

SECTION 1: Identification

1.1. Product identifier

Trade name : POTASSIUM FERROCYANIDE 3hydr
 CAS-No. : 14459-95-1
 Product code : 116120xxx
 Formula : K₄Fe(CN)₆.3H₂O

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended uses and restrictions : For laboratory use only

1.3. Supplier's details

Labchem (Pty)Ltd
 6 Wakefield Road
 Founders Hill
 1609 Johannesburg - South Africa
 T +27 11 452 1116 - F +27 86 588 0293
techlab@labchem.co.za - www.labchem.co.za

1.4. Emergency telephone number

Emergency number : +27 11 452 1116

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS

Acute toxicity (oral) Not classified
 Hazardous to the aquatic environment — H402
 Acute Hazard, Category 3
 Full text of H statements : see section 16

2.2. Label elements

Labelling according to the United Nations GHS

Signal word (GHS-ZA) : -
 Hazard statements (GHS-ZA) : H402 - Harmful to aquatic life
 Precautionary statements (GHS-ZA) : P273 - Avoid release to the environment.
 P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

Adverse physicochemical, human health and environmental effects : Harmful to aquatic life

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance identification codes: See section 1.1

Name	Product identifier	%	Classification according to the United Nations GHS
tetrapotassiumhexacyanoferrate, trihydrate (Main constituent)	(CAS-No.) 14459-95-1	≥ 99	Acute Tox. Not classified (Oral) Aquatic Acute 3, H402

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

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First-aid measures after skin contact	: Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents. Remove clothing before washing. Take victim to a doctor if irritation persists. Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Take victim to an ophthalmologist. Do not apply neutralizing agents. Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Rinse mouth with water. Victim is fully conscious: immediately induce vomiting. Induce vomiting by giving a 0.9 % saline solution. Call Poison Information Centre (www.big.be/antigif.html). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Doctor: administration of chemical antidote. Doctor: gastric lavage. Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after skin contact	: Slight irritation.
Symptoms/effects after eye contact	: Slight irritation.
Symptoms/effects after ingestion	: Red skin. Accelerated heart action. Rapid respiration. Dry/sore throat. Vomiting. Nausea. Diarrhoea. FOLLOWING SYMPTOMS MAY APPEAR LATER: Dizziness. Slowing heart action. Low arterial pressure. Decreased renal function. Change in urine composition.
Potential adverse human health effects and symptoms	: Non-toxic if swallowed (LD50 oral, rat > 5000 mg/kg). Slightly irritant to skin. Slightly irritant to eyes. Caution! Substance is absorbed through the skin.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Adapt extinguishing media to the environment for surrounding fires. Water spray. Dry powder. Foam.
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5.2. Special hazards arising from the substance or mixture

Fire hazard	: DIRECT FIRE HAZARD: Non combustible. INDIRECT FIRE HAZARD: Reactions involving a fire hazard: see "Reactivity Hazard".
Hazardous decomposition products in case of fire	: On heating/burning: release of toxic and corrosive gases/vapours (nitrous vapours).

5.3. Advice for firefighters

Precautionary measures fire	: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions	: Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No additional information available

6.1.1. For non-emergency personnel

Protective equipment	: Gloves. Protective clothing. Dust cloud production: compressed air/oxygen apparatus.
Emergency procedures	: Ventilate spillage area. Mark the danger area. Prevent dust cloud formation. No naked flames. Wash contaminated clothes.

6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Avoid release to the environment. Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment	: Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Take account of toxic/corrosive precipitation water. Knock down/dilute dust cloud with water spray. On heating: dilute combustible/toxic gases/vapours. Collect spillage.
Methods for cleaning up	: Mechanically recover the product. Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
Other information	: Dispose of materials or solid residues at an authorized site.

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According to SANS 10234:2008 and SANS 11014:2010

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Avoid raising dust. Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Clean contaminated clothing. Do not discharge the waste into the drain. Keep container tightly closed.
- Hygiene measures : Observe normal hygiene standards. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a well-ventilated place. Keep cool.
- Storage area : Store in a dark area. Keep container in a well-ventilated place. Meet the legal requirements.
- Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.
- Information on mixed storage : KEEP SUBSTANCE AWAY FROM: (strong) acids.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : SUITABLE MATERIAL: wood. synthetic material. glass. cardboard.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station.
- Environmental exposure controls : Avoid release to the environment.

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

- Materials for protective clothing : GIVE GOOD RESISTANCE: neoprene. PVC
- Hand protection : Gloves
- Eye protection : Safety glasses. In case of dust production: protective goggles. Safety glasses
- Skin and body protection : Protective clothing
- Respiratory protection : Dust production: dust mask with filter type P1

Personal protective equipment symbol(s):



8.4. Exposure limit values for the other components

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Solid
- Appearance : Crystalline solid. Crystalline powder.
- Molecular mass : 422.41 g/mol
- Colour : Light yellow.
- Odour : Odourless.
- Odour threshold : No data available
- pH : 8 – 10
- pH solution : No data available
- Relative evaporation rate (butylacetate=1) : No data available
- Relative evaporation rate (ether=1) : No data available
- Melting point : 70 °C
- Freezing point : Not applicable
- Boiling point : No data available
- Flash point : Not applicable
- Auto-ignition temperature : Not applicable
- Decomposition temperature : > 70 °C

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Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Vapour pressure at 50 °C	: No data available
Relative vapour density at 20 °C	: 12.7
Relative density	: 1.9
Relative density of saturated gas/air mixture	: No data available
Density	: 1850 kg/m ³
Relative gas density	: No data available
Solubility	: Soluble in water. Soluble in acetone. Water: 34 g/100ml
Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (Log Kow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: Not applicable
Lower explosive limit (LEL)	: No data available
Upper explosive limit (UEL)	: No data available

9.2. Other information

Minimum ignition energy	: Not applicable
VOC content	: 0 %
Other properties	: Basic reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Decomposes on exposure to temperature rise: release of toxic/combustible gases/vapours (hydrogen cyanide).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

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LD50 oral rat	> 5000 mg/kg (Rat, Oral)
Skin corrosion/irritation	: Not classified pH: 8 – 10
Serious eye damage/irritation	: Not classified pH: 8 – 10
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

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According to SANS 10234:2008 and SANS 11014:2010

Potential adverse human health effects and symptoms : Non-toxic if swallowed (LD50 oral, rat > 5000 mg/kg). Slightly irritant to skin. Slightly irritant to eyes. Caution! Substance is absorbed through the skin.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008. Harmful to aquatic life.

Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

Ecology - water : Harmful to crustacea. Slightly harmful to fishes. Groundwater pollutant. Water pollutant (surface water). Not harmful to bacteria. pH shift.

Hazardous to the aquatic environment, short-term (acute) : Harmful to aquatic life.

Hazardous to the aquatic environment, long-term (chronic) : Not classified

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LC50 fish 1	> 100 mg/l (96 h, Pimephales promelas, Anhydrous form)
EC50 Daphnia 1	32 mg/l (96 h, Daphnia magna, Anhydrous form)

12.2. Persistence and degradability

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Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

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Bioaccumulative potential	No bioaccumulation data available.
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12.4. Mobility in soil

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Mobility in soil	No additional information available
Ecology - soil	Toxic to flora.

12.5. Other adverse effects

Ozone : Not classified

Other adverse effects : No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations : Recycle/reuse.

Additional information : Can be considered as non hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

SECTION 14: Transport information

In accordance with SANS / IMDG / IATA

SANS	IMDG	IATA
14.1. UN number		
Not regulated for transport		
14.2. Proper Shipping Name		
Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)		
Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable
14.4. Packing group		
Not applicable	Not applicable	Not applicable
14.5. Environmental hazards		
Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
: No supplementary information available		

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14.6. Special precautions for user

- SANS

Transport regulations (UN) : Not subject

- IMDG

Transport regulations (IMDG) : Not subject

- IATA

Transport regulations (IATA) : Not subject

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 national regulations specific for the product

Regulatory reference : SANS 10234:2008; SANS 11014:2010; SANS 10228:2012;SANS 10229:2010; SANS 10232(1,2,4), SANS 10231:2018; Occupational Health and Safety Act 85 of 1993; National Road Traffic Act 93 of 1996.

SECTION 16: Other information

Issue date : 11/03/2020

Revision date : 11/03/2025

Full text of H-statements:

H402	Harmful to aquatic life
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SDS South Africa

The data provided in this Safety Data Sheet (SDS) is correct to the best of our knowledge. The data relates to the specific product as named and is intended as a guide to the safe handling of the product in all its facets. The data may no longer be valid if the product is used in any process or in combination with other products. This SDS is not a quality specification nor any form of guarantee.