

# Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 01.07.2015

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## 1,10-Phenanthroline

### SECTION 1 : Identification of the substance/mixture and of the supplier

**Product name :** 1,10-Phenanthroline

**Manufacturer/Supplier Trade name:**

**Manufacturer/Supplier Article number:** S25461C

**Recommended uses of the product and uses restrictions on use:**

**Manufacturer Details:**

AquaPhoenix Scientific  
9 Barnhart Drive, Hanover, PA 17331

**Supplier Details:**

Fisher Science Education  
15 Jet View Drive, Rochester, NY 14624

**Emergency telephone number:**

Fisher Science Education Emergency Telephone No.: 800-535-5053

### SECTION 2 : Hazards identification

**Classification of the substance or mixture:**



**Toxic**

Acute toxicity (oral, dermal, inhalation), category 3



**Environmentally Damaging**

Acute hazards to the aquatic environment, category 1

AcTox Oral. 3

Aquatic AcTox. 1

Aquatic ChrTox. 1

**Signal word :** Danger

**Hazard statements:**

Toxic if swallowed

Very toxic to aquatic life with long lasting effects

**Precautionary statements:**

If medical advice is needed, have product container or label at hand

Keep out of reach of children

Read label before use

Wash ... thoroughly after handling

Do not eat, drink or smoke when using this product

Avoid release to the environment

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Rinse mouth

Collect spillage

Store locked up

Dispose of contents/container to ...

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### Combustible Dust Hazard :

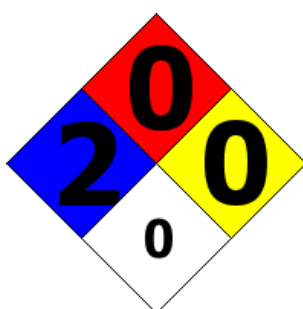
May form combustible dust concentrations in air (during processing).

### Other Non-GHS Classification:

WHMIS



NFPA/HMIS



NFPA SCALE (0-4)

Health	2
Flammability	0
Physical Hazard	0
Personal Protection	X

HMIS RATINGS (0-4)

## SECTION 3 : Composition/information on ingredients

### Ingredients:

CAS 5144-89-8	1,10-Phenanthroline monohydrate	100 %
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Percentages are by weight

## SECTION 4 : First aid measures

### Description of first aid measures

**After inhalation:** Move exposed individual to fresh air. Loosen clothing as necessary and position individual in a comfortable position. If breathing difficult, give oxygen. Do not perform mouth-to-mouth on an unconscious person. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediately get medical assistance.

**After skin contact:** Flush the skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Seek medical attention if irritation persists or if concerned.

**After eye contact:** Protect unexposed eye. Rinse or flush exposed eye gently using water for 15-20 minutes. Seek medical attention if irritation persists or concerned.

**After swallowing:** Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Immediately get medical assistance.

### Most important symptoms and effects, both acute and delayed:

Shortness of breath. Irritation. Nausea. Headache.;

### Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician. Physician should treat symptomatically.

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### SECTION 5 : Firefighting measures

#### Extinguishing media

**Suitable extinguishing agents:** Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam.

**For safety reasons unsuitable extinguishing agents:**

#### Special hazards arising from the substance or mixture:

No data available

#### Advice for firefighters:

**Protective equipment:** Wear protective eyewear, gloves, and clothing. Refer to Section 8.

**Additional information (precautions):** Do not inhale gases, fumes, dust, mist, vapor, and aerosols.

### SECTION 6 : Accidental release measures

#### Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.

#### Environmental precautions:

Prevent from reaching drains, sewer or waterway. Discharge into the environment must be avoided.

#### Methods and material for containment and cleaning up:

If necessary use trained response staff or contractor. Vacuum or sweep up material and place into a suitable disposal container. Wear a self-contained breathing apparatus and appropriate personal protection. Refer to Section 8. Avoid generating dust. Do not let this chemical enter the environment. Follow proper disposal methods. Refer to Section 13.

#### Reference to other sections:

### SECTION 7 : Handling and storage

#### Precautions for safe handling:

Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Minimize dust generation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use under a fume hood. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Do not eat, drink, smoke, or use personal products when handling chemical substances. Use only in well ventilated areas.

#### Conditions for safe storage, including any incompatibilities:

Store in a cool location. Provide ventilation for containers. Keep container tightly sealed.

### SECTION 8 : Exposure controls/personal protection



#### Control Parameters:

, , OSHA PEL TWA (Total Dust) 15 mg/m<sup>3</sup> (50 mppcf\*)  
, , ACGIH TLV TWA (inhalable particles) 10 mg/m<sup>3</sup>

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- Appropriate Engineering controls:** Use only in a chemical fume hood. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling. Ensure that dust-handling systems (exhaust ducts, dust collectors, vessels, and processing equipment) are designed to prevent the escape of dust into the work area.
- Respiratory protection:** Use only under a chemical fume hood. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.
- Protection of skin:** Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation.
- Eye protection:** Safety glasses with side shields or goggles.
- General hygienic measures:** Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Before wearing wash contaminated clothing. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

### SECTION 9 : Physical and chemical properties

<b>Appearance (physical state,color):</b>	White solid	<b>Explosion limit lower: Explosion limit upper:</b>	Non Explosive Non Explosive
<b>Odor:</b>	Odorless	<b>Vapor pressure:</b>	Not Available
<b>Odor threshold:</b>	Not Available	<b>Vapor density:</b>	6.2
<b>pH-value:</b>	Not Available	<b>Relative density:</b>	Not Available
<b>Melting/Freezing point:</b>	>98°C	<b>Solubilities:</b>	Soluble in water
<b>Boiling point/Boiling range:</b>	Not Available	<b>Partition coefficient (n-octanol/water):</b>	Not Available
<b>Flash point (closed cup):</b>	Not Available	<b>Auto/Self-ignition temperature:</b>	Not Available
<b>Evaporation rate:</b>	Not Available	<b>Decomposition temperature:</b>	Not Available
<b>Flammability (solid,gaseous):</b>	Not Available	<b>Viscosity:</b>	a. Kinematic: Not Available b. Dynamic: Not Available
<b>Density:</b> Not Available			

### SECTION 10 : Stability and reactivity

**Reactivity:**

**Chemical stability:**Hygroscopic: absorbs moisture or water from the air

**Possible hazardous reactions:**

**Conditions to avoid:**Incompatible materials.Dust generation. Exposure to moisture or water.

**Incompatible materials:**Strong acids.Strong oxidizers.

**Hazardous decomposition products:**Carbon oxides (CO, CO<sub>2</sub>).Nitrogen oxides (NO, NO<sub>2</sub>).

### SECTION 11 : Toxicological information

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<b>Acute Toxicity:</b>	
<b>Oral:</b>	LD50 Oral - Rat - 132 mg/kg
<b>Chronic Toxicity:</b> No additional information.	
<b>Corrosion Irritation:</b> No additional information.	
<b>Sensitization:</b>	No additional information.
<b>Single Target Organ (STOT):</b>	No additional information.
<b>Numerical Measures:</b>	No additional information.
<b>Carcinogenicity:</b>	Not listed as a carcinogen (ACGIH, IARC, NTP): 1,10-Phenanthroline
<b>Mutagenicity:</b>	No additional information.
<b>Reproductive Toxicity:</b>	Adverse reproductive effects have occurred in experimental animals.

### SECTION 12 : Ecological information

**Ecotoxicity Persistence and degradability:** Not persistent.

**Bioaccumulative potential:** Bioaccumulative.

**Mobility in soil:**

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

### SECTION 13 : Disposal considerations

#### Waste disposal recommendations:

Do not allow product to reach sewage system or open water. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations. Ensure complete and accurate classification.

### SECTION 14 : Transport information

#### UN-Number

UN2811

#### UN proper shipping name

Toxic Solids, Organic, N.O.S.

#### Transport hazard class(es)



#### Class:

6.1 Toxic substances

**Packing group:** III

**Environmental hazard:** Marine pollutant

**Transport in bulk:**

**Special precautions for user:**

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### SECTION 15 : Regulatory information

#### United States (USA)

##### SARA Section 311/312 (Specific toxic chemical listings):

None of the ingredients is listed

##### SARA Section 313 (Specific toxic chemical listings):

None of the ingredients is listed

##### RCRA (hazardous waste code):

None of the ingredients is listed

##### TSCA (Toxic Substances Control Act):

All ingredients are listed.

##### CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

None of the ingredients is listed

#### Proposition 65 (California):

##### Chemicals known to cause cancer:

None of the ingredients is listed

##### Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed

##### Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed

##### Chemicals known to cause developmental toxicity:

None of the ingredients is listed

#### Canada

##### Canadian Domestic Substances List (DSL):

All ingredients are listed.

##### Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients is listed

##### Canadian NPRI Ingredient Disclosure list (limit 1%):

None of the ingredients is listed

### SECTION 16 : Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

#### GHS Full Text Phrases:

#### Abbreviations and acronyms:

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IMDG: International Maritime Code for Dangerous Goods  
PNEC: Predicted No-Effect Concentration (REACH)  
CFR: Code of Federal Regulations (USA)  
SARA: Superfund Amendments and Reauthorization Act (USA)  
RCRA: Resource Conservation and Recovery Act (USA)  
TSCA: Toxic Substances Control Act (USA)  
NPRI: National Pollutant Release Inventory (Canada)  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
ACGIH: American Conference of Governmental Industrial Hygienists  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
WHMIS: Workplace Hazardous Materials Information System (Canada)  
DNEL: Derived No-Effect Level (REACH)

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