*Phyto*Technology Laboratories®

SAFETY DATA SHEET

1. CHEMICAL IDENTIFICATION AND COMPANY INFORMATION

PRODUCT NAME: Cupric Sulfate Solution (4%)

PRODUCT NUMBER: C466

COMPANY INFO: *Phyto*Technology 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 *Phyto*Technology 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:

H400 - Acute aquatic toxicity (Category 1)
H410 - Chronic aquatic toxicity (Category 1)

GHS Label elements, including hazard and precautionary statements:

Pictogram: 

Signal Word: Warning

Hazard Statements:

H315 – Causes skin irritation.
H319 – Causes serious eye irritation.
H335 – May cause respiratory irritation.
H410 – Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

P280 – Wear protective gloves/protective clothing/eye 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 Pentahydrate

CAS No.: 7758-99-8

Formula: $CuSO_4 \cdot 5H_2O$

Molecular Weight: 249.68 g/mol

EC No.: 231-847-6

Ingredient	CAS Number	Percent	Hazardous
Cupric Sulfate, Pentahydrate	7758-99-8	4 %	NIOSH: 1 mg/m^3

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. **Get medical attention.**
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. **Get medical attention.**
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. **Get medical attention if irritation persists.**
Skin Contact	Irritating. May cause reddening, itching or inflammation.	Wash area thoroughly with soap and water. Remove and wash contaminated clothing. **Get medical attention if irritation persists.**

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 breathing 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:	Clean-up personnel should wear proper protective equipment and clothing. Contain spilled material and do not let product enter drains. Soak up with inert absorbent material and place in a suitable, closed container for disposal in accordance with all local, state/provincial, and national requirements. Ventilate the area if necessary.

7. HANDLING AND STORAGE

Precaution for Safe Handling:	Avoid contact with skin and eyes. Avoid incompatible substances. Wash thoroughly after use.
Conditions for Safe Storage:	Keep in a tightly closed container and store in a cool, dry, and well-ventilated area.
Incompatibilities:	Reducing agents, alkalis, phosphates, hydroxylamine, finely powdered metals, steel
Recommended Storage Temperature:	Room Temperature

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

USA. NIOSH Recommended Exposure Limits:	1 mg/m^3
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:	Appropriate respirator

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colorless to Light Blue, Clear Liquid
pH:	No data available
Solubility:	Miscible with Water
Melting Point:	No data available
Vapor Density:	No data available
Vapor Pressure:	No data available
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: n-octanol/water):	No data available
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

The numbers listed below are for the powdered form of Cupric Sulfate

Toxicity:	LD_{50} (Oral-Rat)(mg/Kg)	300
	LD_{50} (IPR-Mouse)(mg/Kg)	33
	LD_{50} (Dermal-Rat)(mg/Kg)	>2000

Carcinogenicity: NTP: No

	IARC:	No
	Z List:	No
	OSHA Reg:	No

Respiratory or skin sensitization:	Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelization, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis.
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:	No data available
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:	CHEMICALS, N.O.S. (NON-REGULATED)
	Hazard Class:	N/A
	UN/NA:	N/A
	Labels:	N/A

International:

IMDG:	Proper Shipping Name:	CHEMICALS, N.O.S. (NON-REGULATED)
	Hazard Class:	N/A
	UN/NA:	N/A
	Labels:	N/A

IATA:	Proper Shipping Name:	CHEMICALS, N.O.S. (NON-REGULATED)
	Hazard Class:	N/A
	UN/NA:	N/A
	Labels:	N/A

15. REGULATORY INFORMATION

TSCA:	No
SARA TITLE III:	
Section 302 (EHS) Ingredients:	No
Section 313 Ingredients:	No
Section 304 (EHS/CERCLA) Ingredients:	No
Section 311/312 Hazard:	Acute Health Hazard, Chronic Health Hazard
Massachusetts Right to Know Components:	No components are subject to the Massachusetts Right to Know Act.
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:	**Health Hazard**	**Chronic Health Hazard**	**Flammability**	**Physical Hazard**
	2	*	0	0
NFPA Rating:	**Health Hazard**	**Fire Hazard**	**Reactivity Hazard**	**Special Hazard**
	2	0	0	

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

***Phyto*Technology 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. *Phyto*Technology 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.**

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