

บริษัท เคมเวิร์ค จำกัด

CHEMWORK CO.,LTD.

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MATERIAL SAFETY DATA SHEET

Common Name COPPER SULFATE

Manufacturer Old Bridge Chemicals, Inc.

P.O. Box 194

Old Bridge, New Jersey 08857

Telephone (732) 727-2225

Emergency Telephone 1(800) 275-3924

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SECTION I. MATERIAL IDENTIFICATION

Common Name Copper Sulfate

Synonyms Blue Vitrol, Bluestone, Cupric

Sulfate

Molecular Formula CuSO₄ • 5H₂0

EPA Reg. Number 46923-4

CAS Number 7758-99-8 SIC Number 28199 C 29

SECTION II. PHYSICAL DATA

Physical State Blue crystals or powder

Boiling Point -5 H₂O @ 150° F

Melting Point -4 H₂O @ 110° F

Specific Gravity 2.284

Solubility in H_2O 22.37% @ 0° C

117.95% @ 100° C

Solubility in other solvents

Soluble in methanol, glycerol and slightly soluble in

ethanol

Appearance Blue crystals or powder

Odor Odorless

SECTION III. FIRE AND EXPLOSION 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, CO₂ or dry chemical.

Special Fire Fighting

Instructions

If dry heated above 600° C, SO₂ is evolved. If water is used it

will solubalize the Copper Sulfate and care should be taken to keep such water out of streams or other water

bodies.

Fire and Explosion Hazards

None

SECTION IV. REACTIVITY DATA

Stability Stable

Conditions to Avoid

Incompatibility

Product is highly soluble, but does not react with water. None know when product remains dry. Product readily

dissolves in water. Solutions are mildly corrosive to steel. Store solutions in plastic or rubber or 304, 347 or 316 stainless steel. Iron and moisture should be avoided. Store in a dry area. With exposure to air it

will oxidize and turn whitish.

Hazardous Decomposition None at normal production temperatures and pressures. If dry

Products heated above 600° C toxic sulfur may evolve.

Polymerization Will not occur.

SECTION V. HEALTH AND HAZARD INFORMATION

Swallowing Toxic orally in accordance with FHSLA regulations.

Acute oral LD50 (male rats) = 472 mg/kg.

Skin Non-toxic. Skin irritation index is zero in accordance

with FHSLA regulations.

Eyes Corrosive in accordance with FHSLA regulations. Eye

irritation score: 24 hours = 41.67; 48 hours = corrosive

Inhalation Inhalation of dust may cause irritation to the upper

respiration tract.

Carcinogenicity None as per NTP, OSHA, and IARC.

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 (40 CFR 372).

SECTION VI. FIRST AID PROCEDURES

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.

Eyes Immediately flush eyes with plenty of water for 15

minutes. Hold eyelids apart during irrigation. Call a

physician.

Inhalation Remove person to fresh air and call a physician.

Carcinogenicity None

SECTION VII. HANDLING PRECAUTIONS

Personal Protective Equipment Chemical safety goggles. Rubber gloves and rubber

apron may be worn.

Ventilation TWA = 1 mg/l 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.

SECTION VIII. ENVIRONMENTAL AND 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.

SECTION IX. SPECIAL PRECAUTIONS

Storage Store in a dry place.

Other Precautions None other than those stated in the MSDS or on the package.

SECTION XI. REGULATORY INFORMATION

NOTICE: The information herein is presented in good faith and believed to be accurate. However, no warranty, expressed or implied, is given. Regulatory requirements are subject to change and may differ from one location to another. It is the buyer's responsibility to ensure that its activities comply with Federal, State and local laws.

U.S. REGULATIONS: SARA 313 Information. This product contain 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 Amendments and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following category: **AN**

IMMEDIATE HEALTH HAZARD.

SECTION XII. SHIPPING INFORMATION

DOT Shipping Name: RQ, Environmentally Hazardous Substance, Solid, N.O.S., (CUPRIC SULFATE), 9, UN3077, PGIII, Marine Pollutant, ERG 171.

SECTION XIII. MSDS PREPARATION INFORMATION

Prepared by Joel L. Goldschmidt, Vice President

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