

# Liquid Copper Sulfate 25%

## Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

Revision Date: 11/20/2018

Date of Issue: 05/01/2015

Version: 5.0

## SECTION 1: IDENTIFICATION

### Product Identifier

**Product Form:** Mixture

**Product Name:** Liquid Copper Sulfate 25%

**EPA Registration #:** 83918-4

### Intended Use of the Product

Algae control. Disinfection byproduct control.

### Name, Address, and Telephone of the Responsible Party

#### **Manufacturer**

CHEMTRADE LOGISTICS INC.

155 Gordon Baker Road

Suite 300

Toronto, Ontario M2H 3N5

For SDS Info: (416) 496-5856

[www.chemtradelogistics.com](http://www.chemtradelogistics.com)

### Emergency Telephone Number

**Emergency Number :**

Canada: CANUTEC +1-613-996-6666 / US: CHEMTREC +1-800-424-9300

INTERNATIONAL: +1-703-741-5970

Chemtrade Emergency Contact: (866) 416-4404

For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

## SECTION 2: HAZARDS IDENTIFICATION

### Classification of the Substance or Mixture

#### **GHS Classification**

Acute Tox. 4 (Oral) H302

Skin Irrit. 2 H315

Eye Irrit. 2A H319

Carc. 1A H350

Aquatic Acute 1 H400

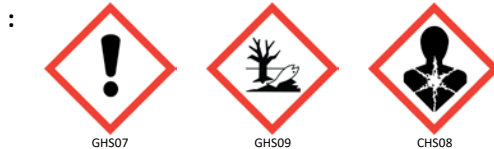
Aquatic Chronic 1 H410

Full text of hazard classes and H-statements : see section 16

### Label Elements

#### **GHS Labeling**

##### **Hazard Pictograms**



##### **Signal Word**

: Warning

##### **Hazard Statements**

: H302 - Harmful if swallowed.

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

H350 - May cause cancer (Inhalation).

H400 - Very toxic to aquatic life.

H410 - Very toxic to aquatic life with long lasting effects.

##### **Precautionary Statements**

: P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P273 - Avoid release to the environment.

P280 - Wear protective gloves, protective clothing, and eye protection.

P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.

P302+P352 - IF ON SKIN: Wash with plenty of water.

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P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 - Specific treatment (see section 4 on this SDS).

P330 - Rinse mouth.

P332+P313 - If skin irritation occurs: Get medical advice/attention.

P337+P313 - If eye irritation persists: Get medical advice/attention.

P362+P364 - Take off contaminated clothing and wash it before reuse.

P391 - Collect spillage.

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

### Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

### Unknown acute toxicity

No data available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### Mixture

Name	Product Identifier	%*	GHS Ingredient Classification
Water	(CAS No) 7732-18-5	70 - 90	Not classified
Sulfuric acid, copper(2+) salt (1:1), pentahydrate	(CAS No) 7758-99-8	10 - 30 <sup>+</sup>	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Sulfuric acid**	(CAS No) 7664-93-9	0.1 – 1.0 <sup>+</sup>	Met. Corr. 1, H290 Skin Corr. 1A, H314 Eye Dam. 1, H318 Carc. 1A, H350 Aquatic Acute 3, H402

Full text of H-phrases: see section 16

\*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

\*The actual concentration of the ingredient(s) is withheld as a trade secret in accordance with the Hazardous Products Regulations (HPR) SOR/2015-17 and 29 CFR 1910.1200.

\*\* Strong inorganic acid aerosols/mists containing this substance are carcinogenic to humans via inhalation. Under normal conditions of use this route of exposure is not expected.

## SECTION 4: FIRST AID MEASURES

### Description of First-aid Measures

**General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

**Inhalation:** When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

**Skin Contact:** Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists.

**Eye Contact:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

**Ingestion:** Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

### Most Important Symptoms and Effects Both Acute and Delayed

**General:** Causes serious eye irritation. Causes skin irritation. Harmful if swallowed.

**Inhalation:** Prolonged exposure may cause irritation.

**Skin Contact:** Redness, pain, swelling, itching, burning, dryness, and dermatitis.

**Eye Contact:** Contact causes severe irritation with redness and swelling of the conjunctiva.

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**Ingestion:** This material is harmful orally and can cause adverse health effects or death in significant amounts.

**Chronic Symptoms:** None expected under normal conditions of use.

### **Indication of Any Immediate Medical Attention and Special Treatment Needed**

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

## **SECTION 5: FIRE-FIGHTING MEASURES**

### **Extinguishing Media**

**Suitable Extinguishing Media:** Water spray, dry chemical, foam, carbon dioxide.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

### **Special Hazards Arising From the Substance or Mixture**

**Fire Hazard:** Not considered flammable but may burn at high temperatures.

**Explosion Hazard:** Product is not explosive.

**Reactivity:** Hazardous reactions will not occur under normal conditions.

### **Advice for Firefighters**

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Use water spray or fog for cooling exposed containers.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** Sulphur oxides. Copper compounds.

**Other Information:** Do not allow run-off from fire fighting to enter drains or water courses.

### **Reference to Other Sections**

Refer to Section 9 for flammability properties.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

### **Personal Precautions, Protective Equipment and Emergency Procedures**

**General Measures:** Avoid breathing (vapor, mist, spray). Avoid all contact with skin, eyes, or clothing.

#### **For Non-Emergency Personnel**

**Protective Equipment:** Use appropriate personal protective equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

#### **For Emergency Personnel**

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

### **Environmental Precautions**

Prevent entry to sewers and public waters. Avoid release to the environment. Collect spillage.

### **Methods and Materials for Containment and Cleaning Up**

**For Containment:** Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

**Methods for Cleaning Up:** Cautiously neutralize spilled liquid. Liquid spill: neutralize with powdered limestone or sodium bicarbonate. Clear up spills immediately and dispose of waste safely. Contact competent authorities after spill.

### **Reference to Other Sections**

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

## **SECTION 7: HANDLING AND STORAGE**

### **Precautions for Safe Handling**

**Additional Hazards When Processed:** Handle in accordance with standard industrial practices, and ensure appropriate ventilation. Do not release into the environment. Do not use metal containers. Contact with metals may evolve flammable hydrogen gas.

**Precautions for Safe Handling:** Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle empty containers with care because they may still present a hazard. Do not get in eyes, on skin, or on clothing.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures.

### **Conditions for Safe Storage, Including Any Incompatibilities**

**Technical Measures:** Comply with applicable regulations.

**Storage Conditions:** Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

**Incompatible Materials:** Bases. Oxidizers. Metals.

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### Specific End Use(s)

Algae control. Disinfection byproduct control.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Sulfuric acid (7664-93-9)		
Mexico	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup> (thoracic particulate matter)
USA ACGIH	ACGIH chemical category	Suspected Human Carcinogen contained in strong inorganic acid mists
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
USA IDLH	US IDLH (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup>
Alberta	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Alberta	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
British Columbia	OEL TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup> (Thoracic, contained in strong inorganic acid mists)
Manitoba	OEL TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup> (thoracic particulate matter)
New Brunswick	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
New Brunswick	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Newfoundland & Labrador	OEL TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup> (thoracic particulate matter)
Nova Scotia	OEL TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup> (thoracic particulate matter)
Nunavut	OEL STEL (mg/m <sup>3</sup> )	0.6 mg/m <sup>3</sup> (thoracic fraction)
Nunavut	OEL TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup> (thoracic fraction)
Northwest Territories	OEL STEL (mg/m <sup>3</sup> )	0.6 mg/m <sup>3</sup> (thoracic fraction, strong acid mists only)
Northwest Territories	OEL TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup> (thoracic fraction, strong acid mists only)
Ontario	OEL TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup> (thoracic)
Prince Edward Island	OEL TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup> (thoracic particulate matter)
Québec	VECD (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Québec	VEMP (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Saskatchewan	OEL STEL (mg/m <sup>3</sup> )	0.6 mg/m <sup>3</sup> (thoracic fraction)
Saskatchewan	OEL TWA (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup> (thoracic fraction)
Yukon	OEL STEL (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Yukon	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>

### Exposure Controls

**Appropriate Engineering Controls:** Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

**Personal Protective Equipment:** Gloves. Protective clothing. Protective goggles.



**Materials for Protective Clothing:** Acid-resistant clothing.

**Hand Protection:** Wear protective gloves.

**Eye Protection:** Chemical safety goggles.

**Skin and Body Protection:** Wear suitable protective clothing.

**Respiratory Protection:** If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

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**Other Information:** When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Clear, blue
Odor	: Odorless
Odor Threshold	: Not available
pH	: 2.0 - 2.1
Evaporation Rate	: Not available
Melting Point	: -2 °C (28.4 °F)
Freezing Point	: Not available
Boiling Point	: Not available
Flash Point	: Not available
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not available
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available
Relative Vapor Density at 20°C	: Not available
Relative Density	: Not available
Specific Gravity	: 1.18
Solubility	: Not available
Partition Coefficient: N-Octanol/Water	: Not available
Viscosity	: Not available

## SECTION 10: STABILITY AND REACTIVITY

**Reactivity:** Hazardous reactions will not occur under normal conditions.

**Chemical Stability:** Stable under recommended handling and storage conditions (see section 7).

**Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.

**Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, and incompatible materials.

**Incompatible Materials:** Bases. Oxidizers. Metals.

**Hazardous Decomposition Products:** None expected under normal conditions of use.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects - Product

**Acute Toxicity (Oral):** Oral: Harmful if swallowed.

**Acute Toxicity (Dermal):** Not classified

**Acute Toxicity (Inhalation):** Not classified

### LD50 and LC50 Data:

Liquid Copper Sulfate 25%	
ATE (Oral)	1,598.92 mg/kg body weight

**Skin Corrosion/Irritation:** Causes skin irritation.

pH: 2.0 - 2.1

**Eye Damage/Irritation:** Causes serious eye irritation.

pH: 2.0 - 2.1

**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Carcinogenicity:** Not classified

**Specific Target Organ Toxicity (Repeated Exposure):** Not classified

**Reproductive Toxicity:** Not classified

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**Specific Target Organ Toxicity (Single Exposure):** Not classified

**Aspiration Hazard:** Not classified

**Symptoms/Effects After Inhalation:** Prolonged exposure may cause irritation.

**Symptoms/Effects After Skin Contact:** Redness, pain, swelling, itching, burning, dryness, and dermatitis.

**Symptoms/Effects After Eye Contact:** Contact causes severe irritation with redness and swelling of the conjunctiva.

**Symptoms/Effects After Ingestion:** This material is harmful orally and can cause adverse health effects or death in significant amounts.

**Chronic Symptoms:** None expected under normal conditions of use.

### Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

<b>Sulfuric acid, copper(2+) salt (1:1), pentahydrate (7758-99-8)</b>	
LD50 Oral Rat	960 mg/kg
<b>Water (7732-18-5)</b>	
LD50 Oral Rat	> 90000 mg/kg
<b>Sulfuric acid (7664-93-9)</b>	
LD50 Oral Rat	2140 mg/kg
<b>Sulfuric acid (7664-93-9)</b>	
IARC Group	1
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.

## SECTION 12: ECOLOGICAL INFORMATION

### Toxicity

**Ecology - General:** Very toxic to aquatic life with long lasting effects. Very toxic to aquatic life.

<b>Sulfuric acid, copper(2+) salt (1:1), pentahydrate (7758-99-8)</b>	
LC50 Fish 1	0.66 (0.66 - 1.15) mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [semi-static])
EC50 Daphnia 1	0.147 (0.147 - 0.227) mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 Fish 2	0.96 (0.96 - 1.8) mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
<b>Sulfuric acid (7664-93-9)</b>	
LC50 Fish 1	500 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
LC50 Fish 2	42 mg/l (Exposure time: 96 h - Species: Gambusia affinis [static])

### Persistence and Degradability

<b>Liquid Copper Sulfate 25%</b>	
Persistence and Degradability	May cause long-term adverse effects in the environment.

### Bioaccumulative Potential

<b>Liquid Copper Sulfate 25%</b>	
Bioaccumulative Potential	Not established.
<b>Sulfuric acid (7664-93-9)</b>	
BCF Fish 1	(no bioaccumulation)

### Mobility in Soil

Not available

### Other Adverse Effects

**Other Information:** Avoid release to the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste Disposal Recommendations:** Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

**Additional Information:** Container may remain hazardous when empty. Continue to observe all precautions.

**Ecology - Waste Materials:** Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

## SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.





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\*When shipped in accordance with US DOT 49 CFR part 171.4(c) and other appropriate sections/provisions this material is not designated as a marine pollutant when transported by road or rail.

\*\*When shipped in accordance with the Canada Transport of Dangerous Goods Regulations part 1.45.1 and other appropriate sections/provisions this material is not designated as a marine pollutant when transported by road or rail.

TRANSPORTATION CLASSIFICATION	DOT	TDG	IMDG	IATA
Identification Number	UN3082	UN3082	UN3082	UN3082
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S., (CONTAINS COPPER SULFATE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S., (CONTAINS COPPER SULFATE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S., (CONTAINS COPPER SULFATE)	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S., (CONTAINS COPPER SULFATE)
Transport Hazard Class(es)	9	9	9	9
				
Packing Group	III	III	III	III
Environmental Hazards	Marine Pollutant : Yes*	Marine Pollutant : Yes**	Marine Pollutant : Yes	Marine Pollutant: N/A
Emergency Response	ERG Number : 171	ERAP Index: Not applicable	EMS: F-A, S-F	ERG code (IATA): 9L
Additional Information	Not applicable	Not applicable	Not applicable	Not applicable

## SECTION 15: REGULATORY INFORMATION

### US Federal Regulations

Chemical Name (CAS No.)	CERCLA RQ	EPCRA 304 RQ	SARA 302 TPQ	SARA 313
Sulfuric acid, copper(2+) salt (1:1), pentahydrate (7758-99-8)	Not present	Not present	Not present	No
Sulfuric acid (7664-93-9)	1000 lb	1000 lb	1000 lb	Yes

### SARA 311/312

<b>Liquid Copper Sulfate 25%</b>
Immediate (acute) health hazard. Delayed (chronic) health hazard

### US TSCA Flags

Not present

### US State Regulations

#### California Proposition 65

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Sulfuric acid, copper(2+) salt (1:1), pentahydrate (7758-99-8)	No	No	No	No
Sulfuric acid (7664-93-9)	Yes	No	No	No
Strong inorganic acid mists containing sulfuric acid (Not applicable)	Yes	No	No	No

### State Right-To-Know Lists

<b>Sulfuric acid, copper(2+) salt (1:1), pentahydrate (7758-99-8)</b>
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U.S. - Massachusetts - Right To Know List - No  
 U.S. - New Jersey - Right to Know Hazardous Substance List - No  
 U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List - No  
 U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances - No  
 U.S. - Pennsylvania - RTK (Right to Know) List - No

### Sulfuric acid (7664-93-9)

U.S. - Massachusetts - Right To Know List - Yes  
 U.S. - New Jersey - Right to Know Hazardous Substance List - Yes  
 U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List - Yes  
 U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances - No  
 U.S. - Pennsylvania - RTK (Right to Know) List - Yes

### Canadian Regulations

#### Sulfuric acid, copper(2+) salt (1:1), pentahydrate (7758-99-8)

Listed on the Canadian DSL (Domestic Substances List)\* Anhydrous form is listed on DSL as (7758-98-7)  
 Not listed on the Canadian NDSL (Non-Domestic Substances List)

#### Sulfuric acid (7664-93-9)

Listed on the Canadian DSL (Domestic Substances List)  
 Not listed on the Canadian NDSL (Non-Domestic Substances List)

### International Inventories/Lists

Chemical Name (CAS No.)	Australia AICS	Turkey CICR	Korea ECL	EU EINECS	EU ELINCS	EU SVHC	EU NLP	Mexico INSQ
Sulfuric acid, copper(2+) salt (1:1), pentahydrate (7758-99-8)	Yes	No	No	No	No	No	No	No
Sulfuric acid (7664-93-9)	Yes	No	Yes	Yes	No	No	No	No

Chemical Name (CAS No.)	China IECSC	Japan ENCS	Japan ISHL	Japan PDSCL	Japan PRTR	Philippines PICCS	New Zealand NZIOC	US TSCA
Sulfuric acid, copper(2+) salt (1:1), pentahydrate (7758-99-8)* Anhydrous form is listed on TSCA as (7758-98-7)	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Sulfuric acid (7664-93-9)	Yes	Yes	No	Yes	No	Yes	Yes	Yes

## SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 11/30/2018

### Revision Summary

Section	Change	Date Changed
2	Classification Modification	11/30/2018
3	Classification Modification	11/30/2018
3	HPR trade secret statement	11/30/2018
16	NFPA and HMIR information	11/30/2018

**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR).

### GHS Full Text Phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Eye Dam. 1	Serious eye damage/eye irritation Category 1



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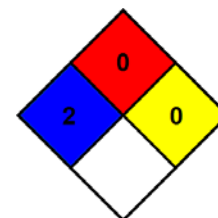
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Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Met. Corr. 1	Corrosive to metals Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
Skin Irrit. 2	Skin corrosion/irritation Category 2
Carc. 1A	Carcinogenicity Category 1A
H290	May be corrosive to metals
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H350	May cause cancer
H400	Very toxic to aquatic life
H402	Harmful to aquatic life
H410	Very toxic to aquatic life with long lasting effects

### NFPA 704

- NFPA Health Hazard** : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
- NFPA Fire Hazard** : 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
- NFPA Reactivity Hazard** : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



### HMIS Rating

- Health** : 2 Moderate Hazard - Temporary or minor injury may occur
- Flammability** : 0 Minimal Hazard
- Physical** : 0 Minimal Hazard
- PPE** See Section 8

### Indication of Changes

#### Abbreviations and Acronyms

AICS - Australian Inventory of Chemical Substances	LC50 - Median Lethal Concentration
ACGIH - American Conference of Governmental Industrial Hygienists	LD50 - Median Lethal Dose
AIHA - American Industrial Hygiene Association	LOAEL - Lowest Observed Adverse Effect Level
ATE - Acute Toxicity Estimate	LOEC - Lowest-observed-effect Concentration
BCF - Bioconcentration factor	Log Pow - Octanol/water Partition Coefficient
BEI - Biological Exposure Indices (BEI)	NFPA 704 - National Fire Protection Association - Standard System for the Identification of the Hazards of Materials for Emergency Response
CAS No. - Chemical Abstracts Service number	NIOSH - National Institute for Occupational Safety and Health
CERCLA RQ - Comprehensive Environmental Response, Compensation, and Liability Act - Reportable Quantity	NLP - Europe No Longer Polymers List
CICR - Turkish Inventory and Control of Chemicals	NOAEL - No-Observed Adverse Effect Level
DOT - 49 CFR - US Department of Transportation - Code of Federal Regulations Title 49 - Transportation.	NOEC - No-Observed Effect Concentration
EC50 - Median effective concentration	NZIOC - New Zealand Inventory of Chemicals
ECL - Korea Existing Chemicals List	OEL - Occupational Exposure Limits
EINECS - European Inventory of Existing Commercial Chemical Substances	OSHA - Occupational Safety and Health Administration
ELINCS - European List of Notified Chemical Substances	PEL - Permissible Exposure Limits
EmS - IMDG Emergency Schedule Fire & Spillage	PICCS - Philippine Inventory of Chemicals and Chemical Substances
ENCS - Japanese Existing and New Chemical Substances Inventory	PDSCL - Japan Poisonous and Deleterious Substances Control Law
EPA - Environmental Protection Agency	PPE - Personal Protective Equipment
EPCRA 304 RQ - EPCRA 304 Extremely Hazardous Substance Emergency Planning and Community Right-to-Know-Act - Reportable Quantity	PRTR - Japan Pollutant Release and Transfer Register
ERAP Index - Emergency Response Assistance Plan Quantity Limit	REL - Recommended Exposure Limit
ErC50 - EC50 in Terms of Reduction Growth Rate	SADT - Self Accelerating Decomposition Temperature
ERG code (IATA) - Emergency Response Drill Code as found in the International Civil Aviation Organization (ICAO)	SARA - Superfund Amendments and Reauthorization Act
	SARA 302 - Section 302, 40 CFR Part 355
	SARA 311/312 - Sections 311 and 312, 40 CFR Part 370 Hazard Categories
	SARA 313 - Section 313, 40 CFR Part 372

# Liquid Copper Sulfate 25%

## Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

ERG No. - Emergency Response Guide Number	SRCL - Specifically Regulated Carcinogen List
HCCL - Hazard Communication Carcinogen List	STEL - Short Term Exposure Limit
HMIS – Hazardous Materials Information System	SVHC – European Candidate List of Substance of Very High Concern
IARC - International Agency for Research on Cancer	TDG – Transport Canada Transport of Dangerous Goods Regulations
IATA - International Air Transport Association – Dangerous Goods Regulations	TLM - Median Tolerance Limit
IDLH - Immediately Dangerous to Life or Health	TLV - Threshold Limit Value
IECSC - Inventory of Existing Chemical Substances Produced or Imported in China	TPQ - Threshold Planning Quantity
IMDG - International Maritime Dangerous Goods Code	TSCA – United States Toxic Substances Control Act
INSQ - Mexican National Inventory of Chemical Substances	TWA - Time Weighted Average
ISHL - Japan Industrial Safety and Health Law	WEEL - Workplace Environmental Exposure Levels

*Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA'S "Right to Know" (29 CFR 1910.1200) and Canada's WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and Chemtrade and its affiliates assume no responsibility. Chemtrade is a member of the CIAC (Chemistry Industry Association of Canada) and adheres to the codes and principles of Responsible Care™.*



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