

83190-2

04-26-2012

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

APR 26 2012

Ms Rebecca M. Horton
Agent for Blue Water Chem Group
C/O Registration by Design, Inc
P.O. Box 1019
Salem, VA 24153-1019

Subject: Product Name: Blue Water Copper Sulfate
EPA Reg. No. 83190-2
Submission date: 3/14/2012
Resubmission date: 4/26/2012
Label Amendment: Remove reference to terrestrial use language used
in the environmental hazards section for non commercial use and update CRP
certification
Decision Number 463089

Dear Registrant:

The amended label (version 4/26/12) referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act as amended is acceptable.

One copy of the label stamped "Accepted" is enclosed for your records. This label supersedes all labels previously accepted for this product. Please submit one copy of the final printed label before the product is released for shipment.

If you have questions concerning this letter, please contact Banza Djapao at 703-305-7269, or via email at djapao.banza@epa.gov, or myself at 703-308-9443.

Sincerely,

A handwritten signature in black ink that reads "Banza Djapao" followed by a stylized flourish.

Tony Kish
Product Manager, Team 22
Fungicide Branch
Registration Division (7504P)

[VERSION A – COMMERCIAL LABEL]

BLUE WATER COPPER SULFATE

ACTIVE INGREDIENT:

Copper Sulfate Pentahydrate (CAS #7758-99-8)	99.0%
OTHER INGREDIENTS:	<u>1.0%</u>
TOTAL	100.0%

Copper as metallic not less than 25%

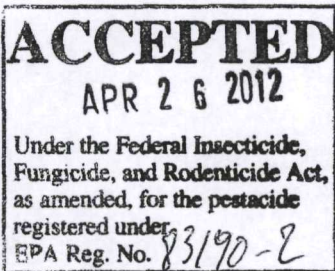
KEEP OUT OF REACH OF CHILDREN DANGER/PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

(See back/side/other panel(s)/attached pamphlet for instructions and additional Precautionary Statements.)

[DOT
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CUPRIC SULFATE), 9, UN3077, PGIII,
RQ]

[For California: ATTENTION: This product contains a chemical known to the State of California to cause cancer and birth defects.]



NET WEIGHT: xx LB (xx kg)

FIRST AID	
If in eyes:	<ul style="list-style-type: none"> · Hold eye open and rinse slowly and gently with water for 15-20 minutes. · Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. · Call a poison control center or doctor for treatment advice.
If swallowed:	<ul style="list-style-type: none"> · Call poison control center or doctor immediately for treatment advice. · Have person sip a glass of water if able to swallow. · Do not induce vomiting unless told to do so by the poison control center or doctor. · Do not give anything by mouth to an unconscious person.
If on skin or clothing:	<ul style="list-style-type: none"> · Take off contaminated clothing. · Rinse skin immediately with plenty of water for 15-20 minutes. · Call poison control center or doctor for treatment advice.
If inhaled:	<ul style="list-style-type: none"> · Move person to fresh air. · If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. · Call poison control center or doctor for further treatment advice.
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact the National Pesticide Information Center at 1-800-858-7378 for emergency medical information.</p>	
<p>Note to physician: Probable mucosal damage may contraindicate the use of gastric lavage.</p>	

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
DANGER-PELIGRO**

Corrosive. Causes irreversible eye damage. May be fatal if swallowed. Harmful if absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin.

For applications in waters destined for use as drinking water, those waters must receive additional and separate potable water treatment. Do not apply more than 1.0 ppm metallic copper in these waters.

PERSONAL PROTECTIVE EQUIPMENT

Mixers, loaders, applicators and other handlers must wear the following:

- long-sleeved shirt
- long pants
- shoes plus socks
- chemical-resistant gloves made of any waterproof material
- protective eyewear such as goggles, face shield or safety glasses

Some materials that are chemical-resistant to this product are polyvinyl chloride, nitrile rubber, or butyl rubber gloves. If you want more options, follow the instructions for Category A on an EPA chemical resistance category selection chart.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

USER SAFETY RECOMMENDATIONS

Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates. Waters treated with this product may be hazardous to aquatic organisms. Treatment of aquatic weeds and algae can result in oxygen loss from decomposition of dead algae and weeds. This oxygen loss can cause fish and invertebrate suffocation. To minimize this hazard, do not treat more than 1/2 of the water body to avoid depletion of oxygen due to decaying vegetation. Wait at least 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Consult with the State or local agency with primary responsibility for regulating pesticides before applying to public waters, to determine if a permit is required.

Certain water conditions including low pH (≤ 6.5), low dissolved organic carbon (DOC) levels (3.0 mg/L or lower), and "soft" waters (i.e., alkalinity less than 50 mg/L), increases the potential acute toxicity to non-target aquatic organisms.

[When packaged/labeled for Sewer Treatment—Root Destroyer only:

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates and may contaminate water through runoff. This product has a potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. Certain water conditions including low pH (≤ 6.5), low dissolved organic carbon (DOC) levels (3.0 mg/L or lower), and "soft" waters (i.e., alkalinity less than 50 mg/L), increases the potential acute toxicity to non-target aquatic organisms.]

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation. Do not allow others to enter the treated areas until dusts have settled.

Do not use in residential ornamental fish ponds or other artificial aquaculture systems containing Koi or trout.

SPRAY DRIFT MANAGEMENT

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and method of application (e.g., ground, aerial, airblast, chemigation) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

Wind Speed

Do not apply at wind speeds greater than 15 mph. Only apply this product if the wind direction favors on-target deposition (approximately 3 to 10 mph), and there are no sensitive areas within 250 feet downwind.

Temperature Inversions

If applying at wind speeds less than 3 mph, the applicator must determine if a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

Other State and Local Requirements

Applicators must follow all state and local pesticide drift requirements regarding application of copper compounds. Where states have more stringent regulations, they must be observed.

Equipment

All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

Additional requirements for aerial applications:

- The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.
- Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety.
- When applications are made with a crosswind, the swath must be displaced downwind. The applicator must compensate for this displacement at the up and downwind edge of the application area by adjusting the path of the aircraft upwind.

Additional requirements for ground boom application:

Do not apply with a nozzle height greater than 4 feet above the water.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses and handlers of agricultural pesticides. It contains requirements for 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. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry into 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, shoes plus socks, chemical-resistant gloves made of any waterproof material, and protective eyewear.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not enter or allow others to enter treated areas until dusts and sprays have settled.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited. Do not reuse empty container.

PESTICIDE STORAGE: Keep pesticide in original container. Do not put concentrate or dilutions of concentrate in food or drink containers.

PESTICIDE DISPOSAL: 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: Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration or, offer for recycling, if available, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

If Plastic Container [\leq 5 GAL]: Nonrefillable container. Do not reuse or refill this container. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container $\frac{1}{4}$ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, if available, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

If Plastic Container [$>$ 5 GAL] Nonrefillable container. Do not reuse or refill this container. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container $\frac{1}{4}$ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling or reconditioning, if available, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

INSTRUCTIONS FOR USE ALGAE CONTROL

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.

Water hardness, water temperature, the type and amount of vegetation to be controlled, and the amount of water flow must be considered in using Copper Sulfate to 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. Generally, larger quantities of Copper Sulfate will also be required to control algae growth when water temperatures are low (below 60°F), in hard water, and in water that is free flowing. If possible, curtail the flow of water before treatment and hold dormant for approximately three days after treatment, or until the algae have begun to die. For best results, treat algae on a sunny day when the heavy mats of filamentous algae are most likely to be floating on the surface, where it can be sprayed directly.

When in doubt about the concentration required for control, first use the lower concentration. If needed, gradually increase to the higher concentration until the algae are killed.

Minimum number of days between applications = 14 days.

CALCULATIONS FOR AMOUNT OF WATER AND AMOUNT OF COPPER SULFATE PENTAHYDRATE TO BE USED:

A. Calculate water volume as follows:

1. Obtain surface area by measuring regular shaped ponds or mapping irregular ponds or by use of previously recorded data or maps.
2. Calculate average depth by sounding in a regular pattern and taking the mean of these readings or by use of previously recorded data.
3. Multiply the surface area in square feet by average depth in feet to obtain cubic feet of water volume, or multiply surface area in acres by average depth in feet to obtain total acre feet of water volume.

B. Calculate weight of water to be treated as follows:

1. Multiply volume in cubic feet by 62.44 to obtain total pounds of water, or multiply volume in acre feet by 2,720,000 to obtain total pounds of water.

C. Calculate water flow in ditches, streams and irrigation systems:

1. The amount of water flow in cubic feet per second is found by means of a weir or other measuring device.

D. Calculate amount of Copper Sulfate to add:

1. To calculate the weight of Copper Sulfate needed to achieve the recommended concentration, multiply the weight of water in pounds by the recommended concentration of Copper Sulfate.
 - a. Since the recommended concentrations are given in parts per million (ppm) of product, first convert the value to a decimal equivalent. For example, a value of 1 ppm is equivalent to 0.000001 as a decimal value. Thus the amount of Copper Sulfate required to treat 1 acre-foot (2,720,000 pounds) of water with 1 ppm of Copper Sulfate would be: $0.000001 \times 2,720,000 = 2.72$ lbs. Copper Sulfate.

Useful formulas for calculating water volume flow rates: Multiply the water volume in cu. ft. times 7.5 to obtain gallons. Note: 1 C.F.S./hr. = 27,000 gal.; 1 acre ft. = 326,000 gal.

TO CONTROL ALGAE AND THE POTOMOGETON POND WEEDS (LEAFY AND SAGO) IN IRRIGATION SYSTEMS: Once the amount of Copper Sulfate required for treating ditches or streams has been calculated, use a continuous application method, selecting proper equipment to supply Copper Sulfate as follows:

FOR ALGAE CONTROL – Begin continuous addition of Copper Sulfate when water is first turned into the system and continue throughout the irrigation system, applying 0.1 to 0.2 lbs per hour per cubic ft per second for 12 hours of each 24 hours. Maximum application rate is 4 ppm copper sulfate (1 ppm metallic copper). Note: 4 ppm copper sulfate = 10.88 lbs copper sulfate/acre ft.

FOR LEAFY AND SAGO POND WEED CONTROL – Use the same continuous feeder, applying 0.5 to 0.9 lbs Copper Sulfate per hour per cubic foot per second for 12 hours of each 24 hours. Maximum application rate is 4 ppm copper sulfate (1 ppm metallic copper).

NOTE: For best control of leafy and sago pond weed, it is essential to begin Copper Sulfate additions when water is first turned into the system or ditch to be treated, and to continue throughout the irrigation system. Copper Sulfate becomes less effective as the alkalinity increases. Its effectiveness is significantly reduced when the bicarbonate alkalinity exceeds 150 ppm. Should Copper Sulfate fail to control pond weeds satisfactorily, it may be necessary to treat the ditch with either a suitable approved herbicide or use of a mechanical means to remove excess growth. In either case, resume Copper Sulfate addition as soon as possible.

TO CONTROL ALGAE IN IRRIGATION CONVEYANCE SYSTEMS USING THE SLUG APPLICATION METHOD: Make an addition (dump) of Copper Sulfate into the irrigation ditch or lateral at 0.25 to 2.0 pounds per cubic foot, per second of water, per treatment. Repeat at two-week intervals as required. Depending on water hardness, alkalinity and algae concentration, a dump is usually required every 5 to 30 miles. Effectiveness of Copper Sulfate decreases as the bicarbonate alkalinity increases and is significantly reduced when the alkalinity exceeds approximately 150 ppm as CaCO₃. Maximum application rate is 4 ppm copper sulfate (1 ppm metallic copper).

TO CONTROL ALGAE IN IMPOUNDED WATER, LAKES, PONDS, AND RESERVOIRS: There are several methods by which to apply Copper Sulfate to impounded water. Probably the simplest and most satisfactory method is to dissolve the Copper Sulfate in water and spray the solution over the body of the water. A small pump mounted in a boat can easily be used for this purpose. Another method is to broadcast the Copper sulfate granules directly on the water surface from a properly equipped boat. A specially equipped air blower can be used to discharge the product at a specific rate over the surface of the water. When using this method, the wind direction is an important factor. Do not use this method unless completely familiar with this type of application. Where the situation permits, a boat can be used to apply the product under the water by dragging burlap bags containing Copper Sulfate through the water. Begin treatment along the shoreline and proceed outward until one-third to one-half of the total area has been treated. Care should be taken that the course of the boat is such as to cause even distribution of the chemical. In large lakes, it is customary for the boat to travel in parallel lines about 20 to 100 feet apart. Continue dragging the burlap bags over the treated area until the minimum dosage is achieved and all granules have been dissolved. Large or medium sized Copper Sulfate granules should be used with this method since they dissolve slowly and evenly. Copper Sulfate can also be applied to impounded waters by injecting a copper sulfate solution in water via a piping system. **Note:** Maximum application rate is 4 ppm copper sulfate (1 ppm metallic copper). Minimum retreatment interval is 14 days.

COPPER SULFATE REQUIRED FOR TREATMENT OF DIFFERENT GENERA OF

ALGAE: The genera of algae listed below are commonly found in waters of the United States. Use the lower recommended rate in soft waters (less than 50 ppm methyl orange alkalinity) and higher concentration in hard waters (above 50 ppm alkalinity). Always consult State Fish and Game Agency before applying this product to municipal waters.

Concentrations of copper sulfate in water:

ORGANISM	¼ to ½ ppm*	½ to 1 ppm*	1 to 1½ ppm*	1½ to 2 ppm*
Cyanophyceae (Blue Green)	Anabaena	Cylindrospermum	Nostoc	Calothrix
	Anacystis	Oscillatoris	Phormidium	Symploca
	Aphanizomenon	Plectonema		
	Gloetrichia			
	Gomphosphaeria			
	Polycystis			
	Rivularia			
Chlorophyceae (Green)	Closterium	Botryococcus	Chlorella	Ankistrodesmus
	Hydrodictyon	Cladophora	Crucigenia	Chara
	Spirogyra	Coelastrum	Desmidium	Nitella
	Ulothrix	Draparnaldia	Golenkinia	Scenedesmus
		Enteromorpha	Oocystis	
		Gloeocystis	Palmella	
		Microspora	Pithophora	
		Tribonema	Staurastrum	
		Zygnema	Tetraedron	
Diatomaceae (Diatoms)	Asterionella	Gomphonema	Achnanthes	
	Fragilaria	Nitzschia	Cymbella	
	Melosira	Stephanodiscus	Neidium	
	Navicula	Synedra		
		Tabellaria		
Protozoa (Flagellates)	Dinobryon	Ceratium	Chlamydomonas	Eudorina
	Synura	Cryptomonas	Hawmatococcus	Pandorina
	Uroglena	Euglena	Peridinium	
	Volvox	Glenodinium		
		Mallomonas		

* Copper sulfate ppm (Cu metallic ppm) = lbs/acre ft
 0.25 - 0.5 ppm (0.0625 - 0.125 ppm) = 0.68 - 1.36 lbs/acre ft.
 0.5 - 1.0 ppm (0.125 - 0.25 ppm) = 1.36 - 2.72 lbs/acre ft
 1.0 - 1.5 ppm (0.25 - 0.375 ppm) = 2.72 - 4.08 lbs/acre ft
 1.5 - 2.0 ppm (0.375 - 0.50 ppm) = 4.08 - 5.44 lbs/acre ft

CONTROL OF ALGAE & BACTERIAL ODOR IN SEWAGE LAGOONS AND PITS

(except California): Application rates may vary depending on amount of organic matter in effluent system or retention ponds. Use 2 lb. of Copper Sulfate in 60,000 gal. (8,000 cu. ft.) of effluent to yield 1 ppm of dissolved copper. Dosage levels may vary depending upon organic load. Other Organic Sludge: Copper Sulfate solution must be thoroughly mixed with sludge. Dissolve 2 lb. in 1-2 gal. of water and apply to each 60,000 gals of sludge. Maximum application rate is 4 ppm copper sulfate (1 ppm metallic copper). Minimum retreatment interval is 14 days.

CONTROL OF ALGAE IN RICE (Domestic and Wild) FIELDS: Application should be made when algae have formed on the soil surface in the flooded field. Applications are most effective at the first sign of algae after the field has been flooded and prior to the algae's leaving the soil surface and rising to the water surface. Apply to the water surface as either crystals or dissolve in water and make a surface spray. For a 3-inch flood depth, apply Copper Sulfate Crystals at a rate of 2.72 lbs per acre. Likewise, for a 6- inch flood depth, use 5.44 lbs per acre. Adjust the rate according to average water depth, not to exceed the maximum application rate of 4 ppm copper sulfate (1 ppm metallic copper), which is equivalent to 10.88 lbs copper sulfate / acre foot of water.

CONTROL OF TADPOLE SHRIMP IN RICE FIELDS: Tadpole shrimp in rice fields may be effectively controlled by the prompt and proper use of Copper Sulfate Crystals. After the rice field has been flooded, Copper Sulfate Crystals should be uniformly applied at the first sign of infestation. For a 3-inch flood depth, apply 6.8 lbs per acre. For a flood depth of 6 inches, use 13.6 lbs per acre. Adjust the rate according to average water depth, not to exceed the maximum application rate of 10 ppm copper sulfate (2.5 ppm metallic copper), which is equivalent to 27.2 lbs copper sulfate / acre foot of water.

SEWER TREATMENT – ROOT DESTROYER

State law prohibits the use of this product in sewage systems in the State of Connecticut and in the following counties of California: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano and Sonoma. Not for sale or use in septic systems in the state of Florida.

Plant roots can penetrate through small cracks and poorly sealed joints of sewer lines. If not controlled, these small roots will continue to grow larger in number causing breakage, reduced flow, and eventual flow stoppage. Copper Sulfate is an effective means to control roots in residential and commercial sewers.

Do not apply Copper Sulfate through sink or tub drains, as it will corrode the metal drains. Copper Sulfate added to an active 300 gallon septic tank at up to 2 lb. per treatment will temporarily reduce bacterial action, but it will return to normal approximately 15 days after treatment. Trees and shrubbery growing near a treated line normally are not affected due to only a small portion of their roots being in contact with the Copper Sulfate; only those roots inside the leach line are killed.

COMMERCIAL, INSTITUTIONAL & MUNICIPAL USE:

- A. Root Control in Sewers: As a preventive measure and at times of reduced flow (some water flow is essential), apply up to 2 lb. of Copper Sulfate into each junction or terminal manhole every 6-12 months. For reduced flow due to root masses, add Copper Sulfate in the next manhole above the reduced flow area. For complete stoppage, first penetrate the mass with a rod to enable some flow before treatment.
- B. Root Control in Storm Drains: Apply when water flow is light. If no water flow, as in dry weather, use a hose to produce a flow. Apply up to 2 lb. of Copper Sulfate per drain, every 6-12 months.

- C. Sewer Pumps and Force Mains: At the storage well inlet, place a cloth bag containing up to 2 lb. of Copper Sulfate every 6-12 months.

RESIDENTIAL OR HOUSEHOLD USE:

- A. Root Control in Sewer Systems: It is important to treat with Copper Sulfate when reduced flow is first noticed and root growth is thought to be the cause. Do not wait until complete stoppage occurs; some flow is necessary to move the Copper Sulfate to the area of root growth. After roots have accumulated sufficient Copper Sulfate (usually 3-4 weeks), the roots will die and begin to decay, and water flow should increase. Follow-up treatments with Copper Sulfate will be required for regrowth of roots. Apply up to 2 lb. Copper Sulfate two times per year – in the spring after plant growth begins and during late summer or early fall – or anytime a reduced water flow thought to be caused by root growth occurs. Using one-half pound increments, pour Copper Sulfate into the toilet bowl nearest the sewer line and flush; repeat this process until the recommended dose has been added. Or, remove cleanout plug and pour entire recommended amount directly into the sewer line; replace plug and flush the toilet several times.
- B. Roots Control in Septic Tanks, Leach Lines & Leach Line Pipes: The majority of the Copper Sulfate will settle in the septic tank itself, and little will pass into the leach lines. To treat leach line pipes, add up to 2 lb. of Copper Sulfate to the distribution box located between the septic tank and the leach lines. To achieve effective root control in the leach lines, it is necessary to transfer Copper Sulfate from the septic tank to the leach lines. A cleanout plus opening may need to be installed if the distribution box does not have an opening leading to the leach lines.

***NOTE:** Do not apply Copper Sulfate Crystals through sink or tub drains as it will corrode the metal drains.

***NOTE:** Copper sulfate added to an active 300 gallon septic tank at 2 pounds per treatment will temporarily reduce bacterial action, but it will return to normal approximately 15 days after treatment. Trees and shrubbery growing near a treated line normally are not affected due to only a small portion of their roots being in contact with the copper sulfate. The copper sulfate kills only those roots inside the leach line.

***NOTE:** Do not use as a sewer additive where prohibited by State law. State law prohibits the use of this product in sewage systems in the State of Connecticut. Not for sale or use in the California counties of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma for root control in sewers. Not for sale or use in septic systems in the States of Florida and Massachusetts.

***NOTE:** For all sewer line treatment applications do not use more than 2 lbs copper sulfate (0.5 lbs. metallic copper) per application. Minimum retreatment interval is 6 months. Make no more than two applications per calendar year. Do not exceed 8 lbs copper sulfate (2 lbs metallic copper) per year.

SCHISTOSOME-INFECTED FRESH WATER SNAILS:

For recreational lakes, reservoirs and ponds 5.32-13.3 lb/acre-ft. Copper Sulfate (i.e., 2-5 ppm copper sulfate) is usually sufficient for treatment of Schistosome-infected fresh water snails. Use surface area in acres multiplied by average depth in feet to determine water volume and application rate. Apply only along shoreline swimming areas and/or to infected snail beds on calm sunny day when water temperature is at least 60°F. Do not allow swimming for at least 12 hours following treatment. If this higher dosage is used, do not allow swimming for 48 hours after treatment. With either dosage, a second application may be made if necessary, 10 to 14 days later. DO NOT make more than 2 applications a season. Broadcast application using boat, aircraft, or hand equipment with power or hand seeder or underwater dispenser. Do not exceed 1 ppm copper (4 ppm copper sulfate) in water destined for drinking water sources. This labeling must be in the possession of the user at the time of application.

[For New York: For use in recreational lakes, reservoirs and ponds ONLY in areas where infected snail beds have been identified. Apply medium grade crystals by hand broadcast method of application only. This product is a restricted use pesticide in New York State. Pesticide applicator certification or a special use permit is required for sale, possession or use. Each individual treatment must be approved by the Dept. of Environmental Conservation. Therefore, you must contact the Pesticide Control Specialist at the appropriate regional office of the Department 30 days in advance of the proposed treatment.]

WARRANTY

Read and follow all package directions carefully. To the extent consistent with applicable law, purchaser and user assume all risks associated with improper use, or application or other factors beyond Blue Water Chem Group's control. Blue Water Chem Group warrants that this product conforms to the chemical description on the label and is reasonably fit for the purpose referred to in the directions for use subject to the risks referred to above. To the extent consistent with applicable law, BLUE WATER CHEM GROUP MAKES NO AND THE LAW SHALL NOT FIND ANY EXPRESSED OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. To the extent consistent with applicable law, purchaser's and user's sole remedy against Blue Water Chem Group for any cause of action related to the handling or use of this product shall be for damages, the amount of which shall not exceed the price paid for the product that causes the alleged loss, damages, injury or other claim. To the extent consistent with applicable law, in no event shall Blue Water Chem Group be liable for special indirect, incidental or consequential damages or expenses.

By purchasing or using this product purchaser or user accept the foregoing conditions of sale and limitation of warranty, liability and remedies.

Blue Water Chem Group
P.O. Box 11384
Fort Wayne, IN 46857

[Batch Code inserted at production]

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[VERSION B – NON-COMMERCIAL LABEL]

BLUE WATER COPPER SULFATE

Optional Marketing Statements:

Don't Let Tree Roots Destroy Your Septic/Sewer

ACTIVE INGREDIENT:

Copper Sulfate Pentahydrate (CAS #7758-99-8) 99.0%

OTHER INGREDIENTS: 1.0%

TOTAL..... 100.0%

Copper as metallic not less than 25%

KEEP OUT OF REACH OF CHILDREN DANGER/PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

(See back/side/other panel(s)/attached pamphlet for instructions and additional Precautionary Statements.)

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ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CUPRIC SULFATE), 9, UN3077,
PGIII, RQ]

[For California: ATTENTION: This product contains a chemical known to the State of California to cause cancer and birth defects.]

NET WEIGHT: xx LB (xx k)

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FIRST AID	
If in eyes:	<ul style="list-style-type: none"> · Hold eye open and rinse slowly and gently with water for 15-20 minutes. · Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. · Call a poison control center or doctor for treatment advice.
If swallowed:	<ul style="list-style-type: none"> · Call poison control center or doctor immediately for treatment advice. · Have person sip a glass of water if able to swallow. · Do not induce vomiting unless told to do so by the poison control center or doctor. · Do not give anything by mouth to an unconscious person.
If on skin or clothing:	<ul style="list-style-type: none"> · Take off contaminated clothing. · Rinse skin immediately with plenty of water for 15-20 minutes. · Call poison control center or doctor for treatment advice.
If inhaled:	<ul style="list-style-type: none"> · Move person to fresh air. · If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. · Call poison control center or doctor for further treatment advice.
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact the National Pesticide Information Center at 1-800-858-7378 for emergency medical information.</p>	

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
DANGER-PELIGRO**

Corrosive. Causes irreversible eye damage. May be fatal if swallowed. Harmful if absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin.

For applications in waters destined for use as drinking water, those waters must receive additional and separate potable water treatment. Do not apply more than 1.0 ppm metallic copper in these waters.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear the following:

- long-sleeved shirt
- long pants
- shoes plus socks
- chemical-resistant gloves made of any waterproof material
- protective eyewear such as goggles, face shield or safety glasses

Some materials that are chemical-resistant to this product are polyvinyl chloride, nitrile rubber, or butyl rubber gloves. If you want more options, follow the instructions for Category A on an EPA chemical resistance category selection chart.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

USER SAFETY RECOMMENDATIONS

Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates. Waters treated with this product may be hazardous to aquatic organisms. Treatment of aquatic weeds and algae can result in oxygen loss from decomposition of dead algae and weeds. This oxygen loss can cause fish and invertebrate suffocation. To minimize this hazard, do not treat more than 1/2 of the water body to avoid depletion of oxygen due to decaying vegetation. Wait at least 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Consult with the State or local agency with primary responsibility for regulating pesticides before applying to public waters, to determine if a permit is required.

Certain water conditions including low pH (≤ 6.5), low dissolved organic carbon (DOC) levels (3.0 mg/L or lower), and "soft" waters (i.e., alkalinity less than 50 mg/L), increases the potential acute toxicity to non-target aquatic organisms.

[When packaged/labeled for Sewer Treatment—Root Destroyer only:

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates and may contaminate water through runoff. This product has a potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. Certain water conditions including low pH (≤ 6.5), low dissolved organic carbon (DOC) levels (3.0 mg/L or lower), and "soft" waters (i.e., alkalinity less than 50 mg/L), increases the potential acute toxicity to non-target aquatic organisms.]

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact adults, children or pets, either directly or through drift. Do not allow adults, children, or pets to enter the treated area until dusts have settled.

General Precautions and Restrictions: Do not enter or allow adults, children or pets to enter treated areas until dusts have settled.

Do not use in residential ornamental fish ponds or other artificial aquaculture systems containing Koi or trout.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: Store in original container and place in a locked storage area.

PESTICIDE DISPOSAL: Call your local solid waste agency for disposal instructions. Unless otherwise instructed, place in the trash. Never pour unused product down the drain or on the ground.

CONTAINER DISPOSAL: *If empty* – Nonrefillable container. Do not reuse or refill this container. Do not rinse unless required for recycling. Place in trash or offer for recycling if available. *If partly filled* – Call your local solid waste agency for disposal instructions. Unless otherwise instructed, place in the trash. Never pour unused product down the drain or on the ground.

**GENERAL INSTRUCTIONS FOR USE
ALGAE CONTROL**

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.

Water hardness, water temperature, the type and amount of vegetation to be controlled, and the amount of water flow must be considered in using Copper Sulfate to 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. Generally, larger quantities of Copper Sulfate will also be required to control algae growth when water temperatures are low (below 60°F), in hard water, and in water that is free flowing. If possible, curtail the flow of water before treatment and hold dormant for approximately three days after treatment, or until the algae have begun to die. For best results, treat algae on a sunny day when the heavy mats of filamentous algae are most likely to be floating on the surface, where it can be sprayed directly. When in doubt about the concentration required for control, first use the lower concentration. If needed, gradually increase to the higher concentration until the algae are killed.

Treatment of algae can result in oxygen loss from decomposition of dead algae. This loss can cause fish suffocation. To minimize this hazard, treat one-third to one-half of the water area in a single operation and wait 14 days between treatments. Begin treatments along the shore and proceed outward in bands to allow fish to move into untreated water.

NOTE: If treated water is to be used as a source of potable water, the metallic copper residual must not exceed 1ppm (4 ppm copper sulfate pentahydrate).

Minimum number of days between applications = 14 days.

CALCULATIONS FOR AMOUNT OF WATER AND AMOUNT OF COPPER SULFATE PENTAHYDRATE TO BE USED:

A. Calculate water volume as follows:

1. Obtain surface area by measuring regular shaped ponds or mapping irregular ponds or by use of previously recorded data or maps.
2. Calculate average depth by sounding in a regular pattern and taking the mean of these readings or by use of previously recorded data.
3. Multiply the surface area in square feet by average depth in feet to obtain cubic feet of water volume, or multiply surface area in acres by average depth in feet to obtain total acre feet of water volume.

B. Calculate weight of water to be treated as follows:

1. Multiply volume in cubic feet by 62.44 to obtain total pounds of water, or multiply volume in acre feet by 2,720,000 to obtain total pounds of water.

C. Calculate water flow in ditches, streams and irrigation systems:

2. The amount of water flow in cubic feet per second is found by means of a weir or other measuring device.

D. Calculate amount of Copper Sulfate to add:

1. To calculate the weight of Copper Sulfate needed to achieve the recommended concentration, multiply the weight of water in pounds by the recommended concentration of Copper Sulfate.
 - a. Since the recommended concentrations are given in parts per million (ppm) of product, first convert the value to a decimal equivalent. For example, a value of 1 ppm is equivalent to 0.000001 as a decimal value. Thus the amount of Copper Sulfate required to treat 1 acre-foot (2,720,000 pounds) of water with 1 ppm of Copper Sulfate would be: $0.000001 \times 2,720,000 = 2.72$ lbs. Copper Sulfate.

Useful formulas for calculating water volume flow rates: Multiply the water volume in cu. ft. times 7.5 to obtain gallons. Note: 1 C.F.S./hr. = 27,000 gal.; 1 acre ft. = 326,000 gal.

TO CONTROL ALGAE IN IMPOUNDED WATER AND PONDS: There are several methods by which to apply Copper Sulfate to impounded water. Probably the simplest and most satisfactory method is to dissolve the Copper Sulfate in water and spray the solution over the body of the water. A small pump mounted in a boat can easily be used for this purpose. Another method is to broadcast the Copper sulfate granules directly on the water surface from a properly equipped boat. A specially equipped air blower can be used to discharge the product at a specific rate over the surface of the water. When using this method, the wind direction is an important factor. Do not use this method unless completely familiar with this type of application. Where the situation permits, a boat can be used to apply the product under the water by dragging burlap bags containing Copper Sulfate through the water. Begin treatment along the shoreline and proceed outward until one-third to one-half of the total area has been treated. Care should be taken that the course of the boat is such as to cause even distribution of the chemical. In large ponds, it is customary for the boat to travel in parallel lines about 20 to 100 feet apart. Continue dragging the burlap bags over the treated area until the minimum dosage is achieved and all

granules have been dissolved. Large or medium sized Copper Sulfate granules should be used with this method since they dissolve slowly and evenly. Copper Sulfate can also be applied to impounded waters by injecting a copper sulfate solution in water via a piping system.

COPPER SULFATE REQUIRED FOR TREATMENT OF DIFFERENT GENERA OF ALGAE: The genera of algae listed below are commonly found in waters of the United States. Use the lower recommended rate in soft waters (less than 50 ppm methyl orange alkalinity) and higher concentration in hard waters (above 50 ppm alkalinity). Always consult State Fish and Game Agency before applying this product to municipal waters.

Concentrations of copper sulfate in water:

ORGANISM	¼ to ½ ppm*	½ to 1 ppm*	1 to 1½ ppm*	1½ to 2 ppm*
Cyanophyceae (Blue Green)	Anabaena	Cylindrospermum	Nostoc	Calothrix
	Anacystis	Oscillatoris	Phormidium	Symploca
	Aphanizomenon	Plectonema		
	Gloeotrichia			
	Gomphosphaeria			
	Polycystis			
	Rivularia			
Chlorophyceae (Green)	Closterium	Botryococcus	Chlorella	Ankistrodesmus
	Hydrodictyon	Cladophora	Crucigenia	Chara
	Spirogyra	Coelastrum	Desmidium	Nitella
	Ulothrix	Draparnaldia	Golenkinia	Scenedesmus
		Enteromorpha	Oocystis	
		Gloeocystis	Palmella	
		Microspora	Pithophora	
		Tribonema	Staurastrum	
		Zygnema	Tetraedron	
Diatomaceae (Diatoms)	Asterionella	Gomphonema	Achnanthes	
	Fragilaria	Nitzschia	Cymbella	
	Melosira	Stephanodiscus	Neidium	
	Navicula	Synedra		
	Tabellaria			
Protozoa (Flagellates)	Dinobryon	Ceratium	Chlamydomonas	Eudorina
	Synura	Cryptomonas	Hawmatococcus	Pandorina
	Uroglena	Euglena	Peridinium	
	Volvox	Glenodinium		
		Mallomonas		

* Copper sulfate ppm (Cu metallic ppm) = lbs/acre ft
 0.25 - 0.5 ppm (0.0625 - 0.125 ppm) = 0.68 - 1.36 lbs/acre ft.
 0.5 - 1.0 ppm (0.125 - 0.25 ppm) = 1.36 - 2.72 lbs/acre ft
 1.0 - 1.5 ppm (0.25 - 0.375 ppm) = 2.72 - 4.08 lbs/acre ft
 1.5 - 2.0 ppm (0.375 - 0.50 ppm) = 4.08 - 5.44 lbs/acre ft

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SEWER TREATMENT – ROOT DESTROYER

State law prohibits the use of this product in sewage systems in the State of Connecticut and in the following counties of California: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano and Sonoma. Not for sale or use in septic systems in the state of Florida.

Plant roots can penetrate through small cracks and poorly sealed joints of sewer lines. If not controlled, these small roots will continue to grow larger in number causing breakage, reduced flow, and eventual flow stoppage. Copper Sulfate is an effective means to control roots in residential and commercial sewers.

Do not apply Copper Sulfate through sink or tub drains, as it will corrode the metal drains. Copper Sulfate added to an active 300 gallon septic tank at up to 2 lb. per treatment will temporarily reduce bacterial action, but it will return to normal approximately 15 days after treatment. Trees and shrubbery growing near a treated line normally are not affected due to only a small portion of their roots being in contact with the Copper Sulfate; only those roots inside the leach line are killed.

RESIDENTIAL OR HOUSEHOLD USE:

- A. Root Control in Sewer Systems: It is important to treat with Copper Sulfate when reduced flow is first noticed and root growth is thought to be the cause. Do not wait until complete stoppage occurs; some flow is necessary to move the Copper Sulfate to the area of root growth. After roots have accumulated sufficient Copper Sulfate (usually 3-4 weeks), the roots will die and begin to decay, and water flow should increase. Follow-up treatments with Copper Sulfate will be required for regrowth of roots. Apply up to 2 lb. Copper Sulfate two times per year – in the spring after plant growth begins and during late summer or early fall – or anytime a reduced water flow thought to be caused by root growth occurs. Using one-half pound increments, pour Copper Sulfate into the toilet bowl nearest the sewer line and flush; repeat this process until the recommended dose has been added. Or, remove cleanout plug and pour entire recommended amount directly into the sewer line; replace plug and flush the toilet several times.
- B. Roots Control in Septic Tanks, Leach Lines & Leach Line Pipes: The majority of the Copper Sulfate will settle in the septic tank itself, and little will pass into the leach lines. To treat leach line pipes, add up to 2 lb. of Copper Sulfate to the distribution box located between the septic tank and the leach lines. To achieve effective root control in the leach lines, it is necessary to transfer Copper Sulfate from the septic tank to the leach lines. A cleanout plus opening may need to be installed if the distribution box does not have an opening leading to the leach lines.

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WARRANTY

Read and follow all package directions carefully. To the extent consistent with applicable law, purchaser and user assume all risks associated with improper use, or application or other factors beyond Blue Water Chem Group's control. Blue Water Chem Group warrants that this product conforms to the chemical description on the label and is reasonably fit for the purpose referred to in the directions for use subject to the risks referred to above. To the extent consistent with applicable law, BLUE WATER CHEM GROUP MAKES NO AND THE LAW SHALL NOT FIND ANY EXPRESSED OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. To the extent consistent with applicable law, purchaser's and user's sole remedy against Blue Water Chem Group for any cause of action related to the handling or use of this product shall be for damages, the amount of which shall not exceed the price paid for the product that causes the alleged loss, damages, injury or other claim. To the extent consistent with applicable law, in no event shall Blue Water Chem Group be liable for special indirect, incidental or consequential damages or expenses. By purchasing or using this product purchaser or user accept the foregoing conditions of sale and limitation of warranty, liability and remedies.

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Batch Code inserted at production