



Infosafe No™	1CHJF	Issue Date : September 2018	RE-ISSUED by CHEMSUPP
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Product Name : **1,10-PHENANTHROLINE Monohydrate**

Classified as hazardous

1. Identification

GHS Product Identifier	1,10-PHENANTHROLINE Monohydrate	
Company Name	CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)	
Address	38 - 50 Bedford Street GILLMAN SA 5013 Australia	
Telephone/Fax Number	Tel: (08) 8440-2000 Fax: (08) 8440-2001	
(24 hour a day available)	CHEMCALL: 1800 127 406 (Australia) / +64-4-917-9888 (International)	
Recommended use of the chemical and restrictions on use	Redox indicator: oxidised (faint blue) to reduced (red) - forms a complex compound with ferrous ions, determination of nickel, ruthenium, silver and other metals, drier in coatings industry and analytical reagent.	
Other Names	Name	Product Code

1,10-PHENANTHROLINE Monohydrate AR
Phenanthroline hydrate
4,5-Phenanthroline
o-Phenanthroline monohydrate
Orthophenanthroline monohydrate
4,5-Diazaphenanthrene monohydrate

PA180

Other Information

Chem-Supply 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 Chem-Supply 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 Chem-Supply 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.

2. Hazard Identification

GHS classification of the substance/mixture	Hazardous to the Aquatic Environment - Acute Hazard: Category 1 Hazardous to the Aquatic Environment - Long-Term Hazard: Category 1
Signal Word (s)	Acute Toxicity - Oral: Category 3 DANGER
Hazard Statement (s)	H301 Toxic if swallowed. H410 Very toxic to aquatic life with long lasting effects.
Pictogram (s)	Skull and crossbones, Environment



Precautionary statement – Prevention	P264 Wash thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P273 Avoid release to the environment.
Precautionary statement – Response	P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P330 Rinse mouth.
Precautionary statement – Storage	P405 Store locked up.
Precautionary statement – Disposal	P501 Dispose of contents/container to an approved waste disposal plant.

3. Composition/information on ingredients



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Chemical Characterization	Solid				
Ingredients	<u>Name</u>	<u>CAS</u>	<u>Proportion</u>	<u>Hazard Symbol</u>	<u>Risk Phrase</u>
	1,10-Phenanthroline Monohydrate	5144-89-8	100 %		

4. First-aid measures

Inhalation	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.
Ingestion	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate medical advice.
Skin	Immediately remove contaminated clothing and wash affected area with water for at least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek immediate medical advice /attention depending on the severity.
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.
First Aid Facilities	Maintain eyewash fountain and safety shower in work area.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of the patient.
Other Information	For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

5. Fire-fighting measures

Suitable extinguishing media	No limitations to the type of extinguishing media.
Hazards from Combustion Products	May liberate toxic fumes under fire conditions including combustion products such as oxides of carbon and nitrogen.
Specific Methods	No limitations to the type of extinguishing media. Small fire: Use dry chemical, CO ₂ , water spray or foam. Large fire: Use water spray, fog or foam.
Specific hazards arising from the chemical	May burn but do not ignite readily. Runoff may pollute waterways. Fire or heat may produce irritating, poisonous and/or corrosive gases.
Hazchem Code	2X
Precautions in connection with Fire	Wear SCBA and structural firefighter's uniform.

6. Accidental release measures

Personal Precautions	Evacuate the area of all non-essential personnel. Avoid substance contact. Avoid generation of dusts: do not inhale dusts. Ensure supply of fresh air in enclosed rooms.
Personal Protection	Wear protective clothing specified for normal operations (see Section 8)
Clean-up Methods - Small Spillages	Sweep up (avoid generating dust) and using clean non-sparking tools transfer to a clean, suitable, clearly labelled container for disposal in accordance with local regulations.
Environmental Precautions	Avoid release to the environment.

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. Keep material away from sparks, flames and other ignition sources.
Conditions for safe storage, including any incompatibilities	Store in cool place and out of direct sunlight. Store in well ventilated area. Store away from sources of heat or ignition. Store away from oxidizing agents. Keep containers closed at all times.
Storage Regulations	Refer Australian Standard AS/NZS 4452:1997 'The storage and handling of toxic substances'.

8. Exposure controls/personal protection



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Other Exposure Information	No exposure standards have been established for this product by Safe Work Australia, however, the TWA exposure standard for dusts/mists not otherwise specified is 10 mg/m ³ . All atmospheric contamination should be kept to as low a level as is workable.
Appropriate engineering controls	Maintain concentration below recommended exposure limit. Local exhaust ventilation system may be required. When making up indicator solution, do so in the fume cupboard.
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.
Eye 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.
Hand Protection	Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Rubber or plastic gloves.
Personal Protective Equipment	Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.
Body Protection	Wear suitable protective clothing to prevent skin contact.
Hygiene Measures	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

9. Physical and chemical properties

Form	Solid
Appearance	White to colourless crystalline powder.
Odour	Odourless.
Melting Point	93 - 94°C
Solubility in Water	Soluble
Solubility in Organic Solvents	Soluble in alcohol, benzene and acetone.
Specific Gravity	1.636
pH	pH ~4.0 (50 g/l, H ₂ O @ 20 °C)
Partition Coefficient: n-octanol/water	LogP (o/w): 1.78
Flammability	Combustible.
Molecular Weight	198.23
Other Information	Sensitivity to iron = 1:10,000,000. A heterotricyclic compound.

10. Stability and reactivity

Chemical Stability	Stable under normal use conditons.
Conditions to Avoid	Dust generation. Heat, flames, ignition sources and incompatibles.
Incompatible Materials	Strong oxidising agents and nitric acid.
Hazardous Decomposition Products	Oxides of nitrogen and carbon.
Hazardous Polymerization	Will not occur.

11. Toxicological Information

Acute Toxicity - Oral LD50 (rat): 132 mg/kg



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Ingestion	Toxic if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea.
Inhalation	Harmful if inhaled. Irritating to mucous membranes and respiratory tract.
Skin	Irritating to skin.
Eye	Irritating to eyes.
Carcinogenicity	No evidence of carcinogenic properties.

12. Ecological information

Ecotoxicity	No ecological data available for this product.
Bioaccumulative Potential	Not expected. Log Pow: 1.78.
Environmental Protection	Highly toxic to aquatic life. Do not allow to enter waters, waste water, or soil!

13. Disposal considerations

Disposal Considerations	Whatever cannot be saved for recovery or recycling should be disposed of according to relevant local, state and federal government regulations.
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14. Transport information

Transport Information	Dangerous Goods of Class 6 Toxic and Infectious Substances are incompatible in a placard load with any of the following: - Class 1, Class 3, if the Class 3 dangerous goods are nitromethane, Class 8, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids, and are incompatible with food packaging in any quantity.
U.N. Number	2811
UN proper shipping name	TOXIC SOLID, ORGANIC, N.O.S. - (1,10-PHENANTHROLINE Monohydrate)
Transport hazard class(es)	6.1
Hazchem Code	2X
Packaging Method	3.8.6.1
Packing Group	III
EPG Number	6B5
IERG Number	36

15. Regulatory information

Regulatory Information	Listed in the Australian Inventory of Chemical Substances (AICS). Not listed under WHS Regulation 2011, Schedule 10 - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
Poisons Schedule	Not Scheduled

16. Other Information

Literature References	'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia. Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007. Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011. Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010. Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'. Safe Work Australia, 'Hazardous Substances Information System, 2005'. Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'. Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'. Contact Person/Point Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT: All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are
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Safety Data Sheet

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Empirical Formula & Structural Formula C₁₂H₈N₂.H₂O

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