:	Toţi factorii de eliberare/degajare se referă la eliberare/degajare din proces de utilizare cu dispersie largă. Factorii de eliberare/degajare pentru aer şi sol se referă exclusiv la utilizarea regională. Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală.

Condiţii tehnice şi măsuri / măsuri organizaţionale

Aer	:	Trataţi emisiile în aer pentru a asigura o eficienţă tipică de îndepartare/eliminare de: nu se aplică:
apă	:	Trataţi apele reziduale de la amplasament (înainte de evacuarea în apa receptoare) pentru a asigura eficienţa necesară de îndepărtare/eliminare de >= (%):: 62,9 %
apă	:	Dacă se evacuează la staţia de tratare a apelor menajere uzate, asiguraţi eficienţa necesară de îndepărtare/eliminare din apele reziduale de la amplasament de >= (%): 0 %
Note	:	Practicile obişnuite variază de la un amplasament la altul, astfel încât se utilizează estimările minime ale eliberărilor/degajărilor/emisiilor din cadrul proceselor. Riscul asociat cu expunerea mediului este cauzat de elementul apă dulce. Dacă se evacuează la staţia de tratare a apelor menajere uzate, nu este necesară tratarea apelor reziduale de la amplasament.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	94,9 %
Îndepărtarea totală din apele reziduale conform masurilor de la amplasament şi din afara acestuia	:	94,9 %
Tratarea nămolului	:	Măsuri organizaţionale pentru prevenirea/limitarea degajărilor de la amplasament: A nu se aplica nămoluri industriale pe/în solurile naturale. Nămolurile trebuie incinerate, izolate sau valorificate.
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Emisiile rezultate din ardere sunt limitate prin măsuri obligatorii de control al emisiilor de evacuare., Emisiile rezultate din ardere sunt avute în vedere în cadrul evaluării regionale a impactului., Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Această substanţă este consumată în timpul utilizării şi nu sunt generate deşeuri ale acesteia.

2.2 Scenariu de contribuţie pentru controlul expunerii lucrătorului pentru:

PROC1 : Producţie chimică sau de rafinărie în proces închis fără probabilitate de expunere sau în procese cu condiţii de izolare echivalente.

PROC2 : Productie chimică sau de rafinărie în proces închis continuu cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente

PROC3 : Fabricare sau formulare în industria chimică în procese discontinue închise cu expunere ocazională controlată sau în procese cu conditii de izolare echivalente

PROC8a : Transfer de substanţe sau amestecuri (încărcare şi descărcare) în unităţi nespecializate

PROC8b : Transfer de substanţe sau amestecuri (încărcare si descărcare) în unităţi specializate

PROC16 : Utilizarea combustibililor

Caracteristici produs

Concentraţia substanţei în amestec/articol		Acoperă procentul de substanţă în produs de până la 100% (cu excepţia cazului în care se menţionează altfel).
Formă fizică (în momentul folosirii)	:	Lichid, cu potenţial de generare a aerosolilor
Presiune de vapori	:	Presiunea vaporilor este dată la temperatură şi presiune standard (conditii STP). < 5 hPa
Note	:	Presupune implementarea unui standard de bază adecvat privind igiena profesională., Presupune utilizarea la nu mai mult de 20°C peste temperatura ambiantă, dacă nu este menţionat altfel.

Frecvenţa şi durata folosirii

Acoperă expunerile zilnice de până la 8 ore (cu excepţia cazului în care se menţionează altfel)	:	8 o

Condiţii tehnice şi măsuri

CS135 Măsuri generale aplicabile tuturor activităţilor
Controlaţi orice potenţială expunere folosind măsuri precum sisteme izolate sau închise, unităţi proiectate şi întreţinute corespunzător şi un standard adecvat de ventilaţie generală. Goliţi sistemele şi liniile de transfer înainte de a afecta etanşeitatea. Goliţi şi spălaţi echipamentele, acolo unde este posibil, înainte de efectuarea lucrărilor de întreţinere.
G19 Măsuri generale (substanţe iritante pentru piele)
Nu au fost identificate alte măsuri specifice.
CS14 Transferuri în vrac.
Nu au fost identificate alte măsuri specifice.
CS8 Transferuri în canistre/în loturi
Utilizaţi pompe pentru canistre sau turnaţi cu atenţie din container.
CS507 Activităţi de realimentare cu combustibil/carburant
Nu au fost identificate alte măsuri specifice.
GEST_12I Utilizare drept combustibil/carburant, CS107 (sisteme închise)
Asiguraţi un standard adecvat de ventilaţie generală (nu mai puţin de 3 - 5 schimburi de aer pe oră) sau Asiguraţi-vă că operaţiunea este efectuată în spaţiul exterior (în aer liber).
CS39 Curăţare şi întreţinere echipamente.
Goliţi sistemul înainte de deschiderea sau întreţinerea echipamentelor.
CS67 Depozitare.
Depozitaţi substanţa în cadrul unui sistem închis.

Măsuri organizaţionale pentru prevenirea/limitarea eliminării, dispersiei si expunerii:

CS135 Măsuri generale aplicabile tuturor activităţilor
Acolo unde există potenţial de expunere: Asiguraţi-vă că personalul relevant este informat cu privire la potenţialul expunerii şi cunoaşte acţiunile de bază pentru reducerea la minimum a expunerilor; monitorizaţi eficacitatea măsurilor de control; asiguraţi examinări medicale regulate, după cum este necesar; identificaţi şi implementaţi acţiuni corective.
G19 Măsuri generale (substanţe iritante pentru piele)
Asiguraţi instruirea de bază a angajaţilor astfel încât să prevină / minimizeze expunerile şi să raporteze orice efecte asupra pielii care ar putea să se producă.
CS14 Transferuri în vrac.
Nu au fost identificate alte măsuri specifice.
CS8 Transferuri în canistre/în loturi
Nu au fost identificate alte măsuri specifice.
CS507 Activităţi de realimentare cu combustibil/carburant
Nu au fost identificate alte măsuri specifice.
GEST_12I Utilizare drept combustibil/carburant, CS107 (sisteme închise)
Nu au fost identificate alte măsuri specifice.
CS39 Curăţare şi întreţinere echipamente.
Nu au fost identificate alte măsuri specifice.
CS67 Depozitare.
Nu au fost identificate alte măsuri specifice.

Condiţii şi măsuri legate de protecţie personală, igienă şi evaluarea stării de sănătate

CS135 Măsuri generale aplicabile tuturor activităţilor
Când există posibilitatea de expunere: asiguraţi-vă că este disponibil echipament de protecţie adecvat, curăţaţi scurgerile de produs şi eliminaţi deşeurile in conformitate cu cerinţele legale.
G19 Măsuri generale (substanţe iritante pentru piele)
Evitaţi contactul direct al pielii cu produsul. Identificaţi suprafeţele potenţiale de contact indirect cu pielea Purtaţi mănuşi (testate conform EN374) dacă este posibil un contact al mâinilor cu substanţa/materialul. Curăţaţi contaminarea/substanţele/materialele scurse/vărsate de îndată ce acestea apar. Îndepărtaţi imediat prin spălare contaminarea pielii.
CS14 Transferuri în vrac.
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS8 Transferuri în canistre/în loturi
Purtaţi mănuşi corespunzătoare testate conform EN374.
CS507 Activităţi de realimentare cu combustibil/carburant
Purtaţi mănuşi corespunzătoare testate conform EN374.
GEST_12I Utilizare drept combustibil/carburant, CS107 (sisteme închise)
Nu au fost identificate alte măsuri specifice.
CS39 Curăţare şi întreţinere echipamente.
Purtaţi mănuşi rezistente la produse chimice (testate conform EN374) şi efectuaţi instruirea la nivel de bază a angajatului.
CS67 Depozitare.
Nu au fost identificate alte măsuri specifice.

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru estimarea expunerii la locul de muncă, cu excepţia cazului în care se indică altfel.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:

Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL) / fără efect derivat (DNEL) atunci când sunt implementate Măsurile de Management al Riscului (RMM)/Condiţiile Operaţionale (OC) descrise la Secţiunea 2. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente. Datele disponibile referitoare la pericole nu permit derivarea unui nivel DNEL pentru efectele iritante asupra pielii. Datele disponibile referitoare la pericole nu justifică necesitatea stabilirii unui nivel DNEL pentru alte efecte asupra sănătăţii. Măsurile de management al riscurilor se bazează pe caracterizarea calitativă a riscurilor.
4.2. Mediu înconjurător:
Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului. Eficienţa necesară de evacuare pentru apele reziduale poate fi atinsă cu ajutorul tehnologiilor de la amplasament/din afara amplasamentului, fie separat, fie în combinaţie. Eficienţa de eliminare necesară pentru aer poate fi realizată folosind tehnologiile de la amplasament, în mod separat sau în combinaţie. Detalii suplimentare privind tehnologiile de scalare şi control sunt furnizate în fişa de date SpERC (http://cefic.org/en/reach-for-industries-libraries.html).
Rata maximă de caracterizare a riscului pentru emisiile de aer RCRair
0,024
Rata maximă de caracterizare a riscurilor pentru emisiile de ape reziduale RCRwater
0,077

1. Titlu scurt al Scenariului de expunere: 12c - Utilizare drept combustibil sau carburant - Consumatori

Stadiul ciclului de viață	:	**C:** Utilizare de către consumatori
Domeniu de utilizare	:	nu se aplică
Categorie produs	:	**PC13:** Combustibili/carburanţi
Categorie de eliberare în mediu	:	**ERC9a:** Utilizare larg răspândită a unui fluid funcțional (la interior) **ERC9b:** Utilizare larg răspândită a unui fluid funcțional (la exterior)
Alte informaţii	:	Categoria Eliberări specifice în mediu (Special Environmental Release Category, SpERC) ESVOC SpERC 9.12c.v1
Procese, sarcini, activităţi acoperite	:	Acoperă utilizarea de către consumatori a combustibililor/carburanţilor.

2.1 Scenariu de contribuţie pentru controlul expunerii ambientale pentru:

ERC9a, Utilizare larg răspândită a unui fluid funcțional (la interior)

ERC9b, Utilizare larg răspândită a unui fluid funcțional (la exterior)

Caracteristici produs

Cantitatea folosită

Tonaj pentru utilizare regională	:	19 10E6 t/an
Tonaj anual la amplasament (tone/an)	:	9.500
Tonaj zilnic maxim la amplasament (kg/zi)	:	26.000
Fracţiune de tonaj UE utilizată în regiune	:	0,1
Fracţiune din tonajul regional utilizat la nivel local:	:	0,0005
Note	:	Substanţa este un produs UVCB complex. Preponderent hidrofoba.
MSafe (tonaj maxim permis la amplasament)	:	180.000 kg/zi
Note	:	Tonaj maxim permis la amplasament (MSafe) pe baza degajării în urma îndepărtării totale prin tratarea apelor reziduale

Frecvenţa şi durata folosirii

Expunere continuă	:	365 zile de emisii (zile/an), Degajare continuă.

Factori de mediu neinfluenţaţi de managementul riscurilor

Factor de diluare locală în apă dulce	:	10
Factor de diluare locală în apă de mare	:	100

Alte condiţii de operare date care afectează expunerea mediului

Factor de emisie sau de eliberare/degajare: Aer	:	0,1 %
Factor de emisie sau de eliberare/degajare: Apă	:	0,001 %

Factor de emisie sau de eliberare/degajare:	:	0,001 %
Sol		
Note	:	Toţi factorii de eliberare/degajare se referă la eliberare/degajare din proces de utilizare cu dispersie largă. Factorii de eliberare/degajare pentru aer şi sol se referă exclusiv la utilizarea regională. Eliberarea/degajarea în apă înseamnă eliberarea/degajarea în apa reziduală.

Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale.

Tipul staţiei de tratare a apelor reziduale	:	Staţie de tratare a apelor menajere uzate
Debitul efluentului in staţia de tratare a apelor reziduale	:	2.000 m3/d
Eficienţă (Staţie de tratare a apelor reziduale)	:	94,9 %
Note	:	Condiţii şi măsuri asociate staţiei de tratare a apelor urbane reziduale:, Nu se aplică deoarece nu are loc degajare în apele reziduale.

Condiţii şi măsuri aferente tratării externe a deşeurilor in vederea eliminării

Tratarea deşeurilor	:	Emisiile rezultate din ardere sunt limitate prin măsuri obligatorii de control al emisiilor de evacuare., Emisiile rezultate din ardere sunt avute în vedere în cadrul evaluării regionale a impactului., Tratarea şi eliminarea externă a deşeurilor trebuie să respecte reglementările locale şi/sau naţionale în vigoare.

Condiţii şi măsuri aferente valorificării externe a deşeurilor

Metode de valorificare	:	Această substanţă este consumată în timpul utilizării şi nu sunt generate deşeuri ale acesteia.

2.2 Scenariu de contribuţie pentru controlul expunerii consumatorului pentru:

PC13 : Combustibili/carburanţi

Caracteristici produs

Concentraţia substanţei în amestec/articol	:	Dacă nu este menţionat altfel, se referă la concentraţii de până la 100%
Formă fizică (în momentul folosirii)	:	Lichid
Presiune de vapori	:	Presiune de vapori > 0,1 hPa
Note	:	Dacă nu se specifică altfel, acoperă cantităţile de utilizare de până la 37500 g [ConsOC2]; acoperă suprafaţa de contact cu pielea de până la 420 cm2 [ConsOC5] Dacă nu este menţionat altfel, se referă la frecvenţa de utilizare de până la 0,143 ori/zi (ConsOC4); Se referă la expunerea de până la 2 ore/caz (ConsOC14); Dacă nu este menţionat altfel, presupune utilizarea la temperatura ambiantă. Presupune utilizarea într-o cameră de 20 m3. Presupune utilizarea cu ventilaţie obişnuită.

Alte condiţii de exploatare date care afectează expunerea consumatorilor

Activitatea (în aer liber/în spaţii interioare)	:	PC13:Carburanţi--Lichid - subcategorii adăugate: Alimentare cu carburanţi a autovehiculelor
Volum încapere	:	100 m3
Note	:	Dacă nu este menţionat altfel, se referă la concentraţii până la 100%., Se referă la utilizarea de până la 52 zile/an., Se referă la utilizarea de până la o dată/zi de utilizare., Se referă la suprafeţe de contact cu pielea de până la 210 cm2., Pentru fiecare caz de utilizare, se referă la cantităţi utilizate de până la 37500 g., Se referă la utilizarea în aer liber., Acoperă utilizarea într-o încăpere cu dimensiunea de 100m3; , Pentru fiecare caz de utilizare, se referă la expunerea de până la 0,05 ore/caz.
Activitatea (în aer liber/în spaţii interioare)	:	PC13:Combustibili--Lichid -: combustibil pentru încălzirea locuinţelor
Volum încapere	:	100 m3

Note	:	Dacă nu este menţionat altfel, se referă la concentraţii până la 100%., Se referă la utilizarea de până la 120 zile/an., Se referă la utilizarea de până la o dată/zi de utilizare., Se referă la suprafeţe de contact cu pielea de până la 210.00 cm2., Pentru fiecare caz de utilizare, se referă la cantităţi utilizate de până la 1500 g., Acoperă utilizarea în condiţii de ventilare casnică tipică., Acoperă utilizarea într-o încăpere cu dimensiunea de 20m3; , Pentru fiecare caz de utilizare, se referă la expunerea de până la 0,03 ore/caz.
Activitatea (în aer liber/în spaţii interioare)	:	PC13:Carburanţi--Lichid - subcategorii adăugate: Echipament pentru grădină - Utilizare
Volum încapere	:	100 m3
Note	:	Dacă nu este menţionat altfel, se referă la concentraţii până la 100%., Se referă la utilizarea de până la 26 zile/an., Se referă la utilizarea de până la o dată/zi de utilizare., Pentru fiecare caz de utilizare, se referă la cantităţi utilizate până la 750 g., Se referă la utilizarea în aer liber., Acoperă utilizarea într-o încăpere cu dimensiunea de 100m3; , Pentru fiecare caz de utilizare, se referă la expunerea de până la 2 ore/caz.
Activitatea (în aer liber/în spaţii interioare)	:	PC13:Carburanţi--Lichid (subcategorii adăugate): Echipament pentru grădină - Alimentare cu carburanţi
Volum încapere	:	34 m3
Note	:	Dacă nu este menţionat altfel, se referă la concentraţii până la 100%., Se referă la utilizarea de până la 26 zile/an., Se referă la utilizarea de până la o dată/zi de utilizare., Se referă la suprafeţe de contact cu pielea de până la 420 cm2., Pentru fiecare caz de utilizare, se referă la cantităţi utilizate până la 750 g., Se referă la utilizarea într-un garaj pentru o singură maşină (34 m3) cu folosirea ventilaţiei obişnuite., Acoperă utilizarea într-o încăpere cu dimensiunea de 34m3; , Pentru fiecare caz de utilizare, se referă la expunerea de până la 0,03 ore/caz.

Condiţii şi măsuri legate de protecţia consumatorului (ex. sfaturi de comportament, protecţie personală şi igienă)

Mod de aplicare	:	PC13:Carburanţi--Lichid - subcategorii adăugate: Alimentare cu carburanţi a autovehiculelor
Note	:	Nu sunt identificate măsuri specifice de management al riscurilor (RMM) în afara acelor condiţii operaţionale (OC) stabilite
Mod de aplicare	:	PC13:Combustibili--Lichid -: combustibil pentru încălzirea locuinţelor
Note	:	Nu sunt identificate măsuri specifice de management al riscurilor (RMM) în afara acelor condiţii operaţionale (OC) stabilite
Mod de aplicare	:	PC13:Carburanţi--Lichid - subcategorii adăugate: Echipament pentru grădină - Utilizare
Note	:	Nu sunt identificate măsuri specifice de management al riscurilor (RMM) în afara acelor condiţii operaţionale (OC) stabilite
Mod de aplicare	:	PC13:Carburanţi--Lichid (subcategorii adăugate): Echipament pentru grădină - Alimentare cu carburanţi
Note	:	Nu sunt identificate măsuri specifice de management al riscurilor (RMM) în afara acelor condiţii operaţionale (OC) stabilite

3. Estimarea expunerii şi referinţa la sursa acesteia

3.1. Sănătate:
Instrumentul ECETOC TRA a fost utilizat pentru a estima expunerile consumatorilor, în conformitate cu conţinutul raportului ECETOC nr. 107 şi cu Capitolul R15 din IR&CSA TGD. În situaţiile în care determinanţii expunerii diferă de aceste surse, atunci aceştia sunt indicaţi.
3.2. Mediu înconjurător:
Metoda Blocurilor de Hidrocarburi (HBM) a fost folosită pentru calcularea expunerii mediului înconjurător conform modelului Petrorisk.

4. Ghid pentru utilizatorul din aval în vederea evaluării faptului, dacă lucrează în interiorul limitelor stabilite prin scenariul de expunere

4.1. Sănătate:
Nu se preconizează că expunerile prognozate vor depăşi nivelul cu efect minim (DMEL) / fără efect derivat (DNEL) atunci când sunt implementate Măsurile de Management al Riscului (RMM)/Condiţiile Operaţionale (OC) descrise la Secţiunea 2. În cazul în care sunt adoptate alte măsuri de management al riscurilor/condiţii operaţionale, utilizatorii trebuie să se asigure că riscurile sunt gestionate la niveluri cel puţin echivalente.
4.2. Mediu înconjurător:
Recomandările se bazează pe condiţiile de operare presupuse care pot să nu fie aplicabile tuturor amplasamentelor; astfel, poate fi necesară scalarea pentru a determina măsurile adecvate de management al riscurilor specifice amplasamentului.
Rata maximă de caracterizare a riscului pentru emisiile de aer RCRair
0,024
Rata maximă de caracterizare a riscurilor pentru emisiile de ape reziduale RCRwater
0,088

Fișa cu date de securitate

în conformitate cu Regulamentul (CE) nr. 1907/2006 (REACH)

Ferrocid 8583

număr articol: 48202

Numărul versiunii: Vers. 8.0
Înlocuiește versiunea din: 21.01.2021 (Vers. 7)

Revizuire: 31.03.2021

SECȚIUNEA 1: Identificarea substanței/amestecului și a societății/întreprinderii

1.1 Element de identificare a produsului

Denumirea comercială **Ferrocid 8583**

Număr articol **48202**

Identificatori (Uniunea Europeană)

Numărul de înregistrare (REACH) nerelevante (amestec)

1.2 Utilizări relevante identificate ale substanței sau amestecului și utilizări contraindicate

Utilizări relevante identificate

Biocid
Produse chimice de tratare a apei
Agent de condiționare

1.3 Detalii privind furnizorul fișei cu date de securitate

Kurita Europe GmbH
Theodor-Heuss-Anlage 2
DE-68165 Mannheim
Germania

Telefon: + 49 621 1218-3000
e-mail: KEG_PS@kurita-water.com
Website: www.kurita.eu

Producător

Furnizor a produsului						
Țara	*Denumirea*	*Strada*	*Codul poștal/ localitatea*	*Telefon*	*Telefax*	*Website*
România	ACC Waterchem SRL	Bd. Decabal 10	RO 030967 Bucharest	Cristian Cojocaru +40 741 23 59 68		www.kurita.eu

1.4 Număr de telefon care poate fi apelat în caz de urgență

Numar telefon urgenta: 021.318.36.06 (Disponibil in intervalul orar 8.00 – 16.00), Birou RSI si Informare Toxicologica din cadrul INSP, Str. D.Leonte Nr.1-3,Bucuresti, Romania
National Environmental Protection Agency (NEPA): +40 (0) 213118620
Emergency CONTACT (24-Hour-Number):
Europe: GBK GmbH +49 (0)6132-84463
International: GBK/Infotrac ID 108808: (001) 352 323 3500
Assistance in mother tongue.

SECȚIUNEA 2: Identificarea pericolelor

2.1 Clasificarea substanței sau a amestecului

Clasificare conform Regulamentului (CE) nr. 1272/2008 (CLP)

Clasa de pericol	*Clasa și categoria de pericol*	*Categorie*	*Fraza de pericol*
corodarea/iritarea pielii	Skin Corr. 1C	1C	H314
lezarea gravă a ochilor/iritarea ochilor	Eye Dam. 1	1	H318
sensibilizarea pielii	Skin Sens. 1A	1A	H317
periculos pentru mediul acvatic - pericol acut	Aquatic Acute 1	1	H400
periculos pentru mediul acvatic - pericol cronic	Aquatic Chronic 1	1	H410

Pentru textul complet al abrevierilor: a se vedea SECŢIUNEA 16.

Cele mai importante efecte adverse fizico-chimice, asupra sănătății umane și asupra mediului

Corodarea pielii produce leziunea ireversibilă a pielii; anume, necroza vizibilă trecând de epidermă şi ajungând până la dermă. Vărsarea și apa de stingere a incendiului pot cauza poluarea cursurilor de apă.

2.2 Elemente pentru etichetă

Etichetarea în conformitate cu Regulamentul (CE) nr. 1272/2008 (CLP)

Cuvânt de avertizare pericol

Pictograme

GHS05, GHS07, GHS09



Frazele de pericol

H314	Provoacă arsuri grave ale pielii şi lezarea ochilor.
H317	Poate provoca o reacţie alergică a pielii.
H410	Foarte toxic pentru mediul acvatic cu efecte pe termen lung.

Frazele de precauţie

P261	Evitaţi să inspiraţi ceaţa/vaporii/spray-ul.
P273	Evitaţi dispersarea în mediu.
P280	A se purta mănuși de protecție/îmbrăcăminte de protecție/echipament de protecție a ochilor/echipament de protecție a feței/protecție a auzului/....
P301+P330+P331	ÎN CAZ DE ÎNGHIŢIRE: clătiţi gura. NU provocaţi voma.
P303+P361+P353	ÎN CAZ DE CONTACT CU PIELEA (sau cu părul): Scoateţi imediat toată îmbrăcămintea contaminată. Clătiţi pielea cu apă [sau faceţi duş].
P304+P340	ÎN CAZ DE INHALARE: transportaţi persoana la aer liber și menţineţi-o într-o poziţie confortabilă pentru respiraţie.
P305+P351+P338	ÎN CAZ DE CONTACT CU OCHII: Clătiţi cu atenţie cu apă timp de mai multe minute. Scoateţi lentilele de contact, dacă este cazul și dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi.
P310	Sunaţi imediat la un CENTRU DE INFORMARE TOXICOLOGICĂ/un medic.
P501	Aruncaţi conţinutul/recipientul în conformitate cu reglementările locale/regionale/naţionale/internaţionale.

Informații suplimentare privind pericolele

EUH071	Corosiv pentru căile respiratorii.

Ingrediente periculoase pentru etichetare masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)

2.3 Alte pericole

Rezultatele evaluării PBT și vPvB

Acest amestec nu conţine nicio substanţă evaluată a fi PBT sau vPvB.

SECȚIUNEA 3: Compoziție/informații privind componenții

3.2 Amestecuri

Ingrediente periculoase

Denumirea substanței	*Element de identificare*	*% Masă*	*Clasificare conf. 1272/2008/CE*	*Limite de conc. specifice*	*Factori M*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	Nr. CAS 55965-84-9 Nr. index 613-167-00-5	1 – < 3	Acute Tox. 3 / H301 Acute Tox. 2 / H310 Acute Tox. 2 / H330 Skin Corr. 1C / H314 Eye Dam. 1 / H318 Skin Sens. 1A / H317 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410 EUH071	Skin Corr. 1C; H314: C ≥ 0,6 % Skin Irrit. 2; H315: 0,06 % ≤ C < 0,6 % Eye Dam. 1; H318: C ≥ 0,6 % Eye Irrit. 2; H319: 0,06 % ≤ C < 0,6 % Skin Sens. 1A; H317: C ≥ 0,0015 %	factor M (acut) = 100.0 factor M (cronic) = 100.0
copper dinitrate	Nr. CAS 3251-23-8 Nr. CE 221-838-5 Nr. Înreg. REACH 01-2119969290-34-xxxx	< 1	Ox. Sol. 2 / H272 Skin Corr. 1B / H314 Eye Dam. 1 / H318 Aquatic Acute 1 / H400 Aquatic Chronic 2 / H411		factor M (acut) = 10.0

Pentru textul complet al abrevierilor: a se vedea SECŢIUNEA 16.

SECȚIUNEA 4: Măsuri de prim ajutor

4.1 Descrierea măsurilor de prim ajutor

Observaţii generale

Nu lăsați persoana afectată nesupravegheată. Evacuați victima din zona de pericol. Mențineți persoana afectată la căldură, nemișcată și acoperită. Scoateţi imediat toată îmbrăcămintea contaminată. În caz de pierdere a cunoștinței, așezați persoana în poziție laterală stabilă. Nu-i administrați niciodată ceva pe gură.

După inhalare

În caz de iritare a tractului respirator, consultați un medic.

După contactul cu pielea

Scoateți îmbrăcămintea contaminată. După contactul cu pielea, scoateţi imediat toată îmbrăcămintea contaminată şi spălaţi imediat cu multă apa. Sunați imediat la un medic.

După contactul cu ochii

Clătiți din abundență cu apă proaspătă și curată, timp de cel puțin 10 minute, ținând pleoapele depărtate. Scoateţi lentilele de contact, dacă este cazul şi dacă acest lucru se poate face cu uşurinţă. Continuaţi să clătiţi. Sunați un medic imediat.

După ingerare

Se clătește gura cu apă (numai dacă persoana este conștientă). NU provocaţi voma. Sunați imediat la un medic.

4.2 Cele mai importante simptome și efecte, atât acute, cât și întârziate

Provoacă arsuri grave ale pielii şi lezarea ochilor. Ingestion causes pain, burns, abdominal pain, possible general impact (shock).

4.3 Indicații privind orice fel de asistență medicală imediată și tratamentele speciale necesare

No specific antidot is known. Treatment of the symptoms.

SECȚIUNEA 5: Măsuri de combatere a incendiilor

5.1 Mijloace de stingere a incendiilor

Mijloace de stingere corespunzătoare

Pulverizare de apă, Spumă rezistentă la alcool, Praf de extinctor, Dioxid de carbon (CO2)

Mijloace de stingere necorespunzătoare

Jet continuu de apă

5.2 Pericole speciale cauzate de substanța sau amestecul în cauză

Produși de combustie periculoși

Oxizi de azot (NOx), Monoxid de carbon (CO), Dioxid de carbon (CO2), Oxizi de sulf (SOx)

5.3 Recomandări destinate pompierilor

Mențineți containerele reci prin pulverizarea de apă. A nu se inspira fumul în caz de incendiu şi/sau explozie. Nu lăsați apa folosită la stingerea incendiului să pătrundă încanalizări sau în cursurile de apă. Colectați separat apa contaminată folosită la stingerea incendiilor. Stingeţi incendiul de la o distanţă rezonabilă, luând măsuri normale de precauţie.

Echipamentul de protecție special destinat pompierilor

Echipament de protecţie chimică, Folosiți aparate de protecție respiratorie adecvate

SECȚIUNEA 6: Măsuri de luat în caz de dispersie accidentală

6.1 Precauții personale, echipament de protecție și proceduri de urgență

Pentru personalul care nu este implicat în situații de urgență

Evacuați persoana într-un loc sigur.

Pentru personalul care intervine în situații de urgență

Purtați aparat de respirat dacă sunteți expus la vapori/praf/spray/gaze. Utilizaţi echipamentul de protecţie individuală conform cerinţelor.

6.2 Precauții pentru mediul înconjurător

Păstrați la distanță față de canalele de scurgere și apele de suprafață sau subterane. Rețineți apa de spălare contaminată și eliminați-o. Chemicals generally shouldn't reach surface water.

6.3 Metode și material pentru izolarea incendiilor și pentru curățenie

Sfaturi privind modul de izolare a unei cantități vărsate

Acoperirea canalelor de evacuare

Sfaturi privind modul de curățare a unei cantități vărsate

Ștergeți cu material absorbant (de ex. cârpă, fleece). Colectaţi scurgerile de produs: Material absorbant (de exemplu, nisip, diatomit, liant acid, liant universal, rumeguș etc.)

Tehnica adecvată de izolare

Utilizarea materialelor absorbante.

Alte informații referitoare la vărsări și dispersii

Puneți în containere adecvate pentru eliminare. Ventilați zona afectată.

6.4 Trimitere la alte secțiuni

Secțiunea 7: Manipularea și depozitarea. A se vedea și secțiunile 8 și 13 din fișa cu date de securitate.

SECȚIUNEA 7: Manipularea și depozitarea

7.1 Precauții pentru manipularea în condiții de securitate

Recomandări

Măsurile de prevenire a incendiilor, precum și a generării de aerosoli și praf

Nu sunt necesare masuri speciale.

Sfaturi privind igiena generală la locul de muncă

Spălați mâinile după utilizare. Nu mâncați, beți sau fumați în zonele de lucru. Îndepărtați îmbrăcămintea contaminată și echipamentul de protecție înainte de a pătrunde în zonele în care se ia masa. Nu țineți niciodată mâncarea sau băutura în apropiere de produsele chimice. Nu puneți niciodată produsele chimice în recipiente care sunt folosite în mod obișnuit pentru mâncare sau băutură. A se păstra departe de hrană, băuturi şi hrană pentru animale.

7.2 Condiții de depozitare în condiții de securitate, inclusiv eventuale incompatibilități

Proiectarea specială a spațiilor de depozitare sau a rezervoarelor

Păstraţi ambalajul închis ermetic şi într-un loc bine ventilat.

Temperatura de depozitare

Temperatura de depozitare recomandată: <40 °C.

Compatibilitățile privind ambalarea

Păstraţi numai în recipientul original. Pot fi utilizate exclusiv ambalajele omologate (de ex. conf. ADR).

7.3 Utilizare finală specifică (utilizări finale specifice)

Biocid. Produse chimice de tratare a apei. Agent de condiționare.

SECȚIUNEA 8: Controale ale expunerii/protecția personală

8.1 Parametri de control

Valorile limită naționale

Valori limită de expunere profesională (Limite de expunere la locul de muncă)

nu este relevant

8.2 Controale ale expunerii

Controale tehnice corespunzătoare

Ventilaţie generală.

Măsuri de protecție individuală (echipamentul de protecție personală)

Trebuie sa existe garantii, ca instalatiile de clatire a ochilor si dusurile de siguranta se afla aproape de locul de munca.

Protecția ochilor/feței

A se purta mască de protecţie a ochilor/feţei.

Protecția pielii

Chemical resistant protective clothing.

Protecția mâinilor

A se purta mănuși corespunzătoare. Mănușile de protecție chimică adecvate sunt testate conform EN 374. Verificați etanșeitatea/impermeabilitatea înainte de utilizare. În scopuri speciale, se recomandă să verificați rezistența la produse chimice a mănușilor de protecție menționate mai sus, împreună cu furnizorul acestor mănuși. In case of spray contact at least protection index 2 recommended, according to more than 30 min. penetration time (EN 374).
Layer thickness of gloves at least: 0.4 mm
In case of prolonged and intensive contact protection index 6 recommended, according to more than 480 min. penetration time (EN 374).
Layer thickness of gloves at least: 0.7 mm.

Tipul de material

PVC: policlorură de vinil, PE: polietilenă, CR: cauciuc cloroprenic (clorobutadienic), NBR: cauciuc acrilonitrilbutadienic, IIR: cauciuc izobuten-izoprenic (butilcauciuc), FKM: elastomer cu fluor

Timpul de perforare a materialului din care sunt fabricate mănușile

Momentul de cedare si insusirile de origine ale materialului trebuie luate in consideratie

Alte măsuri de protecție

Spălaţi-vă maini bine după utilizare.

Protecția respirației

În cazul în care ventilarea este insuficientă, purtaţi echipament de protecţie respiratorie.

Controlul expunerii mediului

Considerații privind eliminarea: a se vedea secțiunea 13.

SECȚIUNEA 9: Proprietățile fizice și chimice

9.1 Informații privind proprietățile fizice și chimice de bază

Aspect

Starea fizică	lichid
Culoarea	galben - verde - albastru deschis

Miros	fara miros
Pragul de acceptare a mirosului	nu este aplicabilă

Alți parametri de securitate

pH (valoare)	ca. 4 – 6 (in aqueous solution: 10 $^{g}/_{l}$)
Punctul de topire/punctul de înghețare	ca. -5 °C
Punctul inițial de fierbere și intervalul de fierbere	ca. 102 °C
Punctul de aprindere	>101 °C
Viteza de evaporare	nedeterminat
Inflamabilitatea (solid, gaz)	nu este relevant (fluid)
Limita superioară/inferioară de inflamabilitate sau de explozie	nedeterminat
Presiunea de vapori	nedeterminat
Densitatea vaporilor	aceste informații nu sunt disponibile
Densitatea	ca. 1,04 $^{g}/_{cm^3}$ la 20 °C

Solubilitatea (solubilitățile)

Solubilitatea în apă	miscibil în orice proporție

Coeficientul de partiție

- n-octanol/apă (log KOW)	aceste informații nu sunt disponibile

Temperatura de autoaprindere	>600 °C
Temperatura de descompunere	nu există date disponibile

Vâscozitatea

Vâscozitatea cinematică	4,5 $^{mm^2}/_{s}$
Vâscozitatea dinamică	4,6 mPa s la 20 °C

Proprietăți explozive	nici una/nici unul
Proprietăți oxidante	nici una/nici unul

9.2 Alte informații

Nu există informații suplimentare.

SECȚIUNEA 10: Stabilitate și reactivitate

10.1 Reactivitate

Acest material nu este reactiv în condiții normale de mediu ambiant.

10.2 Stabilitate chimică

Materialul este stabil în condiții ambientale normale, precum și în condițiile de temperatură și presiune în care se anticipează că vor avea loc depozitarea și manipularea.

10.3 Posibilitatea de reacții periculoase

Nu se cunosc reacţii periculoase.

10.4 Condiții de evitat

Nu există condiții specifice cunoscute care trebuie evitate.

10.5 Materiale incompatibile

Nu există informații suplimentare.

10.6 Produși de descompunere periculoși

Produșii de descompunere periculoși anticipați în mod rezonabil care sunt produși în urma utilizării, depozitării, vărsării și încălzirii nu sunt cunoscuți. Produși de combustie periculoși: a se vedea secțiunea 5.

SECȚIUNEA 11: Informații toxicologice

11.1 Informații privind efectele toxicologice

Nu sunt disponibile date de testare pentru întregul amestec.

Procedura de clasificare

Metoda pentru clasificarea amestecului se bazează pe ingredientele amestecului (formula de aditivitate).

Toxicitate acută

Nu se clasifică ca fiind toxic(ă) acut(ă).

Product ATEmix oral : >2000 mg/kg
Product ATEmix dermal : >2000 mg/kg

Toxicitatea acută a componenților amestecului

Denumirea substanței	*Nr. CAS*	*Calea de expunere*	*Efect*	*Valoare*	*Specii*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	orală	LD50	64 $^{mg}/_{kg}$	șobolan
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	prin inhalare: praf/ceață	LC50	0,33 $^{mg}/_{l}$/4h	șobolan
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	dermică	LD50	87,12 $^{mg}/_{kg}$	iepure

Corodarea/iritarea pielii

Provoacă arsuri grave ale pielii şi lezarea ochilor.

Lezarea gravă a ochilor/iritarea ochilor

Provoacă leziuni oculare grave.

Sensibilizarea căilor respiratorii sau a pielii

Poate provoca o reacţie alergică a pielii.

Mutagenicitatea celulelor embrionare

Nu sunt disponibile date de testare pentru întregul amestec.

Cancerigenitate

Nu sunt disponibile date de testare pentru întregul amestec.

Toxicitatea pentru reproducere

Nu sunt disponibile date de testare pentru întregul amestec.

Toxicitate asupra unui organ ţintă specific - o singură expunere

Nu sunt disponibile date de testare pentru întregul amestec.

Toxicitate asupra unui organ ţintă specific - expunere repetată

Nu sunt disponibile date de testare pentru întregul amestec.

Pericol prin aspirare

Nu se clasifică ca prezentând pericol prin aspirare.

Alte informaţii

Corosiv pentru căile respiratorii.

SECŢIUNEA 12: Informaţii ecologice

12.1 Toxicitatea

Foarte toxic pentru mediul acvatic cu efecte pe termen lung.

Toxicitate acvatică (acută) a componenţilor amestecului

Denumirea substanţei	*Nr. CAS*	*Efect*	*Durata de expunere*	*Valoare*	*Specii*
masă de reacţie compusă din 5-cloro-2-metil-2H-izotiazol-3-onă şi 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	LC50	96 h	0,19 $^{mg}/_{l}$	peşte
masă de reacţie compusă din 5-cloro-2-metil-2H-izotiazol-3-onă şi 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	EC50	48 h	0,16 $^{mg}/_{l}$	nevertebrate acvatice
masă de reacţie compusă din 5-cloro-2-metil-2H-izotiazol-3-onă şi 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	ErC50	72 h	19,9 $^{µg}/_{l}$	alge

Toxicitate acvatică (cronică) a componenților amestecului					
Denumirea substanței	*Nr. CAS*	*Efect*	*Valoare*	*Specii*	*Durata de expunere*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	LC50	0,07 $^{mg}/_{l}$	pește	14 d
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	EC50	>0,18 $^{mg}/_{l}$	nevertebrate acvatice	21 d
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	ErC50	45,6 $^{µg}/_{l}$	alge	120 h

12.2 Persistența și degradabilitatea

Nu este ușor biodegradabil(ă).

Degradabilitatea componenților amestecului					
Denumirea substanței	*Nr. CAS*	*Proces*	*Rata de degradare*	*Timp*	*Metoda*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	generare de dioxid de carbon	>60 %	29 d	

12.3 Potențialul de bioacumulare

A worth-mentioning accumulation in organisms is not expected.

Potențial de bioacumulare a componenților amestecului				
Denumirea substanței	*Nr. CAS*	*BCF*	*Log KOW*	*BOD5/COD*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)	55965-84-9	54	≥-0,34 – ≤0,63 (pH valoare: 7, 10 °C)	

12.4 Mobilitatea în sol

Nu sunt disponibile date.

12.5 Rezultatele evaluării PBT și vPvB

Nu este aplicabilă.

12.6 Alte efecte adverse

Potențialul de a afecta sistemul endocrin

Niciun ingredient nu figurează pe listă.

Observații

A nu se arunca în rețeaua de canalizare sau în apa de suprafață.

SECȚIUNEA 13: Considerații privind eliminarea

13.1 Metode de tratare a deșeurilor

Acest produs şi ambalajul său se vor depozita ca un deşeu periculos. Alocarea de numere de identificare/marcaje pentru reziduuri trebuie sa se efectueze corespunzator OID, specifc procesului si bransei. Eliminarea deseurilor de produs se va face conform legii 211/2011 privind regimul deseurilor.¶Eliminarea deseurilor de ambalaje se face cf. HG 621/2005 privind gestionarea ambalajelor si deseurilor de ambalaje; HG 856/2002- evidenta gestiunii deseurilor si aprobarea listei deseurilor. Legea 249/2015 privind modalitatea de gestionare a ambalajelor si a deseurilor de ambalaje.

Informaţii relevante pentru tratarea deşeurilor

Este un deșeru periculos; pot fi utilizate exclusiv ambalajele omologate (de ex. conf. ADR). Ambalajele golite complet pot fi reciclate. Manipulați ambalajele contaminate în același mod ca și substanța respectivă.

Observații

Vă rugăm să luați în considerare dispozițiile naționale sau regionale relevante. Deșeurile vor fi selectate pe categorii care pot fi tratate separat de către facilitățile de gestionare a deșeurilor de la nivel local sau național. A nu se arunca în rețeaua de canalizare sau în apa de suprafață. Evitaţi dispersarea în mediu.

SECȚIUNEA 14: Informații referitoare la transport

14.1 Numărul ONU	3265
14.2 Denumirea corectă ONU pentru expediție	LICHID ORGANIC COROSIV, ACID, N.S.A.
Denumire tehnică (ingrediente periculoase)	(isothiazolinones)
14.3 Clasa (clasele) de pericol pentru transport	
Clasa	8
14.4 Grupul de ambalare	III
14.5 Pericole pentru mediul înconjurător	periculos pentru mediul acvatic
Substanţă periculoasă pentru mediu (mediul acvatic)	isothiazolinones

14.6 Precauții speciale pentru utilizatori

Nu există informații suplimentare.

14.7 Transport în vrac, în conformitate cu anexa II la MARPOL și Codul IBC

Încărcătura nu este destinată să fie transportată în vrac.

Informații pentru fiecare Regulament-tip ONU

Transportul rutier, feroviar şi pe căi navigabile interioare al mărfurilor periculoase (ADR/RID/ADN)

Numărul ONU	3265
Denumirea oficială de transport	LICHID ORGANIC COROSIV, ACID, N.S.A., (isothiazolinones)
Clasa	8
Grupul de ambalare	III
Etichetă(e) de pericol	8, peşte şi copac



Pericole pentru mediul înconjurător	da
Cod restricţie tunel (CRT)	E

Codul maritim internaţional pentru mărfuri periculoase (IMDG)

Numărul ONU	3265
Denumirea oficială de transport	LICHID ORGANIC COROSIV, ACID, N.S.A., (isothiazolinones)
Clasa	8
Poluează mediul acvatic marin	da
Grupul de ambalare	III
Etichetă(e) de pericol	8, peşte şi copac



EmS	F-A, S-B
Grupă de segregare	1 - Acizi
Coduri de segregare	SG36, SG49

Organizaţia Internaţională de Aviaţie Civilă (OACI-IATA/DGR)

Numărul ONU	3265
Denumirea oficială de transport	Lichid organic corosiv, acid, n.s.a., (isothiazolinones)
Clasa	8
Pericole pentru mediul înconjurător	da
Grupul de ambalare	III
Etichetă(e) de pericol	8



SECȚIUNEA 15: Informații de reglementare

15.1 Regulamente/legislație în domeniul securității, al sănătății și al mediului specifice (specifică) pentru substanța sau amestecul în cauză

Dispozițiile relevante ale Uniunii Europene (UE)

Restricții în conformitate cu REACH, Anexa XVII

Substanțe periculoase cu restricții (REACH, Anexa XVII)			
Denumirea substanței	*Denumirea conf. inventarului*	*Nr. CAS*	*Restricție*
Ferrocid 8583	acest produs îndeplineşte criteriile de clasificare în conformitate cu Regulamentul nr. 1272/2008/CE		R3

Legendă

R3 1. Nu se utilizează în:
- articole decorative destinate producerii unor efecte de lumină sau de culoare prin intermediul unor faze diferite, de exemplu, în lămpi decorative și în scrumiere;
- obiecte destinate producerii de farse și capcane;
- jocuri pentru unul sau mai mulți participanți sau orice alt articol destinat unei folosințe similare, chiar și cu aspecte decorative.
2. Este interzisă introducerea pe piață a articolelor care nu se conformează punctului 1.
3. Nu se introduc pe piață dacă conțin colorant, cu excepția cazului în care este necesar din motive fiscale, sau parfum ori ambele, dacă:
- pot fi utilizate drept combustibili în lămpi decorative cu ulei pentru a fi furnizate publicului larg; și
- prezintă un pericol în caz de inhalare și sunt etichetate cu R65 sau H304.
4. Lămpile decorative cu ulei destinate publicului larg nu sunt introduse pe piață decât dacă sunt conforme standardului european privind lămpile decorative cu ulei (EN 14059), adoptat de Comitetul European de Standardizare (CEN).
5. Fără a aduce atingere punerii în aplicare a altor dispoziții comunitare referitoare la clasificarea, ambalarea și etichetarea substanțelor și a amestecurilor periculoase, furnizorii se asigură, înainte de introducerea pe piață, că sunt respectate următoarele cerințe:
(a) uleiurile lampante, etichetate cu R65 sau H304, destinate publicului larg, sunt marcate vizibil, lizibil și de neșters după cum urmează: „A nu se lăsa la îndemâna copiilor lămpi umplute cu acest lichid" și, începând cu 1 decembrie 2010, „Doar o înghițitură de ulei lampant – sau chiar suptul fitilului lămpilor – poate cauza leziuni pulmonare care constituie o amenințare la adresa vieții";
(b) lichidele de aprins focul pentru barbecue, etichetate cu R65 sau H304, destinate publicului larg, sunt marcate, începând cu 1 decembrie 2010, lizibil și de neșters, după cum urmează: „O singură înghițitură din acest lichid poate cauza leziuni pulmonare care constituie o amenințare la adresa vieții";
(c) uleiurile lampante și lichidele de aprins focul pentru barbecue, etichetate cu R65 sau H304, destinate publicului larg, sunt îmbuteliate, începând cu 1 decembrie 2010, în recipiente negre opace care nu depășesc 1 litru.
6. Până la 1 iunie 2014 cel târziu, Comisia solicită Agenției Europene pentru Produse Chimice să pregătească un dosar, în conformitate cu articolul 69 din prezentul regulament, în scopul de a interzice, dacă este cazul, lichidele de aprins focul pentru barbecue și combustibilii pentru lămpile decorative, etichetați R65 sau H304, destinați publicului larg.
7. Persoanele fizice sau juridice care introduc pe piață pentru prima oară uleiuri lampante și lichide de aprins focul pentru barbecue, etichetate cu R65 sau H304, furnizează autorității competente din statul membru în cauză, până la 1 decembrie 2011 și apoi anual, date privind soluții alternative pentru uleiul lampant și lichidele de aprins focul pentru barbecue etichetate R65 sau H304. Statele membre pun datele respective la dispoziția Comisiei.

Lista substanțelor care fac obiectul autorizării (REACH, Anexa XIV) / SVHC - lista substanțelor candidate

niciun ingredient nu figurează pe listă

Directiva Seveso

2012/18/UE (Seveso III)				
Nr.	*Substanță periculoasă/categorii de pericol*	*Cantități relevante (tone) ale substanțelor pentru încadrarea amplasamentelor de nivel inferior și de nivel superior*		*Note*
E1	pericole pentru mediu (periculoase pentru mediul acvatic, cat. 1)	100	200	56)

Observație

56) periculoase pentru mediul acvatic în categoria acut 1 sau cronic 1

Directiva 2011/65/UE privind restricțiile de utilizare a anumitor substanțe periculoase în echipamentele electrice și electronice (RoHS) - Anexa II

niciun ingredient nu figurează pe listă

Regulamentul 166/2006/CE privind înfiinţarea Registrului European al Poluanţilor Emişi şi Transferaţi (PRTR)

niciun ingredient nu figurează pe listă

Directiva-cadru privind apa (DCA)

Lista poluanților (DCA)

Denumirea substanței	*Nr. CAS*	*Enumerată în*	*Observații*
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)		A)	
masă de reacție compusă din 5-cloro-2-metil-2H-izotiazol-3-onă și 2-metil-2H-izotiazol-3-onă (3:1)		A)	

Legendă
A) Lista orientativă a principalilor poluanți

Regulamentul (UE) 2019/1148 al Parlamentului European și al Consiliului din 20 iunie 2019 privind comercializarea și utilizarea precursorilor de explozivi, de modificare a Regulamentului (CE) nr. 1907/2006 și de abrogare a Regulamentului (UE) nr. 98/2013

niciun ingredient nu figurează pe listă

Regulamentul 111/2005/CE de stabilire a normelor de monitorizare a comerțului cu precursori de droguri între Comunitate și țările terțe

niciun ingredient nu figurează pe listă

Restricţii privind ocupaţia

Respectati restrictiile ocupationale conform Legii pentru protectia muncii juvenile (94/33/UE). Legea nr. 319/2006- legea securitatii si sanatatii in munca. HG 1218/2006 privind stabilirea cerinţelor minime de securitate si sănătate in munca pentru asigurarea protecției lucrătorilor împotriva riscurilor legate de prezenta agenților chimici.

Regulamentul 528/2012/UE privind introducerea pe piață și utilizarea produselor biocide

Utilizați în siguranță produsele biocide. Citiți întotdeauna eticheta și informațiile despre produs înainte de utilizare.

15.2 Evaluarea securității chimice

Evaluarea securității chimice: Nu.

SECŢIUNEA 16: Alte informaţii

Indicație a modificărilor (fișă cu date de securitate revizuită)

Secțiunea	*Introducere anterioară (text/valoare)*	*Introducere actuală (text/valoare)*
1.3	Detalii privind furnizorul fișei cu date de securitate: Kurita Europe GmbH Giulinistrasse 2 DE-67065 Ludwigshafen Germania Telefon: + 49 621 1218-3000	Detalii privind furnizorul fișei cu date de securitate: Kurita Europe GmbH Theodor-Heuss-Anlage 2 DE-68165 Mannheim Germania Telefon: + 49 621 1218-3000

Secţiunea	*Introducere anterioară (text/valoare)*	*Introducere actuală (text/valoare)*
	e-mail: MSDS@kurita.eu Website: www.kurita.eu	e-mail: KEG_PS@kurita-water.com Website: www.kurita.eu
1.3		Furnizor a produsului: modificare în listă (tabel)
12.2		Degradabilitatea componenţilor amestecului: modificare în listă (tabel)

Abrevieri si acronime

Abr.	*Descrieri ale abrevierilor utilizate*
Acute Tox.	Toxicitate acută
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (Acordul european privind transportul internaţional al mărfurilor periculoase pe căile navigabile interioare)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (Acordul european referitor la transportul rutier internaţional al mărfurilor periculoase)
Aquatic Acute	Periculos pentru mediul acvatic - pericol acut
Aquatic Chronic	Periculos pentru mediul acvatic - pericol cronic
BCF	Bioconcentration factor (factor de bioconcentrare)
BOD	Consumul biochimic de oxigen
CAS	Chemical Abstracts Service (departament care deţine cea mai cuprinzătoare listă a substanţelor chimice)
CLP	Regulamentul (CE) Nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor
COD	Consumul chimic de oxigen
DGR	Reglementări privind Mărfurile Periculoase (a se vedea IATA/DGR)
EC50	Concentraţia Efectivă 50%. CE50 corespunde concentraţiei unei substanţe testate care produce schimbări de 50% în efect (de ex., asupra creşterii) într-un interval de timp specificat
EINECS	European Inventory of Existing Commercial Chemical Substances (Inventarul european al substanţelor chimice existente introduse pe piaţă)
ELINCS	European List of Notified Chemical Substances (Lista europeană a substanţelor chimice notificate)
EmS	Emergency Schedule (Plan de urgenţă)
ErC50	≡ CE50: în această metodă, acea concentraţie a substanţei de testat care determină o reducere cu 50 % fie a creşterii (CEb50), fie a vitezei de creştere (CEr50) în comparaţie cu testul martor
Eye Dam.	Lezare gravă a ochiului
Eye Irrit.	Iritant pentru ochi
factor M	Înseamnă un factor de multiplicare. Acesta se aplică concentraţiei unei substanţe clasificate ca fiind periculoasă pentru mediul acvatic, toxicitate acută categoria 1 sau toxicitate cronică categoria 1, şi care se utilizează pentru determinarea, prin metoda însumării, a clasificării unui amestec, în care este prezentă substanţa
IATA	International Air Transport Association (Asociaţia Internaţională de Transport Aerian)
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA) (Reglementări privind Mărfurile Periculoase pentru transportul aerian)

Abr.	*Descrieri ale abrevierilor utilizate*
IMDG	International Maritime Dangerous Goods Code (Codul maritim internaţional pentru mărfuri periculoase)
LC50	Lethal Concentration 50 % (concentrație letală 50 %): LC50 corespunde concentrației unei substanțe testate care produce o letalitate de 50 % într-un interval de timp specificat
LD50	Lethal Dose 50 % (doză letală 50 %): DLx corespunde dozei unei substanțe testate care produce o letalitate de 50 % într-un interval de timp specificat
log KOW	n-Octanol/apă
MARPOL	Convenția internațională pentru prevenirea poluării de către nave (abr. de la „Marine Pollutant")
NLP	No-Longer Polymer (ex-polimer)
Nr. CE	Inventarul CE (EINECS, ELINCS și NLP-list) este sursa numărului CE, format din șapte cifre, un identificator al substanțelor disponibile pe piață în UE (Uniunea Europeană)
Nr. index	Numărul index reprezintă codul de identificare alocat substanței în partea 3 din anexa VI la Regulamentul (CE) nr. 1272/2008
OACI	International Civil Aviation Organization (Organizația Internațională de Aviație Civilă)
Ox. Sol.	Solid oxidant
PBT	Persistent, bioacumulativ și toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Înregistrarea, evaluarea, autorizarea și restricționarea substanțelor chimice)
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulamentul privind transportul internațional feroviar al mărfurilor periculoase)
Skin Corr.	Corosiv pentru piele
Skin Irrit.	Iritant pentru piele
Skin Sens.	Sensibilizarea pielii
SVHC	Substance of Very High Concern (substanță care prezintă motive de îngrijorare deosebită)
vPvB	Very Persistent and very Bioaccumulative (foarte persistent și foarte bioacumulativ)

Trimiteri către literatura de specialitate şi către sursele de date

Regulamentul (CE) Nr. 1272/2008 privind clasificarea, etichetarea şi ambalarea substanţelor şi a amestecurilor. Regulamentul (CE) nr. 1907/2006 (REACH), modificat prin 2015/830/UE. ECHA: Agenția Europeană pentru Produse Chimice, http://echa.europa.eu/.

Transportul rutier, feroviar și pe căi navigabile interioare al mărfurilor periculoase (ADR/RID/ADN). Codul maritim internaţional pentru mărfuri periculoase (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA) (Reglementări privind Mărfurile Periculoase pentru transportul aerian).

Procedura de clasificare

Proprietățile fizice și chimice: Clasificarea este bazată pe amestecul testat.
Pericolele pentru sănătate, Pericole pentru mediul înconjurător: Metoda pentru clasificarea amestecului se bazează pe ingredientele amestecului (formula de aditivitate).

Lista frazelor relevante (codul şi textul întreg aşa cum figurează în capitolul 2 şi 3)

Cod	*Text*
H272	Poate agrava un incendiu; oxidant.
H301	Toxic în caz de înghiţire.
H310	Mortal în contact cu pielea.
H314	Provoacă arsuri grave ale pielii şi lezarea ochilor.
H317	Poate provoca o reacţie alergică a pielii.
H318	Provoacă leziuni oculare grave.
H330	Mortal în caz de inhalare.
H400	Foarte toxic pentru mediul acvatic.
H410	Foarte toxic pentru mediul acvatic cu efecte pe termen lung.
H411	Toxic pentru mediul acvatic cu efecte pe termen lung.

Clauză de exonerare de răspundere

Aceste informaţii se bazează pe nivelul actual de cunoştinţe pe care le deţinem. Prezenta FDS a fost redactată şi este destinată exclusiv pentru acest produs.

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name **Transaqua HT2**

Product code 462602-FR01

SDS no. 462602

Product type Liquid.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/ mixture Fire-resistant hydraulic fluid.
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

1.3 Details of the supplier of the safety data sheet

Supplier Castrol Marine, a trading name of BP Marine Limited
Chertsey Road
Sunbury-on-Thames
Middlesex
TW16 7BP
United Kingdom

E-mail address MSDSadvice@bp.com

1.4 Emergency telephone number

EMERGENCY TELEPHONE NUMBER Carechem: +44 (0) 1235 239 670 (24/7)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Acute Tox. 4, H302
STOT RE 2, H373

See Section 16 for the full text of the H statements declared above.

See sections 11 and 12 for more detailed information on health effects and symptoms and environmental hazards.

2.2 Label elements

Hazard pictograms



Signal word Warning

Hazard statements H302 - Harmful if swallowed.
H373 - May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention P260 - Do not breathe vapour.
P270 - Do not eat, drink or smoke when using this product.
P264 - Wash hands thoroughly after handling.

Response P314 - Get medical attention if you feel unwell.
P301 + P312 , P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.

Storage Not applicable.

Disposal P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

SECTION 2: Hazards identification

Hazardous ingredients Ethylene glycol

Supplemental label elements Not applicable.

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings Not applicable.

Tactile warning of danger Not applicable.

2.3 Other hazards

Results of PBT and vPvB assessment Product does not meet the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII.

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency.
See 'Notes to physician' under First-Aid Measures, Section 4 of this Safety Data Sheet.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Product definition Mixture

Ethylene glycol; ethanediol. Proprietary performance additives.

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
Ethylene glycol	REACH #: 01-2119456816-28 EC: 203-473-3 CAS: 107-21-1	≥25 - ≤50	Acute Tox. 4, H302 STOT RE 2, H373 (kidneys) (oral)	[1] [2]

See Section 16 for the full text of the H statements declared above.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
[5] Substance of equivalent concern
[6] Additional disclosure due to company policy

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention if irritation develops.

Skin contact In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if irritation develops.

Inhalation If inhaled, remove to fresh air. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. Get medical attention if symptoms occur.

SECTION 4: First aid measures

Ingestion

Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Get medical attention. If ingested, call a physician or Poison Control Center immediately. Get medical attention urgently informing the doctor that a product containing ethylene glycol has been ingested and specific treatment may be required. Transport casualty together with the product container, its label, or the safety data sheet urgently to hospital. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

Protection of first-aiders

No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Potential acute health effects

Inhalation

Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion

Harmful if swallowed. Ethylene glycol: Ingestion of ethylene glycol can cause metabolic acidosis, kidney damage, central nervous system depression, and convulsions. The estimated human lethal dose is approximately 100 ml (3.4 ounces for an adult).

Skin contact

No known significant effects or critical hazards.

Eye contact

No known significant effects or critical hazards.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Inhalation

Overexposure to the inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.

Ingestion

Ingestion of large quantities may cause nausea and diarrhoea.

Skin contact

Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.

Eye contact

Potential risk of transient stinging or redness if accidental eye contact occurs.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

In case of inhalation of decomposition products in a fire, symptoms may be delayed.
The exposed person may need to be kept under medical surveillance for 48 hours.
Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discoloured and extremely painful with extensive subcutaneous necrosis. Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimise tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.

Specific treatments

Ethylene Glycol: Gastric irrigation, ethanol or fomepizole may have value in treatment. Consult physician.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

In case of fire, use water fog, alcohol resistant foam, dry chemical or carbon dioxide extinguisher or spray.

Unsuitable extinguishing media

Do not use water jet. The use of a water jet may cause the fire to spread by splashing the burning product.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture

In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous combustion products

Combustion products may include the following:
carbon oxides (CO, CO_2) (carbon monoxide, carbon dioxide)
nitrogen oxides (NO, NO_2 etc.)

5.3 Advice for firefighters

Special precautions for fire-fighters

No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

SECTION 5: Firefighting measures

Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Floors may be slippery; use care to avoid falling. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment.

For emergency responders

Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Small spill

Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill

Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Contaminated absorbent material may pose the same hazard as the spilt product. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 5 for firefighting measures.
See Section 8 for information on appropriate personal protective equipment.
See Section 12 for environmental precautions.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment. Do not breathe vapour or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse container. Empty containers retain product residue and can be hazardous.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep away from heat and direct sunlight. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Store and use only in equipment/ containers designed for use with this product. Do not store in unlabelled containers.

Not suitable

Prolonged exposure to elevated temperature.

7.3 Specific end use(s)

Recommendations

See section 1.2 and Exposure scenarios in annex, if applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Ethylene glycol	**EH40/2005 WELs (United Kingdom (UK)). Absorbed through skin.** TWA: 10 mg/m³ 8 hours. Issued/Revised: 12/2001 Form: Particulate STEL: 104 mg/m³ 15 minutes. Issued/Revised: 4/2005 Form: Vapour TWA: 52 mg/m³ 8 hours. Issued/Revised: 4/2005 Form: Vapour STEL: 40 ppm 15 minutes. Issued/Revised: 4/2005 Form: Vapour TWA: 20 ppm 8 hours. Issued/Revised: 4/2005 Form: Vapour

Whilst specific OELs for certain components may be shown in this section, other components may be present in any mist, vapour or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Derived No Effect Level

No DNELs/DMELs available.

Predicted No Effect Concentration

No PNECs available

8.2 Exposure controls

Appropriate engineering controls

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.
All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.
Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.
The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.
The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Eye/face protection

Safety glasses with side shields.

Skin protection

Hand protection

General Information:

Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. The correct choice of protective gloves depends upon the chemicals being handled, and the conditions of work and use. Most gloves provide protection for only a limited time before they must be discarded and replaced (even the best chemically resistant gloves will break down after repeated chemical exposures).

Gloves should be chosen in consultation with the supplier / manufacturer and taking account of a full assessment of the working conditions.

SECTION 8: Exposure controls/personal protection

Recommended: Butyl gloves.
Neoprene gloves.
Breakthrough time:

Breakthrough time data are generated by glove manufacturers under laboratory test conditions and represent how long a glove can be expected to provide effective permeation resistance. It is important when following breakthrough time recommendations that actual workplace conditions are taken into account. Always consult with your glove supplier for up-to-date technical information on breakthrough times for the recommended glove type.
Our recommendations on the selection of gloves are as follows:

Continuous contact:

Gloves with a minimum breakthrough time of 240 minutes, or >480 minutes if suitable gloves can be obtained.
If suitable gloves are not available to offer that level of protection, gloves with shorter breakthrough times may be acceptable as long as appropriate glove maintenance and replacement regimes are determined and adhered to.

Short-term / splash protection:

Recommended breakthrough times as above.
It is recognised that for short-term, transient exposures, gloves with shorter breakthrough times may commonly be used. Therefore, appropriate maintenance and replacement regimes must be determined and rigorously followed.

Glove Thickness:

For general applications, we recommend gloves with a thickness typically greater than 0.35 mm.

It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.
Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.

- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential.

Skin and body

Use of protective clothing is good industrial practice.
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

Refer to standards:

Respiratory protection: EN 529
Gloves: EN 420, EN 374
Eye protection: EN 166
Filtering half-mask: EN 149
Filtering half-mask with valve: EN 405
Half-mask: EN 140 plus filter
Full-face mask: EN 136 plus filter
Particulate filters: EN 143
Gas/combined filters: EN 14387

SECTION 8: Exposure controls/personal protection

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	Liquid.
Colour	Brown. [Light]
Odour	Not available.
Odour threshold	Not available.
pH	8.9 [Conc. (% w/w): 100%]
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Pour point	-33 °C
Flash point	Closed cup: Not applicable. [Water content interferes with flash point determination.]
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Density	1000 kg/m³ (>1 g/cm³) at 15°C
Solubility(ies)	Miscible in water.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Kinematic: 2.3 mm^2/s (2.3 cSt) at 40°C
Explosive properties	Not available.
Oxidising properties	Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerisation will not occur.

10.4 Conditions to avoid

Avoid all possible sources of ignition (spark or flame).

10.5 Incompatible materials

Reactive or incompatible with the following materials: oxidising materials.

10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Transaqua HT2	1087	N/A	N/A	N/A	N/A
ethane-1,2-diol	500	N/A	N/A	N/A	N/A

Information on likely routes of exposure Routes of entry anticipated: Dermal, Inhalation.

Potential acute health effects

Inhalation Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion Harmful if swallowed. Ethylene glycol: Ingestion of ethylene glycol can cause metabolic acidosis, kidney damage, central nervous system depression, and convulsions. The estimated human lethal dose is approximately 100 ml (3.4 ounces for an adult).

Skin contact No known significant effects or critical hazards.

Eye contact No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs.

Ingestion No specific data.

Skin contact No specific data.

Eye contact No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Inhalation Overexposure to the inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.

Ingestion Ingestion of large quantities may cause nausea and diarrhoea.

Skin contact Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.

Eye contact Potential risk of transient stinging or redness if accidental eye contact occurs.

Potential chronic health effects

General May cause damage to organs through prolonged or repeated exposure. May cause damage to organs through prolonged or repeated exposure. (kidney)

Carcinogenicity No known significant effects or critical hazards.

Mutagenicity No known significant effects or critical hazards.

Developmental effects Birth defects and decreased fetal weight have been observed in laboratory animals fed ethylene glycol in large amounts repeatedly during pregnancy.

Fertility effects No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Environmental hazards Not classified as dangerous

12.2 Persistence and degradability

Expected to be biodegradable.

12.3 Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Ethylene glycol	-1.36	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) Not available.

Mobility Spillages may penetrate the soil causing ground water contamination.

SECTION 12: Ecological information

12.5 Results of PBT and vPvB assessment

Product does not meet the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII.

12.6 Other adverse effects

Other ecological information Miscible in water.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal Undiluted fluid Where possible, arrange for product to be recycled. Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations. Diluted Fluid Diluted fluid should not be discharged into sewage systems unless provided for by local regulations. Dispose under conditions approved by the local authority or via a licensed waste disposal contractor.

Hazardous waste Yes.

European waste catalogue (EWC)

Waste code	Waste designation
13 01 13*	other hydraulic oils

However, deviation from the intended use and/or the presence of any potential contaminants may require an alternative waste disposal code to be assigned by the end user.

Packaging

Methods of disposal Where possible, arrange for product to be recycled. Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations.

Special precautions This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Empty containers represent a fire hazard as they may contain flammable product residues and vapour. Never weld, solder or braze empty containers. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Other information At sea, used or unwanted product should be stored for eventual discharge into port approved waste oil disposal facilities.

References Commission 2014/955/EU
Directive 2008/98/EC

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

14.6 Special precautions for user Not available.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code Not available.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Other regulations

REACH Status	The company, as identified in Section 1, sells this product in the EU in compliance with the current requirements of REACH.
United States inventory (TSCA 8b)	All components are active or exempted.
Australia inventory (AICS)	All components are listed or exempted.
Canada inventory	At least one component is not listed in DSL but all such components are listed in NDSL.
China inventory (IECSC)	At least one component is not listed.
Japan inventory (ENCS)	At least one component is not listed.
Korea inventory (KECI)	At least one component is not listed.
Philippines inventory (PICCS)	At least one component is not listed.
Taiwan Chemical Substances Inventory (TCSI)	At least one component is not listed.

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

EU - Water framework directive - Priority substances

None of the components are listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for one or more of the substances within this mixture. A Chemical Safety Assessment has not been carried out for the mixture itself.

SECTION 16: Other information

Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CSA = Chemical Safety Assessment
CSR = Chemical Safety Report
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EINECS = European Inventory of Existing Commercial chemical Substances
ES = Exposure Scenario
EUH statement = CLP-specific Hazard statement
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
OECD = Organisation for Economic Co-operation and Development

SECTION 16: Other information

PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SADT = Self-Accelerating Decomposition Temperature
SVHC = Substances of Very High Concern
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TWA = Time weighted average
UN = United Nations
UVCB = Complex hydrocarbon substance
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative
Varies = may contain one or more of the following 64741-88-4 / RRN 01-2119488706-23, 64741-89-5 / RRN 01-2119487067-30, 64741-95-3 / RRN 01-2119487081-40, 64741-96-4/ RRN 01-2119483621-38, 64742-01-4 / RRN 01-2119488707-21, 64742-44-5 / RRN 01-2119985177-24, 64742-45-6, 64742-52-5 / RRN 01-2119467170-45, 64742-53-6 / RRN 01-2119480375-34, 64742-54-7 / RRN 01-2119484627-25, 64742-55-8 / RRN 01-2119487077-29, 64742-56-9 / RRN 01-2119480132-48, 64742-57-0 / RRN 01-2119489287-22, 64742-58-1, 64742-62-7 / RRN 01-2119480472-38, 64742-63-8, 64742-65-0 / RRN 01-2119471299-27, 64742-70-7 / RRN 01-2119487080-42, 72623-85-9 / RRN 01-2119555262-43, 72623-86-0 / RRN 01-2119474878-16, 72623-87-1 / RRN 01-2119474889-13

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Acute Tox. 4, H302 STOT RE 2, H373	Calculation method Calculation method

Full text of abbreviated H statements	H302 H373 (oral)	Harmful if swallowed. May cause damage to organs through prolonged or repeated exposure if swallowed.
Full text of classifications [CLP/GHS]	Acute Tox. 4, H302 STOT RE 2, H373 (oral)	ACUTE TOXICITY (oral) - Category 4 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (oral) - Category 2

History

Date of issue/ Date of revision	16/10/2020.
Date of previous issue	23/10/2018.
Prepared by	Product Stewardship

Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBIL EAL 224H**
Product Description: Plant/Vegetable Oil
Product Code: 201560105010, 601831-00, 973407
Intended Use: Hydraulic fluid

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
22777 Springwoods Village Parkway
Spring, TX 77389 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525
MSDS Internet Address	www.exxon.com, www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Mildly irritating to skin. May be irritating to the eyes, nose, throat, and lungs.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health:	1	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	1	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
2,6-DI-TERT-BUTYLPHENOL	128-39-2	1 - < 2.5%	H315, H400(M factor 1), H410(M factor 1)

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Pressurized mists may form a flammable mixture.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >221°C (430°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Avoid contact with skin. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m³ - ACGIH TLV (inhalable fraction), 5 mg/m³ - OSHA PEL.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

Chemical/oil resistant clothing is recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Pale Yellow
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.921
Flammability (Solid, Gas): N/A
Flash Point [Method]: >221°C (430°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D
Boiling Point / Range: N/D
Decomposition Temperature: N/D
Vapor Density (Air = 1): N/D
Vapor Pressure: [N/D at 20 °C]
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): N/D

Solubility in Water: Negligible
Viscosity: 36.8 cSt (36.8 mm2/sec) at 40 °C | 8.3 cSt (8.3 mm2/sec) at 100°C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION
Freezing Point: N/D
Melting Point: N/A
Pour Point: -34°C (-29°F)

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Mildly irritating to skin with prolonged exposure. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.

Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation:	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

OTHER INFORMATION

For the product itself:

Repeated and/or prolonged exposure may cause irritation to the skin, eyes, or respiratory tract.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC
2 = NTP SUS
3 = IARC 1
4 = IARC 2A
5 = IARC 2B
6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Majority of components -- Expected to be readily biodegradable.

ECOLOGICAL DATA

Ecotoxicity

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	96 hour(s)	Americamysis bahia	LC50 >5000 mg/l
Aquatic - Acute Toxicity	96 hour(s)	Oncorhynchus mykiss	LC50 >5000 mg/l

Aquatic - Chronic Toxicity	7 day(s)	Ceriodaphnia dubia	NOELR >5000 mg/l
Aquatic - Chronic Toxicity	7 day(s)	Pimephales promelas	NOELR >5000 mg/l

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Even though this product is biodegradable, it must not be indiscriminately discarded into the environment. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrositivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is not considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, IECSC, ISHL, KECI, PICCS, TCSI, TSCA

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA (311/312) REPORTABLE GHS HAZARD CLASSES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Section 08: Exposure Control - Note information was modified.
Section 09: Viscosity information was modified.
Section 11: Dermal Lethality Test Comment information was added.
Section 15: National Chemical Inventory Listing information was modified.

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