

## Cupric Sulfate Pentahydrate

### SECTION 1. IDENTIFICATION

<b>Product Identifier</b>	Cupric Sulfate Pentahydrate
<b>Other Means of Identification</b>	Blue vitriol, Copper(II) sulfate pentahydrate, Sulfuric acid copper(2+) salt (1:1) pentahydrate
<b>Product Code(s)</b>	CU3010, CU3011, CU3015, CU3020, CU3030
<b>Product Family</b>	Inorganic Solid
<b>Recommended Use</b>	Laboratory and industrial use.
<b>Restrictions on Use</b>	None known.
<b>Supplier Identifier</b>	Alphachem Limited, 2485 Milltower Court, Mississauga, Ontario, L5N 5Z6, (905) 821-2995
<b>Emergency Phone No.</b>	CANUTEC CANADA, 613-996-6666, 24 Hours
<b>SDS No.</b>	0613

### SECTION 2. HAZARD IDENTIFICATION

Classified according to Canada's Hazardous Products Regulations (WHMIS 2015) and the US Hazard Communication Standard (HCS 2012).

#### Classification

Acute toxicity (Oral) - Category 4; Acute toxicity (Dermal) - Category 4; Skin irritation - Category 2; Eye irritation - Category 2A

#### Label Elements



Signal Word:  
Warning

#### Hazard Statement(s):

Harmful if swallowed.  
Causes skin irritation.  
Causes serious eye irritation.  
May cause respiratory irritation.

#### Precautionary Statement(s):

Wash hands and skin thoroughly after handling.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Use only outdoors or in a well-ventilated area.

#### Response:

IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.  
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
IF ON SKIN: Wash with plenty of water.

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If skin irritation occurs: Get medical advice/attention.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTRE or doctor if you feel unwell.

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

If eye irritation persists: Get medical advice or attention.

Storage:

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Disposal:

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

#### **Other Hazards**

None known.

### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance:

Chemical Name	CAS No.	%	Other Identifiers
COPPER(II) SULFATE, PENTAHYDRATE	7758-99-8	> 99	Blue vitriol, Copper(II) sulfate pentahydrate, Sulfuric acid copper(2+) salt (1:1) pentahydrate

### **SECTION 4. FIRST-AID MEASURES**

#### **First-aid Measures**

##### **Inhalation**

Remove source of exposure or move to fresh air. Keep at rest in a position comfortable for breathing. Get medical advice or attention if you feel unwell or are concerned.

##### **Skin Contact**

Immediately wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 15-20 minutes. If skin irritation occurs, get medical advice or attention.

##### **Eye Contact**

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. If eye irritation persists, get medical advice or attention.

##### **Ingestion**

Rinse mouth with water. Do not induce vomiting. Call a Poison Centre or doctor if you feel unwell.

##### **First-aid Comments**

All first aid procedures should be periodically reviewed by a doctor familiar with the material and its condition of use in the workplace. If exposed or concerned, get medical advice or attention.

#### **Most Important Symptoms and Effects, Acute and Delayed**

None known.

#### **Immediate Medical Attention and Special Treatment**

##### **Special Instructions**

General advice

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

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

#### **Extinguishing Media**

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### Suitable Extinguishing Media

Not combustible. Use extinguishing agents compatible with product and suitable for surrounding fire.

### Unsuitable Extinguishing Media

None known.

### Specific Hazards Arising from the Product

Heating increases the release of toxic vapour. Closed containers may rupture violently when heated releasing contents.

In a fire, the following hazardous materials may be generated: corrosive sulfur oxides. Copper oxides.

### Special Protective Equipment and Precautions for Fire-fighters

Fight fire from a safe distance or a protected location. Knock down vapours or gases with water fog or fine water spray. For a massive fire, immediately evacuate the area and use unmanned hose holder or monitor nozzles. Dike and recover contaminated water for appropriate disposal.

Chemical protective clothing (e.g. chemical splash suit) and positive pressure SCBA may be necessary.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

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

Use the personal protective equipment recommended in Section 8 of this safety data sheet. Increase ventilation to area or move leaking container to a well-ventilated and secure area. Remove or isolate incompatible materials as well as other hazardous materials.

### Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway.

### Methods and Materials for Containment and Cleaning Up

Avoid generating dust. Collect using shovel/scoop or approved HEPA vacuum and place in a suitable container for disposal.

## SECTION 7. HANDLING AND STORAGE

### Precautions for Safe Handling

Wear personal protective equipment to avoid direct contact with this chemical. Only use where there is adequate ventilation. Avoid generating vapours or mists. Prevent accidental contact with incompatible chemicals. Wash hands thoroughly after handling this material. Keep containers tightly closed when not in use or empty.

### Conditions for Safe Storage

Store in an area that is: cool, dry, well-ventilated, separate from incompatible materials (see Section 10: Stability and Reactivity). Protect from conditions listed in Conditions to Avoid in Section 10 (Stability and Reactivity). Store in a closed container.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
COPPER(II) SULFATE, PENTAHYDRATE	1 mg/m3		1 mg/m3			

### Appropriate Engineering Controls

Use local exhaust ventilation and enclosure, if necessary, to control amount in the air. Provide eyewash and safety shower if contact or splash hazard exists.

### Individual Protection Measures

#### Eye/Face Protection

Wear chemical safety goggles and face shield when contact is possible.

#### Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.

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## Respiratory Protection

Wear a NIOSH approved particulate respiratory equipped with an N95, R95, or P95 filter, wear a NIOSH approved air-purifying respirator with N100, R100, or P100 filter(s).

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### Basic Physical and Chemical Properties

<b>Appearance</b>	Blue - green crystalline powder.
<b>Odour</b>	Odourless
<b>Odour Threshold</b>	Not available
<b>pH</b>	3.9 (10% solution)
<b>Melting Point/Freezing Point</b>	Not applicable (melting); Not applicable (freezing)
<b>Initial Boiling Point/Range</b>	Not applicable
<b>Flash Point</b>	Not applicable
<b>Evaporation Rate</b>	Not applicable
<b>Flammability (solid, gas)</b>	Will not burn.
<b>Upper/Lower Flammability or Explosive Limit</b>	Not applicable (upper); Not applicable (lower)
<b>Vapour Pressure</b>	~ 0 kPa (0 mm Hg)
<b>Vapour Density (air = 1)</b>	Not applicable
<b>Relative Density (water = 1)</b>	2.29 at 20 °C
<b>Solubility</b>	Soluble in water; Insoluble in alcohols (e.g. ethanol).
<b>Partition Coefficient, n-Octanol/Water (Log Kow)</b>	Not applicable
<b>Auto-ignition Temperature</b>	Not applicable
<b>Decomposition Temperature</b>	88 °C (190 °F)
<b>Viscosity</b>	Not available (kinematic); Not applicable (dynamic)
<b>Other Information</b>	
<b>Physical State</b>	Solid

## SECTION 10. STABILITY AND REACTIVITY

### Reactivity

None known.

### Chemical Stability

Normally stable.

### Possibility of Hazardous Reactions

Decomposes in the presence of increased temperature.

### Conditions to Avoid

High temperatures. Water, moisture or humidity.

### Incompatible Materials

Strong oxidizing agents (e.g. perchloric acid), strong reducing agents (e.g. hydrides), metals (e.g. aluminum).

### Hazardous Decomposition Products

Corrosive sulfur oxides. copper oxides.

## SECTION 11. TOXICOLOGICAL INFORMATION

### Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

### Acute Toxicity

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Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
COPPER(II) SULFATE, PENTAHYDRATE		960 mg/kg (rat)	> 1000 mg/kg (rabbit)

#### Skin Corrosion/Irritation

Human experience and animal tests show moderate or severe irritation.

#### Serious Eye Damage/Irritation

Causes serious eye irritation based on skin irritation information.

#### STOT (Specific Target Organ Toxicity) - Single Exposure

##### Inhalation

May cause nose and throat irritation.

##### Ingestion

Harmful May cause irritation of the mouth, throat and stomach.

#### Aspiration Hazard

No information was located.

#### STOT (Specific Target Organ Toxicity) - Repeated Exposure

Blood tests may show abnormal results.

#### Respiratory and/or Skin Sensitization

No information was located.

#### Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
COPPER(II) SULFATE, PENTAHYDRATE	Not evaluated	Not designated	Not Listed	

#### Reproductive Toxicity

##### Development of Offspring

No information was located.

##### Sexual Function and Fertility

No information was located.

##### Effects on or via Lactation

No information was located.

#### Germ Cell Mutagenicity

No information was located.

#### Interactive Effects

No information was located.

## SECTION 12. ECOLOGICAL INFORMATION

This section is not required by WHMIS. This section is not required by OSHA HCS 2012.

## SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal Methods

Bury in a licensed landfill according to federal, provincial/state, and local regulations.

## SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group

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IMO (Marine)	UN3077	Environmentally hazardous substance solid nos (copper (II) sulfate pentahydrate)	9	III
IATA (Air)	UN3077	Environmentally hazardous substance solid nos (copper (II) sulfate pentahydrate)	9	III
US DOT	UN3077	Environmentally hazardous substance solid nos (copper (II) sulfate pentahydrate)	9	III
Canadian TDG	UN3077	Environmentally hazardous substance solid nos (copper (II) sulfate pentahydrate)	9	III

**Special Precautions** Not applicable

**Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

## SECTION 15. REGULATORY INFORMATION

### Safety, Health and Environmental Regulations

#### Canada

##### Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

Listed on the DSL.

#### USA

##### Toxic Substances Control Act (TSCA) Section 8(b)

Listed on the TSCA Inventory.

## SECTION 16. OTHER INFORMATION

**SDS Prepared By** Alphachem Limited

**Phone No.** (905)-821-2995

**Date of Preparation** July 13, 2016

**Date of Last Revision** September 14, 2016

**References** CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS).

**Disclaimer** This document is offered only as a guide in the safe handling of the above product, and has been prepared from the best information currently available. It is not intended to be all-inclusive and the conditions of use may involve other additional considerations. Since Alphachem Limited cannot anticipate or control the conditions under which the product may be used, it will not be liable for any claims, damages or losses which may result from the use or reliance on any information herein.