

## 1. IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY / UNDERTAKING

### 1.1. Identification of the substance

**Name of the substance:** potassium O-pentyl dithiocarbonate

**Synonyms:** potassium amyl xanthate, PAX

**Trade name:** potassium amyl xanthate

**Molecular formula:** C<sub>6</sub>H<sub>12</sub>OS<sub>2</sub>.K

**EINECS:** 220-329-5

**CAS:** 2720-73-2

**REACH:** pre-registration number: 05-2114276335-46-0000

### 1.2. Use of the substance

reagent in the mining, metallurgical, chemical industry

### 1.3. Company/undertaking identification

The substance is put on the market by Polymet 99 Ltd., address: 60-B Bulgaria Blvd, 1680 Sofia, Bulgaria

tel +359-2-9581760, fax: +359-2-9586784

e-mail: [tomov@polymet-bg.com](mailto:tomov@polymet-bg.com)

### 1.4. Emergency telephone

Bulgaria:

+359-2 862 60 75 Civil protection

+359-2 960 10 262

## 2. HAZARDS IDENTIFICATION

The substance is not included in Annex I to Directive 67/548/EEC / Annex VI to Regulation (EC) No 1272/2008

Classification: Xn – harmful Xi - irritating  
R22 - Harmful if swallowed R36/37/38 - Irritating to eyes, respiratory system and skin.

Self-heating material. Spontaneously combustible. Can form explosive air-dust mixtures.

**Inhalation:** Inhalation of dust can cause irritation of the nose, throat and respiratory tract. Inhalation of decomposition fumes (carbon disulphide) can cause severe behavioral disorder, incl. anxiety, anger, hallucinations.

**Ingestion:** Moderately toxic and irritating. Can cause moderate to severe irritation of mouth, throat and digestive tract, including nausea, vomit, diarrhoea. When in the stomach, this substance releases carbon disulphide.

**Skin contact:** Dust and fumes may be irritating. Xanthate solutions cause severe skin irritation. No data is available for skin absorptivity.

**Eye contact:** Dust and fumes are irritating. Xanthate solutions cause severe eye irritation.

**Chronic exposure:** Can cause anxiety, anger, hallucinations, fever, hearing and visual abnormalities and liver nuisance. Carbon disulphide has severe acute effect on the central nervous system. Xanthate salts may cause respiratory irritation.

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

Dangerous ingredients	CAS No	EC No	contents	Hazard symbols	R-phrases
Potassium amyl xanthate	2720-73-2	220-329-5	90 – 100%	Xn - harmful	R22-36/37/38

## 4. FIRST AID MEASURE

Consult a physician and/or the nearest toxicological center in any (except the most negligible) case of inhalation or skin contact.

**Inhalation:** Move the victim to fresh air. If breathing is difficult give oxygen, warm up and keep silence. If the victim is not breathing, apply artificial respiration mouth-to-mouth. If the victim has no pulse, give external heart massage. Seek medical advice.

**Ingestion:** If the victim is conscious, flush mouth with plenty of water. DO NOT induce vomiting. Give the victim at least 500 ml water to drink and immediately seek medical advice. If natural vomiting occurs, bend the victim forward so that not to suffocate and give water again. Immediately seek medical advice.

**Skin contact:** Remove all contaminated clothing. Flush skin with soapy water, do not use solvents. Use 3% tartaric acid solution. Note: this solution can be used for the skin only, not for the eyes. If irritation develops, seek medical attention.

**Eye contact:** Flush with plenty of water for at least 15 minutes. Keep the eyelids open. Use 2% boric acid solution. Seek immediate medical attention.

**Notes to the doctor:** There is no specific antidote, the treatment depends on the symptoms and clinical condition of the patient.

## 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media:** carbon dioxide, dry chemical powder, foam. When not available, use water jet, mist or spray, but not in small premises where toxic fumes can build up – in this case use dry chemical and be cautious for re-ignition.

**Extinguishing media which shall not be used for safety reasons:** no data

**Special exposure hazards arising from the substance, combustion products, resulting gases:** this material can suddenly ignite; in combination with certain organic chemicals can form combustible dust cloud in the air. In the process of aging, when in contact with water, or when heated it can liberate carbon disulphide – extremely flammable toxic gas. Heating can also cause the material to expand and decompose, leading to destruction of the container. Cool the containers with water spray. If possible, remove the containers from the line of fire.

**Special protective equipment for fire-fighters:** Use independent breathing apparatus and wear full set of protective clothing.

**Note:** Consider any flammable material close to or above the ignition point having in mind that hot air can circulate to distant ignition source and back.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Wear approved, positive pressure, self-contained respirator. Wear full protective equipment – impervious gloves, apron, trousers, long-sleeve shirt, boots, impervious goggles or face mask for protection against skin and eye contact. Remove all sources of ignition. Evacuate personnel without protective equipment from the area. Cleaning up is performed only by trained personnel.

**Environmental precautions:** Do not let in the sewers!

**Methods for cleaning up:** Do not use water on the spillage as this will generate heat.

**Small spillage** of dry material – collect mechanically. When xanthate solution is spilled, cover with absorbent material, collect and place in approved metallic container for dangerous waste and dispose of as prescribed. Pick up contaminated soil in distinguished containers for disposal as a chemical waste. Do not use flammable materials, like saw-dust. When the spillage is collected, flush the area with water. If no fire occurs on the site, use water to disperse the fumes and protect the personnel.

**Large spillage** – evacuate the untrained personnel off the area. Extinguish or remove all sources of ignition. Contain the spillage if safe. Dyke the area to prevent access to the drains and surface waters (potential danger for aquatic organisms). Collect as much as possible from the solution or dry material for reuse. Treat the remains as small spillage.

**Additional information:** see p.7 – handling and storage, p.8 – personal protection, p.13 – disposal consideration.

## 7. HANDLING AND STORAGE

### 7.1. Handling

**Attention!** As a result of decomposition, the container can hold flammable and toxic fumes. This product is irritating to skin, eyes and respiratory tract.

In areas where contact is possible, install proper equipment for eye-washing and shower. Use only in well ventilated areas. Avoid any contact with eyes or skin, as well as inhaling fumes. Keep away from heat, sparks and open flame. Use only spark-proof tools. Ground all equipment to prevent static electrical charge. Be cautious when opening containers with aged xanthate as they can contain built up carbon dioxide fumes. All electronic equipment should be set up for operation in explosive conditions of carbon disulphide. Do not smoke. Wash thoroughly after work.

### 7.2. Storage

Store solid xanthates in the original, properly sealed containers in a cool, dry and ventilated area. Keep away from heat, flame, fire, sunshine and moisture. When in contact with water, the material is destroyed freeing toxic flammable gas. Keep the containers tightly closed at all times and check regularly for spillage.

### 7.3. Specific use(s)

no data

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1. Exposure limit values

no data

### 8.2. Exposure controls

#### 8.2.1. Occupational exposure controls

**Engineering controls:** Where contact is possible, place operating suitable equipment for eye-washing and shower. Local or general ventilation is recommended to keep the risk for workers at lowest possible level. Usually a local ventilation is preferred in order to control the emissions at source, keeping down the possible spread to general working areas.

**Respiratory protection:** If respiratory protection is necessary, apply full program – incl. Approved respirator with dust filter for organic gases and fumes, as well as protective mask with screens for organic gases and fumes. In case of apparent presence of dust or fumes and lack of proper engineering control, a breathing apparatus may be used (with N95 type filters or better). In

case of emergency and when exposure is unknown, use full-piece respirator with positive pressure. ATTENTION: Air filtering respirators do not provide protection in low-oxygen atmosphere.

**Hand / skin protection:** Wear impervious protective clothing, incl. rubber or PVC boots, impervious rubber/neoprene/PVC gloves, overcoat, apron or overalls (chemically impervious and made of spark-proof materials)

**Eye protection:** Use chemical protective goggles and/or full-piece facial mask when dusting or solution dispersion is possible. DO NOT wear contact lenses. Provide equipment for eye washing and rapid water spraying in the working areas.

#### 8.2.2. Environmental exposure controls

no data

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. General information

**Appearance:** powder, flakes, pellets / granules

**Color:** light-yellow, gray-yellow, yellow-green

**Odor:** unpleasant

### 9.2. Important health, safety and environmental information

**pH in water solution:** 13 (10% solution)

**Boiling point/boiling range:** no data

**Flash point:** no data

**Flammability:** no data

**Explosive properties:** no data

**Vapour pressure:** no data

**Relative density :** 0.6

**Water solubility:** 535 g/l (25 °C), 350 g/l (20 °C)

**Solubility:** no data

**Partition coefficient: n-octanol/water :** no data

**Viscosity:** no data

**Vapour density:** no data

**Evaporation rate:** no data

### 9.3. Other information

**Melting point/melting range:** >150 °C

**Auto-ignition temperature:** no data

**Explosive limits** (carbon disulphide vapors): lower – 1.25, upper – 50

## 10. STABILITY AND REACTIVITY

Solid xanthates are stable for long periods of time when stored at cool and dry area and properly sealed air-tight in the original package. When exposed to heat or moisture, they decompose. In solution xanthates decompose slowly even at room temperature. Acids and oxidizing agents speed up decomposition.

**10.1 Conditions to avoid :** heat, flame, fire, sunshine, moisture

**10.2. Materials to avoid :** strong oxidizing agents, strong bases, strong acids

**10.3. Hazardous decomposition products :** sulphur oxides, carbon oxide, carbon dioxide

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Acute toxicity

**Inhalation:** Harmful when inhaled. Irritates the mucous membranes and upper respiratory tract

**Ingestion:** Harmful when swallowed

LD50 oral, rat = 1700 mg/kg

LD50 oral, mouse = 308 mg/kg

LD50 peritoneum, mouse > 500 mg/kg

LD50 vein, mouse = 199 mg/kg

**Skin contact:** causes skin irritation. Harmful when absorbed through the skin.

**Eye contact:** causes eye irritation.

Exposition symptoms: nausea, headache, vomiting.

**11.2 Chronic toxicity**

Inhalation: no data

Ingestion: no data

Skin contact: no data

Sensibilization: no data

Carcinogenicity: no data

Mutagenicity: no data

Toxic for reproduction: no data

**12. ECOLOGICAL INFORMATION****12.1. Ecotoxicity**

no data

**12.2. Mobility**

no data

**12.3. Persistence and degradability**

no data

**12.4. Bioaccumulative potential**

no data

**12.5. Results of PBT assessment**

no data

**12.6. Other adverse effects**

no data

**13. DISPOSAL CONSIDERATIONS****Methods of disposal:** According to local regulations.**Waste:** According to local regulations.**Contaminated packaging:** According to local regulations.**14. TRANSPORT INFORMATION**

	class	label	Suitable transport name
ADR	4.2	Spontaneously combustible	XANTHATES
IMDG	4.2	Spontaneously combustible	XANTHATES
ICAO	4.2	Spontaneously combustible	XANTHATES

UN number: 3342

Packing group: II

**15. REGULATORY INFORMATION****Classification:** Xn; R36/37/38 – harmful, Xi; R22 - irritating**Labelling:**

F: Spontaneously combustible



Xn: Harmful

R-phrases **R22** – Harmful if swallowed**R36/37/38** - Irritating to eyes, respiratory system and skin.S-phrases **S26** – In case of contact with eyes, flush immediately with plenty of water and seek medical advice.**S36** – Wear suitable protective clothing**ECC index:** not available**Dangerous waste:** yes**Narcotic precursors** (Regulation EC No 273/2004): no**Chemical weapons convention:** no**Export and import of dangerous chemicals** (Regulation EC No 304/2003): no

**Dual use** (Regulation EC No 1334/2000): no

## 16. OTHER INFORMATION

**Usage restriction:** To be used only by technically qualified specialists.

**List of applicable R phrases:**

**R22** - Harmful if swallowed

**R36/37/38** - Irritating to eyes, respiratory system and skin.

**Uses advised against:** no data

**Changes since last revision:** new SDS

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