



Samchun Chemicals

Material Safety Data Sheet

o-Phenanthroline monohydrate

Section 1 – PRODUCT AND COMPANY IDENTIFICATION

1. Product Identifier	o-Phenanthroline monohydrate; 1,10-Phenanthroline monohydrate
2. Recommended Use & Uses advised against	Uses for Laboratory and R&D only
3. Information of Supplier	SAMCHUN PURE CHEMICAL CO.,LTD ADDRESS; (Mogok-dong) 117, Sandan-ro 16Beon-gil, Pyeongtaek-si, Gyeonggi-do, Korea Emergency Phone; 82-31-668-0700/3 Department; Safety & Environment dep. Web site; http://www.samchun.com

Section 2 – HAZARDS and DANGER IDENTIFICATION

1.GHS Classification· Identification	Acute toxic(Oral)	Category3
	Acute Aquatic Toxicity	Category1
	Chronic Aquatic Toxicity	Category2

2. Label and Mark including Precautionary Statement

◦Label elements



◦Signal word

Danger

◦Hazard · Danger statement

H301 Toxic if swallowed
H400 Very toxic to aquatic life
H411 Toxic to aquatic life with long lasting effects

◦Precautionary statement

Precaution	P264 Wash ... thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P273 Avoid release to the environment
Measures	P321 Specific treatment (see Seciton 4. on this label). P330 Rinse mouth. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician P391 Collect spillage
Storage	P405 Store locked up
Dispose	P501 Dispose of contents/container under related law and regulations

3. Other Hazard-Risk which are not included in the classification criteria

NFPA index(0~4steps) : Health=1, Fire=1, Reaction=0

Section 3 – COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Name	Other Name	CAS No.	Content (%)
o-Phenanthroline monohydrate	1,10-Phenanthroline monohydrate	5144-89-8	99 ~ 100
Water		7732-18-5	0 ~ 1

Section 4 – FIRST AID MEASURES

1. Eye Contact	Rinse with plenty of water for at least 15minutes and get medical attention immediately.
2. Skin Contact	Take off contaminated cloths and shoes immediately, wash with plenty of water and soap for at least 15minutes.
3. Inhalation	Move victim to fresh air. If breathing is difficult, give artificial respiration and get medical attention immediately.
4. Ingestion	Do not induce vomiting. Get medical advice/attention immediately.
5. Immediate medical attention and Notes for physician	Keep the medical personnel aware of the materials involved and take protective action.

Section 5 – FIRE-FIGHT MEASURES

1. Suitable extinguish media	Carbon dioxide, powdered fire extinguisher, foam extinguisher, water Inappropriate Extinguishing Media: N/A
2. Special hazards arising from the substance	Pyrolysis products: Carbon oxides, nitrogen
3. Special protective equipment and Precautions for fire-fighters	Move containers from fire area if you can do it without risk. When extinguishing a fire, be sure to wear personal protective equipment. If it is not possible to extinguish the fire, withdraw immediately. Keep containers cool by spraying with water for a long time, even after the fire is out. Isolate hazardous areas and deny access to people.

Section 6 – ACCIDENTIAL RELEASE MEASURES

1. Personal precautions and Emergency procedures	Do not touch spilled material. Avoid inhalation and skin contact. In case of confined space, wear air respirator and ventilate and remove all sources of ignition.
2. Environmental precautions	Minimize leak/spill, collect and keep leak/spill in container
3. Methods and material for containment and cleaning up	Remove residue with high-efficient cleaner

Section 7 – HANDING AND STORAGE

1. Precautions for safe Handling	Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. All containers should be grounded.
2. Conditions for safe storage	Use a method that minimizes the generation of dust. Keep container tightly closed in a dry, cool and well-ventilated place. Keep away from incompatible materials.

Section 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

1. Occupational exposure limit, biological exposure limit

National law of Safety management of

N/A

2. Appropriate Engineering controls	Ensure compliance with applicable exposure limits and operate local exhaust ventilation when working. If the substance is at risk of explosion, ventilation equipment should be explosion-resistant.
3. Personal protective equipment	
◦Respiratory protection	Because it is concerned about the harmfulness of human body due to chemical substances, it is recommended to wear respiratory protective equipment with dust mask or dust filter in consideration of physical and chemical characteristics when handling. Respiratory protection should be certified by the Health and Safety Authority. It is concerned about the harmfulness of the human body depending on the working environment, it should wear respirator, air-purifying respirator
◦Eye-protection	Wear safety glasses when handling as they may cause human health hazards due to chemicals. Install eye wash facilities and emergency eyewash stations near chemical handling sites
◦Hand protection	Wear safety gloves when handling, as it is likely to harm human health due to

◦Skin and body protection	chemicals Wear chemical protective clothing when handling, as it is likely to harm human health due to chemicals
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Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

1. Physical state and color	Solid(White)	2. Odor	Odorless
3. threshold	N/A	4. pH	N/A
5. Melting/Freezing point	97~101°C	6. Boiling point/range	N/A
7. Flashing point	N/A	8. Evaporation speed	N/A
9. Flammability(solid,gas)	N/A	10. Flash or Explosion limit upper / lower	N/A
11. Vapor pressure	N/A	12. Solubility	0.33%
13. Vapor density	N/A	14. Gravity	N/A
15. n-octanol-water Partition coefficient	N/A	16. Self ignition temp(°C)	N/A
17. Cracking temp(°C)	N/A	18. Viscosity	N/A
19. Molecular Weight	198.23		

Section 10 – STABILITY AND REACTIVITY

1. Chemical stability and Possibility of Hazardous Reactions	Stable under normal temp. and pressure
2. Conditions to Avoid	Avoid heat, sparks, flames and other sources of ignition.
3. Incompatible Materials	Strong oxidizing agent, strong acid
4. Hazardous Decomposition Products	Thermal decomposition products: carbon oxides, nitrogen oxides

Section 11 – TOXICOLOGICAL INFORMATION

1. Information on the likely routes of exposure.

N/A

2. Health hazard information

◦Acute toxic	Oral : LD50 132 mg/kg Rat Skin : N/A Inhalation : N/A
◦Serious skin corrosive / irritation	May cause skin irritation
◦Serious eye damage / irritation	May cause eye irritation
◦Respiratory sensitization	N/A
◦Skin sensitization	N/A
◦Carcinogenicity	N/A
◦Germ cell Mutagenicity	N/A
◦Reproductive toxic	N/A
◦Specific target organ toxicity (single exposure)	N/A
◦Specific target organ toxicity (repeated exposure)	N/A
◦Aspiration hazard	N/A

Section 12 – ECOLOGICAL INFORMATION

1. Aquatic and Terrestrial eco toxicity	Fish toxicity : N/A Invertebrate toxicity : N/A Sea algae : N/A
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2.Persistence and degradability	Persistence : N/A Degradability : N/A
3.Bioaccumulative potential	Concentrations : N/A Bioaccumulative : N/A
4.Mobility in soil	N/A
5.Other adverse effects	Very toxic to aquatic organisms. Toxic to aquatic life with long lasting effects.

Section 13 – Disposable considerations

1.Waste methods	Dispose in accordance with local regulations.
2.Waste warning	Dispose prohibited substances and waste separately from others.

Section 14 – TRANSPORT INFORMATION

1. UN No.	2811
2.Proper shipping Name	o-Phenanthroline monohydrate
3.Hazard class	6.1
4.Packing group	III
5.Marine pollutant	N/A
6.Particular safety Measures for transportation	Fire emergency : F-A Emergency measures RELEASE : S-A

Section 15 – REGULATORY INFORMATION

1.Occupation safety and health acts	Non-described
2. Chemical Substances Control Act	Non-described
3. National law of Safety management of hazardous material	Non-described
4.National law of management of Wastes	Designated Waste
5.Other domestic and foreign law	Non-described

Section 16 – OTHER INFORMATION

1. Material source	A chemical information MSDS Safety and Health Agency National Institute of Environmental Research Chemical Information Systems Korea Industrial Technology National Fire Hazardous Materials Information System
1. The 1st edition	2002.07.30
2. Revision and The final revision	6 / 2019.01.03
. Other references	

* The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.