
CHEMICAL SAFETY DATA SHEET

Copper Sulphate Pentahydrate (MSDS)

Section 1: Chemical Product and Company Information

Product Name: Copper Sulphate Pentahydrate

Formula: $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$

Molecular Weight: 249.68

CAS No.: 7758-99-8

Manufacturer/Supplier

ChangSha Haolin Chemicals Co., Ltd

Address: No.26b.59dong,Meilingshuijun,KaiyuanWestRoad,Xingsha,Changsha,Hunan Province, China

Tel: +86-731-85252352

Fax: +86-731-84066299

Section 2: Hazards Identification

Emergency Overview

Health Rating: 2 - Moderate (Life)

Flammability Rating: 0 - None

Reactivity Rating: 1 - Slight

Contact Rating: 2 - Moderate

Storage Color Code: Green (General Storage)

Potential Health Effects

Inhalation:

Causes irritation to respiratory tract, symptoms may include coughing, sore throat, and shortness of breath. May result in ulceration and perforation of respiratory tract. When heated, this compound may give off copper fume, which can cause symptoms similar to the common cold, including chills and stuffiness of the head.

Ingestion:

May cause burning pain in the mouth, esophagus, and stomach. Hemorrhagic gastritis, nausea, vomiting, abdominal pain, metallic taste, and diarrhea may occur. If vomiting does not occur immediately systemic copper poisoning may occur. Symptoms may include capillary damage, headache, cold sweat, weak pulse, kidney and liver damage, central nervous excitation followed by

depression, jaundice, convulsions, blood effects, paralysis and coma. Death may occur from shock or renal failure. Fatalities have occurred as a result of ingesting gram quantities of copper sulfate.

Skin Contact: May cause irritation and itching.

Eye Contact: Dust may cause irritation. Contact may cause conjunctivitis, ulceration, or clouding of the cornea.

Chronic Exposure: Prolonged or repeated skin exposure may cause dermatitis. Prolonged or repeated exposure to dusts of copper salts may cause discoloration of the skin or hair, blood and liver damage, ulceration and perforation of the nasal septum, runny nose, metallic taste, and atrophic changes and irritation of the mucous membranes.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders, impaired liver, kidney, or pulmonary function, glucose 6-phosphate-dehydrogenase deficiency, or pre-existing Wilson's disease may be more susceptible to the effects of this material.

Section 3: First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact:

In case of contact, wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician.

Eye Contact:

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

Section 4: Fire Fighting Measures

Fire: Not considered to be a fire hazard.

Explosion: Not considered to be an explosion hazard. Sealed container may rupture during fire conditions from pressure water vapor release.

Fire Extinguishing Media: Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.

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. When heated above 110C (230F) material will melt. Avoid using a direct water stream on molten material as it may causes splattering.

Section 5: Accidental Release Measures

Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities.

Section 6: Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Solutions are corrosive to mild steel. 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 7: Exposure Controls/Personal Protection

Airborne Exposure Limits:

-OSHA Permissible Exposure Limit (PEL):

1 mg/m³ (TWA) for copper dusts & mists as Cu

-ACGIH Threshold Limit Value (TLV):

1 mg/m³ (TWA) for copper dusts & mists as Cu

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. 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):

If the exposure limit is exceeded and engineering controls are not feasible, a half facepiece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.. A full-face piece particulate respirator (NIOSH type N100 filters) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. 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 piece 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 8: Physical and Chemical Properties

Appearance: Transparent blue triclinic crystals or crystalline granules or powder.

Odor: Odorless.

Solubility: 31.6g/100cc H₂O @ 0C (32F)

Specific Gravity: 2.28 @ 15.6C/4C

pH: 4.0 (0.2 M solution) % Volatiles by volume @ 21C (70F):

Boiling Point: > 150C (> 302F) Decomposes with loss of 5H₂O

Melting Point: 110C (230F) Loses 4H₂O @ this temperature.

Vapor Density (Air=1): No information found.

Vapor Pressure (mm Hg): No information found.

Evaporation Rate (BuAc=1): (water=1): slowly efflorescent.

Section 9: Stability and Reactivity

Stability: Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

When heated to decomposition cupric oxide and sulfur oxide may form.

Hazardous Polymerization: Will not occur.

Incompatibilities: Substance will ignite hydroxylamine. Solutions are acidic and can react with magnesium to evolve flammable hydrogen gas. May react with acetylene to form dangerous acetylides.

Conditions to Avoid: Incompatibles.

Section 10: Ecological Information

Environmental Fate: No information found.

Environmental Toxicity: No information found.

Section 11: 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.



CHANGSHA HAOLIN CHEMICALS CO., LTD

Address: No.26b.59dong,Meilingshuijun,KaiyuanWest Road,

Xingsha, Changsha City, Hunan Province, China

Phone: +86-731-85252352

Fax: +86-731-84066299

E-mail: sam@haolinchem.com [Http://www.haolinchem.com](http://www.haolinchem.com)

Section 12: Shipping Information

TDG Class: 9

PIN Shipping Name: Environmentally Hazardous Substances solid N.O.S. (Cupric Sulfate)

UN 3077 PG III

Section 13: Other Information

References: Not available.

Other Special Considerations: Not available.

Disclaimer:

This information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. Pestell Minerals & Ingredients makes no warranty of any kind, expressed or implied, concerning the safe use of this material in your process or combination with any other substances. Effects can be aggravated by other materials and/or this material may aggravate or add to the effects of other materials. This material may be released from gas, liquid or solid materials made directly or indirectly from it. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.
