COPPER	GROUP	M1	FUNGICIDE
COPPER	GROUP	NOT CLASSIFIED	HERBICIDE

50 LBS. NET WEIGHT (22.68 KILOS)

GRANULAR COPPER SULFATE

ACTIVE INGREDIENT	BY WEIGHT
COPPER SULFATE PENTAHYDRATE *	99.0%
OTHER INGREDIENTS	1.0%
TOTAL	100.0%

CAS #7758-99-8
* COPPER AS METALLIC, 25.1%
See booklet attached to the back panel for additional precautionary statements and directions for use.

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.)

FIRST AID	
If in eyes:	• 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 to rinse eye. Call a poison control center or doctor for treatment advice.
If swallowed:	• Call a 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 to an unconscious person.
If on skin or clothing:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled:	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
NOTES:	Have the product container or label with you when calling a poison control center or doctor or going for treatment. For non-emergency information concerning this product, call the National Pesticides Information Center (NPIC) at 1-800-858-7378 Monday through Friday, 8:00am to 12:00pm Pacific time (NPIC website: www.npic.orst.edu). For emergencies, call the poison control center at 1-800-222-1222, 24 hours a day, 7 days a week.
NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Product causes eye irritation.	

Escanee el código QR para la etiqueta en español

EPA REG. NO. 56576-1-12204 EPA EST. NO. 12204-NE-1

M-70-G

Sold by:

MID-AMERICAN RESEARCH CHEMICAL CORP.
P. O. BOX 927 • COLUMBUS, NE 68602-0927 • 402-564-7104

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. Do not breathe dust or spray mist. Wear goggles or face shield, long-sleeved shirt and long pants, socks, shoes and chemical resistant gloves made of any waterproof material.

PERSONAL PROTECTIVE EQUIPMENT

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

- Long-sleeved shirt and long pants,
- chemical-resistant gloves made of: barrier laminate, butyl rubber >=14 mils, nitrile rubber >=14 mils, neoprene rubber >=14 mils, natural rubber >=14 mils, polyethylene, polyvinyl chloride >=14 mils, or Viton >=14 mils.
- shoes plus socks, and
- goggles or face shield.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated by this product. Do not reuse them. 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.

Engineering Controls

Pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides [40CFR 170.305].

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

Fish Advisory Statement: This pesticide is toxic to fish and aquatic organisms. Unlike most organic pesticides, copper is an element and will not break down in the environment and will therefore accumulate in sediment with repeated applications. Copper is a micronutrient, but its pesticidal application rate exceeds the amount of copper needed as a nutrient.

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. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high-water mark. Do not contaminate water when disposing of equipment washwaters or rinsate.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

Stormwater Advisory Statement: This product may be applied for the purposes of root intrusion control in storm drains or storm sewers than can discharge directly or indirectly into ephemeral or permanent waterbodies. This product must not be used in any municipal or public storm sewer or "MS4" system, or any storm drain system otherwise covered under an NPDES MS4 discharge permit. Copper will accumulate with repeated applications in the waterbodies to which treated storm drains/sewers discharge.

To the extent possible, avoid simultaneous treatments of multiple drain systems that discharge to the same waterbody. Staggering applications to individual stormwater collection points to allow interceding storm events to clear the product from previously treated drains can help reduce the impact to aquatic organisms in receiving waterbodies. Development of and adherence to, a pesticide management plan for storm drains is encouraged.

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 State or Tribal agency responsible for pesticide regulation.

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 until sprays have dried.

SPRAY DRIFT

For aerial applications:

- Do not release spray at a height greater than 10 feet above the vegetative canopy or water unless a greater application height is necessary for pilot safety.
- Applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Do not apply when wind speed exceeds 15mph at the application site. If the windspeed is greater than 10mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.
- Applicators must use ½ swath displacement upwind at the downwind edge of the application area.
- Do not apply during temperature inversions.

For ground boom application:

- Apply with the spray release height recommended by the manufacturer, but no more than 4 feet above the ground or crop canopy.
- Applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

SPRAY DRIFT ADVISORIES

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.
BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable conditions.

Controlling Droplet Size – Ground Boom

- Volume – Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure – Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle – Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

Controlling Droplet Size – Aircraft

- Adjust Nozzles – Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

BOOM HEIGHT – Ground Boom
Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom should remain level with the crop and have minimal bounce.

RELEASE HEIGHT – Aircraft
Higher release heights increase the potential for spray drift. When applying aerially to crops, do not release spray at a height greater than 10 ft. above the crop canopy, unless a greater application height is necessary for pilot safety.

SHIELDED SPRAYERS
Shielded the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

TEMPERATURE AND HUMIDITY
When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS
Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

WIND
Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.
Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

RESTRICTIONS
Pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides [40CFR 170.305].

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 as metallic copper in these waters.

RESISTANT MANAGEMENT RECOMMENDATIONS

For resistance management, Granular Copper Sulfate contains a Group M01 fungicide. Any fungal population may contain individuals naturally resistant to Granular Copper Sulfate and other Group M01 fungicides. A gradual or total loss of pest control may occur over time if these fungicides are use repeatedly in the same fields. Appropriate resistance-management strategies should be followed.

To delay fungicide resistance, take one or more of the following steps:

- Rotate the use of Granular Copper Sulfate or other Group M01 fungicides within a growing season sequence with different groups that control the same pathogens.
- Use tank mixtures with fungicides from a different group that are equally effective on the target pest when such use is permitted. Use at least the minimum application rate as labeled by the manufacturer.
- Adopt an integrated disease management program for fungicide use that includes scouting, uses historical information related to pesticide use, and crop rotation, and which considers host plant resistance, impact of environmental conditions on disease developments, disease thresholds, as well as cultural, biological and other chemical control practices.
- Where possible, make use of predictive disease models to effectively time fungicide applications. Note that using predictive models alone is not sufficient to manage resistance.
- Monitor treated fungal populations for resistance development.
- Contact your local extension specialist or certified crop advisor for any additional pesticide resistance-management and/or IPM recommendations for specific crops and pathogens.
- For further information or to report suspected resistance contact your pesticide distributor or university extension specialist to report resistance.

Water bodies or management units should be scouted prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective. Water bodies or management units should be scouted after application to verify that the treatment was effective.

Suspected herbicide-resistant weeds may be identified by these indicators:

- Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
- A spreading patch of non-controlled plants of a particular weed species; and
- Surviving plants mixed with controlled individuals of the same species.

Report any incidence of non-performance of this product against a particular weed species to your Granular Copper Sulfate retailer or representative. If resistance is suspected, treat weed escapes with an herbicide having a different mechanism of action and/or use non-chemical means to remove escapes, as practical, with the goal of preventing further reproduction.

Implement the Early Detection, Rapid Response practice and Maintenance Control by using the following practices where possible:

- Identify weeds present in a management unit through scouting or history of the water body and understand the biology of target species.
- Applications should target weeds when populations are small and there is low biomass, early in the season to maximize efficacy.
- Applications should be made so that the herbicide contacts the weed. Use the appropriate application method for the use site/weed/chemical combination.
- Weed escapes should not be allowed to go to seed or product asexual vegetative propagules.
- Use a diversified approach toward weed management. Whenever possible, incorporate multiple weed-control practices such as mechanical control, biological management practices, and rotation of MOAs.
- Time applications to have the highest probability for control and minimize need for follow-up control measures. Apply during conditions that minimize herbicide degradation (light/temperature/microbes) and/or dissipation (water exchange).

Contact your local sales representative, local water management agency, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of actions for each target weed.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

INSTRUCTIONS FOR USE

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 Granular 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 Granular Copper Sulfate will be required. Algal growth is difficult to control with Granular Copper Sulfate when water temperatures are low (less than 60° F) or when the water alkalinity is above 50 ppm. Larger quantities of Granular 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 for approximately three days after treatment or until the algae have begun to die. When preparing a Granular Copper Sulfate solution in water, the mixing container should be made of plastic, glass, or a painted, enameled, or copper-lined metal container. It is best to treat algae on a sunny day when the heavy mats of filamentous algae are most likely to be floating on the surface where they can be sprayed directly. If there is some doubt about the concentration to apply, it is best to start with the lower concentration given in the Specific Instructions below.

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 no more than one-half of the water area in a single operation and wait at least 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 1 ppm (4 ppm Granular Copper Sulfate).

Maximum annual application rate of 46.6 lbs metallic copper (186.4 lbs product) per acre-foot per year (17 applications per year at up to 1 ppm). This rate/frequency is calculated based on the maximum number of possible applications allowed based on a 14-day minimum (at a rate of 2.74 lbs metallic copper (10.96 lbs product) per acre-foot = 1 ppm) retreatment interval for 8 months (244 days). Do not apply more than 46.6 lbs of metallic copper (186.4 lbs product) to a water management unit, regardless of the pest(s) targeted by applications. In situations where rapidly reproducing toxic algal species pose a public health threat to drinking or recreational water resources, applicators must receive authorization from applicable state, local or tribal water resources authorities to apply copper in excess of 46.6 lbs of metallic copper (186.4 lbs product) per acre-foot per year for a single water management unit.

CALCULATIONS FOR THE AMOUNT OF WATER IMPOUNDED AND FOR THE AMOUNT OF COPPER SULFATE CRYSTALS TO BE USED: Calculate water volume as follows: (1) Obtain surface area by measuring of regular shaped ponds or mapping of irregular ponds or by reference to previously recorded engineering data or maps. (2) Calculate average depth by sounding in a regular pattern and taking the mean of these readings or by reference to previously obtained data. (3) Multiply surface area in feet by average depth in feet to obtain cubic feet of water volume. (4) Multiply surface area in acres by average depth in feet to obtain total acre-feet of water volume.

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 pounds of water.

CALCULATIONS OF ACTIVE INGREDIENT TO BE ADDED: To calculate the amount of Granular Copper Sulfate needed to achieve the recommended concentration, multiply the weight of water by the recommended concentration of Granular Copper Sulfate. Since recommended concentrations are normally given in parts per million (ppm), it will first be necessary to convert the value in parts per million to a decimal equivalent. For example, 2 ppm is the same as 0.000002 when used in this calculation. Therefore, to calculate the amount of Granular Copper Sulfate to treat 1 acre-foot of water with 2 ppm Granular Copper Sulfate (or 0.5 ppm metallic copper), the calculation would be as follows:
0.000002 X 2,720,000 = 5.44 lbs. Granular Copper Sulfate

CALCULATION OF WATER FLOW IN DITCHES, STREAMS, AND IRRIGATION SYSTEMS: The amount of water flow in cubic feet per second is found by means of a weir or other measuring device.

SPECIFIC INSTRUCTIONS

SEWER TREATMENT – ROOT DESTROYER *
ROOT CONTROL GENERAL INFORMATION: 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 eventually, flow stoppage. Granular Copper Sulfate has been known to be an effective means to control roots in residential and commercial sewers. Do not apply more than maximum annual application rate of 1 lb metallic copper (4 lbs product) per linear foot per year.

COMMERCIAL, INSTITUTIONAL, AND MUNICIPAL SEWERS:
ROOT CONTROL IN SEWERS: As a preventive measure, apply into each junction or terminal manhole 2 pounds of Granular Copper Sulfate every 6 to 12 months. At time of reduced flow (some water flow is essential), add Granular Copper Sulfate. If flow has not completely stopped, but has a reduced flow due to root masses, add Granular Copper Sulfate in the next manhole above the reduced flow area. For complete stoppage, penetrate the mass with a rod to enable some flow before treatment.
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. It may be necessary to repeat treatments in 6 month intervals, if drains become nearly plugged. Maximum annual application rate of 0.5 lbs metallic copper (2 lb product) per drain per year. This product may not be used in municipal or public storm drains and storm sewers.
SEWER PUMPS AND FORCE MAINS: At the storage well inlet, place a cloth bag containing **2 pounds** of Granular Copper Sulfate. Repeat in **6 or 12-month intervals**, if necessary.

RESIDENTIAL OR HOUSEHOLD SEWER SYSTEMS:
When a reduced water flow is first noticed, and root growth is thought to be the cause, treat with Granular Copper Sulfate. It is important not to wait until a stoppage occurs because some water flow is necessary to move the Granular Copper Sulfate to the area of root growth. Usually, within 3 to 4 weeks, after roots have accumulated sufficient copper sulfate, the roots will die and begin to decay, and water flow should increase. As the roots re-grow, follow-up treatments with Granular Copper Sulfate will be required. Applications may be made each year in the spring after plant growth begins, or during late summer or early fall, or any time a reduced water flow, thought to be caused by root growth, occurs.
Apply **2 pounds** Granular Copper Sulfate to household sewers. Add Granular Copper Sulfate to sewer line by pouring **½-pound increments** into the toilet bowl nearest the sewer line and flush, repeat this process until recommended dose has been added, or remove cleanout plug and pour entire recommended quantity directly into the sewer line. Replace the plug and flush the toilet several times. Repeat in **6 or 12-month intervals**, if necessary.

ROOT CONTROL IN SEPTIC TANKS, LEACH LINES AND LEACH LINE PIPES:
The majority of the Granular Copper Sulfate will settle in the septic tank itself and little will pass into the leach lines. To treat leach line pipes, add **2 pounds** of Granular 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 Granular Copper Sulfate from the septic tank to the leach lines. A cleanout plug opening may need to be installed if the distribution box does not have an opening leading to the leach lines. Repeat in **6 or 12-month intervals**, if necessary.

***NOTE:** Do not apply Granular Copper Sulfate through sink or tub drains as it will corrode the metal drains.
***NOTE:** Granular 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 Granular Copper Sulfate. Granular 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 and State of Washington. However, Granular Copper Sulfate may be sold and used in residential or household sewer systems in the States of Florida, Massachusetts and Washington which do not discharge into a septic tank/leach field system.

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

AQUATIC USES (EXCLUDING SWIMMING POOLS, SPAS, HOT TUBS, FOUNTAINS AND AQUATIC AGRICULTURE):
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 biomass. This oxygen loss can cause fish and invertebrate suffocation. To minimize this hazard, do not treat more than ½ of the water body and wait at least 14 days between treatments to avoid depletion of oxygen due to decaying vegetation (excluding water infrastructure and constructed conveyances such as drainage canals, ditches and pipelines or intakes and aqueducts for drinking water or irrigation use).

Begin treatment along the shore and proceed outward 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. Application of algaecides to high density bloom of cyanobacteria can result in the release of intracellular contents into the water. Some of these intracellular compounds are known mammalian hepato- and nervous system toxins. Therefore, to minimize the risk of toxin leakage, manage cyanobacteria effectively in order to avoid applying this product when blooms of toxin-producing cyanobacteria are present at high density. In situations where rapidly reproducing toxic algal species pose a public health threat to drinking or recreational water resources, applicators must receive authorization from applicable state, local or tribal water resources authorities to apply copper at intervals shorter than 14 days should the circumstance demand.

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. The application rates on this label are appropriate for water with pH values >6.5, DOC levels >3.0 mg/L, and alkalinity greater than 50 mg/L. Avoid treating waters with pH values <6.5, DOC levels <3.0, and alkalinity less than 50 ppm (e.g., soft or acid waters), as trout and other sensitive species of fish may be killed under such conditions if present.

Consult your state department of natural resources or fish and game agency before applying this product to public waters. Permits may be required before treating such waters.

PRE-APPLICATION DOSE DETERMINATION: For algae and aquatic plant treatments, applicators should conduct initial dose determination tests simulating a full-scale treatment program to determine the minimum efficacious concentrations for eliminating the target species, unless an effective dose is already known for the given target pest population.

TO CONTROL ALGAE AND THE POTOMOGETON POND WEEDS, LEAFY AND SAGO, IN IRRIGATION SYSTEMS: Once the amount of Granular Copper Sulfate required for treating ditches or streams has been calculated, use a continuous application method, selecting proper equipment to supply the granular crystals. Minimum retreatment interval is 2 weeks.

FOR ALGAE CONTROL – Begin continuous addition application of Granular Copper Sulfate when water is first turned into the system and continue throughout the irrigation season, applying **0.1 to 0.2 lbs** Granular Copper Sulfate **per hour per cubic ft per second for 12 hours of each 24 hours.** This rate provides 0.112 to 0.224 ppm metallic copper in the treated water**. Maximum application rate is 4 ppm Granular Copper Sulfate (1 ppm metallic copper).** Note: 4 ppm Granular Copper Sulfate = 10.88 lbs of product/acre ft. =1.0 ppm metallic copper in the treated water.

FOR LEAFY AND SAGO POND WEED CONTROL – Use the same continuous feeder, applying **0.5 to 0.9 lbs** Granular Copper Sulfate **per hour per cubic foot per second for 12 hours of each 24 hours.** This provides 0.5 to1.0 ppm metallic copper in the treated water. **Maximum application rate is 4 ppm Granular Copper Sulfate (1 ppm metallic copper).**

NOTE: For best control of leafy and sago pond weed, it is essential to begin Granular Copper Sulfate additions when water is first turned into the system or ditch to be treated and to continue throughout the irrigation season. Granular Copper Sulfate becomes less effective as the alkalinity increases. Its effectiveness is significantly reduced when the bicarbonate alkalinity exceeds 150 ppm. Should Copper Sulfate Crystals 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 Granular Copper Sulfate addition as soon as possible.

Useful formulas for calculating water volume flow rates:
Multiply the water volume in cu. ft. times 7.5 to obtain gallons.
1 C.F.S./Hr. = 27,000 Gals.
1 Acre Foot = 326,000 Gals.
1 ppm Granular Copper Sulfate= 0.25 ppm metallic copper
1 ppm Granular Copper Sulfate = 2.72 lbs of product/acre ft

TO CONTROL ALGAE IN IRRIGATION CONVEYANCE SYSTEMS USING THE PULSE APPLICATION METHOD: Make an addition of Granular Copper Sulfate into the irrigation ditch or lateral at **0.25 to 2.0 lbs product (0.06 to 0.5 lbs metallic copper) per cubic foot per second of water per treatment.** Repeat on **2-week intervals** as required. Depending on water hardness, alkalinity and algae concentration, a dump is usually required every **5 to 30 miles.** Effectiveness of Granular Copper Sulfate decreases as the bicarbonate alkalinity increases and is significantly reduced when the alkalinity exceeds approximately 150 ppm as $CaCO_3$. **Maximum annual application rate of 13 lbs metallic copper (52 lbs product) per year per 5 miles of conveyance per cubic foot per second.** Apply copper into irrigation conveyance system or lateral at up to a maximum rate of 0.5 lbs metallic copper (2 lbs product) per cubic foot per second of water per 5 to 30-mile treatment depending on water hardness, alkalinity and algae concentration. This method may only be used in constructed irrigation conveyance systems, laterals and aqueducts.

APPLICATION METHODS TO CONTROL ALGAE IN IMPOUNDED WATERS, LAKES, PONDS AND RESERVOIRS: There are several methods by which to apply Granular Copper Sulfate to impounded water. Probably the most satisfactory and simplest method is to dissolve the Granular Copper Sulfate in water and to spray this water over the body of water from a boat. A small pump mounted in the boat can easily be used for this purpose. Fine crystals may be **broadcast directly on the water surface** from a properly equipped boat. A specially equipped air blower can be used to discharge fine crystals at a specific rate over the surface of the water. When using this method, the direction of the wind is an important factor. Do not use this method unless completely familiar with this type of application. Where the situation permits, Granular Copper Sulfate may be **applied under the water by dragging burlap bags** containing Granular Copper Sulfate. A tear-resistant permeable bag may be towed via watercraft to disperse copper into the upper water column for treatment of weeds and algae. Operators should ensure the application path is clear of any obstacles that may rupture or otherwise damage the bag containing the copper once deployed. 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 crystals have been dissolved. Large or medium size crystals that dissolve slowly should be used with this method. Granular Copper Sulfate can be applied to impounded waters by injecting a solution in water via a piping system. **Note: Maximum application rate is 4 ppm Granular Copper Sulfate (1 ppm metallic copper).** Minimum retreatment interval is **14 days.** EPA sets the maximum application rate at 4 ppm Granular Copper Sulfate; however, based on the table below, 0.25 to 2 ppm Granular Copper Sulfate can be used to treat for specific genera of algae. Maximum annual application rate of 21.9 lbs metallic copper (87.6 lbs product) per acre-foot (8 applications per year at up to 1 ppm). This rate/frequency is calculated based on staggering the treatment of each half of the water body every 14 days (at a rate of 2.74 lbs metallic copper/10.96 lbs product per acre-foot = 1 ppm) for eight months (244 days). In situations where rapidly reproducing toxic algal species pose a public health threat to drinking or recreational water resources, applicators must receive authorization from applicable state, local or tribal water resources authorities to apply copper in excess of 21.9 lbs of metallic copper (87.6 lbs product) per acre-foot (8 applications per year at up to 1 ppm).

GRANULAR 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 waters (above 50 ppm alkalinity). Always consult State Fish and Game Agency before applying this product to municipal waters.

ORGANISM	0.25 to 0.50 ppm*	0.50 to 1 ppm*	1 to 1.5 ppm*	1.5 to 2 ppm
Cyanophyceae (Blue-green)	Anabaena Anacystis Aphanizomenon Gloeotrichia Gomphosphaeria Polycystis Rivularia	Cylindrospermum Oscillatoria Plectonema	Nostoc Phormidium	Calothrix Symploca
Chlorophyceae (Green)	Closterium Hydrodictyon Spirogyra Ulothrix	Botryococcus Cladophora Coelastrum Draparnaldia Enteromorpha Gloeocystis Microspora Tribonema Zygnema	Chlorella Crucigenia Desmidium Golenkinia Oocystis Palmella Pithophora Staurastrum Tetraedron	Ankistrodesmus Chara Nitella Scenedesmus
Diatomaceae (Diatoms)	Asterionella Fragilaria Melosira Navicula	Gomphonema Nitzschia Stephanodiscus Synedra Tabellaria	Achnanthes Cymbella Neidium	
Protozoa (Flagellates)	Dinobryon Synura Uroglena Volvox	Ceratium Cryptomonas Euglena Glenodinium Mallomonas	Chlamydomonas Hawmatococcus Peridinium	Eudorina Pandorina

* Granular Copper Sulfate ppm (Cu metallic ppm) = lbs/acre ft
0.25 – 0.5 ppm (0.625 – 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 AND BACTERIAL ODOR IN SEWAGE LAGOONS AND PITS (Except California): Application rates may vary depending on amounts of organic matter in effluent stream or retention ponds. **Use 2 lbs.** of Granular Copper Sulfate **in 60,000 gals** (8,000 cu ft) of effluent to yield 1 ppm of dissolved copper. Dosage levels may vary depending upon organic load. Other Organic Sludges: The solution of crystals must be thoroughly mixed with sludge. **Dissolve 2 lbs** of crystals in 1-2 gals of water and **apply to each 60,000 gals** of sludge. **Maximum application rate is 4 ppm Granular Copper Sulfate (1 ppm metallic copper). Minimum retreatment interval is 14 days.**

STORAGE AND DISPOSAL

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

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. Open burning and dumping is prohibited.

(FOR RIGID, NONREFILLABLE CONTAINERS, EQUAL TO OR LESS THAN 50 LBS)

CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or 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, if available, or puncture and dispose of in a sanitary landfill, or by incineration.

NOTICE: Seller warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Seller. To the extent consistent with applicable law, Seller shall not be liable for consequential, special or indirect damages resulting from the use or handling of this product. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer. To the extent consistent with applicable law exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling or application of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid for this product or at Seller's election, the replacement of this product. SELLER MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

ENVIRONMENTALLY HAZARDOUS SUBSTANCES
SOLID, N.O.S. (CUPRIC SULFATE) UN3077, RQ

R011426