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## **1** Identification

- · Product identifier
- · Trade name: 1,10-Phenanthroline, Monohydrate Reagent ACS
- Article number: P1938
- · CAS Number:
- 5144-89-8
- *EC number:* 200-629-2
- Details of the supplier of the safety data sheet
  Manufacturer/Supplier: Aqua Solutions, Inc.
  6913 Highway 225 DEER PARK, TX 77536 USA
  800-256-2586
- Information department: Technical Coordinator
   Sherman Nelson sherman@aquasolutions.org
   Emergency telephone number:
- Chemtrec: 800-424-9300 Canutec: 613-996-6666

## 2 Hazard(s) identification

· Classification of the substance or mixture

GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

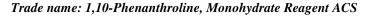
- · Label elements
- *GHS label elements* The substance is classified and labeled according to the Globally Harmonized System (GHS). *Hazard pictograms*

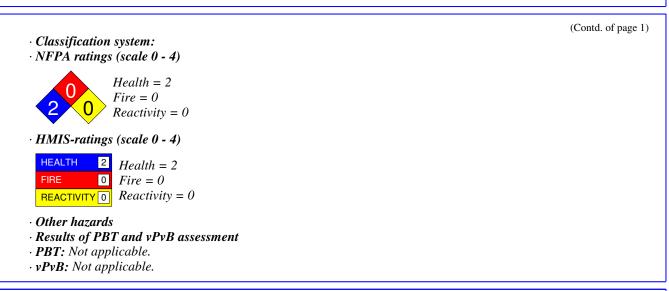


- · Signal word Danger
- · Hazard statements
- Toxic if swallowed.
- · Precautionary statements
- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- If swallowed: Immediately call a poison center/doctor.
- Specific treatment (see on this label). Rinse mouth.
- Store locked up.
- Dispose of contents/container in accordance with local/regional/national/international regulations.
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### **3** Composition/information on ingredients

- · Chemical characterization: Substances
- · CAS No. Description
- 5144-89-8 1,10-Phenanthroline, Monohydrate
- · Identification number(s)
- EC number: 200-629-2

## 4 First-aid measures

- · Description of first aid measures
- General information:
- Immediately remove any clothing soiled by the product.
- In case of irregular breathing or respiratory arrest provide artificial respiration.
- After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- · After swallowing: Do not induce vomiting; immediately call for medical help.
- Information for doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- *Indication of any immediate medical attention and special treatment needed No further relevant information available.*

## **5** Fire-fighting measures

- · Extinguishing media
- Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.

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### **6** Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Not required.
- · Environmental precautions: No special measures required.
- Methods and material for containment and cleaning up:
- Dispose contaminated material as waste according to item 13.
- · Reference to other sections
- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.
- · Protective Action Criteria for Chemicals
- **PAC-1:** Substance is not listed.
- PAC-2: Substance is not listed.
- · PAC-3: Substance is not listed.

### 7 Handling and storage

#### · Handling:

- · Precautions for safe handling Thorough dedusting.
- Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities
- · Storage:
- Requirements to be met by storerooms and receptacles: No special requirements.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: Keep receptacle tightly sealed.
- · Specific end use(s) No further relevant information available.

### 8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- · Components with limit values that require monitoring at the workplace: Not required.
- Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment:
- · General protective and hygienic measures:
- Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work.
- · Breathing equipment: Not required.
- · Protection of hands:
- The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation • Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

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· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

• Eye protection: Not required.

· Body protection: Protective work clothing

# 9 Physical and chemical properties

· Information on basic physical and chemical properties		
· General Information		
· Appearance:		
Form:	Powder	
Color:	White	
· Odor:	Mild	
· Odor threshold:	Not determined.	
· pH-value:	Not applicable.	
· Change in condition		
Melting point/Melting range:	100-104 °C (212-219.2 °F)	
Boiling point/Boiling range:	Undetermined.	
· Flash point:	Not applicable.	
· Flammability (solid, gaseous):	Product is not flammable.	
· Ignition temperature:		
Decomposition temperature:	Not determined.	
• Auto igniting:	Not determined.	
· Danger of explosion:	Product does not present an explosion hazard.	
· Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
· Vapor pressure:	Not applicable.	
· Density at 20 °C (68 °F):	1.31 g/cm <sup>3</sup> (10.93195 lbs/gal)	
· Relative density	Not determined.	
· Vapor density	Not applicable.	
· Evaporation rate	Not applicable.	
· Solubility in / Miscibility with		
Water:	Not determined.	
· Partition coefficient (n-octanol/wat	t <b>er):</b> Not determined.	
· Viscosity:		
Dynamic:	Not applicable.	
Kinematic:	Not applicable.	
• Other information	No further relevant information available.	

## **10 Stability and reactivity**

• *Reactivity* No further relevant information available.

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### Trade name: 1,10-Phenanthroline, Monohydrate Reagent ACS

- · Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

## **11 Toxicological information**

- · Information on toxicological effects
- Acute toxicity:

### · LD/LC50 values that are relevant for classification:

- Oral LD50 100 mg/kg (ATE)
- Primary irritant effect:
- on the skin: No irritant effect.
- on the eye: No irritating effect.
- Sensitization: No sensitizing effects known.
- · Additional toxicological information:
- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer) Substance is not listed.
- · NTP (National Toxicology Program) Substance is not listed.
- · OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.

## **12 Ecological information**

- · Toxicity
- Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- *Mobility in soil* No further relevant information available.
- · Additional ecological information:
- · General notes: Not known to be hazardous to water.
- · Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

## **13 Disposal considerations**

- · Waste treatment methods
- · Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- · Uncleaned packagings:
- Recommendation: Disposal must be made according to official regulations.

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UN-Number DOT, IMDG, IATA	UN2811	
UN proper shipping name DOT IMDG, IATA	Toxic solids, organic, n.o.s. (1,10-Phenanthroline, Monohydrate) TOXIC SOLID, ORGANIC, N.O.S. (1,10-Phenanthrolin Monohydrate)	
Transport hazard class(es)		
DOT		
TOXIC 8		
Class Label	6.1 Toxic substances 6.1	
IMDG		
Label	6.1	
IATA	0.1	
Class	6.1 Toxic substances	
Label	6.1	
Packing group DOT, IMDG, IATA	111	
Environmental hazards: Marine pollutant:	Environmentally hazardous substance, solid No	
Special precautions for user Danger code (Kemler):	Warning: Toxic substances 60	
EMS Number: Stowage Category	F-A,S-A A	
Transport in bulk according to Annex MARPOL73/78 and the IBC Code	II of Not applicable.	
UN ''Model Regulation'':	UN 2811 TOXIC SOLIDS, ORGANIC, N.O.S. (1,10	

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### **15 Regulatory information**

· Safety, health and environmental regulations/legislation specific for the substance or mixture · Sara

- Section 355 (extremely hazardous substances): Substance is not listed.
- Section 313 (Specific toxic chemical listings): Substance is not listed.
- · TSCA (Toxic Substances Control Act):
- · TSCA new (21st Century Act) (Substances not listed)
- · Proposition 65
- · Chemicals known to cause cancer: Substance is not listed.
- · Chemicals known to cause reproductive toxicity for females: Substance is not listed.
- · Chemicals known to cause reproductive toxicity for males: Substance is not listed.
- · Chemicals known to cause developmental toxicity: Substance is not listed.
- · Carcinogenic categories
- · EPA (Environmental Protection Agency) Substance is not listed.
- TLV (Threshold Limit Value established by ACGIH) Substance is not listed.
- · NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.
- GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms



- · Signal word Danger
- · Hazard statements
- Toxic if swallowed.

Precautionary statements
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
If swallowed: Immediately call a poison center/doctor.
Specific treatment (see on this label).
Rinse mouth.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

## **16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing SDS: Environment protection department.
- · Contact:
- Date of preparation / last revision

   12-21-2017: review SDS for accuracy. STN
   Creation date for SDS 09-23-2014 STN
   12/21/2017 / 

   Abbreviations and acronyms:

   Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
   IMDG: International Maritime Code for Dangerous Goods
   DOT: US Department of Transport Association

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ACGIH: American Conference of Governmental Industrial Hygienists	
EINECS: European Inventory of Existing Commercial Chemical Substances	
CAS: Chemical Abstracts Service (division of the American Chemical Society)	
NFPA: National Fire Protection Association (USA)	
HMIS: Hazardous Materials Identification System (USA)	
LC50: Lethal concentration, 50 percent	
LD50: Lethal dose, 50 percent	
PBT: Persistent, Bioaccumulative and Toxic	
vPvB: very Persistent and very Bioaccumulative	
NIOSH: National Institute for Occupational Safety	
OSHA: Occupational Safety & Health	
TLV: Threshold Limit Value	
PEL: Permissible Exposure Limit	
REL: Recommended Exposure Limit	
Acute Tox. 3: Acute toxicity – Category 3	
	US -