

WESLEY COPPER SULFATE

LARGE CRYSTALS

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

STORAGE AND DISPOSAL

Store in a cool, dry place. Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited. Do not reuse empty container. If container is damaged, place contents in a plastic bag. Show any spill into plastic bag and seal with tape. Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or waste 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 of the nearest EPA Regional Office for guidance.

Container disposal: Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by State and local authorities.

FOR CONTROL OF ALGAE AND POTAMOGETON POND WEEDS IN IMPOUNDED WATERS, LAKES, PONDS, RESERVOIRS AND IRRIGATION SYSTEMS.

GENERAL INSTRUCTIONS

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

When using Copper Sulfate Pentahydrate to control algae, there are many factors to consider such as water hardness, temperature of the water, type and quantity of algae, time to be controlled and the amount of water flow. Algae can be controlled more easily and effectively if treatment with Copper Sulfate is made soon after plant growth has started. Under such circumstances, small amounts of Copper Sulfate can effectively control algae in water. However, if treatment is delayed until large amounts of algae are present, larger quantities of Copper Sulfate will be required. Control of algae in water systems is not always permanent. Usually algae is more difficult to control with Copper Sulfate when water temperatures are low. The dose rates for Copper Sulfate are based on a water temperature of 60°F. or higher. Larger quantities of Copper Sulfate will be required in hard water. Normally, larger quantities of Copper Sulfate will be required to kill algae in water that is flowing than in a body of stagnant water. If possible, curtail the flow of water before treatment and hold dormant for about three days after treatment or until plants have begun to die. When preparing a Copper Sulfate solution in water, it is best that the mixing vessel be made of plastic or glass. Metal containers lined with plastic or painted or enameled are permissible. Galvanized containers are to be avoided. It is usually best to treat algae on calm sunny days when heavy mats of filamentary algae are most likely to be floating on the surface where it can be sprayed directly. When in doubt about the concentration to be used, it is recommended to start with a lower concentration and gradually increase the concentration until the algae is killed.

Copper Sulfate Pentahydrate crystals are also designed to be used as a dry application from airplanes, using a maximum of 5.3 pounds per acre. Where the situation permits, Copper Sulfate may be applied under the water by dragging burlap bags containing Copper Sulfate. The crystals are placed in burlap bags and dragged through the water by means of a boat. Begin treatment along the shoreline and proceed outwards until one-third to one-half of the total area has been treated. Care should be taken that the source 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 crystals have been dissolved. Copper Sulfate Large Crystals or Small Crystals should be used with this method since they dissolve slowly and evenly.

CALCULATIONS FOR AMOUNT OF WATER AND 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 surface area in square feet by average depth in feet to obtain cubic feet of water volume, or
4. 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
2. Multiply volume in acre feet by 2,720,000 to obtain total pounds of water.

C. Calculate amount of Copper Sulfate Pentahydrate to add:

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

D. To calculate water flow in ditches, streams and irrigation systems:

A weir or other measuring device should be used to determine the amount of water in cubic feet per second.

Treatment of algae can result in oxygen loss from decomposition of dead algae. This loss can cause fish suffocation. Therefore to minimize this hazard, treat 1/3 to 1/2 of the water area in a single operation and wait 7 to 14 days between treatments. Begin treatments along the shore and proceed outwards 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 1 ppm (4 ppm Copper Sulfate Pentahydrate).

SPECIFIC INSTRUCTIONS

TO CONTROL ALGAE AND THE POTAMOGETON 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 granular crystals as follows.

FOR ALGAE CONTROL:—Begin continuous addition of granular Copper Sulfate when water is first turned into the system and continue throughout the irrigation system, applying 0.1 to 0.2 pounds per cubic foot per second per day.

FOR LEAFY AND SAGO POND WEED CONTROL:—Use the same continuous feeder, applying 1.6 to 2.4 pounds Copper Sulfate Pentahydrate per cubic foot per second per day.

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 through 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 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 lbs per cubic foot per second of water per treatment. Repeat at approximately ten water intervals as required. Depending on water hardness, alkalinity and algae concentration, a dump is usually required every 5 to 30 days. Effectiveness of Copper Sulfate decreases as the bicarbonate alkalinity increases and is significantly reduced when the alkalinity exceeds approximately 150 ppm as CaCO₃.

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 crystals in water and to spray this solution over the body of water. A small pump mounted in the boat can easily be used for this purpose. For crystals may be broadcast directly on the water surface from a properly equipped boat.

Copper Sulfate Ag Crystals, Food Grade or Powder can be used to discharge these crystals 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.

Copper Sulfate Ag Crystals and Granular grades are also designed to be used as a dry application from airplanes, using a maximum of 5.3 pounds per acre. Where the situation permits, Copper Sulfate may be applied under the water by dragging burlap bags containing Copper Sulfate.

The crystals are placed in burlap bags and dragged through the water by means of a boat. Begin treatment along the shoreline and proceed outwards until one-third to one-half of the total area has been treated. Care should be taken that the source 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 crystals have been dissolved. Copper Sulfate Large Crystals or Small Crystals should be used with this method since they dissolve slowly and evenly.

TO CONTROL ALGAE IN RICE FIELDS (Domestic and Wild): Application should be made when algae has formed on the soil surface in the flooded field. Applications are most effective when made prior to the algae's leaving the soil surface and rising to the water surface. Apply 10-15 pounds Copper Sulfate Pentahydrate to the water surface or dissolve in water and make a surface spray. Apply higher rate in deeper water (6 inches or greater).

TO CONTROL TADPOLE SHRIMP IN RICE FIELDS (Domestic and Wild): Application should be made to the flooded fields any time the pup appears from planting time until the seedlings are well rooted and have emerged through the water. Apply 5-10 pounds Copper Sulfate Pentahydrate crystals per acre. The use rate per acre should be determined by the water depth and flow. Use the lower rate at minimum flow and water depth and the higher rate when water depth and flow are maximum.

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 the higher concentration in hard water (above 50 ppm alkalinity). Always consult State Fish and Game Agency before applying this product to municipal waters.

ORGANISM	1/2 to 1 ppm*	1 to 1 ppm*	1 to 1 1/2 ppm*	1 1/2 to 2 ppm*
Cyanophyceae (Blue Green)	Anabaena Aphanizomenon Glebochloa Gomphosphaera Polychoeta Pseudocapsa	Cylindrocapsa Oscillatoria Plectononema	Phormidium	Colethema Synedra
Chlorophyceae (Green)	Chlorella Hydrocoleum Spirulina (Lithothamnion)	Botryococcus Chlorella Coelastrum Diatoma Emersonella Glebochloa Microcystis Trichocapsa Zygnema	Chlorella Cruciger Desmodium Golenista Oocystis Pinnularia Pinnularia Tetradium	Arthrospira Chlorella Mastigella Scenedesmus
Diatomeae (Diatoms)	Achnanthes Fragilaria Melosira Navicula	Gomphonema Nitzschia Stephanodiscus Synedra Tabellaria	Achnanthes Cymella Nitzschia	
Protophytes (Flagellates)	Dinobryon Synura Uroglena Volvox	Ceratium Cryptomonas Euglena Glenodinium Metanema	Chlamydomonas Heterosigma Pantodon	Euglena Pantodon

* 1/2 - 1 ppm - 67 - 13.33 lbs/acre ft. 1 - 1 ppm - 13.33 - 26.66 lbs/acre ft. 1 1/2 - 1 1/2 ppm - 26.66 - 39.99 lbs/acre ft. 2 - 2 ppm - 39.99 - 53.32 lbs/acre ft.

— WARRANTY — CONDITION OF SALE

DIRECTIONS FOR USE of this product are based on field use and tests believed reliable and should be followed carefully. It is, however, impossible to eliminate all risks associated with use of this product. Because such factors as weather conditions, foreign material and manner of use for application are all beyond the control of Wesley Industries, Inc., or the Seller of this product, such things as crop injury, ineffectiveness or other unintended consequences may result.

ALL SUCH RISKS ARE ASSUMED BY THE BUYER.

Wesley Industries, Inc., warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the directions for use. Wesley Industries, Inc., make no other warranties, expressed or implied, including FITNESS OR MERCHANTABILITY. In no case shall Wesley Industries, Inc., or the Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product. The foregoing is a condition of sale by Wesley Industries, Inc., and is accepted as such by the Buyer.

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If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Richard F. Mountfort *RFM*
Product Manager (23)
Fungicide-Herbicide Branch
Registration Division (TS-767C)

Enclosures

ACCEPTED
with COMMENTS
in EPA Letter Dated:

Feb. 3, 1979

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.

47916-58

COPPER

SULFATE

SNOW CRYSTALS

ACTIVE INGREDIENT:

Copper Sulfate Pentahydrate 99.0%

INERT INGREDIENTS 1.0%

TOTAL 100.0%

(METALLIC COPPER EQUIVALENT 25.2%)

KEEP OUT OF REACH OF CHILDREN
DANGER - PELIGRO

PRECAUCION AL USUARIO: Si usted no lo lee ingles, no use este
producto hasta que le etiqueta haya sido explicado ampliamente.

Statement of Practical Treatment

IF SWALLOWED: Drink promptly a large quantity of milk, egg
whites, gelatin solution, or if these are not available, large
quantities of water. Avoid alcohol.

Note to Physician: Probable mucosal damage may contraindicate
the use of gastric lavage.

IF IN EYES: Flush with plenty of water. Get medical attention.

IF ON SKIN: Remove contaminated clothing. Wash skin with
soap and warm water. Get medical attention.

IF INHALED: Remove victim to fresh air. If not breathing, give
artificial respiration, preferably mouth-to-mouth. Get medical
attention.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER - PELIGRO

Corrosive, causes irreversible eye damage. Do not get in eyes,
on skin, or on clothing. Protective clothing, including goggles
and rubber gloves, should be worn. Harmful if swallowed,
inhaled, or absorbed through the skin. Avoid breathing dust.
Causes severe skin irritation. Wash thoroughly with soap and
water after handling. Remove contaminated clothing and wash
before reuse.

ENVIRONMENTAL HAZARDS

This product is toxic to fish and aquatic organisms. Do not
apply directly to water except as directed under the specific
instructions section. Drift and runoff from treated areas
may be hazardous to fish and aquatic organisms in adjacent
aquatic sites. 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 depletion of
oxygen levels due to 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 water increases.

Do not contaminate water by cleaning of equipment or disposal
of wastes. Consult your State Fish and Game Agency before
applying this product to public waters. Permits may be
required before treating such waters.

EPA Reg. No. 47916-

EPA Est. No. 47916-AL-01

NET CONTENTS:

 **wesley industries, inc.**

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