



Copper Sulfate

Smart Crystals

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 attached booklet for additional Precautionary Statements and complete Directions for Use.

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%
 EPA Reg. No. 83190-2-72838
 EPA Est. No. 72838-IN-003

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.

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.

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

Distributed by
 SANCO INDUSTRIES, INC.
 P.O. Box 11617
 FORT WAYNE, IN 46859 USA
www.sancoind.com



NET WT. 5LB. (2.27KG)

Crystal Blue Copper Sulfate Smart Crystals

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(See inside for instructions and additional Precautionary Statements.)

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**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 ½ 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.

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 this product 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 this product will be required. Generally, larger quantities of this product 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:

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 this product to add:

1. To calculate the weight of this product 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 this product required to treat 1 acre-foot (2,720,000 pounds) of water with 1 ppm of this product would be: $0.000001 \times 2,720,000 = 2.72$ lbs. of this product.

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 this product to impounded water. Probably the simplest and most satisfactory method is to dissolve the product 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 this product 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. This product 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	Perdinium	
	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

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. This product is an effective means to control roots in residential and commercial sewers.

Do not apply this product through sink or tub drains, as it will corrode the metal drains. This product 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 this product; 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 this product 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 this product to the area of root growth. After roots have accumulated sufficient product (usually 3-4 weeks), the roots will die and begin to decay, and water flow should increase. Follow-up treatments with this product will be required for regrowth of roots. Apply up to 2 lb. of this product 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 this product 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 this product 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 this product 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 this product 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.

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 Sanco Industries control. Sanco Industries 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, **SANCO INDUSTRIES 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 Sanco Industries 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 Sanco Industries 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.

Sanco Industries, Inc.
P.O. Box 11617
Fort Wayne, IN 46859

Base



Copper Sulfate

Smart Crystals

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