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Version 7

## 1. PRODUCT AND COMPANY IDENTIFICATION

### Product Identifier

Product Name Copper Sulfate Pentahydrate

### Other Means of Identification

SDS # OBC-007

UN/ID No UN3077

Synonyms Blue Vitrol, Bluestone, Cupric Sulfate

### Recommended Use of the Chemical and Restrictions on Use

Recommended Use For animal feed and industrial use.

### Details of the Supplier of the Safety Data Sheet

#### Manufacturer Address

Old Bridge Chemicals, Inc.  
554 Waterworks Rd.  
Old Bridge, NJ 08857

### Emergency Telephone Number

Company Phone Number (732) 727-2225 (normal business hours)  
(800) 275-3924 (24 hour number)

Emergency Telephone Chemtrec 1-800-424-9300 (North America) 1-703-527-3887 (International)

## 2. HAZARDS IDENTIFICATION

Appearance - Transparent Blue Crystal or Powder

Physical State – Solid

Odor – Odorless

### Classification

Acute toxicity - Oral	Category 4
Skin Corrosion/Irritation	Category 2
Eye damage/Irritation	Category 2

### Signal Word

Warning

### Hazard Statements

Harmful if swallowed  
Harmful in contact with skin  
Causes serious eye irritation



**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Wear protective gloves/protective clothing  
Wear eye protection/face protection

**Precautionary Statements - Response**

IF ON SKIN: Wash with plenty of soap and water  
Take off contaminated clothing and wash it before reuse  
Call a POISON CENTER or doctor/physician if you feel unwell  
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth  
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/attention.

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other Hazards**

Toxic to aquatic life

**3. COMPOSITION/INFORMATION ON INGREDIENTS****Synonyms**

Blue Vitrol, Bluestone, Cupric Sulfate.

Chemical Name	CAS No	Weight-%
Copper sulfate pentahydrate	7758-99-8	100

**4. FIRST AID MEASURES****First Aid Measures****Eye Contact**

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

**Skin Contact**

IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. Call a POISON CENTER or doctor/physician if you feel unwell.

**Inhalation**

Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Ingestion**

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. Do NOT induce vomiting. Promptly drink large quantities of milk, egg white, gelatin solution, or if these are not available, drink large quantities of water. Never give anything by mouth to an unconscious person. Avoid alcohol.

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

Causes skin irritation. Repeated or prolonged contact may cause allergic dermatitis. May cause irritation or burns on wet skin. May cause eye irritation. Irritates the digestive tract. Abdominal discomfort. Inhalation of dust can result in irritation of nasal mucous membranes and sometimes of the pharynx. On occasion ulceration with perforation of the nasal septum.

**Indication of any Immediate Medical Attention and Special Treatment Needed****Note to Physicians**

Treat symptomatically. Material may be corrosive. Possible mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be necessary. Wilson's disease can be aggravated by excessive exposure. Symptoms include nausea, vomiting, epigastric pain, diarrhea, jaundice, and general debility.

**5. FIRE-FIGHTING MEASURES****Suitable Extinguishing Media**

Dry chemical, CO<sub>2</sub> or water spray. Copper Sulfate does not burn nor will it support combustion.

**Unsuitable Extinguishing Media**

If dry heated above 600 ° C/ 1112 ° F, SO<sub>2</sub> is evolved. If water is used it will solubilize the Copper Sulfate and care should be taken to keep such water out of streams or other bodies of water.

**Specific Hazards Arising from the Chemical**

Not determined.

**Hazardous Combustion Products**

If heated above 400° C/ 752° F product can decompose to emit toxic fumes of oxide and sulfur.

**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**

Use personal protective equipment as required.

**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**

Avoid the generation of dusts during clean-up. Wear NIOSH or MSHA approved respirator if dust will be generated. Dry sweep up, using a sweeping compound. Shovel spill material into plastic bags and seal with tape. Place in appropriate containers for disposal. Dispose of contents/container to an approved waste disposal plant. Prevent run off to storm sewers and ditches leading to natural waterways.

**7. HANDLING AND STORAGE****Precautions for Safe Handling****Advice on Safe Handling**

Use personal protection recommended in Section 8. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wash thoroughly after handling before eating, drinking, smoking, or using toilet facilities. Wear protective gloves/protective clothing. Wash outside of gloves before removing. Wash and change into clean clothing as soon as possible.

**Conditions for Safe Storage, Including any Incompatibilities**

<b>Storage Conditions</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Store away from reducing agents. Keep away from galvanized pipe, aluminum and nylon. Store in original containers. Place damaged containers in plastic bags. Iron and moisture should be avoided. With exposure to air it will oxidize and turn whitish.
<b>Packaging Materials</b>	Solutions are mildly corrosive to steel. Store in plastic or rubber or 304, 347 or 316 stainless steel.
<b>Incompatible Materials</b>	Aluminum powders. Acetylene. Hydroxylamine. Magnesium. Moisture. Contact with magnesium can generate dangerous levels of hydrogen gas.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Copper sulfate pentahydrate 7758-99-8	TWA: 1 mg/m <sup>3</sup> Cu dust and mist	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

**Appropriate Engineering Controls**

<b>Engineering Controls</b>	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Eyewash stations. Showers.
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**Individual Protection Measures, such as Personal Protective Equipment**

<b>Eye/Face Protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin and Body Protection</b>	Wear long-sleeved shirt, long pants, and shoes plus socks. Wear waterproof gloves. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with product's concentrate. Do not reuse them. Keep and wash PPE separately from other laundry.
<b>Respiratory Protection</b>	If necessary, wear an approved respirator for dusts or mists: MSHA/NIOSH approved number prefix TC-21C, or a NIOSH approved respirator with any R, P or HE filter. Alternatively, provide respiratory protection in accordance with Paragraph 1910.134 of Title 29 of the Code of Federal Regulations.

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

**9. PHYSICAL AND CHEMICAL PROPERTIES****Information on Basic Physical and Chemical Properties**

<b>Physical State</b>	Solid		
<b>Appearance</b>	Transparent blue crystals or blue powder	<b>Odor</b>	Odorless
<b>Color</b>	Blue	<b>Odor Threshold</b>	Not determined
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
pH	Not Applicable		
Melting Point/Freezing Point	110 °C / 230 °F		
Boiling Point/Boiling Range	150 °C / 302 °F		
Flash Point	Not determined		
Evaporation Rate	Not Applicable		

<b>Flammability (Solid, Gas)</b>	Not determined
<b>Upper Flammability Limits</b>	Not determined
<b>Lower Flammability Limit</b>	Not Applicable
<b>Vapor Density</b>	Not Applicable
<b>Specific Gravity</b>	2.284
<b>Water Solubility</b>	22.37%
<b>Solubility in Other Solvents</b>	Soluble in methanol, glycerol and slightly soluble in ethanol
<b>Partition Coefficient</b>	@ 0 °C / 32 °F
<b>Autoignition Temperature</b>	Not determined
<b>Decomposition Temperature</b>	Not determined
<b>Kinematic Viscosity</b>	Not determined
<b>Dynamic Viscosity</b>	Not determined
<b>Explosive Properties</b>	Not determined
<b>Oxidizing Properties</b>	Not determined

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions.

### Chemical Stability

Stable under recommended storage conditions.

### Possibility of Hazardous Reactions

None under normal processing. Does not react with water.

**Hazardous Polymerization** Hazardous polymerization does not occur.

### Conditions to Avoid

Keep out of reach of children. Solutions are mildly corrosive to steel. Store in plastic or rubber or 304, 347 or 316 stainless steel.

### Incompatible Materials

Aluminum powders. Acetylene. Hydroxylamine. Magnesium. Moisture. Contact with magnesium can generate dangerous levels of hydrogen gas.

### Hazardous Decomposition Products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. If dry heated above 600° C/ 1112° F toxic sulfur may evolve.

## 11. TOXICOLOGICAL INFORMATION

### Information on Likely Routes of Exposure

#### **Product Information**

**Eye Contact** Avoid contact with eyes.

**Skin Contact** Harmful in contact with skin.

**Inhalation** Avoid inhalation of dust.

**Ingestion** Harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Copper sulfate pentahydrate 7758-99-8	= 472 mg/kg ( Rat )	> 2 g/kg ( Rat )	No Data Available

Information on Physical, Chemical and Toxicological Effects

**Symptoms** Please see section 4 of this SDS for symptoms.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure

**Carcinogenicity** This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Numerical Measures of Toxicity

Not determined

**12. ECOLOGICAL INFORMATION**Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Copper sulfate pentahydrate 7758-99-8		0.66 - 1.15: 96 h Lepomis macrochirus mg/L LC50 semi-static 0.96 - 1.8: 96 h Lepomis macrochirus mg/L LC50 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 0.6752: 96 h Pimephales promelas mg/L LC50 static		0.147 - 0.227: 48 h Daphnia magna mg/L EC50 Static

Persistence and Degradability

Not determined

Bioaccumulation

Not determined

Mobility

May be mobile due to water solubility

Other Adverse Effects

Not determined

### 13. DISPOSAL CONSIDERATIONS

#### Waste Treatment Methods

<b>Disposal of Wastes</b>	Disposal should be in accordance with applicable regional, national and local laws and regulations. With prior approval the material can be returned to the manufacturer.
<b>Contaminated Packaging</b>	Disposal should be in accordance with applicable regional, national and local laws and regulations.

Chemical Name	California Hazardous Waste Status
Copper sulfate pentahydrate 7758-99-8	Toxic

### 14. TRANSPORT INFORMATION

#### Note

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances. When shipped domestically in non-bulk packages weighing less than 10 lbs., product is NOT REGULATED for ground transportation. *The following DOT description for shipping as REGULATED only applies when shipping in packages containing more than 10 lbs. of product.* When this is the case, drivers are required to have Hazmat Certification.

**In Packages less than 10 lbs. this material is not Hazardous.**

#### DOT

<b>UN/ID No</b>	UN3077
<b>Proper Shipping Name</b>	Environmentally Hazardous Substance, solid, n.o.s. (Cupric Sulfate)
<b>Hazard Class</b>	9
<b>Packing Group</b>	III
<b>Reportable Quantity (RQ)</b>	10 lbs
<b>Marine Pollutant</b>	This product contains a chemical which is listed as a severe marine pollutant according to DOT.
<b>Emergency Response Guide Number</b>	171

#### IATA

<b>UN/ID No</b>	UN3077
<b>Proper Shipping Name</b>	Environmentally Hazardous Substance, solid, n.o.s. (Cupric Sulfate)
<b>Hazard Class</b>	9
<b>Packing Group</b>	III

#### IMDG

<b>UN/ID No</b>	UN3077
<b>Proper Shipping Name</b>	Environmentally Hazardous Substance, solid, n.o.s. (Cupric Sulfate)
<b>Hazard Class</b>	9
<b>Packing Group</b>	III
<b>Marine Pollutant</b>	This product contains a chemical which is listed as a severe marine pollutant according to IMDG/IMO

## 15. REGULATORY INFORMATION

### International Inventories

Component	TSCA	DSL/NDSL	EINECS/ELINCS	PICCS	ENCS	IECSC	AICS	KECL
Copper sulfate pentahydrate 7758-99-8 (100)	X	-	-	X	-	X	X	-

#### Legend:

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

### US Federal Regulations

#### CERCLA

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Copper sulfate pentahydrate 7758-99-8	10 lbs	10 lbs	10 lbs

#### SARA 311/312 Hazard Categories

Acute health hazard

Yes

#### 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	Weight-%	SARA 313 - Threshold Values %
Copper sulfate pentahydrate - 7758-99-8	7758-99-8	100	1.0

#### CWA (Clean Water Act)

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Copper sulfate pentahydrate 7758-99-8 (100)		X		

### US State Regulations

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

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Copper sulfate pentahydrate 7758-99-8	X		X

**International Regulations****CANADA**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR

**WHMIS Hazard Class**

Class D2

**Canadian Provincial OEL****16. OTHER INFORMATION**

<u>NFPA</u>	Health Hazards	Flammability	Instability	Special Hazards Not determined
	3	0	0	
<u>HMIS</u>	Health Hazards	Flammability	Physical Hazards	Personal Protection Not determined
	3	0	0	

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**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**