

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Copper Sulfate
Recommended Use: Algacide, Herbicide for sewer roots.
CAS-No. 7758-99-8
EPA Reg.No. 829-210
Chemical Name: Copper sulfate pentahydrate
Company Name: Southern Agricultural Insecticides, Inc.
P.O. Box 218
Palmetto, FL 34220
Company Telephone/Fax: (941) 722-3285/(941)723-2974
Emergency Telephone Number: (800) 424 9300 (CHEMTREC)

2. HAZARDS IDENTIFICATION

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 3) Acute aquatic toxicity (Category 1)
Skin irritation (Category 2) Chronic aquatic toxicity (Category 1)
Eye irritation (Category 2A)
Specific target organotoxicity- single exposure: Category 3 (respiratory system)

Label elements**Hazard pictograms****Signal word**

Danger

Hazard Statements

Toxic if swallowed. Causes skin irritation Causes serious eye irritation. Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Do not handle until all safety precautions have been read and understood. Avoid breathing dust or contact with skin and eyes. Wash thoroughly after handling. Do not ingest. If exposed or concerned: Get medical advice/attention. Dispose of contents/container according to local/state/federal regulations.

Other hazards

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Cupric sulfatepentahydrate
Molecular weight: 249.69 g/mol
Concentration: <=100
Component: Copper sulphate pentahydrate
EHS N OSHA PEL 1 mg/M3
NTP N ACGIH 1 mg/M3
LARC N
SARA 313 Y

4. FIRST AID MEASURES

General information: In case of persisting adverse effects consult a physician. Never give anything by mouth to an unconscious person or a person with cramps.

IF SWALLOWED: Immediately call a Poison Control Center or doctor/physician. Rinse mouth.

IF ON SKIN: Take off contaminated clothing. Rinse immediately with water for 15 to 20 minutes. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice! Attention.

IF IN EYES: Rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice! Attention.

5. FIRE FIGHTING MEASURES

General Fire Hazards:	Copper Sulfate is not combustible, but may decompose in the heat of a fire to product corrosive and/or toxic fumes.
Extinguishing media:	Dry chemical, carbon dioxide, water spray or foam. For large fires use water spray, or alcohol foam
Special hazards arising from the substance or mixture:	Sulphur oxides, Copper oxides
Advice for firefighters:	Wear full protective clothing including self-contained breathing apparatus.
Further information:	Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. Dike fire control water for later disposal.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Wear a NIOSH or MSHA approved respirator if dust will be generated in clean-up. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

If spilled solution is in a confined area, introduce lime or soda ash to form insoluble copper salts and dispose of by approved method.

Environmental precautions:

Prevent further leakage or spillage if safe to do so. Do not let product enter drains, streams or other bodies of water. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up:

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal. Copper sulfate solution may deteriorate concrete.

7. HANDLING AND STORAGE

Precautions for safe handling:

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage, including any incompatibilities:

Keep container tightly closed in a dry and well-ventilated place away from heat sources and reducing agents. Store in stainless steel, fiberglass, polypropylene, PC=s or plastic equipment. If container or bag is damaged, place the container or bag in a plastic bag.

8. EXPOSURE CONTROLS~PERSONAL PROTECTION

Component	CAS-No.	Value	Control parameters	Basis
Copper sulphate pentahydrate	7758-99-8	TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits

Exposure controls

Appropriate engineering controls:

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment:

Eye/face protection: Individuals must wear splash proof or dust resistance safety goggles to prevent eye contact with this substance. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection: Individuals must wear appropriate protective clothing and equipment to prevent repeated or prolonged skin contact.

Respiratory protection: NIOSH approved respirator for toxic dust mist. The respirator selected must be based on contamination levels found in the work area.

Control of environmental exposure: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:	Form: crystalline Color: blue
Odor	No data available
Odor Threshold	No data available
pH	3.7 - 4.5 at 50 g/l at 25 °C (77 OF)
Melting point/freezing point	Melting point/range: 110°C (230 OF) - dec.
Initial boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
vapor pressure	9.7 hPa (7.3 mmHg) at 25°C (77 OF)
Vapor density	No data available
Relative density	2.284 g/cm ³
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Other safety information	No data available

10. STABILITY AND REACTIVITY

Reactivity:	No data available
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	No data available
Conditions to avoid:	Exposure to moisture
Incompatible materials:	Powdered metals, Anhydrous copper(II) sulfate, reacts violently with:, hydroxyl amine, Magnesium
Hazardous decomposition products	At temperatures 600° C material decomposes to cupric oxide and sulfur dioxide
Hazardous Polymerization:	Will not occur
In the event of fire: see section 5	

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute Toxicity: May cause skin, eye and mucous membrane irritation (includes upper respiratory tract). Ingestion may cause gastrointestinal discomfort.

Subchronic / Chronic

Toxicity: Prolonged or repeated exposure may cause kidney, liver and blood damage. Chronic exposure may cause dermatitis.

Reproductive and

Developmental Toxicity: Not known or reported to cause reproductive or developmental toxicity.

LD50 Oral - Rat - 482 mg/kg
(OECD Test Guideline 401)
Remarks: anhydrous

Inhalation: No data available

LD50 Dermal - Rat - > 2,000 mg/kg

Remarks: anhydrous

No data available

Skin corrosion/irritation: Irritating to skin.
Serious eye damage/eye irritation: Irritating to eyes.
Respiratory or skin sensitisation: Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.
Germ cell mutagenicity: No data available

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1 is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1 is identified as a carcinogen or potential carcinogen by ACGIH.
NTP No component of this product present at levels greater than or equal to 0.1 is identified as a known or anticipated carcinogen by NTP.
OSHA No component of this product present at levels greater than or equal to 0.1 is identified as a carcinogen or potential carcinogen by OSHA.

12. ECOLOGICAL INFORMATION

Toxicity

Subacute Dietary LC50: 10,000 ppm (quail and duck)
96 hr Acute Toxicity LC50: 0.65 ppm (bluegill), 0.056 ppm (trout), 16 ppm (pink shrimp)
48 hr EC50: 54 ppm (eastern oysters)
48 hr LC50 17 ppm (pink shrimp), 600 ppb (daphnia)
24 hr LC50: 6.9 ppm (blue crab), 600 ppb (daphnia)
Persistence and degradability: The methods for determining the biological degradability are not applicable to inorganic substances.
Bioaccumulative potential: No data available
Mobility in soil: No data available
Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal: (Paper Bag) If empty: Do not reuse this container. Dispose of empty bag in a sanitary landfill or by incineration, or if allowed by State and local authorities, by burning.

If partly filled: Call your local solid waste agency or 1-800-CLEANUP for disposal instructions. Never place unused product down any indoor or outdoor drain.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Copper sulphate pentahydrate)
Reportable Quantity (RQ): 10 lbs
Marine pollutant: yes
Poison Inhalation Hazard: No

IMDG

UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper sulphate pentahydrate)
Marine pollutant: yes

IATA

UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Copper sulphate pentahydrate)

15. REGULATORY INFORMATION

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SOS), and for workplace labels of non-pesticide chemicals.

Signal word DANGER!
Hazard statements Causes substantial but temporary eye injury.
 Harmful if absorbed through skin.
 Corrosive. Causes irreversible eye damage.
 This pesticide is toxic to fish.
 This pesticide is toxic to aquatic invertebrates.

SARA 302 Extremely Hazardous Substances

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Toxic Chemicals

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Component RQ (lbs)
Copper sulphate pentahydrate	7758-99-8	10

SARA 311/312 Hazard Categories

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components:	Copper sulphate pentahydrate	CAS-No. 7758-99-8
Pennsylvania Right To Know Components:	Copper sulphate pentahydrate	CAS-No. 7758-99-8
New Jersey Right To Know Components:	Copper sulphate pentahydrate	CAS-No. 7758-99-8

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

HMIS Rating
Health hazard: 2
Chronic Health Hazard: *
Flammability: 0
Physical Hazard 0
NFPA Rating
Health hazard: 2
Fire Hazard: 0
Reactivity Hazard: 0

Further information

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Southern Agricultural Insecticides, Inc. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Southern Agricultural Insecticides, Inc has been advised of the possibility of such damages.

