



Material Safety Data Sheet

o-Phenanthroline, 0.1% - 0.3% w/v

Section 1 - Chemical Product and Company Identification

MSDS Name:

o-Phenanthroline, 0.1% - 0.3% w/v

Catalog Numbers:

LC18150, LC18155, LC18160

Synonyms:

1, 10-Phenanthroline solutions

Company Identification:

LabChem Inc

200 William Pitt Way

Pittsburgh, PA 15238

Company Phone Number:

(412) 826-5230

Emergency Phone Number:

(800) 424-9300

CHEMTREC Phone Number:

(800) 424-9300 or

011-703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	Percent
7732-18-5	Water	>99
5144-89-8	1,10-Phenanthroline monohydrate	0.1-0.3
7647-01-0	Hydrochloric acid	0-0.1*

* LC18160 does not contain hydrochloric acid.

Section 3 - Hazards Identification

Emergency Overview

Appearance: clear, colorless to slight yellow solution**Warning!** May cause eye and skin irritation. May cause kidney damage.**Target Organs:** Kidneys, eyes, skin, respiratory tract, teeth

Potential Health Effects

Eye:

May cause eye irritation.

Skin:

May cause skin irritation.

Ingestion:

May cause gastrointestinal irritation.

Inhalation:

May cause respiratory irritation.



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Chronic:

May cause kidney damage. Adverse reproductive effects, mutagenic effects, and teratogenic effects have occurred in laboratory experiments.

Section 4 - First Aid Measures

Eyes:

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Get medical aid at once.

Skin:

Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

Ingestion:

Do not induce vomiting. Give conscious victim 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid at once.

Inhalation:

Move victim to fresh air immediately. Get medical aid if irritation or other symptoms appear.

Notes to Physician:

Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Contact with metals may evolve flammable hydrogen gas.

Extinguishing Media:

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

Autoignition Temperature:

Not available

Flash Point:

Not available

NFPA Rating:

CAS# 7732-18-5: Health- 0, Flammability- 0, Instability- 0

CAS# 5144-89-8: Health- 3, Flammability- 1, Instability- 1

CAS# 7647-01-0: Health- 3, Flammability- 0, Instability- 1

Explosion Limits:

Lower: n/a Upper: n/a

Section 6 - Accidental Release Measures

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb spill with inert material such as sand, vermiculite, or diatomaceous earth, and transfer to a suitable container labeled for later disposal.



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Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

Storage:

Store tightly capped in a cool, dry, well-ventilated area away from incompatible materials.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Facilities using or storing this material should be equipped with an eyewash and safety shower. Provide local exhaust or general dilution ventilation to keep airborne levels below the permissible exposure limits.

Exposure Limits:

Chemical Name:	ACGIH	NIOSH	OSHA
Water	None listed	None listed	None listed
o-Phenanthroline monohydrate	None listed	None listed	None listed
Hydrochloric acid	2 ppm Ceiling	5 ppm Ceiling 7 mg/m ³ Ceiling 50 ppm IDLH	5 ppm Ceiling 7 mg/m ³ Ceiling

OSHA Vacated PELs:

Hydrochloric acid: 5 ppm Ceiling, 7 mg/m³ Ceiling

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133. Do not wear contact lenses when working with chemicals.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134. Always use a NIOSH-approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State:	Liquid
Color:	Colorless to sl. yellow
Odor:	Odorless
pH:	Acidic
Vapor Pressure:	Not available
Vapor Density:	Not available
Evaporation Rate:	Not available
Viscosity:	Not available



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Boiling Point:	Not available
Freezing/Melting Point:	Not available
Decomposition Temperature:	Not available
Solubility in water:	Soluble
Specific Gravity/Density:	1.0
Molecular Formula:	Not applicable
Molecular Weight:	Not applicable

Section 10 - Stability and Reactivity

Chemical Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Incompatible materials, excess heat.

Incompatibilities with Other Materials:

Strong oxidizing agents, strong bases.

Hazardous Decomposition Products:

Nitrogen oxides, carbon dioxide, carbon monoxide, chlorine, hydrogen chloride.

Hazardous Polymerization:

Has not been reported.

Section 11 - Toxicological Information

RTECS:

CAS# 7732-18-5: ZC0110000

CAS# 5144-89-8: SF8437000

CAS# 7647-01-0:

LD50/LC50:

CAS# 7732-18-5:

Oral, rat: LD50 = >90 mL/kg

CAS# 5144-89-8:

Not available

CAS# 7647-01-0:

Oral, rat: LD50 = 700 mg/kg

Dermal, rabbit: LD50 = 5010 mg/kg

Inhalation, rat: LC50 = 3124 ppm/1H

Carcinogenicity:

CAS# 7732-18-5: Not listed as a carcinogen by ACGIH, IARC, NTP, OSHA, or California Proposition 65.

CAS# 5144-89-8: Not listed as a carcinogen by ACGIH, IARC, NTP, OSHA, or California Proposition 65.

CAS# 7647-01-0: Not listed as a carcinogen by ACGIH, IARC, NTP, OSHA, or California Proposition 65.

Epidemiology:

Not available

Teratogenicity:

See actual entry in RTECS for complete information.



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Reproductive:

See actual entry in RTECS for complete information.

Mutagenicity:

See actual entry in RTECS for complete information.

Neurotoxicity:

Not available

Section 12 - Ecological Information

No information found.

Section 13 - Disposal Considerations

Dispose of in accordance with Federal, State, and local regulations.

Section 14 - Transport Information

US DOT

Shipping Name: Not regulated

Hazard Class:

UN Number:

Packing Group:

Section 15 - Regulatory Information

US Federal

TSCA:

CAS# 7732-18-5 is listed on the TSCA Inventory.

CAS# 5144-89-8 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the Inventory (40CFR 720.3(u)(2)).

CAS# 7647-01-0 is listed on the TSCA Inventory.

SARA Reportable Quantities (RQ):

CAS# 7647-01-0: final RQ = 5000 lb. (2270 Kg)

CERCLA/SARA Section 313:

None of the components of this product are listed.

OSHA - Highly Hazardous:

CAS# 7647-01-0 is considered highly hazardous by OSHA.

US State

State Right to Know:

CAS# 7647-01-0 is listed on the following state Right-to-Know lists: Massachusetts, Pennsylvania, New Jersey, Illinois, Rhode Island.

California Regulations:

None



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European/International Regulations

Canadian DSL/NDSL:

- CAS# 7732-18-5 is listed on Canada's DSL List.
- CAS# 5144-89-8 is not listed on Canada's DSL or NDSL Lists.
- CAS# 7647-01-0 is listed on Canada's DSL List.

Canada Ingredient Disclosure List:

- CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.
- CAS# 5144-89-8 is not listed on Canada's Ingredient Disclosure List.
- CAS# 7647-01-0 is listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: November 18, 1997

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