



SAFETY DATA SHEET

Issue Date 02-May-2013

Revision Date 1-Jan-2015

Version 1

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 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

Classification

| | |
|-------------------------|------------|
| Acute toxicity - Oral | Category 4 |
| Acute toxicity - Dermal | Category 4 |

Signal Word

Warning

Hazard Statements

Harmful if swallowed
Harmful in contact with skin



Appearance Transparent blue crystals or blue powder

Physical State Solid

Odor Odorless

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

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

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

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| 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, epigastria pain, diarrhea, jaundice, and general debility.

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

Dry chemical, CO2 or water spray. Copper Sulfate does not burn nor will it support combustion.

Unsuitable Extinguishing Media

If dry heated above 600 °C/ 1112 °F, SO2 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

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| Storage Conditions | 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. |
| Packaging Materials | 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. |

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 ³ Cu dust and mist | TWA: 1 mg/m ³ Cu dust and mist | IDLH: 100 mg/m ³ Cu dust and mist TWA: 1 mg/m ³ Cu dust and mist |

Appropriate Engineering Controls

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| Engineering Controls | 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

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|---------------------------------|--|
| Eye/Face Protection | Wear safety glasses with side shields (or goggles). |
| Skin and Body Protection | 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. |
| Respiratory Protection | 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**

| | | | |
|-------------------------------------|--|-------------------------|----------------|
| Physical State | Solid | Odor | Odorless |
| Appearance | Transparent blue crystals or blue powder | Odor Threshold | Not determined |
| Color | Blue | | |
| Property | Values | Remarks • Method | |
| 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 | | |
| Flammability (Solid, Gas) | Not determined | | |

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

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|---------------------|-------------------------------|
| 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) | > 2.95 mg/L (Rat) |

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

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| 12. ECOLOGICAL INFORMATION |
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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

Not determined

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

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| Disposal of Wastes | 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. |
| Contaminated Packaging | 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.

DOT 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.

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

IATA

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

IMDG

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

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| 15. REGULATORY INFORMATION |
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International Inventories

TSCA

Listed

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**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***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 |

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| 16. OTHER INFORMATION |
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|--------------------|---------------------|-------------------|-----------------------|--|
| <u>NFPA</u> | Health Hazards 3 | Flammability 0 | Instability 0 | Special Hazards Not determined |
| <u>HMIS</u> | Health Hazards 3 | Flammability 0 | Physical Hazards 0 | Personal Protection Not determined |

| | |
|---------------|-------------|
| Issue Date | 02-May-2013 |
| Revision Date | 03-May-2013 |
| Revision Note | New format |

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