

# Safety Data Sheet

## Cupric Sulfate, Pentahydrate

### ACS/USP/FCC Grade

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Cupric Sulfate, Pentahydrate, ACS/USP/FCC Grade

**Synonyms/Generic Names:** Blue Copper; Blue Vitreol; Copper (II) Sulfate Pentahydrate

**Product Number:** 1708

**Product Use:** Industrial, Manufacturing or Laboratory use

**Manufacturer:** Columbus Chemical Industries, Inc.  
N4335 Temkin Rd.  
Columbus, WI. 53925

**For More Information Call:** 920-623-2140 (Monday-Friday 8:00-4:30)  
[www.columbuschemical.com](http://www.columbuschemical.com)

**In Case of Emergency Call:** CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7Days/Week)

### 2. HAZARDS IDENTIFICATION

**Signal Words:** Danger

**Pictograms:**



**GHS Classification:**

Acute toxicity, Oral	Category 3
Skin irritation	Category 2
Eye irritation	Category 2A
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

**GHS Label Elements, including precautionary statements:**

**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:**

P264	Wash hands 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/eye protection/face protection.
P301+P330+P310	IF SWALLOWED: Rinse mouth. Immediately call a POISON CENTER/doctor physician.
P302+P352	IF ON SKIN: Wash with plenty of water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
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.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local regulations.

### Potential Health Effects

<b>Eyes</b>	Causes serious eye irritation.
<b>Inhalation</b>	Causes respiratory tract irritation. Harmful if inhaled.
<b>Skin</b>	Causes skin irritation. Harmful if absorbed through skin.
<b>Ingestion</b>	Toxic if swallowed.

### NFPA Ratings

<b>Health</b>	2
<b>Flammability</b>	0
<b>Reactivity</b>	0
<b>Specific hazard</b>	Not Available

### HMIS Ratings

<b>Health</b>	2
<b>Fire</b>	0
<b>Reactivity</b>	0

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Copper Sulfate Pentahydrate	98-102	7758-99-8	231-847-6	CuSO <sub>4</sub> +5H <sub>2</sub> O	249.69 g/mol

## 4. FIRST-AID MEASURES

<b>Eyes</b>	Rinse with plenty of water for at least 15 minutes and seek medical attention if necessary.
<b>Inhalation</b>	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if necessary.
<b>Skin</b>	Flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention if necessary.
<b>Ingestion</b>	<b>Do Not Induce Vomiting!</b> Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention if necessary.

## 5. FIREFIGHTING MEASURES

<b>Suitable (and unsuitable) extinguishing media</b>	Product is not flammable. Do not use water on product. Use appropriate media for adjacent fire. Use flooding quantities of water to cool containers.
<b>Special protective equipment and precautions for firefighters</b>	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.

<b>Specific hazards arising from the chemical</b>	Emits toxic fumes (sulfur oxides, copper oxides) under fire conditions. (See also Stability and Reactivity section).
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## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions, protective equipment and emergency procedures</b>	Do not handle until all safety precautions have been read and understood. Do not get in eyes, on skin, or on clothing. Avoid breathing dust. See section 8 for recommendations on the use of personal protective equipment.
<b>Environmental precautions</b>	Do not disperse dust into the air during clean-up. Any release to the environment may require reporting to federal/national or local agencies.
<b>Methods and materials for containment and cleaning up</b>	Ventilate the release area. Do not disperse dust into the air during clean up. Use appropriate tools to pick up any spill. Pick up and arrange disposal without creating dust. Sweep up and place in a suitable closed container for disposal. Dispose of all waste or cleanup materials in accordance with local regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

Do not handle until all safety precautions have been read and understood. Do not get in eyes, on skin, or on clothing. Avoid breathing dust. See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid the formation of dust.

### Conditions for safe storage, including any incompatibilities

Store in a tightly closed container. Store in a dry, cool, and well ventilated area. Isolate from oxidizing materials. Keep away from incompatible materials (see section 10 for incompatibilities).

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Occupational Exposure Controls:

Component	Exposure Limits	Basis	Entity
Copper sulfate Pentahydrate	1 mg/m <sup>3</sup>	TWA	NIOSH RELs

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit usually 15 minutes

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

### Personal Protection

<b>Eyes</b>	Chemical safety glasses.
<b>Inhalation</b>	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
<b>Skin</b>	Wear neoprene or nitrile gloves, protective clothing appropriate to the risk of exposure. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
<b>Other</b>	Inspect PPE prior to handling chemicals. Handle in accordance with good industrial hygiene and safety practices.

**Other Recommendations**

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance (physical state, color, etc.)	Blue crystals, granular or powder
Odor	Not Available
Odor threshold	Not Available
pH	3.7 - 4.5 at 50 g/l at 25°C (77°F)
Melting point/freezing point	110°C (230°F)
Initial boiling point and boiling range	Not Available
Flash point	Not Available
Evaporation rate	Not Available
Flammability (solid, gas)	Not Flammable
Upper/lower flammability or explosive limit	Not Available
Vapor pressure	9.7 hPa (7.3 mmHg) at 25°C (77°F)
Vapor density	Not Available
Relative density	2.284 g/cm <sup>3</sup>
Solubility (ies)	317 g/l at 20°C (68°F)
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available

**10. STABILITY AND REACTIVITY**

<b>Chemical Stability</b>	Stable
<b>Possibility of Hazardous Reactions</b>	Will not occur
<b>Conditions to Avoid</b>	Moisture
<b>Incompatible Materials</b>	Powered metals, anhydrous copper (II) sulfate, reacts violently with: hydroxylamine, magnesium
<b>Hazardous Decomposition Products</b>	Sulfur oxides, copper oxides

**11. TOXICOLOGICAL INFORMATION****Acute Toxicity**

*Cupric Sulfate, Pentahydrate*

<b>Skin</b>	LD50 Dermal – rat - > 2000 mg/kg
<b>Eyes</b>	Not Available
<b>Respiratory</b>	Not Available
<b>Ingestion</b>	LD50 Oral – rat – 300 mg/kg

**Carcinogenicity**

<b>IARC</b>	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
<b>ACGIH</b>	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
<b>NTP</b>	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
<b>OSHA</b>	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Signs & Symptoms of Exposure**

<b>Eyes</b>	Irritation, burns, pain, watering eyes
<b>Inhalation</b>	Coughing, shortness of breath, burning, choking, coughing, wheezing, laryngitis, shortness of breath, headache or nausea
<b>Skin</b>	Redness, irritation, itching and pain
<b>Ingestion</b>	Weakness, confusion, central nervous system effects, nausea and skin eruptions

<b>Chronic Toxicity</b>	Not Available
<b>Teratogenicity</b>	Not Available
<b>Mutagenicity</b>	Not Available
<b>Embryotoxicity</b>	Not Available
<b>Specific Target Organ Toxicity</b>	Not Available
<b>Reproductive Toxicity</b>	Not Available
<b>Respiratory/Skin Sensitization</b>	Prolonged or repeated exposure may cause allergic reactions.

**12. ECOLOGICAL INFORMATION****Ecotoxicity***Cupric Sulfate, Pentahydrate*

<b>Aquatic Vertebrate</b>	LC50 – <i>Oncorhynchus mykiss</i> (rainbow trout) – 0.032 mg/l – 96h
<b>Aquatic Invertebrate</b>	EC50 – <i>Daphnia magna</i> (water flea) – 0.024 mg/l – 48h
<b>Terrestrial</b>	Not Available

<b>Persistence and Degradability</b>	Not Available
<b>Bioaccumulative Potential</b>	Not Available
<b>Mobility in Soil</b>	Not Available
<b>PBT and vPvB Assessment</b>	Not Available
<b>Other Adverse Effects</b>	Very toxic to all aquatic organisms

**13. DISPOSAL CONSIDERATIONS**

<b>Waste Residues</b>	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residue.
<b>Product Containers</b>	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

**14. TRANSPORT INFORMATION**

US DOT	UN3077, Environmentally hazardous substances, solid, n.o.s. (Copper Sulfate Pentahydrate), 9, pg III
TDG	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (COPPER SULFATE PENTAHYDRATE), 9, pg III
IMDG	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (COPPER SULFATE PENTAHYDRATE), 9, pg III
Marine Pollutant	Yes

IATA/ICAO	UN3077, Environmentally hazardous substances, solid, n.o.s. (Copper Sulfate Pentahydrate), 9, pg III
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## 15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA Active inventory.
DSL / DSCL	All ingredients are listed on the DSL Active inventory.
California Proposition 65	Not Listed
Massachusetts: Toxic or Hazardous Substance List, Right to Know	Listed: Cupric Sulfate
New Jersey: Right to Know Hazardous Substance List	Listed: Cupric Sulfate
Pennsylvania: Hazardous Substance List	Not Listed
Rhode Island: Hazardous Substance List	Not Listed
SARA 302	Listed: Cupric Sulfate
SARA 304	Listed: Cupric Sulfate
SARA 311	Acute Health Hazard
SARA 312	Acute Health Hazard
SARA 313	Listed: Cupric Sulfate
WHMIS Canada	Class D2B: Toxic Material

## 16. OTHER INFORMATION

Revision	Date
Created on	07/27/2021

Disclaimer: The information provided in this Safety Data Sheet ("SDS") is correct to the best of our knowledge, information and belief at the date of publication. The information in this SDS relates only to the specific Product identified under Section 1, and does not relate to its use in combination with other materials or products, or its use as to any particular process. Those handling, storing or using the Product should satisfy themselves that they have current information regarding the particular way the Product is handled, stored or used and that the same is done in accordance with federal, state and local law. WE DO NOT MAKE ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION) WARRANTIES WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN OR WITH RESPECT TO FITNESS FOR ANY PARTICULAR USE. WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, INJURY, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THIS PRODUCT.