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### MATERIAL SAFETY DATA SHEET (MSDS)

## 1,10-PHENANTHROLINE AR (MONOHYDRATE) (REDOX INDICATOR)

### 1. Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Trade name : 1,10-PHENANTHROLINE AR (MONOHYDRATE) (REDOX INDICATOR)  
Product code : P0155800005  
Identification of the product : 1,10-PHENANTHROLINEAR 99.5%  
CAS No: 5144-89-8

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

Use : Industrial. For professional use only.

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

Company identification : SUVCHEM  
Chaitanya Tower, 2nd Floor, Office # 206,  
Siddharth Nagar, S.V. Road,  
Goregaon (West), Mumbai - 400062,  
Maharashtra, India.  
Contact: +91 22 28725393 / 94 / 95  
Email ID: info@suvchem.com/care@suvchem.com

#### 1.4. Emergency telephone number

Phone no. : + 91 22 28725393 / 94 / 95 (9:00am - 6:00 pm) [ Office hours ]

### 2. Hazards identification -DSD

#### 2.1. Classification of the substance or mixture

##### Classification EC 67/548 or EC 1999/45

Classification : T; R25  
N; R50-53

##### Hazard Class and Category Code(s), Regulation (EC) No 1272/2008 (CLP)

Health hazards : Acute toxicity, Oral - Category 3 - Danger (CLP : Acute Tox. 3) H301  
Environmental hazards : Hazardous to the aquatic environment - Acute hazard - Category 1 - Warning (CLP : Aquatic Acute 1) H400  
Hazardous to the aquatic environment - Chronic hazard - Category 1 - Warning (CLP : Aquatic Chronic 1) H410

#### 2.2. Label elements

##### Labelling EC 67/548 or EC 1999/45

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## 1,10-PHENANTHROLINE AR (MONOHYDRATE) (REDOX INDICATOR)

### 2. Hazards identification -DSD (continued)

Symbol(s)



Symbol(s)

: T : Toxic  
N : Dangerous for the environment

R Phrase(s)

: R25 : Toxic if swallowed.  
R50/53 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S Phrase(s)

: S45 : In case of accident or if you feel unwell, seek medical advice immediately ( show the label when possible).  
S60 : This material and its container must be disposed of as hazardous waste.  
S61 : Avoid release to the environment. Refer to special instructions/Safety data sheets.

#### Labelling Regulation EC 1272/2008 (CLP)

Hazard pictograms



Signal words

: Danger

Hazard statements

: H301 : Toxic if swallowed.  
H410 : Very toxic to aquatic life with long lasting effects.

Precautionary statements

• Prevention

: P273: Avoid release to the environment.  
P264: Wash thoroughly after handling.  
P270: Do not eat, drink or smoke when using this product.

• Response

: P301+P310: IF SWALLOWED : Immediately call a POISON CENTER or doctor.  
P391: Collect spillage.

• Storage

: P405: Store locked up.

• Disposal considerations

: P501: Dispose of this material and its container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

#### 2.3. Other hazards

Other hazards

: The substance does not fulfil the criteria to be identified as PBT substance or vPvB substance according to Annex XIII of Regulation REACH.

### 3. Composition/information on ingredients

Substance / Preparation

: 1,10-PHENANTHROLINEAR 99.5%

Substance.

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**3. Composition/information on ingredients (continued)**

Contains no other components or impurities which will influence the classification of the product.

**4. First aid measures**
**4.1. Description of first aid measures**

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | : Assure fresh air breathing. Allow the victim to rest.  |
| <b>Skin contact</b> | : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.          |
| <b>Eye contact</b>  | : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.                   |
| <b>Ingestion</b>    | : Immediately call a POISON CENTER or doctor. Specific treatment (see on this label). Do NOT induce vomiting. Rinse mouth. |

**4.2. Most important symptoms and effects, both acute and delayed**

**Symptoms relating to use** : Swallowing a small quantity of this material will result in serious health hazard.

**4.3. Indication of any immediate medical attention and special treatment needed**

**General information** : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

**5. Fire-fighting measures**
**5.1. Extinguishing media**

|                                       |  |
|---------------------------------------|--|
| <b>Suitable extinguishing media</b>   | : Foam. Dry powder. Carbon dioxide. Water spray. Sand.   |
| <b>Unsuitable extinguishing media</b> | : Do not use a heavy water stream.                       |
| <b>Surrounding fires</b>              | : Use water spray or fog for cooling exposed containers. |

**5.2. Special hazards arising from the substance or mixture**

**Hazardous combustion products** : Under fire conditions, hazardous fumes will be present.

**5.3. Advice for fire-fighters**

|                                |  |
|--------------------------------|--|
| <b>Protection against fire</b> | : Do not enter fire area without proper protective equipment, including respiratory protection.              |
| <b>Special procedures</b>      | : Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment. |

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**6. Accidental release measures**
**6.1. Personal precautions, protective equipment and emergency procedures**

**For emergency responders** : Equip cleanup crew with proper protection.  
Ventilate area.

**For non-emergency personnel** : Evacuate unnecessary personnel.

**6.2. Environmental precautions**

**Environmental precautions** : Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.  
Avoid release to the environment.

**6.3. Methods and material for containment and cleaning up**

**Clean up methods** : On land, sweep or shovel into suitable containers. Minimize generation of dust.  
Store away from other materials.

**6.4. Reference to other sections**

See section 8. Exposure controls/personal protection

**7. Handling and storage**
**7.1. Precautions for safe handling**

**Handling** : Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

**Technical protective measures** : Provide good ventilation in process area to prevent formation of vapour.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage** : Keep only in the original container in a cool, well ventilated place. Keep container closed when not in use.

**Storage - away from** : Strong bases. Strong acids. Sources of ignition. Direct sunlight.

**7.3. Specific end use(s)**

**Specific end use(s)** : None.

**8. Exposure controls/personal protection**
**8.1. Exposure controls**

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**8. Exposure controls/personal protection (continued)**

|                          |   |
|--------------------------|---|
| Personal protection      | : Avoid all unnecessary exposure.         |
| • Respiratory protection | : Wear approved mask.                     |
| • Hand protection        | : Wear protective gloves.                 |
| • Eye protection         | : Chemical goggles or safety glasses.     |
| • Others                 | : When using, do not eat, drink or smoke. |

**8.2. Control parameters**

|                              |                      |
|------------------------------|----------------------|
| Occupational Exposure Limits | : No data available. |
|------------------------------|----------------------|

**9. Physical and chemical properties**
**9.1. Information on basic physical and chemical properties**

|                                    |                      |
|------------------------------------|----------------------|
| Physical state at 20 °C            | : Solid.             |
| Colour                             | : White powder       |
| Odour                              | : N/A                |
| Odour threshold                    | : No data available. |
| pH value                           | : Not applicable.    |
| Melting point [°C]                 | : 88 °C              |
| Decomposition point [°C]           | : N/A                |
| Critical temperature [°C]          | : N/A                |
| Auto-ignition temperature [°C]     | : N/A                |
| Flammability (solid, gas)          | : N/A                |
| Flash point [°C]                   | : N/A                |
| Boiling point [°C]                 | : N/A                |
| Initial boiling point [°C]         | : N/A                |
| Final boiling point [°C]           | : N/A                |
| Evaporation rate                   | : N/A                |
| Vapour pressure [20°C]             | : N/A                |
| Vapour pressure mm/Hg              | : N/A                |
| Vapour density                     | : 6,2                |
| Density [g/cm <sup>3</sup> ]       | : N/A                |
| Relative density, gas (air=1)      | : N/A                |
| Relative density, liquid (water=1) | : N/A                |
| Solubility in water [% weight]     | : Soluble in water   |
| Solubility in water                | : N/A                |
| Log Pow octanol / water at 20°C    | : No data available. |
| Solubility                         | : N/A                |

**MATERIAL SAFETY DATA SHEET (MSDS)**
**1,10-PHENANTHROLINE AR (MONOHYDRATE) (REDOX INDICATOR)**
**9. Physical and chemical properties (continued)**

 Viscosity at 40°C [mm<sup>2</sup>/s] : N/A

**9.2. Other information**

 Explosive properties : N/A  
 Explosion limits - upper [%] : N/A  
 Explosion limits - lower [%] : N/A  
 Oxidising properties : No data available.

**10. Stability and reactivity**
**10.1. Reactivity**

Reactivity : Not established.

**10.2. Chemical stability**

Chemical stability : Stable under recommended storage conditions.

**10.3. Possibility of hazardous reactions**

Hazardous reactions : Not established.

**10.4. Conditions to avoid**

Conditions to avoid : Direct sunlight. Extremely high or low temperatures.

**10.5. Incompatible materials**

Materials to avoid : Strong acids. Strong bases.

**10.6. Hazardous decomposition products**

Hazardous decomposition products : Fumes. Carbon monoxide. Carbon dioxide.

**11. Toxicological information**
**11.1. Information on toxicological effects**
**Acute toxicity**

- Inhalation : Based on available data, the classification criteria are not met.
- Dermal : Based on available data, the classification criteria are not met.
- Ingestion : Toxic if swallowed.

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**1,10-PHENANTHROLINE AR (MONOHYDRATE) (REDOX INDICATOR)**
**11. Toxicological information (continued)**

|                               |   |
|-------------------------------|---|
| <b>Corrosion</b>              | : Based on available data, the classification criteria are not met. |
| <b>Irritation</b>             | : Based on available data, the classification criteria are not met. |
| <b>Sensitization</b>          | : Based on available data, the classification criteria are not met. |
| <b>Mutagenicity</b>           | : Based on available data, the classification criteria are not met. |
| <b>Carcinogenicity</b>        | : Based on available data, the classification criteria are not met. |
| <b>Toxic for reproduction</b> | : Based on available data, the classification criteria are not met. |
| <b>STOT-single exposure</b>   | : Based on available data, the classification criteria are not met. |
| <b>STOT-repeated exposure</b> | : Based on available data, the classification criteria are not met. |
| <b>Aspiration hazard</b>      | : Based on available data, the classification criteria are not met. |

**12. Ecological information**
**12.1. Toxicity**

**Toxicity information** : Very toxic to aquatic life with long lasting effects.

**12.2. Persistence - degradability**

**Persistence - degradability** : May cause long-term adverse effects in the environment.

**12.3. Bioaccumulative potential**

**Bioaccumulative potential** : Not established.

**12.4. Mobility in soil**

**Mobility in soil** : Not established.

**12.5. Results of PBT and vPvB assessment**

**Results of PBT and vPvB assessment** : The substance does not fulfil the criteria to be identified as PBT substance or vPvB substance according to Annex XIII of Regulation REACH.

**12.6. Other adverse effects**

**Environmental precautions** : Avoid release to the environment.

**13. Disposal considerations**
**13.1. Waste treatment methods**

**General** : Avoid release to the environment. Dispose in a safe manner in accordance with local/national regulations.  
 Dispose of this material and its container to hazardous or special waste collection

**MATERIAL SAFETY DATA SHEET (MSDS)**
**1,10-PHENANTHROLINE AR (MONOHYDRATE) (REDOX INDICATOR)**
**13. Disposal considerations (continued)**

Special precautions : point, in accordance with local, regional, national and/or international regulation.  
 : Hazardous waste due to toxicity.

**14. Transport information**
**14.1. Land transport (ADR-RID)**

UN N° : 2811  
 H.I. nr : 60  
 ADR - Class : 6.1  
 Labelling - Transport : 6.1 : Toxic substances.



ADR - Classification code : T2  
 ADR - Group : III

**14.2. Sea transport (IMDG) [English only]**

UN N° : 2811  
 IMO-IMDG - Class or division : 6.1 : Toxic substances.  
 IMO-IMDG - Packing group : III

**14.3. Air transport (ICAO-IATA) [English only]**

UN N° : 2811  
 IATA - Class or division : 6.1 : Toxic substances.  
 IATA - Packing group : III

**15. Regulatory information**
**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Safety, health and environmental regulations/legislation specific for the substance or mixture : Ensure all national/local regulations are observed.  
 REACH Restrictions - Annex XVII : The components of this product are not subject to restrictions.  
 REACH Authorisation - Annex XIV : The components of this product are not subject to authorization.

**15.2. Chemical Safety Assessment**



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In accordance with REACH Regulation (CE) N° 1907/2006 and with CLP Regulation (CE) N° 1272/2008

**DISCLAIMER:**

- **SUVCHEM** Products are to be used as Lab Chemicals for R&D only. Not for drug, medicinal, household or other uses.
- **SUVCHEM** shall not be responsible for any damage resulting from handling or from contact with the above product.
- **SUVCHEM** provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product.

**End of document**