

# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



## 1,10-Phenanthroline monohydrate $\geq 99\%$ , p.a., ACS

article number: **9113**  
Version: **3.0 en**  
Replaces version of: 2021-11-17  
Version: (2)

date of compilation: 2016-01-25  
Revision: 2024-03-03

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

#### 1.1 Product identifier

Identification of the substance	<b>1,10-Phenanthroline monohydrate <math>\geq 99\%</math>, p.a., ACS</b>
Article number	9113
Index No (GB CLP)	613-092-00-8
EC number	200-629-2
CAS number	5144-89-8

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

Relevant identified uses:	Laboratory chemical Laboratory and analytical use
Uses advised against:	Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household). Food, drink and animal feeding-stuffs.

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

Carl Roth GmbH + Co. KG  
Schoemperlenstr. 3-5  
D-76185 Karlsruhe  
Germany

**Telephone:** +49 (0) 721 - 56 06 0

**Telefax:** +49 (0) 721 - 56 06 149

**e-mail:** [sicherheit@carlroth.de](mailto:sicherheit@carlroth.de)

**Website:** [www.carlroth.de](http://www.carlroth.de)

Competent person responsible for the safety data sheet: Department Health, Safety and Environment

**e-mail (competent person):** [sicherheit@carlroth.de](mailto:sicherheit@carlroth.de)

#### 1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
National Poisons Information Service City Hospital	Dudley Rd	B187QH Birmingham	844 892 0111	

# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



1,10-Phenanthroline monohydrate  $\geq 99\%$ , p.a., ACS

article number: 9113

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Cat-egory	Hazard class and category	Hazard statement
3.10	Acute toxicity (oral)	3	Acute Tox. 3	H301
4.1A	Hazardous to the aquatic environment - acute hazard	1	Aquatic Acute 1	H400
4.1C	Hazardous to the aquatic environment - chronic hazard	1	Aquatic Chronic 1	H410

For full text of abbreviations: see SECTION 16

### The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

### 2.2 Label elements

#### Labelling

**Signal word**

**Danger**

#### Pictograms

GHS06, GHS09



#### Hazard statements

H301

Toxic if swallowed

H410

Very toxic to aquatic life with long lasting effects

#### Precautionary statements

##### Precautionary statements - prevention

P273

Avoid release to the environment

##### Precautionary statements - response

P301+P310

IF SWALLOWED: Immediately call a POISON CENTER/doctor

### 2.3 Other hazards

#### Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

#### Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



1,10-Phenanthroline monohydrate  $\geq 99\%$ , p.a., ACS

article number: 9113

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Name of substance	1,10-Phenanthroline monohydrate
Molecular formula	$C_{12}H_8N_2 \cdot H_2O$
Molar mass	198,2 g/mol
CAS No	5144-89-8
EC No	200-629-2
Index No (GB CLP)	613-092-00-8

#### Substance, Specific Conc. Limits, M-factors, ATE

Specific Conc. Limits	M-Factors	ATE	Exposure route
-	-	132 mg/kg	oral

## SECTION 4: First aid measures

### 4.1 Description of first aid measures



#### General notes

Take off contaminated clothing.

#### Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following skin contact

Rinse skin with water/shower. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following eye contact

Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following ingestion

Rinse mouth immediately and drink plenty of water. Call a physician immediately.

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

Symptoms and effects are not known to date.

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

none

# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



1,10-Phenanthroline monohydrate  $\geq 99\%$ , p.a., ACS

article number: 9113

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media



#### Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings!  
water, foam, alcohol resistant foam, dry extinguishing powder, ABC-powder

#### Unsuitable extinguishing media

water jet

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

Combustible.

#### Hazardous combustion products

In case of fire may be liberated: Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

## SECTION 6: Accidental release measures

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



#### For non-emergency personnel

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Avoid contact with skin, eyes and clothes. Do not breathe dust.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

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

#### Advice on how to contain a spill

Covering of drains. Take up mechanically.

#### Advice on how to clean up a spill

Take up mechanically. Control of dust.

#### Other information relating to spills and releases

Place in appropriate containers for disposal.

### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



1,10-Phenanthroline monohydrate ≥99 %, p.a., ACS

article number: 9113

## SECTION 7: Handling and storage

Avoid dust formation.

### 7.1 Precautions for safe handling

Avoid dust formation. Clear contaminated areas thoroughly.

#### Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

#### Measures to protect the environment

Avoid release to the environment.

#### Advice on general occupational hygiene

When using do not eat or drink. Thorough skin-cleansing after handling the product.

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

Store in a well-ventilated place. Keep container tightly closed. Store in a dry place.

#### Incompatible substances or mixtures

Observe hints for combined storage.

#### Consideration of other advice:

Store locked up.

#### Ventilation requirements

Use local and general ventilation.

#### Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C

### 7.3 Specific end use(s)

No information available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### National limit values

#### Occupational exposure limit values (Workplace Exposure Limits)

not relevant

Country	Name of agent	CAS No	Identifier	TWA [mg/m <sup>3</sup> ]	STEL [mg/m <sup>3</sup> ]	Ceiling-C [mg/m <sup>3</sup> ]	Notation	Source
GB	dust		WEL	10			i	EH40/2005
GB	dust		WEL	4			r	EH40/2005

#### Notation

Ceiling-C Ceiling value is a limit value above which exposure should not occur

i Inhalable fraction

r Respirable fraction

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



**1,10-Phenanthroline monohydrate ≥99 %, p.a., ACS**

article number: **9113**

## 8.2 Exposure controls

### Individual protection measures (personal protective equipment)

#### Eye/face protection



Use safety goggle with side protection.

#### Skin protection



- **hand protection**

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

- **type of material**

NBR (Nitrile rubber)

- **material thickness**

>0,11 mm

- **breakthrough times of the glove material**

>480 minutes (permeation: level 6)

- **other protection measures**

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

#### Respiratory protection



Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P3 (filters at least 99,95 % of airborne particles, colour code: White).

#### Environmental exposure controls

Keep away from drains, surface and ground water.

# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



**1,10-Phenanthroline monohydrate ≥99 %, p.a., ACS**

article number: **9113**

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state	solid
Form	powder
Colour	white - whitish
Odour	odourless
Melting point/freezing point	100 – 104 °C
Boiling point or initial boiling point and boiling range	not determined
Flammability	this material is combustible, but will not ignite readily
Lower and upper explosion limit	not determined
Flash point	not applicable
Auto-ignition temperature	not determined
Decomposition temperature	not relevant
pH (value)	not applicable
Kinematic viscosity	not relevant

#### Solubility(ies)

Water solubility 3,3 g/l at 20 °C

#### Partition coefficient

Partition coefficient n-octanol/water (log value): 1,78 (Experimental data)

Vapour pressure not determined

#### Density and/or relative density

Density not determined

Relative vapour density Information on this property is not available.

Bulk density 300 kg/m<sup>3</sup>

Particle characteristics No data available.

#### Other safety parameters

Oxidising properties none

### 9.2 Other information

Information with regard to physical hazard classes: hazard classes acc. to GHS (physical hazards): not relevant

Other safety characteristics: There is no additional information.

# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



1,10-Phenanthroline monohydrate  $\geq 99\%$ , p.a., ACS

article number: 9113

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

### 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Violent reaction with: Oxidisers, Acids

### 10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser

### 10.4 Conditions to avoid

Direct light irradiation.

### 10.5 Incompatible materials

There is no additional information.

### 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Classification acc. to GHS

#### Acute toxicity

Toxic if swallowed.

Acute toxicity					
Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	132 mg/kg	rat	anhydrous	

#### Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

#### Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

#### Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

#### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

#### Carcinogenicity

Shall not be classified as carcinogenic.

#### Reproductive toxicity

Shall not be classified as a reproductive toxicant.



# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



**1,10-Phenanthroline monohydrate  $\geq 99$  %, p.a., ACS**

article number: **9113**

## Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

## Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

## Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

## Symptoms related to the physical, chemical and toxicological characteristics

### • If swallowed

Data are not available.

### • If in eyes

Data are not available.

### • If inhaled

Data are not available.

### • If on skin

Data are not available.

### • Other information

none

## 11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

## 11.3 Information on other hazards

There is no additional information.

## SECTION 12: Ecological information

### 12.1 Toxicity

### 12.2 Persistence and degradability

Theoretical Oxygen Demand (without nitrification): 2,018 mg/mg  
Theoretical Oxygen Demand (with nitrification): 2,361 mg/mg  
Theoretical Carbon Dioxide: 2,664 mg/mg

### 12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW)	1,78 (Experimental data)
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### 12.4 Mobility in soil

Data are not available.

### 12.5 Results of PBT and vPvB assessment

Data are not available.

### 12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

### 12.7 Other adverse effects

Data are not available.

# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



1,10-Phenanthroline monohydrate  $\geq 99\%$ , p.a., ACS

article number: 9113

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

#### Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

#### Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

### 13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

#### Properties of waste which render it hazardous

**HP 6** acute toxicity

**HP 14** ecotoxic

### 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

## SECTION 14: Transport information

### 14.1 UN number or ID number

ADRRID	UN 2811
IMDG-Code	UN 2811
ICAO-TI	UN 2811

### 14.2 UN proper shipping name

ADRRID	TOXIC SOLID, ORGANIC, N.O.S.
IMDG-Code	TOXIC SOLID, ORGANIC, N.O.S.
ICAO-TI	Toxic solid, organic, n.o.s.
Technical name	1,10-Phenanthroline monohydrate

### 14.3 Transport hazard class(es)

ADRRID	6.1
IMDG-Code	6.1
ICAO-TI	6.1

### 14.4 Packing group

ADRRID	III
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# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



## 1,10-Phenanthroline monohydrate ≥99 %, p.a., ACS

article number: 9113

IMDG-Code	III
ICAO-TI	III
<b>14.5 Environmental hazards</b>	hazardous to the aquatic environment
<b>14.6 Special precautions for user</b>	
Provisions for dangerous goods (ADR) should be complied within the premises.	
<b>14.7 Maritime transport in bulk according to IMO instruments</b>	
The cargo is not intended to be carried in bulk.	
<b>14.8 Information for each of the UN Model Regulations</b>	
<b>Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)Additional information</b>	
Proper shipping name	TOXIC SOLID, ORGANIC, N.O.S.
Particulars in the transport document	UN2811, TOXIC SOLID, ORGANIC, N.O.S., (1,10-Phenanthroline monohydrate), 6.1, III, (E), environmentally hazardous
Classification code	T2
Danger label(s)	6.1, "Fish and tree"
	
Environmental hazards	yes (hazardous to the aquatic environment)
Special provisions (SP)	274, 614, 802(ADN)
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 kg
Transport category (TC)	2
Tunnel restriction code (TRC)	E
Hazard identification No	60
<b>Emergency Action Code</b>	2X
<b>Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)Additional information</b>	
Classification code	T2
Danger label(s)	6.1, "Fish and tree"
	
Environmental hazards	Yes Hazardous to water
Special provisions (SP)	274, 614, 802(ADN)
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 kg
Transport category (TC)	2


# Safety data sheet Safety data sheet


acc. to Regulation (EC) No. 1907/2006 (REACH)



**1,10-Phenanthroline monohydrate ≥99 %, p.a., ACS**

article number: **9113**

<b>Hazard identification No</b>	60
<b>International Maritime Dangerous Goods Code (IMDG) - Additional information</b>	
Proper shipping name	TOXIC SOLID, ORGANIC, N.O.S.
Particulars in the shipper's declaration	UN2811, TOXIC SOLID, ORGANIC, N.O.S., (1,10-Phenanthroline monohydrate), 6.1, III, MARINE POLLUTANT
Marine pollutant	YES (hazardous to the aquatic environment)
Danger label(s)	6.1, "Fish and tree"
	
Special provisions (SP)	223, 274
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 kg
EmS	F-A, S-A
Stowage category	A

<b>International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information</b>	
Proper shipping name	Toxic solid, organic, n.o.s.
Particulars in the shipper's declaration	UN2811, Toxic solid, organic, n.o.s., (1,10-Phenanthroline monohydrate), 6.1, III
Environmental hazards	YES (hazardous to the aquatic environment)
Danger label(s)	6.1
	
Special provisions (SP)	A3, A5
Excepted quantities (EQ)	E1
Limited quantities (LQ)	10 kg

## SECTION 15: Regulatory information

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

#### Relevant provisions of the European Union (EU)

##### Seveso Directive

2012/18/EU (Seveso III)			
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes
H2	acute toxic (cat. 2 + cat. 3, inhal.)	50                      200	41)

##### Notation

- 41) - Category 2, all exposure routes  
- category 3, inhalation exposure route

# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



## 1,10-Phenanthroline monohydrate ≥99 %, p.a., ACS

article number: 9113

### Deco-Paint Directive

VOC content	0 %
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### Industrial Emissions Directive (IED)

VOC content	0 %
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### Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

### Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

### Water Framework Directive (WFD)

List of pollutants (WFD)				
Name of substance	Name acc. to inventory	CAS No	Listed in	Remarks
1,10-Phenanthroline monohydrate	polycyclic aromatic hydrocarbons (PAH)		b)	HAZ (7)
1,10-Phenanthroline monohydrate	polycyclic aromatic hydrocarbons (PAH)		c)	
1,10-Phenanthroline monohydrate	Persistent hydrocarbons and persistent and bioaccumulable organic toxic substances		a)	

#### Legend

- (7) Including benzo(a)pyrene (CAS 50-32-8, EU 200-028-5), benzo(b)fluoranthene (CAS 205-99-2, EU 205-911-9), benzo(g,h,i)perylene (CAS 191-24-2, EU 205-883-8), benzo(k)fluoranthene (CAS 207-08-9, EU 205-916-6), indeno(1,2,3-cd)pyrene (CAS 193-39-5, EU 205-893-2) and excluding anthracene, fluoranthene and naphthalene, which are listed separately
- a) Indicative list of the main pollutants  
b) List of priority substances in the field of water policy  
c) Environmental Quality Standards for Priority Substances and certain other pollutants  
HAZ Identified as priority hazardous substance

### Regulation on the marketing and use of explosives precursors

not listed

### Regulation on drug precursors

not listed

### Regulation on substances that deplete the ozone layer (ODS)

not listed

### Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

### Regulation on persistent organic pollutants (POP)

Name of substance	CAS No	Wt%	Type of registration	Re-remarks	Exemptions	Concentration limit
1,10-Phenanthroline monohydrate	130498-29-2	100	Annex III - B	A3B-ad-01		

#### Legend

- A3B-ad-01 For the purpose of emission inventories, the following four compound indicators shall be used: benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene and indeno(1,2,3-cd)pyrene.  
Annex III - B List of substances subject to release reduction provisions

# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



**1,10-Phenanthroline monohydrate ≥99 %, p.a., ACS**

article number: **9113**

## National regulations(GB)

### List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

not listed

### Restrictions according to GB REACH, Annex 17

not listed

## Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

## National inventories

Country	Inventory	Status
AU	AIIC	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
JP	CSCL-ENCS	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TW	TCSI	substance is listed
VN	NCI	substance is listed

### Legend

AIIC	Australian Inventory of Industrial Chemicals
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
KECI	Korea Existing Chemicals Inventory
NCI	National Chemical Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
TCSI	Taiwan Chemical Substance Inventory

## 15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.

## SECTION 16: Other information

### Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
2.2	Labelling of packages where the contents do not exceed 125 ml: Signal word: Danger		yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes

# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



**1,10-Phenanthroline monohydrate ≥99 %, p.a., ACS**

article number: **9113**

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes
14.8		Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)Additional information	yes
14.8		Classification code: T2	yes
14.8		Danger label(s): 6.1, "Fish and tree"	yes
14.8		Danger label(s): change in the listing (table)	yes
14.8		Environmental hazards: Yes Hazardous to water	yes
14.8		Special provisions (SP): 274, 614, 802(ADN)	yes
14.8		Excepted quantities (EQ): E1	yes
14.8		Limited quantities (LQ): 5 kg	yes
14.8		Transport category (TC): 2	yes
14.8		Hazard identification No: 60	yes
15.1	Restrictions according to REACH, Annex XVII: not listed		yes
15.1	List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list: Not listed.		yes
15.1		List of pollutants (WFD): change in the listing (table)	yes
15.1	Regulation on persistent organic pollutants (POP): not listed	Regulation on persistent organic pollutants (POP)	yes
15.1		Regulation on persistent organic pollutants (POP): change in the listing (table)	yes
15.1		National regulations(GB)	yes
15.1		List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list: not listed	yes

# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



## 1,10-Phenanthroline monohydrate ≥99 %, p.a., ACS

article number: 9113

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
15.1		Restrictions according to GB REACH, Annex 17: not listed	yes
15.1		National inventories: change in the listing (table)	yes

### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
DGR	Dangerous Goods Regulations (see IATA/DGR)
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
ED	Endocrine disruptor
EH40/2005	EH40/2005 Workplace exposure limits ( <a href="http://www.nationalarchives.gov.uk/doc/open-government-licence/">http://www.nationalarchives.gov.uk/doc/open-government-licence/</a> )
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
GB CLP	The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/720 (as amended)
GB REACH	The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended)
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals



# Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



## 1,10-Phenanthroline monohydrate $\geq 99\%$ , p.a., ACS

article number: 9113

Abbr.	Descriptions of used abbreviations
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
STEL	Short-term exposure limit
TWA	Time-weighted average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative
WEL	Workplace exposure limit

### Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

### List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H301	Toxic if swallowed.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.