

MATERIAL SAFETY DATA SHEET**Product Name:** 1,10-Phenanthroline monohydrate**CAS No.:** 5144-89-8**Version:** 0**1. Identification**

Product Code : 90911
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2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
1,10-Phenanthroline monohydrate	5144-89-8	90-100 %

3. Hazards Identification

Emergency Overview : WARNING! MAY BE HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

Saf-T-Data

Health Rating : 2 - Moderate
Flammability Rating : 1 - Slight
Reactivity Rating : 1 - Slight
Contact Rating : 2 - Moderate (Life)

Potential Health Effects

Inhalation : No information found, but compound should be handled as a potential health hazard. May cause irritation to the respiratory tract. Symptoms may include coughing, sore throat, labored breathing, and chest pain.

Ingestion : No information found, but compound should be handled as a potential health hazard. May cause irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea

Skin Contact : No information found, but compound should be handled as a potential health hazard. May cause irritation with redness and pain. May be absorbed through the skin with possible systemic effects

Eye Contact : No information found, but compound should be handled as a potential health hazard. May cause irritation, redness and pain

Chronic Exposure : No information found, but compound should be handled as a potential chronic health hazard.

Aggravation of Pre-existing Conditions : No information found.

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4. First Aid Measures

- General information** : Get medical advice/attention if you feel unwell. If medical advice is needed, have product container or label at hand. Show this safety data sheet to the doctor in attendance.
- Inhalation** : Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention
- Ingestion** : Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention
- Skin Contact** : Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if symptoms occur.
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately

5. Fire fighting measures

- Fire** : As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source.
- Explosion** : Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
- Fire Extinguishing Media** : Water spray, dry chemical, alcohol foam, or carbon dioxide.
- Special Information** : In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	:	Keep unauthorized personnel away. Keep upwind. Ventilate closed spaces before entering them. Avoid inhalation of dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
Methods and material for containment and cleaning up	:	Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination.
Notification Procedures	:	Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.
Environmental precautions	:	Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

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- Precautions for safe handling** : Keep container tightly closed. Suitable for any general chemical storage area. Product may solidify at room temperature. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.
- Conditions for safe storage, including any incompatibilities** : Keep containers tightly closed. Store in cool, dry place. Store in a well-ventilated place.

8. Exposure Controls Personal Protection

- Control parameters**
- Occupational exposure limits** : None established.
- Ventilation System** : A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.
- Personal Respirators (NIOSH Approved):** : For conditions of use where exposure to the substance is apparent and engineering controls are not feasible, consult an industrial hygienist. For emergencies, or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. **WARNING:** Air purifying respirators do not protect workers in oxygen-deficient atmospheres.
- Skin Protection** : Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
- Eye Protection:** : Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.
- Other** : Clothing contaminated with this material may be an increased fire hazard. Wash contaminated clothing as soon as possible.
- Respiratory protection** : In case of inadequate ventilation use suitable respirator.
- Hygiene measures** : Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower.

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9. Physical and Chemical Properties

Appearance	:	White powder.
Odor	:	Slight odor.
pH	:	No information found.
Melting point/freezing point	:	93 - 94C (199 - 201F) Becomes anhydrous @ 117C (242F)
Initial boiling point and boiling range	:	245C (473F)
Flash Point	:	No information found
Vapor pressure	:	Not applicable
Vapor density	:	No information found
Relative density	:	No information found
Solubility in water	:	Soluble in 300 parts water.
Solubility (other)	:	No data available.
Formula	:	C ₁₂ H ₈ N ₂ .H ₂ O
Molecular Weight	:	198.22 g/mol

10. Stability and Reactivity

Stability	:	Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products	:	Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.
Hazardous Polymerization	:	This substance does not polymerize.
Incompatibilities:	:	Strong oxidizers.
Conditions to Avoid:	:	No information found.

1. Toxicological Information

Toxicological Data:

Anhydrous: Investigated as a mutagen, reproductive effector. Hydrate: Investigated as a mutagen.

Cancer Lists			
Ingredient	IARC Monographs on the Evaluation of Carcinogenic Risks to Humans DIOXANE	US. National Toxicology Program (NTP) Report on Carcinogens DIOXANE	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
1,10-Phenanthroline monohydrate	None	No	No

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12. Ecological Information

Ecotoxicity

Acute hazards to the aquatic environment :

Fish Product : No data available.

Aquatic invertebrates Product : No data available.

Chronic hazards to the aquatic environment :

Fish Product : No data available.

Aquatic invertebrates Product : No data available.

Toxicity to Aquatic Plants Product: : No data available.

Persistence and degradability

Biodegradation Product : No data available.

BOD/COD ratio Product : No data available.

Bioaccumulative potential

Bioconcentration factor (BCF) Product : No data available on bioaccumulation.

Product

Partition coefficient n-octanol / water (log Kow) Product : No data available.

Mobility in soil : No data available.

Other adverse effects : No data available.

13. Disposal consideration

Disposal instructions : Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated packaging : Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport Information

	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
DOT			Not regulated		
IMDG			Not regulated		
IATA			Not regulated		

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This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Safety, health and environmental regulations/legislation specific for the substance or mixture
No Data Available.

16. Other Information**Issue Date :**01/08/2014**Version : 0**

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