



# SAFETY DATA SHEET

**PhytoTechnology  
Laboratories®**

## 1. CHEMICAL IDENTIFICATION AND COMPANY INFORMATION

PRODUCT NAME: Cupric Sulfate, Pentahydrate, ACS Reagent  
PRODUCT NUMBER: C375  
COMPANY INFO: *PhytoTechnology Laboratories®*  
PO Box 12205, Shawnee, KS 66282-2205  
Phone: 1-888-749-8682 or 1-913-341-5343; Fax: 1-888-449-8682 or 1-913-341-5442  
www.phytotechlab.com

EMERGENCY PHONE NUMBER: 1-800-535-5053 - US Only  
1-352-323-3500 - International

RECOMMENDED USE: For Research Use Only

RESTRICTIONS ON USE: Products sold by *PhytoTechnology Laboratories®* are intended for research and laboratory use only. Products are not to be used as human or animal therapeutics, cosmetics, agricultural or pesticidal products, food additives, or as household chemicals.

## 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification:

- H301 – Acute toxicity, Oral (Category 3)
- H315 – Skin irritation (Category 2)
- H319 – Eye Irritation (Category 2A)
- H400 – Acute aquatic toxicity (Category 1)
- H410 – Chronic aquatic toxicity (Category 1)

GHS Label elements, including hazard and precautionary statements:

Pictogram  
:



Signal Word: **Danger**

Hazard Statements:

- H301 – Toxic if swallowed.
- H315 – Causes skin irritation.
- H319 – Causes serious eye irritation.
- H410 – Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

- P273 – Avoid release to the environment.
- P280 – Wear protective gloves/protective clothing/eye protection/face protection.
- P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Copper(II) Sulfate  
CAS No: 7758-99-8  
Formula:  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$   
Molecular Weight: 249.68 g/mol  
EC No.: 231-847-6

Ingredient	CAS Number	Percent	Hazardous
Cupric Sulfate, Pentahydrate	7758-99-8	>99 %	ACGIH TLV: 1 mg/m <sup>3</sup> (Cu)

#### 4. FIRST AID MEASURES

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Route of Entry	Symptoms	First Aid Procedures
Ingestion	May cause irritation if swallowed	If swallowed, wash out mouth with water. Never give anything by mouth to an unconscious person. <b>Get medical attention.</b>
Inhalation	May cause irritation to respiratory tract	Safely remove victim to fresh air. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, ensure clear airway and give oxygen. <b>Get medical attention.</b>
Eye Contact	Direct contact may cause irritation. May cause redness, tearing, or blurred vision.	Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. <b>Get medical attention if irritation persists.</b>
Skin Contact	Irritating. May cause reddening, itching or inflammation.	Wash area thoroughly with soap and water. Remove and wash contaminated clothing. <b>Get medical attention if irritation persists.</b>

Most Important Symptoms or Effects, Both Acute and Delayed:

See section 2 and/or section 11

Recommendation for Immediate Medical Care and Special Treatment Needed:

No data available

#### 5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Water spray, carbon dioxide, dry chemical powder, or appropriate foam. Use extinguishing media suitable for surrounding fire.

Special Protective Equipment and Precaution for Firefighters: In the event of a fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus. Evacuate the area and fight fire from a safe distance.

Hazardous Combustion Products: May emit toxic fumes under fire conditions.

Toxic Gases Produced: Copper oxides, sulfur oxides

#### 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Use personal protection recommended in Section 8. Avoid dust formation. Avoid breathing dust, vapors, mist or gas. Ensure adequate ventilation, especially in confined areas. Evacuate personnel to safe areas.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Method of Containment and Cleanup: Wear suitable protective clothing. Avoid dust formation. Carefully sweep up and remove. Place material in a dry container and cover. Remove from the area. Flush spill area with water. Do not let product enter drains.

#### 7. HANDLING AND STORAGE

Precaution for Safe Handling: Avoid contact with skin and eyes. Avoid dust formation and aerosols. Avoid incompatible substances. Provide adequate ventilation at places where dust is formed. Wash thoroughly after use.

Conditions for Safe Storage: Keep in a tightly closed container and store in a cool, dry, and well-ventilated area. Product is hygroscopic.

Incompatibilities: Reducing agents, alkalis, phosphates, hydroxylamine, finely powdered metals, steel

Recommended Storage Temperature: Room Temperature

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA's Permissible Exposure Limits (PELs): No data available

Threshold Limit Values (TLVs): No data available

Engineering Controls: Handle in accordance to general industrial hygiene and safety practice.

Personal Protective Equipment (PPE):

- Eye/Face Protection: Chemical safety glasses or goggles. Have eye-washing facilities readily available where eye contact can occur.
- Skin Protection: Protective gloves
- Body Protection: Lab coat
- Respiratory Protection: A NIOSH/MSHA approved air purifying respirator.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance: Transparent or blue crystalline granules or powder

pH (0.0001 g/L): Under Development

Solubility: Soluble in water

Melting Range: 110 °C (230 °F)

Vapor Density: No data available

Vapor Pressure: 9.7 hPa (7.3 mmHg) at 25 °C (77°F)

Specific Gravity: 2.284 g/cm<sup>3</sup>

Odor: Odorless

Odor Threshold: No data available

Viscosity: No data available

Relative Density: No data available

Evaporation Rate: No data available

Initial Boiling Point and Boiling Range: No data available

Flammability (solid, gas): No data available

Partition coefficient: No data available  
n-octanol/water):

Auto-ignition Temperature: No data available

Decomposition Temperature: No data available

Flash Point (Closed Cup): No data available

Flammable Limits: Upper (%) – No data available Lower (%) – No data available

**10. STABILITY AND REACTIVITY**

Reactivity: No data available

Chemical Stability: Stable under normal conditions of use

Possibility of Hazard Reactions: Will not occur

Conditions to Avoid: Heat, air, moisture

Incompatibles Materials: Reducing agents, alkalis, phosphates, hydroxylamine, finely powdered metals, steel

Hazardous Decomposition Products: Copper oxides, sulfur oxides

**11. TOXICOLOGICAL INFORMATION**

Toxicity:	LD <sub>50</sub> (Oral-Rat)(mg/Kg)	482
	LD <sub>50</sub> (IPR-Mouse)(mg/Kg)	33
	LD <sub>50</sub> (Dermal-Rat)(mg/Kg)	>2,000

Carcinogenicity: NTP: No  
IARC: No  
Z List: No  
OSHA Reg: No

Reproductive Toxicity: No data available

Symptoms Associated with Overexposure: Irritation, cough, sore throat, abdominal pain, vomiting, anemia, kidney pains, liver impairment, weight loss

Specific Target Organ Toxicity: Single Exposure: No data available  
Repeated Exposure: No data available

Target Organs: Liver, kidney, gastrointestinal system

Medical Conditions Aggravated By Exposure: Pre-existing skin conditions, impaired liver, kidney or pulmonary functions

Routes of Entry: Inhalation and ingestion

NIOSH/RTECS NO: GL8900000

***The toxicological properties of this product have not been thoroughly investigated***

## 12. ECOLOGICAL INFORMATION

Ecotoxicity: EC50 – water flea – 0.024 mg/L – 48 hrs.

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available

Mobility in Soil: No data available

Other Adverse Effects: No data available

## 13. DISPOSAL CONSIDERATION

Disposal Procedure: Dispose in accordance with all applicable federal, state, and local environmental regulations.

EPA Hazardous Waste Number: No data available

## 14. TRANSPORT INFORMATION

Domestic (D.O.T.): Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper sulphate pentahydrate)

Hazard Class: Class: 9 Packing group: III

Reportable Quantity: 10 lbs

UN/NA: 3077

Labels: ENVIRONMENTALLY HAZARDOUS

Marine Pollutant: No

International:

IMDG: Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper sulphate pentahydrate)

Hazard Class: Class: 9 Packing group: III EMS No.: F-A, S-F

UN/NA: 3077

Labels: ENVIRONMENTALLY HAZARDOUS

Marine Pollutant: Marine Pollutant

IATA: Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Copper sulphate pentahydrate)

Hazard Class: Class: 9 Packing group: III

UN/NA: 3077

**15. REGULATORY INFORMATION**

TSCA: No

SARA TITLE III:

Section 302 (EHS) Ingredients: No

Section 313 Ingredients: Yes

Section 304 (EHS/CERCLA) Ingredients: No

Section 311/312 Hazard: Acute Health Hazard, Chronic Health Hazard

Massachusetts Right to Know Components: CAS No.: 7758-99-8 Copper sulphate pentahydrate

Pennsylvania Right to Know Components: CAS No.: 7758-99-8 Copper sulphate pentahydrate

New Jersey Right to Know Components: CAS No.: 7758-99-8 Copper sulphate pentahydrate

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**16. OTHER INFORMATION**

HMIS Rating:	<b>Health Hazard</b>	<b>Chronic Health Hazard</b>	<b>Flammability</b>	<b>Physical Hazard</b>
	2	*	0	0
NFPA Rating:	<b>Health Hazard</b>	<b>Fire Hazard</b>	<b>Reactivity Hazard</b>	<b>Special Hazard</b>
	2	0	0	

\*Chronic Hazard: Chronic (long-term) health effects may result from repeated overexposure.

**PhytoTechnology Laboratories® provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. The above information is intended to be used only as a guide to the appropriate precautionary handling of this material by a properly trained person. PhytoTechnology Laboratories® shall not be held liable for any damage resulting from handling or from contact with the above product. This product is intended for LABORATORY USE ONLY. Our products may NOT BE USED as drugs, cosmetics, agricultural or pesticidal products, food additives or as household chemicals.**

Revision Date: 16 Jun 15