Safety Data Sheet

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: **POTASSIUM AMYL XANTHATE**

Other name(s): PAX; Carbonodithioic acid, O-pentyl ester, potassium salt; Potassium pentyl xanthate; Potassium isoamyl xanthate.

Recommended Use of the Chemical and Restrictions on Use In mines of non-ferrous metal material flotation.

Supplier: Ixom Operations Pty Ltd
ABN: 51 600 546 512
Street Address: Level 8, 1 Nicholson Street
East Melbourne Victoria 3002
Australia

Telephone Number: +61 3 9906 3000
Emergency Telephone: **1 800 033 111 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

2. HAZARDS IDENTIFICATION

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

Classification of the chemical:
Self-heating substances and mixtures - Category 2
Acute Oral Toxicity - Category 4
Acute Dermal Toxicity - Category 4
Skin Irritation - Category 2
Eye Irritation - Category 2A
Specific target organ toxicity (single exposure) - Category 3
Toxic to Reproduction - Category 2
Specific target organ toxicity (repeated exposure) - Category 2

SIGNAL WORD: WARNING

Hazard Statement(s):
H252 Self-heating in large quantities; may catch fire.
H302+H312 Harmful if swallowed or in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H361 Suspected of damaging fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary Statement(s):

Prevention:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P235+P410 Keep cool. Protect from sunlight.
P260 Do not breathe dust.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves / protective clothing / eye protection / face protection.
P281 Use personal protective equipment as required.

Response:
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P321 Specific treatment (see First Aid Measures on Safety Data Sheet).
P322 Specific measures (see First Aid Measures on Safety Data Sheet).
P362 Take off contaminated clothing and wash before reuse.
P363 Wash contaminated clothing before re-use.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P305+P351+P338 IF IN EYES: 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 advice/attention.
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.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P314 Get medical advice/attention if you feel unwell.

Storage:
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P407 Maintain air gap between stacks/pallets.
P420 Store away from other materials.

Disposal:
P501 Dispose of contents and container in accordance with local, regional, national, international regulations.

Other Hazards:
AUH031 Contact with acids liberates toxic gas.

Poisons Schedule (SUSMP): None allocated.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Components	CAS Number	Proportion	Hazard Codes
Potassium amyl xanthate	2720-73-2	>90-100%	H252 H302 H312 H315 H319 H335 H361fd H373

4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor.

Inhalation:
Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discolouration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

Skin Contact:
If skin or hair contact occurs, immediately remove any contaminated clothing and wash skin and hair thoroughly with running water and soap. If swelling, redness, blistering or irritation occurs seek medical assistance.

Eye Contact:
If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre or a doctor, or for at least 15 minutes.

Ingestion:
Rinse mouth with water. If swallowed, do NOT induce vomiting. Seek immediate medical assistance.

Indication of immediate medical attention and special treatment needed:
Treat symptomatically. No known specific antidote.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:
Coarse water spray, fine water spray, normal foam, dry agent (carbon dioxide, dry chemical powder).

Hazchem or Emergency Action Code: 1Y

Specific hazards arising from the chemical:
Substance liable to spontaneous combustion. Avoid all ignition sources. In common with many organic chemicals, may form flammable dust clouds in air. For precautions necessary refer to Safety Data Sheet "Dust Explosion Hazards".

Special protective equipment and precautions for fire-fighters:
Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. If safe to do so, remove containers from the path of fire. Decomposes on heating emitting toxic fumes, including those of carbon disulphide . Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition.

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures/Environmental precautions:
Shut off all possible sources of ignition. Clear area of all unprotected personnel. Work up wind or increase ventilation. If contamination of sewers or waterways has occurred advise local emergency services.

Personal precautions/Protective equipment/Methods and materials for containment and cleaning up:
Wear protective equipment to prevent skin and eye contact and breathing in vapours/dust. DO NOT allow material to get wet. Air-supplied masks are recommended to avoid inhalation of toxic material. Vacuum solid spills instead of sweeping. Collect and seal in properly labelled containers or drums for disposal. Use non-sparking tools. After cleaning, flush away any residual traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling:
Avoid skin and eye contact and breathing in dust. Ground all equipment containing material. Take precautionary measures against static discharges. When using do not eat, drink or smoke. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities:
Store in a cool, dry, well ventilated place. Store away from sources of heat or ignition. Store away from incompatible materials described in Section 10. Keep dry - reacts with water, may lead to drum rupture. Keep containers closed when not in use - check regularly for spills.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters: No value assigned for this specific material by Safe Work Australia. However, Workplace Exposure Standard(s) for constituent(s) and decomposition product(s):

Dusts not otherwise classified: 8hr TWA = 10 mg/m^3
Carbon disulfide: 8hr TWA = 31 mg/m^3 (10 ppm), Sk

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

`Sk' (skin) Notice - absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Appropriate engineering controls:
Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Workplace Exposure Standards. Keep containers closed when not in use. Design equipment to avoid the build up or storage of dust. Explosions are controlled by containment, venting or inerting.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

Individual protection measures, such as Personal Protective Equipment (PPE):
The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, DUST MASK.

Wear overalls, chemical goggles and impervious gloves. Avoid generating and inhaling dusts. If determined by a risk assessment an inhalation risk exists, wear a dust mask/respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Powder or Pellets
Colour:	Pale Yellow
Odour:	Unpleasant Sulphurous
Solubility:	Soluble in water.
Specific Gravity:	Not available
Relative Vapour Density (air=1):	Not available
Vapour Pressure (20 °C):	Not available
Flash Point (°C):	Not applicable
Flammability Limits (%):	Not available
Autoignition Temperature (°C):	Not available
Melting Point/Range (°C):	255-280
Decomposition Point (°C):	>255
pH:	Not available

10. STABILITY AND REACTIVITY

Reactivity:	Reacts exothermically on dilution with water. Contact with acids liberates toxic gas.
Chemical stability:	Stable under normal conditions of use. Hygroscopic: absorbs moisture or water from surrounding air.
Possibility of hazardous reactions:	Hazardous polymerisation will not occur. Can react with water producing carbon disulfide.
Conditions to avoid:	Avoid dust generation. Avoid exposure to heat, sources of ignition, and open flame. Avoid exposure to moisture. Avoid exposure to direct sunlight. Avoid electrostatic discharge.
Incompatible materials:	Incompatible with oxidising agents , combustible materials , acids , water , phosgene , sulfur chlorides , copper , copper alloys .
Hazardous decomposition products:	Carbon disulfide. Hydrogen sulfide. Oxides of sulfur. Oxides of carbon.

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Ingestion:	Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain, convulsions and loss of consciousness. Death may occur if large amounts are ingested.
Eye contact:	An eye irritant.

Skin contact: Contact with skin will result in irritation. Will liberate carbon disulfide upon contact with moist skin. Carbon disulfide can be absorbed through the skin with resultant adverse effects.

Inhalation: Breathing in dust will result in respiratory irritation. Breathing in high concentrations can produce central nervous system depression, which can lead to loss of co-ordination, impaired judgement and if exposure is prolonged, unconsciousness. Breathing in high concentrations may result in an irregular heart beat and prove suddenly fatal.

Acute toxicity:
Oral LD50 (rat): 500-2000 mg/kg

Chronic effects:

Mutagenicity: No information available.
Carcinogenicity: Not listed as carcinogenic according to the International Agency for Research on Cancer (IARC).
Reproductive toxicity: Suspected of damaging fertility or the unborn child.
Specific Target Organ Toxicity (STOT) - single exposure: May cause respiratory irritation.
Specific Target Organ Toxicity (STOT) - repeated exposure: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity Avoid contaminating waterways.

Persistence/degradability: No information available.

Bioaccumulative potential: No information available.

Mobility in soil: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal methods:
Refer to Waste Management Authority. Dispose of material through a licensed waste contractor. Advise flammable nature.

14. TRANSPORT INFORMATION

Road and Rail Transport
Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

UN No: 3342
Transport Hazard Class: 4.2 Spontaneously Combustible
Packing Group: III

Proper Shipping Name or Technical Name:	XANTHATES
Hazchem or Emergency Action Code:	1Y

Marine Transport
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN No:	3342
Transport Hazard Class:	4.2 Spontaneously Combustible
Packing Group:	III
Proper Shipping Name or Technical Name:	XANTHATES
IMDG EMS Fire:	F-A
IMDG EMS Spill:	S-J

Air Transport
Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS. TRANSPORT PROHIBITED under the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air in Passenger and Cargo Aircraft; may be transported by Cargo Aircraft Only.

UN No:	3342
Transport Hazard Class:	4.2 Spontaneously Combustible
Packing Group:	III
Proper Shipping Name or Technical Name:	XANTHATES

15. REGULATORY INFORMATION

Classification:
This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

Classification of the chemical:
Self-heating substances and mixtures - Category 2
Acute Oral Toxicity - Category 4
Acute Dermal Toxicity - Category 4
Skin Irritation - Category 2
Eye Irritation - Category 2A
Specific target organ toxicity (single exposure) - Category 3
Toxic to Reproduction - Category 2
Specific target organ toxicity (repeated exposure) - Category 2

Hazard Statement(s):
H252 Self-heating in large quantities; may catch fire.
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H315 Causes skin irritation.
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H335 May cause respiratory irritation.
H361 Suspected of damaging fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.

Poisons Schedule (SUSMP): None allocated.

This material is listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Supplier Safety Data Sheet; 12/ 2018.

This safety data sheet has been prepared by Ixom Operations Pty Ltd (Toxicology & SDS Services).

Reason(s) for Issue:
Revised Primary SDS
Update in Toxicological Information
Change in Hazardous Chemical Classification
Change in Formulation
Change in Exposure Controls
Change to Poisons Requirements

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Ixom representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.