

Safety Data Sheet

Version: 01
Revision Date: Jun.-16-2026
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1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier

Product name : 4,7-Dichloro-1,10-phenanthroline
Catalog No. : CS-W004582
CAS No. : 5394-23-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, manufacture of substances.

1.3 Details of the supplier of the safety data sheet

Company: ChemScene LLC
Address: 1 Deer Park Dr, Suite F, Monmouth Junction, NJ 08852, USA
Tel: 610-426-3128
Fax: 888-484-5008
E-mail: sales@chemscene.com

1.4 Emergency telephone number

Emergency Phone #: 610-426-3128

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, oral (Category 3),H301

Skin corrosion/irritation (Category 2),H315

Serious eye damage/eye irritation (Category 1),H318

Specific target organ toxicity, single exposure; Respiratory tract irritation (Category 3),H335

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)

H301 Toxic if swallowed

H315 Causes skin irritation

H318 Causes serious eye damage

H335 May cause respiratory irritation

Precautionary statement(s)

Prevention

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

2.3 Other hazards

None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms:	1,10-Phenanthroline,4,7-dichloro
Formula:	$C_{12}H_6Cl_2N_2$
Molecular Weight:	249.10
CAS No. :	5394-23-0

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing and seek immediate medical attention.

Skin contact

Where Diphoterine is not available, wash immediately with plenty of water and soap. Remove contaminated clothing immediately. Immediately seek medical attention.

Inhalation

Remove person to fresh air and keep comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration and seek immediate medical attention.

Ingestion

If swallowed rinse the mouth with plenty of water (only if the person is conscious) and immediately contact a poison centre or physician.

4.2 Most important symptoms and effects, both acute and delayed

No known symptoms or effects.

4.3 Indication of any immediate medical attention and special treatment needed

No special immediate treatment required

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable fire extinguishing media

Carbon dioxide, alcohol resistant foam or dry chemical powder.

Unsuitable fire extinguishing media

No known unsuitable media.

5.2 Special hazards arising from the substance or mixture

In combustion toxic fumes may form.

5.3 Advice for firefighters

Special protective equipment for firefighters : Use personal protective equipment.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Immediately evacuate personnel to safe areas. Remove undamaged containers from fire area if it is safe to do so.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Keep personnel away from spill/leak.

6.2 Environmental precautions

Prevent further leakage if safe to do so. Prevent product from entering drains. Do not let product enter waterways or sewer systems. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Absorb the spilled material with an inert absorbent (e.g. sand, silica gel, rag, vermiculite) before transferring into an airtight container. Remove all sources of ignition. Dispose of appropriately according to local regulations.

6.4 Reference to other sections

For personal protection see section 8. For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Safe handling

Wear appropriate personal protective equipment. Use only under a chemical fume hood. Keep away from heat/sparks/open flame/hot surfaces. Take measures to prevent the build-up of electrostatic charge. Ensure adequate exhaust ventilation, especially if dust, aerosol or fumes will be generated. Avoid contact with skin, eyes and clothing. For precautions see section 2.2.

Protections against explosions and fire

Where possible, use anti static and spark proof equipment when handling.

General occupational hygiene

Handle in accordance with good industrial hygiene and safety practice. Wash hands before and after use. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly sealed in cool, well-ventilated area. Keep away from direct sunlight and sources of ignition.

Recommended storage temperature: Storage temp. 2-8°C

Shipping at room temperature if less than 2 weeks.

7.3 Specific end use(s)

No specific end uses are advised. The products supplied are for research purposes only.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

This product contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering controls

Use only under a chemical fume hood ensuring adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye protection

Safety goggles with side-shields.

Hand protection

Protective gloves.

Skin and body protection

Impervious clothing.

Respiratory protection

Suitable respirator.

Hygiene measures

Ensure hair or skin particles cannot enter the chemical container.

Environment exposure controls

Avoid discharge into the environment, see section 6.2.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance

Solid

Odor

No data available

Odor threshold

No data available

pH

No data available

Melting/freezing point

243-247°C

Boiling point/range

395.9°C at 760 mmHg

Flash point

225.5°C

Evaporation rate

No data available

Flammability (solid, gas)

No data available

Upper/lower flammability or explosive limits

No data available

Vapor pressure

No data available

Vapor density

No data available

Relative density

No data available

Water Solubility

No data available

Partition coefficient

No data available

Auto-ignition temperature

No data available

Decomposition temperature

No data available

Viscosity

No data available

Explosive properties

No data available

Oxidizing properties

No data available

9.2 Other safety information

No data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

None under normal storage conditions.

10.4 Conditions to avoid

Heat, sparks, open flames, sources of ignition. Exposure to moisture.

10.5 Incompatible materials

Strong acids/alkalis, strong oxidising/reducing agents.

10.6 Hazardous decomposition products

Under fire conditions, may decompose and emit toxic fumes.

Other decomposition products - no data available.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

No Toxicology data available for this product.

Skin corrosion/irritation

No toxicological data available for this product.

Serious eye damage/irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Toxic if swallowed.

Germ cell mutagenicity

No toxicological data available for this product.

Carcinogenicity

No toxicological data available for this product.

Reproductive toxicity

No toxicological data available for this product.

Specific target organ toxicity - single exposure

No toxicological data available for this product.

Specific target organ toxicity - repeated exposure

No toxicological data available for this product.

Aspiration hazard

No toxicological data available for this product.

Additional information

This information is based on our current knowledge. However the chemical, physical, and toxicological properties have not been completely investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No data available.

12.2 Persistence and degradability

No Ecological data available for this product.

12.3 Bioaccumulative potential

No Ecological data available for this product.

12.4 Mobility in soil

No Ecological data available for this product.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment unavailable as chemical safety assessment not required or not conducted.

12.6 Other adverse effects

No data available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Ensure product is disposed of by licensed waste carriers

Contaminated packaging

Ensure INNER PACKAGING is disposed of by licensed waste carriers. Some OUTER PACKAGING may be recyclable if not contaminated.

14. TRANSPORT INFORMATION

DOT (US)

Proper shipping name: TOXIC SOLID,ORGANIC, N. O. S.

UN number: 2811

Class: 6.1

Packing group: III

IMDG

Proper shipping name: TOXIC SOLID,ORGANIC, N. O. S.

UN number: 2811

Class: 6.1

Packing group: III

IATA

Proper shipping name: TOXIC SOLID,ORGANIC, N. O. S.

UN number: 2811

Class: 6.1

Packing group: III

15. REGULATORY INFORMATION

SARA 302 Components:

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards:

No SARA Hazards.

Massachusetts Right To Know Components:

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components:

No components are subject to the Pennsylvania Right to Know Act.

New Jersey Right To Know Components:

No components are subject to the New Jersey Right to Know Act.

California Prop. 65 Components:

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or anyother reproductive harm.

16. OTHER INFORMATION

Copyright ChemScene. The above information is correct to the best of our present knowledge but does not purport to be all inclusive and should be used only as a guide. The product is for research use only and for experienced personnel. It must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The burden of safe use of this material rests entirely with the user. ChemScene disclaims all liability for any damage resulting from handling or from contact with this product.

Caution: Product has not been fully validated for medical applications. For research use only.

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