

# Material Safety Data Sheet

Martrex, Inc.  
P.O. Box 1709  
Minnetonka, MN 55345-3793

## 1. PRODUCT INFORMATION

Common Name: Copper Sulfate  
Synonyms: Blue Vitrol, Bluestone, Cupric Sulfate  
Molecular Formula:  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$   
EPA Reg. Number: 46923-4  
CAS Number: 7758-99-8  
SIC Number: 28199 C 29

## 2. CHEMICAL AND PHYSICAL PROPERTIES

Physical State Blue crystals or powder

Boiling Point: -5 H<sub>2</sub>O @ 150°F  
Melting Point: -4 H<sub>2</sub>O @ 110°F  
Specific Gravity: 2.284  
Solubility in H<sub>2</sub>O: 22.37% @ 0 degrees C  
117.95% @ 100 degrees C  
Solubility in Other Solvents: Soluble in methanol, glycerol and soluble in ethanol.  
Appearance: Blue crystals or powder  
Odor: Odorless

## 3. HEALTH HAZARD DATA & FIRST AID PROCEDURES

This product contains Copper Sulfate subject to the reporting requirements of Section 13 of the Emergency Planning and Community-right-to-Know-Act of 1986 (40CFR 372).

INGESTION: Toxic orally in accordance with FHSLA regulations.

EYES: Corrosive in accordance with FHSLA regulations.  
Eye irritation score: 24 hours = 41.67 48 hours = corrosive

SKIN: Non-toxic. Skin irritation index is zero in accordance with FHSLA regulations.

INHALATION: inhalation of dust may cause irritation to the upper respiration tract.

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#### 4. EXPOSURE CONTROL MEASURES

EYE PROTECTION: Immediately flush eyes with plenty of water for 15 minutes. Hold eyelids apart during irrigation. Call a physician.

SWALLOWING: Give large amounts of milk or water. Induce vomiting. Call Poison Control Center or a physician.

SKIN: Wash thoroughly with soap and water. Remove and wash contaminated clothing before reuse.

INHALATION: Remove person to fresh air and call a physician.

CARCINOGENICITY: None.

#### 5. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: Not applicable.

FLAMMABLE LIMITS: Not flammable. If heated above 400° C it can decompose to emit toxic fumes of oxide and sulfur.

EXTINGUISHING MEDIA: Copper Sulfate does not burn nor will it support combustion. If stored with other combustible products use water, CO<sub>2</sub> or dry chemical.

FIRE FIGHTING INSTRUCTIONS: If dry heated above 600 degrees C, 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 water bodies.

FIRE AND EXPLOSION HAZARDS: None.

#### 6. REACTIVITY DATA

STABILITY: Stable.

CONDITIONS TO AVOID: Product is highly soluble, but does not react with water.

INCOMPATIBILITY: None known when product remains dry. Product readily

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be avoided. Store in a dry area. With exposure to air it will oxidize and turn whitish.

HAZARDOUS PRODUCTS OF DECOMPOSITION: None at normal production temperatures and pressures. If dry heated above 600 degrees C toxic sulfur may evolve.

HAZARDOUS POLYMERIZATION: Will not occur.

## 7. ENVIRONMENTAL & DISPOSAL INFORMATION

AQUATIC TOXICITY: LC50, 24 hours, Daphnia magna equals 0.182 mg/l. Rainbow trout equals 0.17 mg/l. Blue Gill equals 1.5 mg/l. All values are expressed as Copper Sulfate Pentahydrate. Test water was soft.

SPILLS AND LEAKS: Comply with Federal, state and local regulations on reporting spills. Do not wash away crystals or powder. Recover dry if possible. If product is in a confined solution, react with soda ash to form an insoluble Copper Carbonate solid that can be scooped up.

WASTE DISPOSAL: Do not reuse container. Comply with Federal, State and local regulations. Sweep up crystals, powder or insoluble Copper Carbonate and dispose of in an approved landfill.

ENVIRONMENTAL EFFECTS: May be dangerous if it enters the public water systems. Follow local regulation. Toxic to fish and plants. Fish toxicity critical concentration is 235 mg/l and plant toxicity is 25 mg/l.

## 8. PRECAUTIONS FOR SAFE HANDLING, STORAGE AND USE

PERSONAL PROTECTIVE EQUIPMENT: Chemical safety goggles. Rubber gloves and rubber apron may be worn.

VENTILATION: TWA = 1 mg/1 for Copper Sulfate. When TWA exceeds this limit in the workplace, provide appropriate ventilation. 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 equipment in accordance with Paragraph 1910.134 of Title 29 of the Code of Federal Regulations.

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## 9. SPECIAL PRECAUTIONS

STORAGE: Store in a dry place.

OTHER PRECAUTIONS: None other than stated in the MSDS or on the package.

## 10. REGULATORY INFORMATION

U.S. REGULATIONS: SARA 313 Information; This product contains the following substance subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372: COPPER COMPOUND 63.3%

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SAFA Title III) and is considered, under applicable definitions, to meet the following category: AN IMMEDIATE HEALTH HAZARD.

## 11. SHIPPING INFORMATION

DOT Shipping Name RQ, Environmentally Hazardous Substance, Solid, NOS, (CUPRIC SULFATE), 9, UN3077, PGIII, ERG 171

## 12. MSDS PREPARATION INFORMATION

The data contained herein is accurate to Martrex, Inc. best knowledge and based on information that Martrex, Inc. believes to be reliable. However, it is furnished without representation, inducement, license of any kind or expressed or implied warranty with regard of accuracy of data or suitability for a given situation. Such data relate only to the specific products described and not to such product in combination with any other product. No agent of Martrex Inc. is authorized to vary any of such data. Regulatory requirements are subject to change and may differ from one location to another. Martrex, Inc. or its agents disclaim all liability for actions taken or forgone or reliance upon such data. Buyers are advised to read the product label and to conduct their own tests before use of any product. It is the buyer's responsibility to ensure that its activities comply with Federal, State and local laws.

**For Chemical Emergencies Call CHEMTREC - Day or Night - at 800-424-9300**