

COPPER SULFATE GRANULAR CRYSTALS

MATERIAL SAFETY DATA SHEET

Manufacturer's Name & Address
Southern Agricultural Insecticides, Inc.
PO Box 218, Palmetto, Fla. 34220

Phone: 941-722-3285
Chemtrec: 1-800-424-9300

I NOMENCLATURE

Product Name:	COPPER SULFATE GRANULAR CRYSTALS	EPA Reg. No.829-210
Chemical Name:	Copper Sulfate pentahydrate (CuSO ₄ ·5 H ₂ O)	
Synonyms:	Cupric Sulfate pentahydrate, Bluestone, blue vitriol	
Chemical Family:	Copper salt	

II INGREDIENTS

	Nominal	CAS#	OSHA PEL	ACGIH TLV
CuSO ₄ ·5 H ₂ O	99%.	7758-99-8	1.0 mg/m ³ (Cu as dust/mist)	1.0 mg/m ³ (Cu as dust/mist)
Copper content as Cu	25.2%	7440-50-8		

III PHYSICAL PROPERTIES (N.A.= Not available/applicable)

Boiling Point: -5 H ₂ O @ 150°C (loses water of crystallization)	Specific Gravity: (H ₂ O=1) 2.284
Vapor Pressure (mmHg): N.A.	Percent Volatile: (by volume) N.A.
Melting Point -4H ₂ O @ 110°C (loses 4 H ₂ O)	Vapor Density: N.A.
Solubility In Water: @30°C=24.3g/100, @100°C =203g/100	
Appearance/Odor: Blue transparent crystals, odorless	

IV FIRE AND EXPLOSION DATA

Flash Point: N.A. Flammable Limits: Lel; N.A. Uel; N.A.

Special Fire Fighting Procedures: Copper sulfate does not burn, nor will it support combustion. Use extinguishing media for surrounding fire, CO₂, dry chemical, or water. Avoid direct water stream on molten Copper Sulfate. (splattering occurs) Personnel should remain upwind. Firemen should wear self contained breathing apparatus (air-pack) and full protective clothing. Use water spray to cool fire exposed containers. Copper sulfate decomposes at 600°C evolving sulfur dioxide. If water is used, contain runoff, because of solubility of copper sulfate.

Unusual Fire & Explosion Hazards: Material is acidic when dissolved in water. Contact with magnesium metal may evolve hydrogen gas. Anhydrous copper sulfate, formed by water loss, will ignite hydroxylamine.

V FIRST AID

EYE Exposure: Corrosive to eyes. Flush eyes a gentle stream of clean water for at least 15 minutes. Hold eye lids apart to ensure washing underside of lids. Remove contact lenses while rinsing. Get immediate medical attention.

SKIN Exposure: Remove contaminated clothing. Flush or shower exposed skin with large amount of water for at least five minutes. Launder contaminated clothes separately before reuse.

INHALATION: Remove worker from exposure, administer CPR, if required, and get medical assistance.

INGESTION: May cause severe GI tract irritation. Drink promptly large quantities of water or milk. Avoid alcohol. Induce vomiting. Do not leave victim unattended. Vomiting may occur spontaneously. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. If vomiting occurs and the victim is conscious give additional water to further dilute the chemical. Do not attempt to give anything by mouth to an unconscious or convulsing person. Seek immediate medical aid.

SYMPTOMS of OVEREXPOSURE: Copper sulfate is emetic, and has seldom been fatal. Prolonged ingestion might increase liver copper content. Elevated urinary copper content should be regarded as an indication of excess copper exposure.

VI HEALTH HAZARD DATA

ROUTES Of ENTRY: Skin, Eyes< inhalation. ingestion

Acute: May cause upper respiratory tract, skin or eye irritation.

Chronic: Rare except in individuals with Wilsons disease

Signs & Symptoms of exposure: Localized skin discoloration itching, eye irritation, ulceration of nasal septum may occur.

Repeated or prolonged skin contact may cause dermatitis.

Animal Toxicity: Dermal LD50 > 8000 mg/kg, Acute oral LD50 (male rats) 472 mg/kg,
Acute inhalation LC50 > 1.48 mg/l

Chemical listed as carcinogen N.T.P. No I.A.R.C. No OSHA No
or potential carcinogen:

COPPER SULFATE GRANULAR CRYSTALS

MATERIAL SAFETY DATA SHEET

VI REACTIVITY:

Stability: Stable under normal storage conditions. Conditions to Avoid: Heat and reducing agents.

Materials to Avoid: Solutions are corrosive to mild steel. Solutions are acidic and can generate hydrogen when in contact with metallic magnesium.

Hazardous Decomposition Products: None at ambient temperatures. Decomposes at 600°C evolving sulfur dioxide (SO₂).

Hazardous Polymerization: Will not occur.

VIII SPILL OR LEAK PROTECTION

Steps To Be Taken If Spilled: Sweep up material.

Waste Disposal: Product that can not be used according to label instruction may be disposed of according to label instructions, or disposed of in accord with local, State, and Federal regulations.

SPECIAL PROTECTION

Respiratory: Type/Conditions Do not breathe dust or spray mist. Wear a NIOSH/MSHA approved respirator with pesticide cartridge if inhalation of dust or spray mist will occur.

Ventilation: Handle with good local ventilation. Do not exceed 8 hour TWA (1 mg/m³) without respiratory protection.

Gloves: Wear clean impervious gloves when handling.

Eye Protection: Chemical goggles preferred, otherwise Safety glasses with side shields.

Other Protective Equipment: Clean long sleeved body covering work clothing, hat and shoes and socks. Eye wash and facility for washing. Do not wear contaminated clothing.

IX SPECIAL PRECAUTIONS

Handling Precautions: Avoid damage to containers. Do not breathe dust or spray mist. Wash thoroughly after handling.

Under some conditions copper sulfate dust may be irritating to the skin of some individuals. Problem use conditions seem to be aggravated by high humidity and sweating when copper sulfate is applied undiluted and dust contact occurs.

Storing Precautions: Do not put leaking containers into storage. Store in a cool dry place Do not store near any material intended for use or consumption by humans or animals.. KEEP OUT OF REACH OF CHILDREN. Product is harmful to fish.

SHIPPING AND SELECTED FEDERAL REGULATIONS

Domestic motor freight Hazardous description: Consumer Commodity ORM-D

Motor Freight Herbicides NOI NMFC 50320

SARA Title III: Acute health hazard Chronic health Hazard

CFR 1910.1000 Table Z-1 as copper dust/fume

40 CFR 355.5 Extremely hazardous substance not listed

40 CFR 302.4 Hazardous substances listed Listed RQ 10 LB

This information relates solely to the designated product and is not inclusive for combinations with other materials. This information is given without warranty or representation. Information is based on data we believe to be correct as of the date hereof. This information is furnished solely for your consideration, investigation, and verification. Before using any product READ THE LABEL.

REF: Merck Index 11th Ed.,
CFR 29 7/95

Phelps Dodge Corp. MSS Copper Sulfate 2/92
CFR 40 1/95 CFR49 parts 171-172-173

Chem One Corp MSS 7/93
JKeller Regulatory Cross Ref.