



# Alpha Chemika



ISO 9001 QUALITY SYSTEM CERTIFIED ORGANIZATION

## MATERIAL SAFETY DATA SHEET

### MSDS

Savgan Heights : 102 ,B Wing ; R.T.O. Lane ,Andheri (West) Mumbai - 400053 , INDIA

## Section 1 - Chemical Product and Company Identification

### Product Name : 1,10-PHENANTHROLINE

**Synonyms:** Orthophenanthroline; 4,5-diazaphenanthrene

**CAS No.:** 5144-89-8 (monohydrate)

**Molecular Weight:** 198.23

**Chemical Formula:**  $C_{12}H_8N_2 \cdot H_2O$

## Section 2 - Composition, Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
1,10-Phenanthroline	5144-89-8	100%	Yes

## Section 3 - Hazardous Identification

### Emergency Overview

**WARNING! HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.**

**SAF-T-DATA<sup>(tm)</sup> Ratings (Provided here for your convenience)**

Health Rating: 2 - Moderate

Flammability Rating: 1 - Slight

Reactivity Rating: 0 - None

Contact Rating: 1 - Slight

Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

Storage Color Code: Green (General Storage)

## Potential Health Effects

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Information on the human health effects from exposure to this substance is limited.

### **Inhalation:**

Inhalation of dust may cause irritation to the respiratory tract. Harmful if inhaled.

### **Ingestion:**

The symptoms of poisoning of this compound have not been thoroughly investigated. Harmful if swallowed. May cause abdominal pain, nausea, diarrhea.

### **Skin Contact:**

May cause irritation with redness and pain.

### **Eye Contact:**

May cause irritation, redness and pain.

### **Chronic Exposure:**

No information found.

### **Aggravation of Pre-existing Conditions:**

No information found.

## Section 4 - First Aid Measures

### **Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

### **Ingestion:**

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

### **Skin Contact:**

Wash exposed area with soap and water. Get medical advice if irritation develops.

### **Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

## Section 5 - Fire Fighting Measures

### **Fire:**

As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source.

### **Explosion:**

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

### **Fire Extinguishing Media:**

Water spray, dry chemical, alcohol foam, or carbon dioxide.

### **Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

## Section 6 - Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.

## Section 7 - Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Isolate from oxidizing materials. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

## Section 8 - Exposure Controls, Personal Protection

### **Airborne Exposure Limits:**

None established.

### **Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

### **Personal Respirators (NIOSH Approved):**

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

### **Skin Protection:**

Wear protective gloves and clean body-covering clothing.

### **Eye Protection:**

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

## Section 9 - Physical and Chemical Properties

### **Appearance:**

Tan to dark brown flakes.

### **Odor:**

Slight odor

### **Solubility:**

Soluble in 300 parts water.

### **Density:**

1.28 - 1.35 @ 25C/4C

### **pH:**

No information found.

### **% Volatiles by volume @ 21C (70F):**

No information found.

### **Boiling Point:**

No information found.

### **Melting Point:**

No information found.

### **Vapor Density (Air=1):**

No information found.

### **Vapor Pressure (mm Hg):**

No information found.

### **Evaporation Rate (BuAc=1):**

No information found.

## Section 10 - Stability and Reactivity

### **Stability:**

Stable under ordinary conditions of use and storage.

### **Hazardous Decomposition Products:**

Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.

### **Hazardous Polymerization:**

Will not occur.

### **Incompatibilities:**

Strong oxidizers.

### **Conditions to Avoid:**

No information found.

## Section 11 - Toxicological Information

Investigated as a mutagen, reproductive effector.

Ingredient	---NTP Carcinogen---		
	Known	Anticipated	IARC Category
1,10-Phenanthroline (5144-89-8)	No	No	None

## Section 12 - Ecological Information

**Environmental Fate:** No information found.

**Environmental Toxicity:** No information found.

## Section 13 - Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## Section 14 - Transport Information

**Not regulated.**

## Section 15 - Regulatory Information

Ingredient	-----\Chemical Inventory Status - Part 1\-----			
	TSCA	EC	Japan	Australia
1,10-Phenanthroline (5144-89-8)	Yes	Yes	Yes	Yes

Ingredient	-----\Chemical Inventory Status - Part 2\-----				
	--Canada--	Korea	DSL	NDSL	Phil.
1,10-Phenanthroline (5144-89-8)	Yes	Yes	No	No	

Ingredient	-----\Federal, State & International Regulations - Part 1\-----			
	-SARA 302- RQ	TPQ	-----SARA 313----- List	Chemical Catg.
1,10-Phenanthroline (5144-89-8)	No	No	No	No

Ingredient	-----\Federal, State & International Regulations - Part 2\-----		
	-RCRA- CERCLA	-TSCA- 261.33	8(d)
1,10-Phenanthroline (5144-89-8)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No  
SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No  
Reactivity: No (Pure / Solid)

## Section 16 - Additional Information

**NFPA Ratings:** Health: **2** Flammability: **1** Reactivity: **0**

**Label Hazard Warning:**

WARNING! HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

**Label Precautions:**

Avoid contact with eyes, skin and clothing.

Avoid breathing dust.

Use only with adequate ventilation.

Wash thoroughly after handling.

Keep container closed.

**Label First Aid:**

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

No Changes.