

Common Name: **CUPRIC SULFATE**

Synonyms: Copper Sulfate; Blue Vitriol

CAS No: 7758-98-7

Molecular Formula: CuSO<sub>4</sub>

RTK Substance No: 0549

Description: Odorless, white or bluish-white granule or crystalline powder

### HAZARD DATA

Hazard Rating	Firefighting	Reactivity
<p><b>2 - Health</b></p> <p><b>0 - Fire</b></p> <p><b>0 - Reactivity</b></p> <p><b>DOT#:</b> UN 3077</p> <p><b>ERG Guide #:</b> 171</p> <p><b>Hazard Class:</b> 9 (Environmentally Hazardous Substance)</p>	<p>Extinguish fire using an agent suitable for type of surrounding fire. <b>Cupric Sulfate</b> itself does not burn.</p> <p>POISONOUS GASES ARE PRODUCED IN FIRE, including <i>Copper Oxides</i> and <i>Sulfur Oxides</i>.</p>	<p><b>Cupric Sulfate</b> reacts with MAGNESIUM to produce flammable and explosive <i>Hydrogen gas</i> and will react with ACETYLENE to form shock-sensitive <i>Copper Acetylides</i>.</p> <p><b>Cupric Sulfate</b> will ignite HYDROXYLAMINE.</p> <p><b>Cupric Sulfate</b> is not compatible with AMINES; METALS (such as IRON, POTASSIUM, MAGNESIUM and ZINC); REDUCING AGENTS (such as LITHIUM, SODIUM, ALUMINUM and their HYDRIDES); OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE); STRONG BASES (such as SODIUM HYDROXIDE and POTASSIUM HYDROXIDE); ISOCYANATES; SODIUM HYPOBROMITE; AMMONIA; and NITROMETHANE.</p>

### SPILL/LEAKS

**Isolation Distance:**

Spill: 25 meters (75 feet)

Fire: 800 meters (1/2 mile)

Collect powdered material in the most convenient and safe manner and place into sealed containers for disposal.

Cover spill with plastic sheet to prevent dissolving in rain or firefighting water.

DO NOT wash into sewer.

**Cupric Sulfate** is harmful to aquatic life in very low concentrations.

### PHYSICAL PROPERTIES

<b>Odor Threshold:</b>	Odorless
<b>Flash Point:</b>	Nonflammable
<b>Specific Gravity:</b>	2.3 (water = 1)
<b>Water Solubility:</b>	Soluble
<b>Boiling Point:</b>	1,040° to 1,202°F (560° to 650°C)
<b>Melting Point:</b>	>392°F (>200°C)
<b>Molecular Weight:</b>	249.7

### EXPOSURE LIMITS

**OSHA:** 1 mg/m<sup>3</sup> (Dust), 0.1 mg/m<sup>3</sup> (Fume), 8-hr TWA

**NIOSH:** 1 mg/m<sup>3</sup> (Dust), 0.1 mg/m<sup>3</sup> (Fume), 10-hr TWA

**ACGIH:** 1 mg/m<sup>3</sup> (Dust), 0.2 mg/m<sup>3</sup> (Fume), 8-hr TWA  
(All the above are for *Copper dust and fume*)

**IDLH:** 100 mg/m<sup>3</sup> (as *Copper*)

**PAC:** PAC-1 = 7.5 mg/m<sup>3</sup>; PAC-2 = 10 mg/m<sup>3</sup>  
PAC-3 = 59 mg/m<sup>3</sup>

### PROTECTIVE EQUIPMENT

<b>Gloves:</b>	Neoprene and Polyvinyl Chloride
<b>Coveralls:</b>	DuPont Tyvek®
<b>Respirator:</b>	>0.1 mg/m <sup>3</sup> - Full facepiece APR with High efficiency particulate filter >1 mg/m <sup>3</sup> - Supplied air (Fume) >10 mg/m <sup>3</sup> - Supplied air (Dust/Mist)

### HEALTH EFFECTS

**Eyes:** Irritation and burns

**Skin:** Irritation and burns

**Inhalation:** Nose and throat irritation with coughing and wheezing  
Headache, nausea, vomiting and abdominal pain

### FIRST AID AND DECONTAMINATION

**Remove** the person from exposure.

**Flush** eyes with large amounts of water for at least 15 minutes. Remove contact lenses if worn. Seek medical attention.

**Quickly** remove contaminated clothing and wash contaminated skin with large amounts of water.

**Begin** artificial respiration if breathing has stopped and CPR if necessary.

**Transfer** promptly to a medical facility.