Safety Data Sheet POTASSIUM THIOCYANATE

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SECTION 1: Identification

GHS Product identifier

Product name	POTASSIUM THIOCYANATE

Other means of identification

Name	Product Code
Potassium isothiocyanate, Potassium rhodanide, Potassium rhodanate, Potassium sulfocyanide, Potassium sulfocyanate, Potassium rhodamine	
POTASSIUM THIOCYANATE AR	PA063

Recommended use of the chemical and restrictions on use

Laboratory reagent, photographic restrainer and intensifier, synthetic dyestuffs, manufacture of sulfocyanides and thiourea, printing and dyeing textiles and medicine (hypotensive).

Supplier's details

Name	ChemSupply Australia Pty Ltd
Address	38-50 Bedford Street 5013 Gillman South Australia Australia
Telephone	08 8440 2000
email	www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Acute toxicity, dermal, Cat. 4
- Acute toxicity, inhalation, Cat. 4
- Acute toxicity, oral, Cat. 4

- Hazardous to the aquatic environment, long-term (chronic), Cat. 3

GHS label elements, including precautionary statements

Pictograms

Signal word	**Warning**
Hazard statement(s)	
H302	Harmful if swallowed
H312	Harmful in contact with skin
H332	Harmful if inhaled
H412	Harmful to aquatic life with long lasting effects
Precautionary statement(s)	
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physcian if you feel unwell,
P302+P352	IF ON SKIN: Wash with plenty of water/soap
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTER/doctor/physcian if you feel unwell.
P362+P364	Take off contaminated clothing and wash it before reuse.
P501	Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 97.18

Components

Component	CAS no.	Concentration
Potassium thiocyanate (EC no.: 206-370-1)	**333-20-0**	**100 % (weight)**
CLASSIFICATIONS: Acute toxicity, dermal, Cat. 4; Acute toxicity, inhalation, Cat. 4; Acute toxicity, oral, Cat. 4; Hazardous to the aquatic environment, long-term (chronic), Cat. 3. HAZARDS: H302 - Harmful if swallowed; H312 - Harmful in contact with skin; H332 - Harmful if inhaled; H412 - Harmful to aquatic life with long lasting effects.		

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor (at once).
If inhaled	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Immediately obtain medical aid if cough or other symptoms appear.

In case of skin contact	Wash affected areas with copious quantities of water. Wash clothing before reuse. In severe cases or if irritation persists, seek medical attention.
In case of eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. Seek medical advice if effects persist.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.

Most important symptoms/effects, acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary
For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

SECTION 5: Fire-fighting measures

Suitable extinguishing media
Small fire: Use dry chemical, CO2, water spray or foam.
Large fire: Use water spray, fog or foam.

Specific hazards arising from the chemical
Hazards from Combustion Products: May librate toxic gases in fire (sulfur oxides and nitrogen oxides, hydrogen cyanide).

Material does not burn. Fire or heat may produce irritating, poisonous and/or corrosive gases. Containers may explode when heated. Runoff may pollute waterways.

Special protective actions for fire-fighters
Wear SCBA and structural firefighter's uniform.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Avoid inhalation, contact with skin, eyes and clothing.
Wear protective clothing specified for normal operations (see Section 8)

Environmental precautions
Prevent further leakage or spillage and prevent from entering drains

Methods and materials for containment and cleaning up
Sweep up (avoid generating dust) and remove to a suitable, clearly labelled container for disposal in accordance with local regulations. Seek expert advice on handling and disposa

SECTION 7: Handling and storage

Precautions for safe handling
Avoid generation or accumulation of dusts. Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. In case of insufficient ventilation, wear suitable respiratory
equipment. Wash hands and face thoroughly after working with material.

Conditions for safe storage, including any incompatibilities

Storage Temperatures: Do not store above 25 °C.
Store away from oxidizing agents. Keep containers closed at all times. Store in cool place and out of direct sunlight.

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls
Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection
Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Ensure hand protection complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Body protection
Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Respiratory protection
Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In 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.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Solid
Appearance	White powder or colourless crystals. Turns brown, green, blue when fused, white again on cooling.
Color	No data available.
Odor	Odourless.
Odor threshold	No data available.
Melting point/freezing point	173 - 175 °C
Boiling point or initial boiling point and boiling range	500 °C (decomp.)
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	500 °C (bpt.)
Oxidizing properties	No data available.
pH	~ 5.3 - 8.5 (50 g/L, H2O, 20 °C)

Kinematic viscosity	No data available.
Solubility	Solubility in Water: Soluble. Solubility in Organic Solvents: Soluble in alcohol and acetone.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	No data available.
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 1.89
Relative vapor density	No data available.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes
No data available.

Further safety characteristics (supplemental)
Other Information: Taste: Saline, cooling taste.

SECTION 10: Stability and reactivity

Reactivity
Stable under normal conditions of storage and handling.

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
Contact with acids liberates very toxic gas (cyanide gas or hydrogen sulfide).
Sensitive to moisture; slowly decomposes on exposure to light.

Conditions to avoid
Slowly decomposes on exposure to light. Light, Heat, Incompatibles

Incompatible materials
Strong oxidisers, active halogen compounds, acids, bases, cyanides, nitrites.

Hazardous decomposition products
Cyanide fumes, potassium, hydrogen cyanide and oxides of carbon, nitrogen and sulfur.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Acute Toxicity - Oral: LD50 (rat): 854 mg/kg.

Ingestion: Harmful if swallowed. May cause gastrointestinal irritation with psychosis, nausea, vomiting, disorientation, weakness, low blood pressure, convulsions and death which may be delayed. Ingestion of this material may lead to CNS effects, depression of the respiratory and cardiovascular systems. The probable lethal dose is between 15-30 grams.

Inhalation: Harmful by inhalation. Causes irritation to the mucous membranes and the respiratory tract. Symptoms may include coughing, chest pains and shortness of breath.

// ----- From the Suggestion report (18/07/2024, 9:35 AM) ----- //

The ATE (dermal) of the mixture is: 1100 mg/kg bw

// ----- From the Suggestion report (18/07/2024, 9:35 AM) ----- //
The ATE (gas inhalation) of the mixture is: 4500 ppmV

// ----- From the Suggestion report (18/07/2024, 9:35 AM) ----- //
The ATE (oral) of the mixture is: 500 mg/kg bw

Skin corrosion/irritation
Harmful if absorbed through the skin. Causes irritation to skin with symptoms of redness, itching, and pain. Contact with skin may cause ulcers, discoloration or eczema.

Serious eye damage/irritation
Harmful if contact the eyes. Causes irriation to the eye, reddness, pain, blurred vision and swollen eye lids.

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available.

Carcinogenicity
No data available.

Reproductive toxicity
No data available.

Summary of evaluation of the CMR properties
No data available.

Specific target organ toxicity (STOT) - single exposure
No data available.

Specific target organ toxicity (STOT) - repeated exposure
No data available.

Aspiration hazard
No data available.

Additional information
Chronic Effects: Prolonged or repeated skin exposure may cause dermatitis. Repeated ingestion of small amounts may cause weakness, confusion, central nervous system effects, nausea and skin eruptions.

Potassium thiocyanate: dog LDLo intravenous 100mg/kg (100mg/kg) Journal of the American Pharmaceutical Association, Scientific Edition. Vol. 29, Pg. 152, 1940.
frog LDLo intramuscular 100mg/kg (100mg/kg) "Abdernalden's Handbuch der Biologischen Arbeitsmethoden." Vol. 4, Pg. 1391, 1935.
frog LDLo oral 300mg/kg (300mg/kg) "Abdernalden's Handbuch der Biologischen Arbeitsmethoden." Vol. 4, Pg. 1391, 1935.
frog LDLo unreported 250mg/kg (250mg/kg) Journal of the American Pharmaceutical Association, Scientific Edition. Vol. 29, Pg. 152, 1940.
guinea pig LDLo oral 600mg/kg (600mg/kg) Journal of the American Pharmaceutical Association, Scientific Edition. Vol. 29, Pg. 152, 1940.

guinea pig LDLo subcutaneous 150mg/kg (150mg/kg) "Abdernalden's Handbuch der Biologischen Arbeitsmethoden." Vol. 4, Pg. 1391, 1935.
human LDLo oral 80mg/kg (80mg/kg) BEHAVIORAL: "HALLUCINATIONS, DISTORTED PERCEPTIONS"

BEHAVIORAL: CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD

BEHAVIORAL: MUSCLE WEAKNESS JAMA, Journal of the American Medical Association. Vol. 119, Pg. 1177, 1942.
man TDLo oral 428mg/kg (428mg/kg) BEHAVIORAL: "HALLUCINATIONS, DISTORTED PERCEPTIONS"

BEHAVIORAL: TOXIC PSYCHOSIS

GASTROINTESTINAL: ULCERATION OR BLEEDING FROM STOMACH Archiv fuer Toxikologie. Vol. 23, Pg. 66, 1967.
mouse LD50 intraperitoneal 600mg/kg (600mg/kg) British Journal of Pharmacology and Chemotherapy. Vol. 4, Pg. 1, 1949.
mouse LD50 intravenous 88200ug/kg (88.2mg/kg) BEHAVIORAL: CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD

LUNGS, THORAX, OR RESPIRATION: DYSPNEA Journal of the American Pharmaceutical Association, Scientific Edition. Vol. 29, Pg. 152, 1940.
mouse LD50 oral 594mg/kg (594mg/kg) BEHAVIORAL: CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD

LUNGS, THORAX, OR RESPIRATION: DYSPNEA Journal of the American Pharmaceutical Association, Scientific Edition. Vol. 29, Pg. 152, 1940.
pigeon LDLo intramuscular 750mg/kg (750mg/kg) "Abdernalden's Handbuch der Biologischen Arbeitsmethoden." Vol. 4, Pg. 1391, 1935.
pigeon LDLo subcutaneous 500mg/kg (500mg/kg) "Abdernalden's Handbuch der Biologischen Arbeitsmethoden." Vol. 4, Pg. 1391, 1935.
rabbit LDLo intravenous 150mg/kg (150mg/kg) "Abdernalden's Handbuch der Biologischen Arbeitsmethoden." Vol. 4, Pg. 1391, 1935.
rabbit LDLo oral 500mg/kg (500mg/kg) "Abdernalden's Handbuch der Biologischen Arbeitsmethoden." Vol. 4, Pg. 1391, 1935.
rabbit LDLo subcutaneous 550mg/kg (550mg/kg) "Abdernalden's Handbuch der Biologischen Arbeitsmethoden." Vol. 4, Pg. 1391, 1935.
rat LD50 oral 854mg/kg (854mg/kg) BEHAVIORAL: CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD

LUNGS, THORAX, OR RESPIRATION: DYSPNEA Journal of the American Pharmaceutical Association, Scientific Edition. Vol. 29, Pg. 152, 1940.
rat LDLo subcutaneous 1gm/kg (1000mg/kg) Journal of the American Pharmaceutical Association, Scientific Edition. Vol. 29, Pg. 152, 1940.

SECTION 12: Ecological information

Toxicity
Acute Toxicity - Daphnia: EC50 (Daphnia magna): 11 mg/l/48 h.

SECTION 13: Disposal considerations

Disposal methods

Product disposal
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Other disposal recommendations
Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP
Poison Schedule: NS

Canadian Domestic Substances List (DSL)
Chemical name: Thiocyanic acid, potassium salt
CAS: 333-20-0

SECTION 16: Other information

Further information/disclaimer
ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'
Safe Work Australia, 'National Code of Practice fot the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.
Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.
Safe Work Australia, Workplace Exposure Standards for Airbourne Contaminants, December 2019
Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au
IATA, Dangerous Goods Regulations (DGR)
IMO, International Maritime Dangerous Goods Code (IMDG)