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SAFETY DATA SHEET

Copper Sulfate Pentahydrate

Section 1. Identification

GHS product identifier : Copper Sulfate Pentahydrate
Product type : solid

Uses

Area of application : Not Applicable

Supplier

Supplier's details : Greenway Biotech, Inc.

Address

Street : 10632 Painter Ave
Postal code : 90670
City : Santa Fe Springs
Country : United States

Telephone number : +1 562-351-5168

e-mail address of person responsible for this SDS : sales@greenwaybiotech.com

Emergency telephone number (with hours of operation) : US: Chemtrec 24-hours Emergency Response: 1-800-424-9300
Canada: 24 Hour Emergency Service, (Canutec 613-996-6666)

National advisory body/Poison Center

Name : The National Poisons Emergency number
Telephone number : 1 800 222 1222

Section 2. Hazards identification

Emergency Overview: This product is a blue solid that comes in crystals or granules. Potentially fatal if swallows. May cause irritation to the eyes, respiratory system and skin. Fire may produce irritating , corrosive and/or toxic fumes. Firefighters should use full protective equipment and clothing.

Hazard Statements: HARMFUL OR FATAL IF SWALLOWED. Can cause irritation of eyes skin, respiratory tract and, in extreme cases burns. Avoid contact with eyes and skin. Avoid breathing dusts. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Keep from contact with clothing and other combustible materials.

Potential Health Effects-Eyes: Exposure to particles or solution of this product may cause redness and pain. Prolonged contact may cause conjunctivitis, ulceration and corneal abnormalities.

Potential Health Effects-Skin: This product can cause irritation of the skin with pain, itching and redness. Severe overexposure can cause skin burns. Prolonged exposure may cause dermatitis and eczema.

Potential Health Effects-Ingestion: Harmful or fatal if swallowed. May cause gastrointestinal irritation with symptoms such as nausea, vomiting, and diarrhea.

Potential Health Effects-Inhalation: May irritate the nose, throat and respiratory tract. Symptoms can include sore throat, coughing and shortness of breath. In severe cases ulceration and perforation of the nasal septum can occur.

Personal Protective Equipment: E=chemical goggles, impervious gloves, dust respirator

HMIS Ratings: Health-2 Fire-0 Reactivity-1

Section 3. Composition/information on ingredients

Component	CAS-Number	% Content
Copper (II) Sulfate Pentahydrate	7758-99-8	>99

Component Related Regulatory Information: This product may be regulated, have exposure limits or other information identified as the following: Copper (7440-50-8) and inorganic compounds, as Cu, Copper (7440-50-8) dusts and mists, as Cu and Copper fume, Cu.

Component Information/Information on Non-Hazardous Components: This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

Section 4. First aid measures

Inhalation: Remove source of contamination or move victim to fresh air. If Breathing has stopped, apply artificial respiration. Get immediate medical attention.

Skin contact: Remove all contaminated clothing. For skin contact, wash thoroughly with soap and water for at least 20 minutes. Seek immediate medical attention if irritation develops or persists.

Eye contact: In case of contact with eyes, rinse immediately with plenty of water for at least 20 minutes. Seek immediate medical attention.

Ingestion: DO NOT INDUCE VOMITING. Have victim rinse mouth thoroughly with water, if conscious. Never give anything by mouth to a victim who is unconscious or having convulsions. Contact a physician or control center immediately

Notes to physician: Provide general supportive measures and treat symptomatically.

Section 5. Fire Fighting Measures

Flash Point	:	Not flammable
Upper Flammable Limit	:	Not applicable
Auto Ignition	:	Not applicable

Rate of Burning	:	Not applicable
Method Used	:	Not applicable
Lower Flammable Limit	:	Not applicable
Flammability Classification	:	Not applicable
Hazardous Combustion Products	:	Not applicable
Extinguishing Media	:	Not applicable

General Fire Hazards: Copper Sulfate Pentahydrate is not combustible but may decompose in the heat of a fire to produce corrosive and/ or toxic fumes.

Firefighting Equipment/Instructions: Firefighters should wear full protective clothing, including self-contained breathing apparatus. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

NFPA Ratings: Health: 2 Fire: 0 Reativity: 1 Other:
Hazard Scale: 0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

Section 6. Accidental release measures

Containment Procedures: Stop the flow of material, if this is without risk. Contain the discharge material. If sweeping of a contaminated area is necessary use a dust suppressant agent, which does not react with product.

Clean-Up Procedures: Wear appropriate protective equipment and clothing during clean-up. Shovel the material into waste container. Thoroughly wash the area after a spill or leak clean-up. Prevent spill rinsate from contamination of storm drains, sewers, soil or groundwater.

Evacuation Procedures: Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering. Keep materials which can burn away from spilled material. In case of large spills, follow all facility emergency response procedures.

Special Procedures: Remove soiled clothing and launder before reuse. Avoid all skin contact with the spilled material. Have emergency equipment readily available.

Section 7. Handling and storage

Handling Procedures: Do not breathe dust. Avoid all contact with skin and eyes. Use this product only with adequate ventilation. Wash thoroughly after handling.

Storage Procedures: All employees who handle this material should be trained to handle it safely. Open containers slowly on a stable surface. Containers of this product must be properly labeled. Empty containers may contain residual amounts of this product; therefore, empty containers should be handled with care. Keep this product in an air-tight container. Store containers in a cool, dry location, away from direct sunlight and intense heat. Store away from incompatible materials. Keep container tightly closed when not in use. Keep this material away from food, drink and animal feed. Do not store this material in open or unlabeled containers. Inspect all incoming containers before storage to ensure that containers are properly labeled and not damaged. Limit quantity of material stored.

Section 8. Exposure controls / personal protection

Exposure Guidelines

A: General Product Information

Follow the applicable exposure limits.

B: Component Exposure Limits

The exposure limits given are for copper & inorganic Compounds, as Cu (7440-50-8), Copper fume as

Cu or Copper dusts and mists, as Cu.
 ACGIH: 1 mg/m³ TWA (dust & mists)
 0.2 mg/m³ TWA (fume)
 OSHA: 1 mg/m³ TWA (dusts & mists)
 0.1 mg/m³ TWA (fume)
 NIOSH: 1mg/m³ TWA (dusts & mists)
 0.1 mg/m³ TWA (Fume)
 DFG MAKs: 1 mg/m³ TWA Peak, 30 minutes, average value (dusts & mists)
 0.1 mg/m³ TWA Peak, 30 minutes, average value (fume)

Engineering controls: Use mechanical ventilation such as dilution and local exhaust. Use a corrosion-resistant ventilation system and exhaust directly to the outside. Supply ample air replacement. Provide dust collectors with explosion vents.

PERSONAL PROTECTIVE EQUIPMENT:

Eyes/Face: Wear safety glasses with side shields (or goggles) and a face shield, if this material is made into a solution.

Skin: Wear chemically-impervious gloves, made of any waterproof material, boots and coveralls to avoid skin contact.

Respiratory: If concentrations are above the applicable exposure limits, use the NIOSH-approved respiratory protection. The following NIOSH Guidelines for copper dust and mists (as Cu) are presented for further information.

Up to 5mg/m³: Dust and mist respirator.

Up to 10 mg/m³: Any dust and mist respirator except single-use and quarter mask respirators or any SAR.

Up to 25 mg/m³: SAR operated in a continuous-flow mode or powered air-purifying respirator. With a dust and mist filter(s).

Up to 50 mg/m³: Air purifying, full-facepiece respirator and high-efficiency particulate filter(s), any powered air-purifying respirator with tight-fitting facepiece and high-efficiency particulate filter(s) or full-facepiece SCBA, or full-facepiece SAR.

Up to 100 mg/m³: Positive pressure, full-facepiece SAR.

Emergency or planned entry into unknown concentrations or IDLH Conditions: Positive pressure, full-facepiece SCBA, or positive pressure, full-facepiece SAR with an auxiliary positive pressure SCBA.

Escape: Full-facepiece respirator with high-efficiency particulate filter(s), or escape-type SCBA.

Note: The IDLH concentration for copper dusts and mists (as Cu) is 100 mg/m³.

General: Have an eyewash fountain and safety shower available in the work area.

Section 9. Physical and chemical properties

Appearance	:	Blue crystals or granules
Physical state	:	Solid
Vapor Pressure	:	Practically zero
Boiling Point	:	Decomposes
Solubility (H₂O)	:	31.6 g/100 cc (@ 0 deg C)
Freezing Point	:	Not available
Softening Point	:	Not available
Molecular Weight	:	249.68
Odor	:	Odorless
pH	:	4(0.2 M)
Vapor Density	:	Not applicable
Melting Point	:	653 deg C (deg F) [decomposes]
Specific Gravity	:	2.28 @ 15.6 deg C (H ₂ O = 1)
Particle Size	:	Various
Bulk Density	:	60-100 lbs/ft ³
Chemical Formula	:	CuSO ₄ *5H ₂ O

Section 10. Stability and Reactivity

Chemical Stability: Copper Sulfate Pentahydrate is air sensitive, but stable when kept dry, under normal temperature and pressures.

Conditions to avoid: Avoid high temperatures, exposure to air and incompatible materials.

Incompatibility: Avoid contact with hydroxylamine, magnesium, and reducing agents. This product can corrode steel and iron. Copper Sulfate Pentahydrate is incompatible with alkalines, phosphates, acetylene, hydrazine and nitromethane.

Hazardous Decomposition: Sulfur oxides and Copper oxides.

Hazardous Polymerization: Will not occur.

Section 11. Toxicological information

Acute and Chronic Toxicity:

A: General Product Information

Acute toxicity is largely due to the caustic (alkaline) properties of this material. Harmful or fatal if swallowed. Product is an eye and skin irritant and may cause burns. Product is a respiratory tract irritant, and inhalation may cause nose irritation, sore throat, coughing, and chest tightness and possibly, ulceration and perforation of the nasal septum.

Chronic: Long term skin overexposure to this product may lead to dermatitis and eczema.

Prolonged or repeated eye contact may cause conjunctivitis and possibly corneal abnormalities.

Chronic overexposure to this product may cause liver and kidney damage. Anemia and other blood cell abnormalities.

B: Component Analysis – LD₅₀/LC₅₀ Copper Sulfate Pentahydrate (7758-99-8)

Oral-rat LD₅₀: =300 mg/kg; Intravenous-rat LD₅₀: 48900 ug/kg; Unreported-rat LD₅₀: 520 mg/kg; oral-mouse LD₅₀: 369 mg/kg; Intraperitoneal-Mouse LD₅₀: 33 mg/kg; Intraperitoneal-mouse LD₅₀: 7182 ug/kg.

B: Component Analysis – TDLo/LDLo Copper Sulfate Pentahydrate (7758-99-8)

Oral-man LDLo: 857 mg/kg; Oral-Human LDLo: 50 mg/kg; Behavioral: somnolence (general depressed activity); Kidney, Urethra, Bladder: changes in tubules (including acute renal failure, acute tubular necrosis); Blood: hemorrhage; Oral-Human TDLo: 11 mg/kg; Gastrointestinal: gastritis; Gastrointestinal: hypermotility, diarrhea, nausea or vomiting; Oral-Human TDLo: 272 mg/kg; liver, kidney, Urethra, Bladder: changes in tubes (including acute renal failure, acute tubular; necrosis); Blood: other hemolysis with or without anemia; unknown-Man LDLo: 221 mg/kg; Oral-Woman TDLo: 2400 mg/kg/day; Gastrointestinal tract effects; DNA Inhibition-Human: lymphocyte 76 mmol/L; Oral-woman LDLo: 100 mg/kg; Vascular: Blood pressure lowering not characterized in autonomic section; Liver: hepatitis (hepatocellular necrosis), diffuse; Kidney, Urethra, Bladder: changes in tubules (including acute renal failure, acute tubular necrosis); Oral-Human LDLo: 143 mg/kg; Pulmonary system effects, Gastrointestinal tract effects; Oral-rat TDLo: 915 mg/kg/1 years-intermittent: Cardiac: Changes in coronary arteries; Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol; Oral-rat TDLo: 157 mg/kg/6 weeks-intermittent: Endocrine: changes in adrenal weight, Nutritional and gross Metabolic: weight loss or decreased weight gain; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: dehydrogenases; Oral-rat TDLo: 7530 mg/kg/30 day-intermittent: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol; Blood: changes in erythrocyte (RBC) count; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels; Intraperitoneal-rat TDLo: 791 mg/kg/18 weeks-intermittent: Nutritional and Gross Metabolic: weight loss or decreased weight gain; Intraperitoneal-rat TDLo: 7500 ug/kg: male 1 day(s) pre-mating; Reproductive: Paternal Effects: spermatogenesis (incl. genetic material, sperm morphology, motility, and count), testes, epididymis, sperm duct; Oral-mouse TDLo: 3 gm/kg/8 weeks-continuous: Blood: changes in spleen; immunological Including Allergic: decrease in cellular immune response, decrease in humoral immune response; Oral-mouse TDLo: 2 gm/kg/3 weeks-continuous: Blood: changes in spleen; Immunological Including Allergic: decrease in cellular immune response, decreased in humoral immune response; Subcutaneous-mouse LDLo: 500 ug/kg; Subcutaneous-mouse TDLo: 12768 ug/kg: male 30 day(s) pre-mating; Reproductive: Paternal Effects: testes, epididymis, sperm duct; Intravenous-mouse TDLo: 3200 ug/kg; Female 8 day(s) after conception: Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus), Specific Developmental Abnormalities: Central Nervous System, cardiovascular (circulatory) system; Intravenous mouse TDLo: 3200 ug/kg: female 7 day(s) after conception: Reproductive: Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants); Oral-Dog, adult LDLo 60 mg/kg; Intravenous-guinea pig TDLo: 2 mg/kg; Subcutaneous-Guinea pig, adult LDLo: 62 mg/kg; Oral-Pigeon LDLo: 1000 mg/kg; Oral-Domestic animals (Goat, Sheep) LDLo: 5 mg/kg; Oral-Bird-wild species LDLo: 300 mg/kg; Intravenous-frog LDLo: 25 mg/kg; Parenteral-chicken TDLo: 10 mg/kg; Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Endocrine: tumors; Oral-pig TDLo: 140 mg/kg; female 1-15 week(s) after conception, lactating female 4 week(s) post-birth: Reproductive: Effects on Newborn: biochemical and metabolic; Intravenous-hamster TDLo: 2130 ug/kg: female 8 day(s) after conception: Reproductive: Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants), Specific Development Abnormalities: Central Nervous System, body wall.

Carcinogenicity

A: General Product Information

Copper Sulfate Pentahydrate (7758-99-8)

Cytogenetic Analysis-Rat/ast 300 mg/kg

B: Component Carcinogenicity

Copper dusts and mists, as Cu (7440-50-8)

EPA: EPA-D (Not Classifiable as to Human Carcinogenicity – inadequate human and animal evidence of carcinogenicity or no data available.)

Epidemiology: No information available.

Neurotoxicity: Has not been identified.

Mutagenicity: Human and animal mutation data are available for Copper Sulfate Pentahydrate; these data were obtained during clinical studies on specific human and animal tissues exposed to high doses of this compound.

Teratogenicity: There are no reports of teratogenicity in humans. Animal studies indicate that a deficiency or excess of copper in the body can cause significant harm to developing embryos. The net absorption of copper is limited, and toxic levels are unlikely from industrial exposure.

Other Toxicological Information: Individuals with Wilson's disease are unable to metabolize copper. Thus, persons with pre-existing Wilson's disease may be more susceptible to the effects of overexposure to this product.

Section 12. Ecological Information

Ecotoxicity

A: General Product Information

Harmful to aquatic life in very low concentrations. Copper Sulfate Pentahydrate is toxic to fish and marine organisms when applied to streams, rivers, ponds or lakes.

B: Ecotoxicity

Copper sulfate Pentahydrate (7758-99-8)

LC₅₀ (Lepomis machochirus bluegill) wt 1.5 g = 884 mg/L at 18°C, static bioassay (95% confidence limit 707-1, 100 mg/L) (technical material, 100% (about 25% elemental copper); LC₅₀ (Leopmis Cyanellus, Green Sunfish) = 1.1 g, 3,510 ug/L at °C; LC₅₀ (Pimephales promelas, Fat-head minnow) = 1.2 g, 838 ug/L at 18°C; LC₅₀ (Crassius auratus, Goldfish) = 0.9 g, 1380 ug/L at 18°C; LC₅₀ (Crassius auratus, Goldfish) = 0.1-2.5 mg/L; LC₅₀ (EEL) = 0.1-2.5 mg/L LC₅₀ (salmo gairdneri, Rainbow trout) = 1.6 g, 135 ug/L at 18°C; LC₅₀ (Salmo gairdneri, Rainbow trout) 48 hours = 0.14 ppm; LC₅₀ (daphnia Magna) no time specified = 0.182 mg/L; LC₅₀ (Salmo gairdneri, Rainbow trout) no time specified = 0.17 mg/L; LC₅₀ (Lepomis machochirus, Blue gill) no time specified = 1.5 g, 884 ug/L at 18°C; LC₅₀ (Stripped Bass) 96 hours = 1 ppm or lower; LC₅₀ (Prawn) 48 hours = 0.14; LC₅₀ (Shrimp) 96 hours = 17.0 ppm copper; LC₅₀ (Blue Crab) 96 hours = 28 ppm copper; LC₅₀ (Oyster) 96 hours = 5.8 ppm copper; LC₅₀ (Viviparus bengalensis snail) 96 hours = 0.060 ppm copper (at 32.5°C; 0.066 ppm copper static bioassay); LC₅₀ (Viviparus bengalensis snail) 96 hours = 0.09 ppm copper (at 27.3°C; 0.066 ppm copper static bioassay); LC₅₀ (Viviparus bengalensis snail) 96 hours = 0.39 ppm copper (at 20.3°C; 0.066 ppm copper static bioassay)

Environmental Fate

If released to soil, copper sulfate may leach to groundwater, be partly oxidized or bind to humic materials, clay or hydrous of iron and manganese. In water, it will bind to carbonates as well as humic materials, clay and hydrous oxides of iron and manganese. Copper is accumulated by plants and animals, but it does not appear to biomagnify from plants to animals. In air, copper aerosols have a residence time or 2 to 10 days in an unpolluted atmosphere and 0.1 to greater than 4 days in polluted, urban areas.

Section 13. Disposal Considerations

US EPA Waste Number & Descriptions

A: General Product Information

This product is a registered pesticide.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions: All wastes must be handled in accordance with local, state and federal regulations or with regulations of Canada and its provinces. This material can be converted to a less hazardous material by weak reducing agents followed by neutralization.

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticides, spray mixtures, or rinsate is a violation of U.S. federal and Canadian Law. If these wastes cannot be

disposed of by use, according to product label instruction, contact the nearest U.S. EPA Regional Office, or the offices of Environment Canada for guidance.

Section 14. Transportation Information

NOTE: The data in this section is meant as a guide to the overall classification of the product. However, transportation classifications may be subject to change with changes in package size. Consult shipper requirements under I.M.O., I.C.A.O. (I.A.T.A.) and 49 CFR to assure regulatory compliance.

US DOT Information

Shipping Name: Environmentally Hazardous Substance, solid, n.o.s. (cupric sulfate)

Hazard Class: 9 (Miscellaneous Hazard Materials)

UN/NA #: UN 3077

Packing Group: III

Required Label(s): Class 9 (Miscellaneous Hazardous Materials)

RQ Quantity: 10 lbs (4.54 kg) [Cupric Sulfate]

Additional Shipping Information

In addition to this product being listed as a hazardous substance under DOT regulations if shipped at or above the reportable quantity of 10 pounds (4.54 kg), Cupric Sulfate is a Marine Pollutant (40 CFR 172.322) and requires the marine pollutant mark for vessel transportation.

United Parcel Service Shipping Information

Shipping Name: Environmentally hazardous substance, solid, n.o.s. (copper sulfate pentahydrate)

Alternate Shipping Name: Other regulated substances, solid, n.o.s. (copper sulfate pentahydrate) *must not be waste material.

Hazard Class: 9

UN/NA#: UN 3077

Packing Group: III

Ground Shipment Maximum Quantity: No maximum limit.

Required Label(s) Ground Shipments: Class 9 (Miscellaneous Hazardous Materials) The Limited quantities of Division 9 materials exception [49 CFR 173.155(b)] may be applicable to ground shipments of Copper Sulfate Pentahydrate if it is properly packaged. Hazard labels are still required for air shipments if this exception is met.

International Transport Regulations

Canadian Transport Canada Classification: Copper Sulphate Pentahydrate is considered as dangerous goods, use the above U.S. DOT information for the preparation of Canadian Shipments. When shipped for use as a copper-based pesticide, the following information is applicable:

Shipping name: Copper based pesticides, solid, toxic, n.o.s. (cupric sulphate)

Hazard Class: 6.1 (Toxic) [Primary Hazard]

9.2 (Substance Hazardous to the Environment) [Subsidiary Hazard]

UN/NA #: UN 2775

Packing Group: III

Required Label(s): 6.1 (Keep away from food)

I.M.O. Classification: Environmentally hazardous substance, solid, n.o.s., (copper sulphate, pentahydrate) 9, UN 3077, PG III, EmS No. None, MFAG Table No. None, (IMDG Code 9029), Stowage Category A. This material is considered a severe marine pollutant by the IMO and shipments of the material must carry the marine pollutant mark label. Refer to IMO regulation, 23 of the General Index for information on shipments of marine pollutants under IMO regulations.

Section 15. Regulatory information

US Federal Regulations

A: General Product Information

Copper Sulfate Pentahydrate (CAS # 7758-99-8) is listed as a Priority and Toxic Pollutant under the Clean Water Act.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and /or CERCLA (40 CFR 302.4).

Copper Compounds (7440-50-8)

SARA 313: final RQ= 5000 pounds (2270 kg) Note: No reporting of releases of this substance is required of the diameter of the pieces of the solid metal released is equal or greater than 0.004 inches.

Cupric Sulfate (7758-98-7)

CERCLA: final RQ = 10 pounds (4.54 kg)

State Regulation

A: General Product Information

California Proposition 65

Copper Sulfate Pentahydrate is not on the California Proposition 65 chemical lists.

B: Component Analysis- State

The following Components appear on one or more of the following state hazardous substance lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Copper	7440-50-8	Yes	No	Yes	No	Yes	Yes
Copper, fume, dust and mist		No	Yes	No	Yes	No	Yes
Cupric Sulfate	7758-98-7	No	No	No	No	Yes	Yes

Other Regulations

A: General Product Information

When used as a pesticide, the requirements of the U.S. Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), or requirements under the Canadian Pest Control Act, are applicable.

B: Component Analysis – Inventory

Component	CAS#	TSCA	DSL	EINECS
Copper Sulfate Pentahydrate	7758-99-8	Excepted	No	Yes

Although this compound is not on the TSCA Inventory, it is expected as a hydrate of a listed compound, Copper Sulfate (CAS # 7758-98-7), per 40 CFR 710.4 (d) (3) and 40 CFR 720.30 (h)(3). Under this section of TSCA, any chemical substance which is a hydrate of a listed compound is expected.

C: Component Analysis – WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS#	Minimum Concentration
Copper Sulfate Pentahydrate	7758-99-8	1 percent

ANSI Labeling (Z129.1):

WARNING! MAY BE FATAL IF SWALLOWED. CAUSES SKIN AND EYE IRRITATION. HARMFUL IF INHALED. Keep from contact with clothing. Do not taste or swallow. Do not get on skin or in eyes. Avoid breathing dusts or particulates. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Wear gloves, goggles, faceshields, suitable body protection, and NIOSH/MSHA-approved respiratory protection, as appropriate. **FIRST-AID:** In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If inhaled, remove to fresh air. If ingested, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, dry chemical, CO₂ or "alcohol" foam. **IN CASE OF SPILL:** Absorb spill with inert material. Place residue in suitable container. Consult Material Safety Data Sheet for additional information.

Labeling Information for Pesticide use of Product:

DANGER! HAZARD TO HUMANS AND DOMESTIC ANIMALS.

DANGER: CORROSIVE: Causes eye damage and irritation to the skin and mucous membrane. Harmful or fatal if swallowed. Do not get in eyes, on skin or on clothing. Do not breathe dust or spray mist. May cause skin sensitization reactions to certain individuals.

PERSONAL PROTECTIVE EQUIPMENT: Applicators and other handlers must wear long-sleeved shirt and long pants, chemical-resistant gloves, made of any water-proof material, shoes, plus socks and protective eyewear. Discard clothing and contaminated items. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for reusable items exist, wash using detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS: Persons using this product should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if contaminated by the pesticide. Wash contaminated clothing thoroughly and put on clean clothing. Remove PPE immediately after use with this product. Wash outside of gloves and other equipment before removing. After removal of PPE wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS: This product is toxic to fish. Direct application of Copper Sulfate to Water may cause a significant reduction in populations of aquatic invertebrates, plants and fish. Do not treat more than one-half of lake or pond at one time in order to avoid the depletion of oxygen from decaying vegetation. Allow one to two weeks between treatments for oxygen levels to recover. Trout and other species of fish may be killed at application rates recommended on this label, especially in soft or acid waters. However, fish toxicity generally decreases when the hardness of the water increases. Do not contaminate water by cleaning of equipment or disposal wastes. Consult local state fish and game agency before applying this product to public waters. Permits may be required before treating such waters.

STORAGE AND DISPOSAL: PROHIBITIONS: Do not contaminate water, food, or feed by storage or Disposal. Open burning and dumping is prohibited. Do not re-use empty containers. Keep pesticide in original container. Do not put concentrate or dilutions of concentrate in food or drink containers. 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 states pesticide or environmental control agency, or the hazardous waste representative at the nearest sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. If burned, avoid smoke.

DIRECTIONS FOR USE: It is a violation of Federal Law to use this product inconsistent with its labeling. Do not apply this product in a way that will contaminate workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For requirements specific to your state, consult the agency responsible for your pesticide regulations.

AGRICULTURAL USE REQUIREMENTS: Use this product only in accordance with its labeling and with the Worker Protection Standard, CFR Part 170. The standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. This standard contains requirements for the training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. These requirements only apply to uses of this product that are covered under the worker protection standard. Do not apply this product in a way that will contaminate workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. Do not allow worker entry into treated areas during the restricted interval (REI) of 24 hours. PPE required for early entry to treated areas that is permitted under the worker protection standard and that involves contact with anything that has been treated, such as plants, soil or water, is coveralls, waterproof gloves, shoes, plus socks and protective eyewear.

General Use Instructions: Water hardness, temperature of the water, the type and amount of vegetation to be controlled and the amount of water flow, are to be considered in using Copper Sulfate will be required to kill and control algae. Begin treatment soon after plant growth has started. If treatment is delayed until a large amount of algae is present, larger quantities of copper sulfate will be required to kill and control algae in water which is flowing than in a body of stagnant water. If possible, curtail the flow of water before treatment and hold dormant until approximately three days after treatment or until the algae have begun to die. When preparing a Copper Sulfate solution in water, the mixing container should be made of plastic or glass, or a painted, enameled, or copper-lined metal container. It is usually best to treat algae on a sunny day when the heavy mats of filamentary algae are most likely to be floating on the surface, allowing the solution to be sprayed directly on the algae. If there is some doubt about the concentration to apply, it is generally best to start out with a lower concentration and to increase this concentration until the algae is killed.

Endangered Species Restriction: It is a violation of Federal Law to use any pesticide in a manner that results in the death of an endangered species or adverse modification to their habitat. The use of this product may pose a hazard to certain Federally Designated species known to occur in specific areas. Contact the EPA for information on these areas. Obtain a copy of the EPA Bulletin specific to your area. This bulletin identifies areas within specific state counties where the use of this pesticide is prohibited, unless specified otherwise. The EPA Bulletin is available from either your County Agricultural Extension Agent, the Endangered species specialist in you state wildlife agency headquarters, or the appropriate regional office of the U.S. Fish and Wildlife Service. THIS MUST BE REVIEWED PRIOR TO PESTICIDE USE.

Section 16. Other information

Other Information:

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Key/Legend

EPA=Environmental Protection Agency; TSCA=Toxic Substance Control Act; ACGIH= American Conference of Governmental Industrial Hygienists; IARC= International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration

