

MSDS Document

Product Cupric Sulfate Solution

1. Chemical Product and Company Identification

Product Cupric Sulfate Solution

Synonyms: Copper Sulfate Liquid, Copper(II) Sulfate Pentahydrate (1:1:5) Solution, Sulfuric Acid Copper (+2) Salt (1:1) Solution, , Blue Vitriol Solution

MSDS ID 2530

Phibro-Tech Inc.
65 Challenger Road
Ridgefield Park, NJ 07660

Phone Number

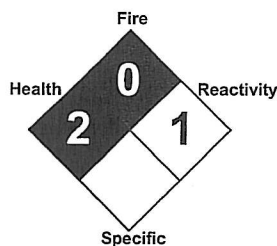
(201) 329-7300

Emergency Phone

CHEMTREC (800) 424-9300

CHEMTREC International (703) 527-3887

Revision Date 11/1/2007



2. Composition and Information on Ingredients

Ingredient	CAS Number	Weight %	ACGIH TLV	PEL	STEL
CUPRIC SULFATE	7758-98-7	13% - 17%	1 mg/m ³ (Cu)*	1 mg/m ³ (Cu)*	

* Dust or Mist

--

3. Hazard Identification

Eye

Contact may cause eye irritation.

Skin

May cause skin irritation. Allergic reactions are possible. Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).

Inhalation

Causes respiratory tract irritation.

Ingestion

Toxic and may be fatal if swallowed; may produce kidney and liver damage. Can burn mouth, throat, and stomach. May cause vomiting. 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, paralysis, and coma. Death may occur from shock or renal failure.

Target organ

Overexposure may cause gastrointestinal tract, central nervous system, and kidney function disturbances. High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis and loss of consciousness).

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

4. First Aid Information**Eye**

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and tested by medical personnel.

Skin

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Thoroughly wash (or discard) clothing and shoes before reuse.

Inhalation

Rescuers should put on appropriate protective gear. Remove from area of exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep victim warm. Get immediate medical attention.

Ingestion

If swallowed, do NOT induce vomiting. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

5. Fire Fighting Measures**Flammable Properties**

Material will not burn. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media

Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material. Cool fire exposed containers with water spray. Exposure to extreme heat may cause containers

to burst.

Fire fighting instructions

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire.

6. Accidental Release Measures

Clean-up

Vacuum or sweep up material and place in a disposal container. Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Do not flush to sewer.

7. Handling and Storage

Handling

Wash thoroughly after handling. Use with adequate ventilation. Avoid breathing (dust, vapor, mist, gas). Avoid contact with eyes, skin, and clothing.

Storage

Store in a cool place in original container and protect from sunlight. Store away from heat. Store away from incompatible materials. Keep container closed when not in use. Keep away from food and drinking water.

8. Exposure Controls and Personal Protection

Engineering controls

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.

Respirators

A NIOSH-approved air purifying respirator with the appropriate cartridge or canister for the hazards may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Other clothing

Wear safety glasses with side shields (or goggles) and a face shield. Use gloves, and other body coverings, recommended for this material by manufacturers or suppliers based on test data showing adequate permeation and penetration resistance.

9. Physical and Chemical Properties

Physical State	Liquid
Specific Gravity	1.18

Color/Appearance	Clear Blue
Odor	Odorless
pH	1.0-3.5
Boiling/Cond. Point	D >400 C
Melting/Freezing Point	looses H ₂ O@ 110 C
Solubility	Soluble

10. Stability and Reactivity

Thermal Stability

Stable under normal conditions of use and storage.

Incompatibility

Alkalies. At temperatures greater than 250 C the anhydrous salt will ignite hydroxyl amine. Solutions are acidic and can react with magnesium to evolve flammable hydrogen gas. Also reacts with finely powdered metal.

Conditions to Avoid

Excessive heat, humidity or sunlight. Incompatibles.

Hazardous Polymerization

Will not occur.

Hazardous Decomposition Products

Thermal decomposition may produce copper fumes, sulfuric acid fumes, and sulfur dioxide fumes.

11. Toxicological Information

Carcinogen

NTP: No

IARC: No

OSHA: No

There is no experimental toxicity data for this product. Refer to the data listed below for relative toxicity assessment.

TOXICITY DATA: (FOR 100% COPPER (II) SULFATE)

Oral Toxicity: LD₅₀: 300 Mg/Kg (Rat)

LDLo: 50 Mg/Kg (Human)

TDLo: 11 Mg/Kg (Human) Git

TDLo: 150 Mg/Kg (Child) Sys, Bld

DNA Inhibition-Intraperitoneal: 20 Mg/Kg (Mouse)

Intravenous: TDLo: 3200 ug/Kg (Female 8D Post): Ter (Mouse)

LD₅₀: 50 Mg/Kg (Mouse)

LD₅₀: 10 Mg/Kg (Rabbit)

Intraperitoneal: TDLo: 7,500 ug/Kg (3D Preg): Rep (Rat)

LD₅₀: 18 Mg/Kg (Mouse)

Subcutaneous: LD₅₀: 43 Mg/Kg (Rat)

TDLo: 500 ug/Kg (Mouse)

TOXICITY DATA: (FOR 100% CUSO₄.5H₂O)

Oral Toxicity: LD50: 300 Mg/Kg (Rat)
LD50: 470 Mg/Kg (Mammal)
TDLo: 272 Mg/Kg (Human) LIV, Kid, Blood Effects
LDLo: 1088 Mg/Kg (Human)
LDLo: 60 Mg/Kg (Dog)
LDLo: 1000 Mg/Kg (Pigeon)
LD50: 470 Mg/Kg (Mammal)
LDLo: 300 Mg/Kg (Wild Bird)
Intraperitoneal: Ld50: 18,700 ug/Kg (Rat)
LD50 33 Mg/Kg (Mouse)
LD50: 7,500 ug/Kg (Mammal)
Subcutaneous: LDLo: 62 Mg/Kg (Guinea Pig)

12. Ecological Information

Harmful to fish and other water organisms. Keep out of waterways.

13. Disposal Considerations

Disposal Method

Dispose in accordance with applicable federal, state, local environmental and regulatory requirements.

14. Transportation Information

Dot Shipping Name: RQ, Environmentally Hazardous Substance, Liquid, N.O. S. (Cupric Sulfate Solution)
Dot Hazard Class: 9
Hazardous Ingredients: Cupric Sulfate
Identification Number: UN 3082
Packing Group: III
Label: Class 9

The RQ is applicable when shipping 10# or more.

Additional Marking: "Marine Pollutant" Required for bulk shipment.

The words "Marine Pollutant" must be entered on the Shipping Paper in association with the basic DOT description for bulk shipments and containers must be marked as a Marine Pollutant. In addition, any quantity shipped by vessel must be identified and marked as a Marine Pollutant.

Note: During an incident involving this material, use of DOT Emergency Response Guide No. 171 are also recommended.

15. Regulatory Information

Toxic Substances Control Act(TSCA)

Chemical ingredients are on the TSCA inventory.

California Proposition 65 Warning

This product may contain chemicals known to the state of California to cause cancer, or birth

defects or other reproductive harm.

Hazardous Waste No.

May be RCRA D002 (Unlisted Hazardous Substance Characteristic of Corrosivity) depending on measured pH.

Superfund Reportable Quantity(RQ):
10#/4.54 KG. (CUSO4)

SARA TITLE III (Section 313): This product is a copper compound which is subject to reporting.

CANADIAN LISTS:

DSL/NDL: Cupric sulfate is on the Domestic Substances List.

WHMIS: Copper(II) sulfate is item number 438 from the ingredient disclosure list and is subject to reporting at 1% threshold

STATE LISTS: Copper sulfate is listed for disclosure or reporting in the states of California, Connecticut, Illinois, Louisiana, Massachusetts, Michigan, New Jersey, New York, and Pennsylvania. Please check with the appropriate Agencies.

For States Not Listed: Please check with the appropriate agencies.

16. Other Information

It is reasonable to assume that copper compounds contain arsenic, cadmium, chromium, and lead in concentrations ranging from a few parts per billion to several hundred parts per million.

All information presented herein is given in good faith and is based on sources and tests considered to be reliable, but cannot be guaranteed. It is the user's full responsibility to accept risk for the safety, toxicity, handling, storage, and use of the product, as well as to determine the suitability of the product for a specific purpose. We make no warranty as to the results to be obtained in using the product; therefore all risks must be assumed by the user.
