

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)  
according to Regulation (EU) No. 2015/830



**Trade name :** 1,10-Phenanthroline monohydrate, ACS

**Revision date :** 20/08/2021

**Version :** 1.0.0

**Print date :** 20/08/2021

## SECTION 1: Identification of the substance/mixture and of the company/ undertaking

### 1.1 Product identifier

1,10-Phenanthroline monohydrate, ACS (110010)

1,10-Phenanthroline monohydrate ; CAS No. : 5144-89-8 ; EC No. : 200-629-2 ; INDEX No. : 613-092-00-8 ; REACH No. : N/D

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

#### Relevant identified uses

For manufacturing, processing, laboratory or repacking use only.

#### Uses advised against

Uses other than those recommended.

### 1.3 Details of the supplier of the safety data sheet

#### Supplier (manufacturer/importer/only representative/downstream user/distributor)

DC Fine Chemicals Ltd

**Street :** 88 Hill Top

**Postal code/city :** NW11 6DY London United Kingdom

**Telephone :** +44 (0)20 7586 6800

**Telefax :** +44 (0)20 7504 1701

**Information contact :** info@dcfinechemicals.com

### 1.4 Emergency telephone number

(Only available during office hours; Monday-Friday; 08:00-18:00)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008 [CLP]

Aquatic Chronic 1 ; H410 - Hazardous to the aquatic environment : Chronic 1 ; Very toxic to aquatic life with long lasting effects.

Acute Tox. 3 ; H301 - Acute toxicity (oral) : Category 3 ; Toxic if swallowed.

### 2.2 Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

##### Hazard pictograms



Skull and crossbones (GHS06) · Environment (GHS09)

##### Signal word

DANGER

##### Hazard statements

H301 Toxic if swallowed.

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H410 Very toxic to aquatic life with long lasting effects.

#### Precautionary statements

P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P273 Avoid release to the environment.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.  
P321 Specific treatment (see on this label).  
P405 Store locked up.

#### 2.3 Other hazards

None

### SECTION 3: Composition/information on ingredients

#### 3.1 Substances

**Substance name :** 1,10-Phenanthroline monohydrate

**INDEX No. :** 613-092-00-8

**EC No. :** 200-629-2

**REACH No. :** N/D

**CAS No. :** 5144-89-8

**Purity :** 100 % [mass]

### SECTION 4: First aid measures

Immediate medical attention is required. Delayed effects may occur after the exposure to the product.

#### 4.1 Description of first aid measures

Remove contaminated, saturated clothing immediately. After contact with skin, wash immediately with plenty of water and soap. In case of skin reactions, consult a physician. After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately. If accidentally ingested, seek immediate medical attention, NEVER induce vomiting. Remove victim out of the danger area. In case of inhalation take the victim into open air; keep them warm and calm. If breathing is irregular or stops, perform artificial respiration.

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

Accidental contact may result in serious respiratory difficulties, alteration of the central nervous system and in extreme cases, unconsciousness.

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

Request immediate medical attention. Never administer anything orally to persons who are unconscious. Do not induce vomiting. If the person vomits, clear the respiratory tract. Keep the person comfortable. Turn him/her over to the left side and stay there while waiting for medical care.

### SECTION 5: Firefighting measures

The product does not present any particular risk in case of fire.

#### 5.1 Extinguishing media

##### Suitable extinguishing media

Extinguisher powder or CO<sub>2</sub>. In case of more serious fires, also alcohol-resistant foam and water spray.

##### Unsuitable extinguishing media

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Do not use a direct stream of water to extinguish. In the presence of electrical voltage, you cannot use water or foam as extinguishing media.

## 5.2 Special hazards arising from the substance or mixture

In case of fire may be liberated: Pyrolysis products, toxic

## 5.3 Advice for firefighters

Use water to cool tanks, cisterns, or containers close to the heat source or fire. Take wind direction into account. Prevent the products used to fight the fire from going into drains, sewers, or waterways.

### Special protective equipment for firefighters

According to the size of the fire, it may be necessary to use protective suits against the heat, individual breathing equipment, gloves, protective goggles or facemasks, and boots.

## SECTION 6: Accidental release measures

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

Clear spills immediately.

#### For non-emergency personnel

Wear a self-contained breathing apparatus and chemical protective clothing. Remove persons to safety.

#### For emergency responders

Eliminate possible ignition points and ventilate the area. No smoking. Avoid breathing fumes. For exposure control and individual protection measures, see section 8.

### 6.2 Environmental precautions

Dangerous product for the environment. Do not allow to enter into surface water or drains. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities. Retain contaminated washing water and dispose it.

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

#### For containment

Collect in closed and suitable containers for disposal.

#### For cleaning up

The contaminated area should be cleaned up immediately with: Water Soak up inert absorbent and dispose as waste requiring special attention. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Avoid dust formation.

### 6.4 Reference to other sections

Reference to other sections Disposal: see section 13 Personal protection equipment: see section 8

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Protective measures



When using do not eat, drink, smoke, sniff. Wear personal protection equipment (refer to section 8).

#### Measures to prevent aerosol and dust generation

Use only in well-ventilated areas. Do not breathe gas/fumes/vapour/spray. Do not breathe dust.

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## Environmental precautions

Use appropriate container to avoid environmental contamination.

## Specific requirements or handling rules

Handle and open container with care.

## Advices on general occupational hygiene

Handle and open container with care.

## 7.2 Conditions for safe storage, including any incompatibilities

### Requirements for storage rooms and vessels

Only use containers specifically approved for the substance/product.

### Hints on joint storage

Store at least 3 metres apart from: Chemicals/products that react together readily

**Storage class (TRGS 510) :** 6.1D

## 7.3 Specific end use(s)

None

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

The product does NOT contain substances with Professional Exposure Environmental Limit Values. The product does NOT contain substances with Biological Limit Values.

### 8.2 Exposure controls

Only wear fitting, comfortable and clean protective clothing.

#### Personal protection equipment

##### Eye/face protection



Eye glasses with side protection Face protection shield DIN EN 166

##### Skin protection

###### Hand protection



Tested protective gloves must be worn EN ISO 374  
The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

###### Body protection



Full protection suit Wash contaminated clothing prior to re-use.

##### Respiratory protection

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

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The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used. Particle filter device (DIN EN 143).

## Thermal hazards

No information available.

## Environmental exposure controls

No information available.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**Appearance :** solid

#### Safety characteristics

<b>Melting point/freezing point :</b>	( 1013 hPa )	94	°C
<b>Initial boiling point and boiling range :</b>	( 1013 hPa )	No data available	
<b>Decomposition temperature :</b>	( 1013 hPa )	No data available	
<b>Flash point :</b>		No data available	
<b>Auto-ignition temperature :</b>		No data available	
<b>Lower explosion limit :</b>		No data available	
<b>Upper explosion limit :</b>		No data available	
<b>Vapour pressure :</b>	( 50 °C )	No data available	
<b>Density :</b>	( 20 °C )	No data available	
<b>Solvent separation test :</b>	( 20 °C )	not applicable	
<b>Water solubility :</b>	( 20 °C )	3,3	g/l
<b>Fat solubility :</b>	( 20 °C )	No data available.	
<b>pH :</b>		No data available	
<b>log P O/W :</b>		1,78	
<b>Flow time :</b>	( 20 °C )	No data available	DIN-cup 4 mm
<b>Viscosity :</b>	( 20 °C )	No data available	
<b>Relative vapour density :</b>	( 20 °C )	No data available	
<b>Evaporation rate :</b>		No data available	
<b>Flammable solids :</b>		No data available.	
<b>Flammable gases :</b>		No data available.	
<b>Explosive properties :</b>		No data available.	

### 9.2 Other information

None

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The product does not present hazards by their reactivity.

### 10.2 Chemical stability

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The product is chemically stable under recommended conditions of storage, use and temperature. Safe handling: see section 7

## 10.3 Possibility of hazardous reactions

The product does not present possibility of hazardous reactions.

## 10.4 Conditions to avoid

Avoid any improper handling.

## 10.5 Incompatible materials

Keep away from oxidising agents and from highly alkaline or acidic materials in order to prevent exothermic reactions.

## 10.6 Hazardous decomposition products

In case of fire may be liberated: Hazardous combustion products

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Acute oral toxicity

Parameter :	LD50 ( 1,10-Phenanthroline monohydrate ; CAS No. : 5144-89-8 )
Exposure route :	Oral
Species :	Rat
Effective dose :	132 mg/kg

#### Corrosion

##### Skin corrosion/irritation

No information available.

##### Serious eye damage/eye irritation

No information available.

#### Respiratory or skin sensitisation

No information available.

#### CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

##### Carcinogenicity

No information available.

##### Germ cell mutagenicity

No information available.

##### Reproductive toxicity

No information available.

#### STOT-single exposure

No information available.

#### STOT-repeated exposure

No information available.

#### Aspiration hazard

No information available.

## SECTION 12: Ecological information

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## 12.1 Toxicity

No information available.

## 12.2 Persistence and degradability

No information available.

## 12.3 Bioaccumulative potential

Parameter : Log KOW ( 1,10-Phenanthroline monohydrate ; CAS No. : 5144-89-8 )

Concentration : Partition coefficient: n-octanol/water

1,78

## 12.4 Mobility in soil

No information available.

## 12.5 Results of PBT and vPvB assessment

No information available.

## 12.6 Other adverse effects

No information available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. Do not dump into sewers or waterways. Waste and empty containers must be handled and eliminated according to current, local/national legislation. Follow the provisions of Directive 2008/98/EC regarding waste management.

#### Product/Packaging disposal

##### Waste treatment options

Recycle according to official regulations. Evidence for disposal must be provided.

##### Appropriate disposal / Product

Dispose of waste according to applicable legislation.

##### Appropriate disposal / Package

Non-contaminated packages must be recycled or disposed of. Contaminated packages must be completely emptied and can be re-used following proper cleaning. Packing which cannot be properly cleaned must be disposed of. Handle contaminated packages in the same way as the substance itself.

## SECTION 14: Transport information

### 14.1 UN number

UN 2811

### 14.2 UN proper shipping name

#### Land transport (ADR/RID)

TOXIC SOLID, ORGANIC, N.O.S. ( 1,10-Phenanthroline monohydrate )

#### Sea transport (IMDG)

TOXIC SOLID, ORGANIC, N.O.S. ( 1,10-Phenanthroline monohydrate )

#### Air transport (ICAO-TI / IATA-DGR)

TOXIC SOLID, ORGANIC, N.O.S. ( 1,10-Phenanthroline monohydrate )

### 14.3 Transport hazard class(es)

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## Land transport (ADR/RID)

**Class(es) :** 6.1  
**Classification code :** T2  
**Hazard identification number (Kemler No.) :** 60  
**Tunnel restriction code :** E  
**Special provisions :** LQ 5 kg · E 1  
**Hazard label(s) :** 6.1 / N

## Sea transport (IMDG)

**Class(es) :** 6.1  
**EmS-No. :** F-A / S-A  
**Special provisions :** LQ 5 kg · E 1  
**Hazard label(s) :** 6.1 / N

## Air transport (ICAO-TI / IATA-DGR)

**Class(es) :** 6.1  
**Special provisions :** E 1  
**Hazard label(s) :** 6.1 / N

## 14.4 Packing group

III

## 14.5 Environmental hazards

**Land transport (ADR/RID) :** Yes  
**Sea transport (IMDG) :** Yes (P)  
**Air transport (ICAO-TI / IATA-DGR) :** Yes

## 14.6 Special precautions for user

**Hazard label(s) :**



## 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

No information available.

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH) Classification according to Regulation (EC) No 1272/2008 [CLP] according to Regulation (EU) No. 2015/830

#### National regulations

##### Water hazard class (WGK)

Class : nwg (Non-hazardous to water)

### 15.2 Chemical safety assessment

No information available.

## SECTION 16: Other information

### 16.1 Indication of changes



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None

## 16.2 Abbreviations and acronyms

ADR:	Accord européen relative au transport international des marchandises dangereuses par route (accordo europeo relativo al trasporto internazionale delle merci pericolose su strada)
ASTM:	ASTM International, originariamente nota come American Society for Testing and Materials (ASTM)
EINECS:	European Inventory of Existing Commercial Chemical Substances (Registro Europeo delle Sostanze chimiche in Commercio)
EC50:	Effective Concentration 50 (Concentrazione Effettiva Massima per il 50% degli Individui)
LC50:	Lethal Concentration 50 (Concentrazione Letale per il 50% degli Individui)
IC50:	Inhibitor Concentration 50 (Concentrazione Inibente per il 50% degli Individui)
NOEL:	No Observed Effect Level (Dose massima senza effetti)
DNEL:	Derived No Effect Level (Dose derivata di non effetto)
DMEL:	Derived Minimum Effect Level (Dose derivata di minimo effetto)
CLP:	Classification, Labelling and Packaging (Classificazione, Etichettatura e Imballaggio)
CSR:	Rapporto sulla Sicurezza Chimica (Chemical Safety Report)
LD50:	Lethal Dose 50 (Dose Letale per il 50% degli Individui)
IATA:	International Air Transport Association (Associazione Internazionale del Trasporto Aereo)
ICAO:	International Civil Aviation Organization (Organizzazione Internazionale dell'Aviazione Civile)
Codice IMDG:	International Maritime Dangerous Goods code (Codice sul Regolamento del Trasporto Marittimo)
PBT:	Persistent, bioaccumulative and toxic (sostanze persistenti bioaccumulabili e tossiche)
RID:	Règlement concernent le transport International ferroviaire des marchandises Dangereuses (Regolamento concernente il trasporto Internazionale ferroviario delle merci Pericolose)
STEL:	Short term exposure limit (limite di esposizione a breve termine)
TLV:	Threshold limit value (soglia di valore limite)
TWA:	Time Weighted Average (media ponderata nel tempo)
UE:	Unione Europea
vPvB:	Very persistent very bioaccumulative (sostanze molto persistenti e molto bioaccumulabili)
N.D.:	Non disponibile.
N.A.:	Non applicabile
VvWvS.:	Text of Administrative Regulation on the Classification of Substances hazardous to waters into Water Hazard Classes (Verwaltungsvorschrift wassergefährdende Stoffe – VvWvS)

## 16.3 Key literature references and sources for data

None

## 16.4 Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

No information available.

## 16.4 Relevant H- and EUH-phrases (Number and full text)

None

## 16.5 Training advice

None

## 16.6 Additional information

None

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily

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valid for the new made-up material.

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