

# SAFETY DATA SHEET



## Copper Sulfate Pentahydrate

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### GHS Product Information

**Product Name:** Copper Sulfate Pentahydrate  
**Business Unit:** PhibroChem  
**Other means of identification:** Not available  
  
**Safety data sheet number:** 2039-200 -US-E

#### Recommended use of the chemical and restrictions on use

**Recommended use:** No information available.  
  
**Uses advised against:** No information available

#### Details of the supplier of the safety data sheet

##### **Supplier:**

Phibrochem  
Glenpointe Centre East, 3rd FL  
300 Frank W. Burr Blvd., Ste 21  
Teaneck, NJ 07666-6712  
Tel: (201) 329-7300  
Toll free: (888) 475-7355  
Fax: (201) 329-7070

**SDS Contact (email of responsible person):** phibroehs@pahc.com

**24 Hour Emergency Phone Number:** Chemtrec 1-800-424-9300 (CCN17224)

**International:** +1 703-527-3887

### 2. HAZARDS IDENTIFICATION

#### Classification

##### **OSHA Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Germ cell mutagenicity	Category 2
Reproductive toxicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 2

#### Label elements

#### Emergency Overview

**Danger**

**Hazard statements**

Harmful if swallowed  
Causes severe skin burns and eye damage  
Suspected of causing genetic defects  
Suspected of damaging fertility or the unborn child  
May cause damage to organs through prolonged or repeated exposure



**Appearance** crystalline

**Physical state** Solid

**Odor** Odorless

**Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Do not breathe dust/fume/gas/mist/vapors/spray

**Precautionary Statements - Response**

Immediately call a POISON CENTER or doctor/physician  
Specific treatment  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
Immediately call a POISON CENTER or doctor/physician  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
Wash contaminated clothing before reuse  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Immediately call a POISON CENTER or doctor/physician  
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth  
Do NOT induce vomiting

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

**Other Information**

**Other hazards**

- May be harmful in contact with skin
- Very toxic to aquatic life with long lasting effects
- Very toxic to aquatic life

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Pure substance/mixture

Substance

Chemical Name	CAS No	Weight-%	Trade Secret
Copper (II) sulfate pentahydrate (1:1:5)	7758-99-8	60 - 100	*

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

## 4. FIRST AID MEASURES

### First aid measures

- General advice:** If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.
- Eye contact:** Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
- Inhalation:** Remove to fresh air. Call a physician. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.
- Skin Contact:** Consult a physician if necessary. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
- Ingestion:** Do NOT induce vomiting. Call a physician immediately. Never give anything by mouth to an unconscious person.
- Self-protection of the first aider:** Use personal protective equipment as required.

### Most important symptoms and effects, both acute and delayed

**Symptoms:** No information available.

### Indication of any immediate medical attention and special treatment needed

**Note to physicians:** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Extinguishing media

**Suitable extinguishing media:** Use. Dry chemical. Carbon dioxide (CO<sub>2</sub>). Water spray (fog). Alcohol resistant foam.

**Unsuitable extinguishing media:** Caution: Use of water spray when fighting fire may be inefficient.

**Specific hazards arising from the chemical:** No information available.

### Explosion data

**Sensitivity to Mechanical Impact:** None.

**Sensitivity to Static Discharge:** None.

**Protective equipment and precautions for firefighters:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

- Personal precautions:** Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment as required.
- For emergency responders:** Use personal protection recommended in Section 8. Use personal protective equipment as required.
- Environmental precautions:** Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.

**Methods and material for containment and cleaning up**

- Methods for containment:** Prevent further leakage or spillage if safe to do so.
- Methods for cleaning up:** Use personal protective equipment as required. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Take up mechanically, placing in appropriate containers for disposal. Avoid creating dust. Clean contaminated surface thoroughly. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

- Advice on safe handling:** Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Use with local exhaust ventilation.

**Conditions for safe storage, including any incompatibilities**

- Storage Conditions:** Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.
- Incompatible materials:** None known based on information supplied.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure Guidelines**

Chemical Name	CAS No	ACGIH TLV	OSHA PEL	NIOSH IDLH
Copper (II) sulfate pentahydrate (1:1:5)	7758-99-8	TWA: 1 mg/m <sup>3</sup> Cu dust and mist	-	IDLH: 100 mg/m <sup>3</sup> Cu dust and mist TWA: 1 mg/m <sup>3</sup> Cu dust and mist

NIOSH IDLH *Immediately Dangerous to Life or Health*

**Appropriate engineering controls**

- Engineering Controls:** Showers  
Eyewash stations  
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

- General Hygiene Considerations:** When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.
- Eye/face protection:** Tight sealing safety goggles.

**Skin and body protection:** No special technical protective measures are necessary.

**Respiratory protection:** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical state</b>	Solid	<b>Odor</b>	Odorless
<b>Appearance</b>	crystalline	<b>Odor threshold</b>	No information available
<b>Color</b>	blue		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No information available	
Melting Point / Freezing Point	No information available	
Boiling point / boiling range	No information available	
Flash point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific Gravity	2.284	
Water solubility	No information available	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	110 Degrees C	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

### Other Information

Softening point	No information available
Molecular weight	249.68
VOC Content (%)	No information available
Density	No information available
Bulk density	No information available
Percent Volatile	No information available

## 10. STABILITY AND REACTIVITY

**Reactivity**  
No data available

**Chemical stability**  
Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**  
None under normal processing.

**Conditions to avoid**

Extremes of temperature and direct sunlight.

**Incompatible materials**

None known based on information supplied.

**Hazardous Decomposition Products**

None known based on information supplied.

**11. TOXICOLOGICAL INFORMATION**

**Information on likely routes of exposure**

**Product Information:** No data available

**Inhalation:** No data available.

**Eye contact:** No data available.

**Skin Contact:** No data available.

**Ingestion:** No data available.

Chemical Name	CAS No	Oral LD50	Dermal LD50	Inhalation LC50
Copper (II) sulfate pentahydrate (1:1:5)	7758-99-8	= 300 mg/kg ( Rat ) = 960 mg/kg ( Rat )	> 2 g/kg ( Rat )	-

**Information on toxicological effects**

**Symptoms:** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Sensitization:** No information available.

**Germ cell mutagenicity:** No information available.

**Carcinogenicity:** No information available.

**Reproductive toxicity:** No information available.

**STOT - single exposure:** No information available.

**STOT - repeated exposure:** No information available.

**Chronic toxicity:** May cause adverse liver effects. Avoid repeated exposure.

**Target Organ Effects:** Eyes, kidney, liver, Respiratory system, Skin.

**Aspiration hazard:** No information available.

**Numerical measures of toxicity - Product Information**

The following values are calculated based on chapter 3.1 of the GHS document . mg/kg 300

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Very toxic to aquatic life with long lasting effects

0% of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	CAS No	Algae/aquatic plants	Fish	Crustacea

Copper (II) sulfate pentahydrate (1:1:5)	7758-99-8	-	0.66 - 1.15: 96 h Lepomis macrochirus mg/L LC50 semi-static 0.1478 - 0.165: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.09 - 0.19: 96 h Oncorhynchus mykiss mg/L LC50 static 0.96 - 1.8: 96 h Lepomis macrochirus mg/L LC50 static 0.6752: 96 h Pimephales promelas mg/L LC50 static	0.147 - 0.227: 48 h Daphnia magna mg/L EC50 Static
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**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

**Mobility**

No information available.

**Other adverse effects:**

No information available

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Disposal of wastes:**

Refer to all federal, state and local regulations prior to disposal of container and unused contents by reuse, recycle or disposal. Disposal should be in accordance with applicable regional, national and local laws and regulations. Avoid runoff to waterways and sewers. Recover or recycle if possible. Send to a licensed recycler, reclaimer or incinerator.

**Disposal methods:**

Do not reuse container.

**14. TRANSPORT INFORMATION**

**Note:**

Store in a closed container. Keep container upright.

**DOT**

UN/ID no UN3077  
 Proper shipping name Environmentally hazardous substance, solid, n.o.s.\* ( Copper sulfates )  
 Hazard Class 9  
 Packing Group III  
 Special Provisions 146, 335, A112, B54, B120, IB8, IP3, N20, T1, TP33, 8  
 Description UN3077, Environmentally hazardous substance, solid, n.o.s.\*, 9, III,  
 Emergency Response Guide 171  
 Number

**IATA**

UN/ID no UN3077  
 Proper shipping name Environmentally hazardous substance, solid, n.o.s.\*  
 Hazard Class 9  
 Packing Group III  
 ERG Code 9L  
 Special Provisions A158, A179, A97  
 Description UN3077, Environmentally hazardous substance, solid, n.o.s.\*, 9, III

# This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Copper Sulfate Pentahydrate

Revision Date 03/30/2015

## IMDG

**UN/ID no** UN3077  
**Proper shipping name** Environmentally hazardous substance, solid, n.o.s.\*  
**Hazard Class** 9  
**Packing Group** III  
**EmS-No** F-A, S-F  
**Special Provisions** 274, 335, 966, 967  
**Description** UN3077, Environmentally hazardous substance, solid, n.o.s.\*, 9, III,

## TDG

**UN/ID no** UN3077  
**Proper shipping name** Environmentally hazardous substance, solid, n.o.s.\*  
**Hazard Class** 9  
**Packing Group** III  
**Description** UN3077, Environmentally hazardous substance, solid, n.o.s.\*, 9, III,

## 15. REGULATORY INFORMATION

### International Inventories

**TSCA:** Complies  
**DSL/NDL:** Not Determined  
**EINECS/ELINCS:** Not Determined  
**ENCS:** Not Determined  
**IECSC:** Complies  
**KECL:** Not Determined  
**PICCS:** Complies  
**AICS:** Complies

### Legend:

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances

### US Federal Regulations

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	SARA 313 - Threshold Values %
Copper (II) sulfate pentahydrate (1:1:5)	7758-99-8	1.0

#### **SARA 311/312 Hazard Categories**

**Acute health hazard** Yes  
**Chronic Health Hazard** No  
**Fire hazard** No  
**Sudden release of pressure hazard** No  
**Reactive Hazard** No

#### **CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)



**This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006**

**Copper Sulfate Pentahydrate**

**Revision Date 03/30/2015**

Chemical Name	CAS No	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Copper (II) sulfate pentahydrate (1:1:5)	7758-99-8	-	X	-	-

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

**US State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals

**U.S. State Right-to-Know Regulations**

No information available

Chemical Name	CAS No	New Jersey	Massachusetts	Pennsylvania
Copper (II) sulfate pentahydrate (1:1:5)	7758-99-8	X	-	X

**Canada**

No information available

**WHMIS Hazard Class** D1B - Toxic materials Non-controlled



**16. OTHER INFORMATION**

**NFPA** Health hazards 2 Flammability 0 Instability 0 Physical & Chemical Properties 0  
**HMIS** Health hazards 2 Flammability 0 Physical hazards 0 Personal protection E

**Document Review**

Revision Number: 3

Revision Note: No information available

**Key or legend to abbreviations and acronyms used in the safety data sheet:**

- Bioconcentration factor (BCF)
- International Air Transport Association (IATA)
- Globally Harmonized System (GHS)
- International Maritime Dangerous Goods (IMDG)

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