

19713-407

7/20/2010

1089



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs
Registration Division (7504P)
Ariel Rios Building
1200 Pennsylvania Ave., NW
Washington, D.C. 20460

EPA Reg. Number:

19713-407

Date of Issuance:

JUL 20 2010

NOTICE OF PESTICIDE:

Registration
 Reregistration
(under FIFRA, as amended)

Term of Issuance:

Name of Pesticide Product:

Kopper Sulfate

Name and Address of Registrant (include ZIP Code):

Drexel Chemical Company
P.O. Box 13327
Memphis, TN 38113

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act. Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is reregistered in accordance with FIFRA provided that you:

- 1) Submit and/or cite all data required for registration/reregistration review of your product when the Agency requires all registrants of similar products to submit data.

Signature of Approving Official:

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

Date:

JUL 20 2010

EPA Reg. 19713-407

Page 2

2) Change the copper equivalent to 24.9%.

3) Based on toxicity ranking per the acute toxicity review, the First Aid statements should be placed on the label in the following order:

“IF IN EYES:...

IF SWALLOWED:...

IF ON SKIN OR CLOTHING:...

IF INHALED:...”

4) Per the acute toxicity review, the Hazards to Humans and Domestic Animals must be revised to read:

“DANGER

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. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.”

5) The handler PPE should be revised to read:

“Some materials that are chemical-resistant to this product are made of any waterproof material. If you want more options, follow instructions for category A on an EPA chemical-resistance category selection chart.

Mixers, loaders, applicators and other handlers must wear:

Long-sleeved shirt and long pants,

Shoes and socks,

Chemical-resistant gloves, and

Goggles and faceshield.”

6) Add “Wash the outside of gloves before removing” to the User Safety Recommendations text currently on the label.

7) The Environmental Hazards text currently on the label must be revised to read:

“For terrestrial use:

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.

309

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.

For Aquatic use

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 10 to 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."

8) The following revisions are needed to the directions for use:

-Control of algae and tadpole shrimp in rice fields:

The rate of 27.3 pounds of product per acre-foot per application (2.5 ppm) is acceptable for use to control tadpole shrimp in rice fields but is not acceptable to control algae in rice fields where the maximum application rate is 1 ppm. The restrictions below must be added to the label for use to control algae in rice fields and any conflicting text must be deleted from the label:

"To control algae in rice fields

The maximum application is 1 ppm per application.

The minimum retreatment interval is 14 days.

No more than 1/2 of the water body may be treated at one time. If the treated water is to be used as a source of potable water, the metallic copper concentration must not exceed 1 ppm."

-Sewer treatment for root and fungus control:

The text "repeat as needed" appearing in the directions for use in sewer pumps and force mains must be deleted from the label.

On page 3, change "recommendations for use in crops" to "directions for use in crops".

-Apples:

An area to be treated must replace the text "spray uniformly to the point of runoff" and the rate must comply with the RED requirements.

The use restrictions section must be revised to read as specified below and any conflicting text must be deleted from the label:

“For fall/late dormant use:

The maximum application rate is 8 pounds metallic copper per acre per application.
The maximum annual application rate is 16 pounds metallic copper per acre per year.
Only one application is permitted per season.

For use between silver-tip and green-tip:

The maximum application rate is 6 pounds metallic copper per acre per application.
The maximum annual application rate is 16 pounds metallic copper per acre per year.
Only one application is permitted per season.”

-Walnuts:

An area to be treated must be added to the label and rate must comply with the RED.

-Bordeaux Spray Mixture:

An area to be treated must be added to the Bordeaux spray mixture section. Change “Use Recommendations” to “Use Directions”.

Almond, Apricot, Peach, Nectarine to control shot hole fungus – Because the use directions only specify use as a dormant spray in late fall or early spring, the use restriction text for the bloom/growing season must be deleted from the label.

Almond, Apricot, Cherry, Peach, Nectarine, Plum, Prune to control brown rot blossom blight - Because the use directions only specify use at bud swell, the use restriction text for the bloom/growing season must be deleted from the label.

Grape- The text “repeat as needed” must be deleted from the label.

Peach - Because the use directions only specify use as a dormant spray in late fall or early spring, the use restriction text for the bloom/growing season must be deleted from the label.

Delete “general” from “general chemigation instructions”.

Delete the “To control algae and weeds in flowing water” section. As the section is written the PPM rate of copper can’t be determined.

A stamped copy of the label is enclosed for your records. You must submit one copy of the final printed label before you release the product for shipment. Products shipped after 12 months from the date of this letter or the next round of printing must bear the new revised label. If these EPA conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA. Your release for shipment of the product constitutes acceptance of these EPA Reg. conditions. This label supersedes all other previously accepted labels. If you have any questions please call Erik Kraft at 703-308-9358 or email at Kraft.Erik@epa.gov.

5009



Drexel

Kopper Sulfate

ACTIVE INGREDIENT:
 Copper sulfate pentahydrate* 98.0%

OTHER INGREDIENTS: 2.0%

TOTAL: 100.0%

*[CAS No. 7758-99-8] *24.9*
 *Metallic copper equivalent is *28.2%*

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 **FIRST AID** Below

EPA Reg. No. 19713-407
 EPA Est. No. 19713-GA-001 Net Content: _____

FIRST AID	
IF IN EYES:	<ul style="list-style-type: none"> Hold eye open and rinse slowly and gently with water for 15 to 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 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 a poison control center or doctor. Do not give anything by mouth to an unconscious or convulsing person.
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 mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none"> Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information on this pesticide product (including health concerns, medical emergencies or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378.</p>	
<p>NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be needed.</p>	

PRECAUTIONARY STATEMENTS
Hazards to Humans and Domestic Animals
DANGER: Causes severe eye and skin irritation. Harmful if swallowed or absorbed through the skin. Avoid breathing mist or dust and contact with skin, eyes or clothing. Causes substantial but temporary eye injury. May cause skin sensitization in certain individuals. "Potable water sources treated with copper products may be used as drinking water only after proper additional potable water treatments".
PERSONAL PROTECTIVE EQUIPMENT (PPE)
 Some materials that are chemical-resistant to this product are made of any waterproof material such as polyethylene or polyvinyl chloride. If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart.

PRECAUTIONARY STATEMENTS
 Mixers, loaders, applicators and other handlers must wear: Long-sleeved shirt and long pants, chemical-resistant gloves, shoes plus socks and protective eyewear.
 Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. 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.

USER SAFETY RECOMMENDATIONS
 Users should: 1) Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. 2) Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. 3) Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

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. For terrestrial uses, 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.
 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 nontarget aquatic organisms.
 Drift and runoff may be hazardous to aquatic organisms in waters adjacent to treated areas.

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.

ACCEPTED
 with **COMMENTS**
 In EPA Letter Dated:
JUL 20 2010

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



Manufactured by:
Drexel Chemical Company

P.O. BOX 13327, MEMPHIS, TN 38113-0327

SINCE 1972

19713-407

6099

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, 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 (REI). The requirements in this box only apply to uses of this product that are covered by the WPS.

Do not enter or allow worker entry into treated areas during the REI of 48 hours. PPE required for early entry to treated areas that is permitted under the WPS and that involves contact with anything that has been treated such as plants, soil or water is: Coveralls, chemical-resistant gloves made of any waterproof material, shoes plus socks, 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. If applied as a spray, do not enter or allow others to enter until sprays have dried. If applied dry, do not enter or allow others to enter until dusts have settled.

CONTROL OF ALGAE AND TADPOLE SHRIMP (*Triops longicaudatus*) IN RICE FIELDS (Domestic and Wild)

Tadpole shrimp in Rice fields may be effectively controlled by the prompt and proper use of this product. After the Rice field has been flooded to a depth of 6 to 8 inches, this product should be uniformly applied at a rate not to exceed 10 parts per million (ppm) of copper sulfate pentahydrate per application per acre per foot of water (equivalent to 2.5 ppm metallic copper) at the first sign of infestation.

Use Restriction: Do not apply more than 27.3 lbs. of this product (equivalent to 10 ppm of copper sulfate pentahydrate or 2.5 ppm of copper) per acre-foot per application.

SEWER TREATMENT FOR ROOT AND FUNGUS CONTROL

Roots of shrubbery and trees growing near sewer lines frequently penetrate sewer lines in search of moisture and nutrients causing tile breakage, gradual reduced flow, and sometimes complete stoppage. This product is effective in keeping sewer lines free of roots. It is safe for drain systems and does not harm outdoor shrubbery or trees. Do not apply into sink or tub drains as it will corrode these metal drains.

Use Restrictions: Do not apply more than 1.9 lbs. of this product per acre per application. Do not apply more than 7.9 lbs. of this product per acre per year at a minimum retreatment interval of 6 months. Maximum number of application per calendar year is two.

State Law prohibits the use of this product in sewage systems in the State of CT and in the following nine counties in CA: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma.

For Partial Stoppage: Add 0.5 pound of this product to sewer or drain and flush toward blockage with 5 gallons of water. Repeat at 6 month intervals to prevent growth of new roots.

For Complete Stoppage: Physically remove the root blockage and treat as "For Partial Stoppage".

For Household Sewer: Use 1.9 pounds of this product twice yearly in Spring and early Fall. Apply in toilet bowl near sewer line. Flush 0.5 pound at a time or remove the cleanout plug and pour entire quantity directly into sewer line and flush with water.

If system is equipped with a septic tank, copper sulfate will be precipitated in the septic tank and little will pass into the absorption drain field. To treat drain field pipes, add 1.9 pounds of this product to distribution box located between the septic tank and the drain field. If distribution box does not have an opening, it would be advisable to install a cleanout plug opening into the outlet pipe from the septic tank leading to the drain field for effective root control in the drain field pipes.

NOTE: Laboratory studies have shown that copper sulfate added to an active 300 gal. septic tank at 2, 4 and 8 lbs. per treatment temporarily reduced bacterial action, but it returned to normal 15 days after treatment. Trees and shrubbery growing near a treated line normally will have only a small portion of their roots in contact with the copper sulfate that primarily kills only those roots inside the pipe, thus, not affecting the growing plants.

FOR COMMERCIAL, INSTITUTIONAL AND MUNICIPAL USE

Sewers: Use 1.9 pounds of this product every 6 to 12 months, applied to each junction or terminal manhole.

Storm Drains: Use 1.9 pounds of this product per drain per year. Apply during period of light flow. In dry weather, induce a flow with hose. If storm drains become almost plugged, repeat treatment at a minimum of 6 month intervals.

Sewer Pumps and Force Mains: Place 1.9 pounds of this product in a cloth bag at the storage wall inlet. Repeat as needed.

Use Restriction: Do not apply more than 1.9 lbs. of this product per application. Do not apply more than 7.9 lbs. of this product per year at a minimum retreatment interval of 6 months. Maximum number of application per calendar year is two.

CONTROLLING WEED ALGAE, AND MICROSCOPIC ORGANISMS IN IMPOUNDED WATER SOURCES (TANKS, RACEWAYS, LAKES, PONDS, RESERVOIRS), FISH HATCHERIES, AND CROP AND NON-CROP IRRIGATION CONVEYANCE SYSTEMS, DITCHES, CANALS AND LATERALS

Precautions concerning fish: The treatment of algae with this product can result in oxygen loss in the water from decomposition of dead algae. This can cause the fish to suffocate. Care should be taken when water temperature exceeds 85°F. At this water temperature, aquatic plants treated with copper sulfate decompose rapidly, causing an increase in oxygen depletion. Therefore, to minimize this hazard, treat one-third to one-half of the water area in a single operation. Wait 7 to 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated water.

This product can be applied to impounded water by the following methods:
Application by dragging this product under water: Large or small sized product is placed in burlap bags or baskets and dragged through the water by means of a boat. Begin treatment along the shoreline and proceed outward until one-third to one-half of the total area has been treated. The path of the boat should ensure a distribution that is even. In large lakes, the boat should move in parallel lines about 20 to 100 feet apart. Continue dragging until all of the weighed product is dissolved.

Application by spraying solution of this product on water surface: A solution can be made with this product which dissolves easily in water. While the volume per surface acre depends on the type of spray equipment being used, spray volume should be approximately 20 to 500 or more gallons per acre of surface water. This solution can then be sprayed on the pond or lake surface from a boat. When using this method, the wind direction is important as well as the operation of the boat. Do not endanger people or animals in the boat with the copper sulfate spray.

Application by injecting copper sulfate solution in water: A solution can be made with this product. This solution can then be injected into the water via a piping system.

Application by broadcasting dry copper sulfate crystal: Crystals may be broadcasted directly on the water surface from the shore or from a properly equipped boat. Crystals ranging from ±10 mesh to ± one-half inch are preferred for this method of application. A specifically equipped air blower can be used to discharge these size 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.

Application by spraying this product dry from airplanes and helicopters: Professional personnel licensed by the State Agricultural Service are allowed to apply this product in some states.

Note: If treated water is to be used as a source of potable water, the metallic residual must not exceed 1 ppm copper. This is equal to 10.7 pounds per acre-foot of water or 4 ppm of this product.

Potable water sources treated with copper products may be used as drinking water only after proper additional potable water treatments.

HOW TO FIND THE POUNDS OF THIS PRODUCT TO ADD TO WATER

To find acre-feet of water in a body of water, measure the depth of the body of water in feet. Calculate the surface area in square feet, divided by 43,560 (square feet/acre) times the average depth in feet.

- 1 acre-foot of water = Water measuring 208.7 feet long by 208.7 feet wide by 1 foot deep
- 1 acre-foot of water = 43,560 cubic feet of water
- 1 cubic foot of water = 62.4 pounds
- 1 acre-foot of water = (43,560)(62.4) = 2,720,000 pounds

COPPER SULFATE PENTAHYDRATE IN WATER

Pounds of Copper Sulfate Pentahydrate Per Acre-Foot of Water	Parts (by weight) Copper Sulfate Pentahydrate per Million Parts (by weight) of Water	Parts (by weight) Copper per Million Parts (by weight) of Water
0.67 pound/acre-foot	= 0.25 ppm	= 0.0625 ppm
1.3 pound/acre-foot	= 0.5 ppm	= 0.125 ppm
2.6 pound/acre-foot	= 1 ppm	= 0.25 ppm
5.36 pound/acre-foot	= 2 ppm	= 0.50 ppm
10.7 pound/acre-foot	= 4 ppm	= 1.0 ppm
26.8 pound/acre-foot	= 10 ppm	= 2.5 ppm

TREATMENT OF SOME ALGAE WITH COPPER SULFATE PENTAHYDRATE

A higher concentration is required if the water is hard. Consult with the State Fish and Game Agency before applying product in municipal waters.

Copper Sulfate Pentahydrate (ppm)			
0.25 to 0.50	0.50 to 1.00	1.00 to 1.50	1.50 to 2.00
CYANOPHYCEAE ORGANISM (Blue Green)			
Anabaena Anacystis Aphanizomenon Gloeotrichia Gomphosphaeria Polycystis Rivularia	Cylindrocapsa Oscillatoria Plectonema	Nostoc Phormidium	Calothrix Symploca
CHLOROPHYCEAE ORGANISM (Green)			
Closterium Hydrodictyon Spirogyra Ulothrix	Botryococcus Cladophora Coelastrum Draparnaldia Enteromorpha Gloeocystis Microspora Tribonema Zygnema	Chlorella Crucigeria Desmidium* Golenkinia Oocystis Palmella Pithophora* Staurastrum Tetraedron	Ankistrodesmus Chara* Nitella* Scenedesmus
DIATOMACEAE ORGANISM (Diatoms)			
Asterionella Fragilaria Melorias* Navicula	Gomphonema Nitzschia Stephanodiscus Synedra Tabellaria	Achnanthes Cymbella Neidium	
PROTOZOA ORGANISM (Flagellates)			
Dinobryon Synura Uroglena*	Ceratium Cryptomonas Euglena Glennodinium Mallomonas	Chlamydomonas Haematococcus* Peridinium	Eudorina* Pandorina*
*NOT FOR USE IN CA			

Treated pool effluent lakes, streams, ponds should not be discharged where it will drain into public water.

TO CONTROL ALGAE AND BACTERIAL ODOR IN SEWAGE LAGOONS AND PITS (Except CA)

Application rates may vary depending on amounts of organic matter in effluent streams or retention ponds. Use 2 pounds of this product in 60,000 gallons (8,000 cubic feet) of effluent to yield 1 ppm of dissolved copper. Dosage levels may vary depending upon organic load.
Other Organic Sludges: This product solution must be thoroughly mixed with sludge. Dissolve 2 pounds in 1 to 2 gallons of water and apply to each 30,000 gallons of sludge.
 Useful formula for calculating water volume and flow rates:
 Multiply the water volume in cubic feet times 7.5 to obtain gallons.
 Note: 1 C.F.S./hour = 27,000 gallons
 1 acre-foot = 326,000 gallons

TO CONTROL ALGAE AND BACTERIAL ODOR IN WATERSCAPES, DECORATIVE POOLS AND FOUNTAINS

Apply in the Spring or early Summer when algae and bacteria first appear. The dosages are variable and depend upon algae/bacteria species, water hardness, water temperature, amount of algae and bacteria present as well as whether water is clear, turbid, flowing or static. Preferably, the water should be clear with temperatures above 60°F. Higher dosages are required at lower water temperatures, higher algae and bacteria concentrations and for hard waters. For each 7,500 gallons of water, dissolve 0.25 pound of this product in one gallon of water. Pour the solution into the water to be treated. Several application points speed up dispersal. Static water requires less chemical than does flowing water. If uncertain about the dosage, begin with a lower dose and increase until control is achieved or until the maximum allowable level of copper has been reached.

RECOMMENDATIONS FOR USE IN CROPS

Apples: To control Fire blight, mix 5 pounds of this product in 100 gals of water and spray uniformly to the point of runoff. Apply in dormant only at silver tip stage. After silver tip, severe burn will occur on any exposed green tissue. Do not mix lime to make a Bordeaux spray for this treatment.

Use Restrictions: Do not apply more than 31.7 lbs. of this product per acre per application. Only one application is permitted per season during the Fall or late dormant period. Do not apply more than 63.4 lbs. of this product per acre per year.

Grapes (Dormant): Powdery mildew-Apply in spring before bud-swell and before any green tissue is present. Use 4 to 8 pounds of this product per 100 gallons of water. Apply in a high volume spray of 300 gallons of water per acre. Direct spray to thoroughly wet the dormant vine, especially the bark of the trunk, head or cordons.

Use Restrictions: Do not apply more than 11.9 lbs. of this product per acre per application. Do not apply more than 79.3 lbs. of this product per acre per year at a minimum retreatment interval of 3 days.

Potatoes (Except CA): To enhance vine-kill and suppress Late blight, apply 10 pounds per acre in 10 to 100 gallons of water (ground equipment) or in 5 to 10 gallons (aerial equipment) with Diquat at vine-kill to enhance vine desiccation and suppress late blight. Additional applications can be made with Diquat if needed within 7 days of harvest. This product may be applied alone until harvest to suppress late blight. **NOTE:** This product can be mixed with Diquat for use on potatoes in accordance with the most restrictive of label limitations and precautions. No label dosage rates should be exceeded.

Use Restrictions: Do not apply more than 9.9 lbs. of this product per acre per application. Do not apply more than 99.2 lbs. of this product per acre per year at a minimum retreatment interval of 5 days.

Walnuts: Walnut blight-Apply 15 pounds to 10 pounds of lime in 100 gallons of water. Make application in early pre-bloom before catkin blooms are showing (10 to 20% pistillate) before or after rain. Use only if Bordeaux mixture has been shown to be non-phytotoxic in your area. If desired, add one-half gallons summer oil emulsion per 100 gallons of water. **NOTE:** Addition of summer oil emulsion to pre-bloom and early bloom sprays may result in plant injury.

Use Restrictions: Do not apply more than 12.5 lbs. of this product per acre per application. Do not apply more than 100 lbs. of this product per acre per year at a minimum retreatment interval of 7 days.

BORDEAUX SPRAY MIXTURE

Understanding Bordeaux Formulations: If the Bordeaux mixture instructions read 10-10-100, the first figure indicates the number of pounds of this product. The second figure is the pounds of hydrated spray lime and the third figure is the gallons of water to be used. Use as a full coverage spray to point of runoff.

Preparation of Bordeaux Spray Mixture: Fill tank one-fourth full with water. With agitator running, add this product through a copper, bronze, stainless steel or plastic screen. Add water so the tank is three-fourths full. Mix in the hydrated spray lime through the screen and finish filling the tank with water.

Use Restrictions: Do not apply more than 10.9 lbs. of this product (equivalent to 4 ppm of copper sulfate pentahydrate or 1 ppm of copper) per acre-foot per application. Minimum retreatment interval is 14 days. No more than one-half of the water body may be treated at one time. If the treated water is to be used as source of potable water, the metallic copper concentration must not exceed 1 ppm.

TO CONTROL ALGAE AND WEEDS IN FLOWING WATER

To control Potamogeton pond weeds, Leafy and Sago, in irrigation conveyance systems, use the continuous application method, selecting proper equipment to supply this product at 0.25 to 0.5 pound per hour for each cubic foot per second of flow for 12 hours of each 24 hours. For best control, begin copper sulfate additions when water is first turned into system to be treated and continue throughout the irrigation season. Copper sulfate becomes less effective for mature plants. Copper sulfate becomes less effective as the bicarbonate alkalinity increases and is substantially reduced above 150 ppm as CaCO₃. Mechanical or other means may then be required to remove excess growth. To control algae (such as: Filamentous green, Pigmented flagellates, Diatoms) in irrigation conveyance systems, begin continuous addition when water is first turned on, using suitable equipment to uniformly deliver 0.10 to 0.2 pound of copper sulfate per hour per cubic foot per second of flow for 12 of each 24 hours. (Note: This product comes in several "free flowing" crystal sizes but should be selected to match requirements of your feeder.)

To control algae and weeds in irrigation systems by "slug" method of addition, add 0.5 to 2 pounds for each cubic foot per second flow. Repeat every two weeks. A pile is required for every 5 to 30 miles of length depending on alkalinity of the water.

Use Restriction: Do not apply more than 10.9 lbs. of this product (equivalent to 4 ppm of copper sulfate pentahydrate or 1 ppm of copper) per acre-foot per application. Minimum retreatment interval is 14 days. No more than one-half of the water body may be treated at one time. If the treated water is to be used as source of potable water, the metallic copper concentration must not exceed 1 ppm.

TO CONTROL ALGAE AND BACTERIAL ODOR IN SWIMMING POOLS

Apply 1 to 2 pounds of this product per 60,000 gallons (8,000 cubic feet) of water. This will result in a concentration of 0.5 to 1 ppm of dissolved copper. Dissolve the required amount of copper sulfate in a plastic container and pour the solution into the pool. Use the higher rate where visible algae are present. For maintenance dosages, use the lower rate. Repeat the lower rate to control the recurrence of algae and avoid the buildup of copper. This product may be used to help control pool odors and algae during the Winter months. Apply the higher rate while the pool is not being used during the Winter.

USE RECOMMENDATIONS

Almond, Apricot, Peach, Nectarine: To control Shot hole fungus, prepare a 10-10-100 Bordeaux mixture. Apply as a dormant spray in late Fall or early Spring.

Use Restrictions: Do not apply more than 31.7 lbs. of this product per acre per application during the dormant/late dormant period at a minimum retreatment interval of 7 days. Do not apply more than 6 lbs. of this product during the bloom/growing season at a minimum retreatment interval of 5 days. Do not apply more than 71.4 lbs. of this product per acre per year.

Almond, Apricot, Cherry, Peach, Nectarine, Plum, Prune: To control Brown rot blossom blight, prepare a 10-10-100 Bordeaux mixture. Apply when buds begin to swell.

Use Restrictions: Do not apply more than 31.7 lbs. of this product per acre per application during the dormant/late dormant period at a minimum retreatment interval of 7 days. Do not apply more than 6 lbs. of this product during the bloom/growing season at a minimum retreatment interval of 5 days. Do not apply more than 71.4 lbs. of this product per acre per year.

Bulbs (Easter Lily, Tulp, Gladiolus): To control Botrytis blight, prepare a 10-10-100 Bordeaux mixture. Apply as a foliar spray to 1 acre. Apply for thorough coverage beginning at the first sign of disease and repeat as needed to control disease at 7 to 10 day intervals. Use the shorter intervals during periods of frequent rains or when severe disease conditions persist. Avoid spray just before flower cutting season if residues are a problem.

Use Restrictions: On Easter lily, do not apply more than 9.9 lbs. of this product per acre per application. Do not apply more than 297.6 lbs. of this product per acre in a 12-month period at a minimum retreatment interval of 7 days. Do not apply any additional copper pesticide to this land for 36 months.

On tulips and gladiolus, do not apply more than 7.9 lbs. of this product per acre per application. Do not apply more than 79.3 lbs. of this product per acre per year at a minimum retreatment interval of 7 days.

Cherry (Sweet): To control Dead bud, Bacterial canker (*Pseudomonas syringae*), prepare a 12-12-100 Bordeaux. Apply at leaf fall and again in late Winter before buds begin to swell. In wet cool Northwest U.S. winters, a third spray may be needed between above sprays.

Cherry (Sour): To control Leaf spot, prepare a 10-10-100 Bordeaux. Apply as a full coverage spray after petal fall or as recommended by the State Extension Service.

Use Restrictions (All cherries): Do not apply more than 31.7 lbs. of this product per acre per application during the dormant/late dormant period at a minimum retreatment interval of 7 days. Do not apply more than 6 lbs. of this product during the bloom/growing season at a minimum retreatment interval of 5 days. Do not apply more than 71.4 lbs. of this product per acre per year.

Citrus (Grapefruit, Kumquat, Lemon, Lime, Orange, Pummelo, Tangelo, Tangerine)

Use Precaution: Adding foliar nutritionals to spray mixtures containing this product or other products containing copper and applying to Citrus during the postbloom period when young fruit is present may result in spray burn.

Use Restrictions: Do not apply more than 12.5 lbs. of this product per acre per application. Do not apply more than 50 lbs. of this product per acre per year at a minimum retreatment interval of 7 days.

BACTERIAL BLAST: Prepare a 10-10-100 Bordeaux spray and apply a spray in late October to early November or before Fall rains begin. Make a complete coverage spray using 10 to 25 gals per mature tree.

Lemon, Orange, Grapefruit: *Phytophthora* Brown Rot-Prepare a 3-4.5-100 Bordeaux mixture only where there is no history of copper injury or use a 3-2-6-100 (Zinc Sulfate-Copper Sulfate Crystals-Hydrated Lime-Gallons of water) Bordeaux mixture. Spray 6 gallons on skirt of tree 3 to 4 feet high and 2 to 4 gallons on trunk and ground under tree. If *Phytophthora hibernalis* is present, use 10 to 25 gallons to completely cover each tree. Apply in November or December just before or after first rain. In several brown rot season, apply second application in January or February.

Use Restrictions: Do not apply more than 12.5 lbs. of this product per acre per application. Do not apply more than 50 lbs. of this product per acre per year at a minimum retreatment interval of 7 days.

Lemon, Orange, Grapefruit: *Septoria* Fruit, Leaf Spot; Central California — Brown Rot, Zinc, Copper Deficiencies — Prepare a 3-2-6-100 Bordeaux mixture (Zinc sulfate-This product-Hydrated lime-Gallons of water). Use 10 to 25 gals to completely cover each tree. Apply in October, November or December before or just after first rain.

Use Restriction: Do not apply more than 12.5 lbs. of this product per acre per application. Do not apply more than 50 lbs. of this product per acre per year at a minimum retreatment interval of 7 days.

Grape: To control Downy mildew, prepare a 2-6-100 Bordeaux mixture. Apply beginning when disease is detected. Repeat as needed to achieve and maintain control. This mixture and its use will exhibit some phytotoxicity on most varieties.

Use Restrictions: Do not apply more than 11.9 lbs. of this product per acre per application. Do not apply more than 79.3 lbs. of this product per acre per year at a minimum retreatment interval of 3 days.

8089
Olives: To control Olive leaf spot (Peacock spot), and Olive knot, prepare a 10-10-100 Bordeaux mixture. Apply up to 500 gallons per acre. In Autumn before heavy winter rains to prevent peacock spot.

In wet winters, a repeat spray may be needed in mid-winter. In areas with less than 10 inches of annual rainfall, a 5-5-100 Bordeaux applied in up to 500 gals per acre may be used. To help protect against Olive knot, apply a 10-10-100 Bordeaux before heavy rains and again in the Spring. Injury may occur in areas of less than 10 inches of rainfall.

Use Restrictions: Do not apply more than 12.5 lbs. of this product per acre per application. Do not apply more than 25 lbs. of this product per acre per year at a minimum retreatment interval of 30 days.

Peach: To control Leaf curl, prepare a 10-10-100 Bordeaux mixture. Apply at leaf fall or as a dormant spray in late Fall or early Spring before buds begin to swell.

Use Restrictions: Do not apply more than 31.7 lbs. of this product per acre per application during the dormant/late dormant period at a minimum retreatment interval of 7 days. Do not apply more than 6 lbs. of this product during the bloom/growing season at a minimum retreatment interval of 5 days. Do not apply more than 71.4 lbs. of this product per acre per year.

GENERAL CHEMIGATION INSTRUCTIONS

Apply this product only through one or more of the following types of systems: sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation system(s). Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Posting of areas to be chemigated is required when 1) any part of a treated area is within 300 feet of sensitive areas such as residential area, labor camps, businesses, day care centers, hospitals, in-patient clinics, nursing homes or any public areas such as schools, parks, playgrounds, or other public facilities not including public roads, or 2) when the chemigated area is open to the public such as golf courses or retail greenhouses. Posting must conform to the following requirements. Treated areas shall be posted with signs at all usual points of entry and along likely routes of approach from listed sensitive areas. When there are no usual points of entry, signs must be posted in the corners of the treated areas and in any other location affording maximum visibility to sensitive areas. The printed side of the sign should face away from the treated area towards the sensitive area. The signs shall be printed in English. Signs must be post prior to application and must remain posted until foliage has dried and soil surface water has disappeared. Signs may remain in place indefinitely as long as they are composed of materials to prevent deterioration and maintain legibility for the duration of the posting period. At the top of the sign shall be the words "KEEP OUT", followed by an octagonal stop sign symbol at least 8 inches in diameter containing the word "STOP". Below the symbol shall be the words "PESTICIDES IN IRRIGATION WATER". All words shall consist of letters at least 2.5 inches tall, and all letters and the symbol shall be a color that sharply contrasts with their immediate background. This sign is in addition to any sign posted to comply with the Worker Protection Standard.

CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly services an average of at least 25 individuals daily at least 60 days out of the year. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into the reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the flow outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

See Treatment Instructions, below.

9 of 9

SPRINKLER CHEMIGATION

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. The system must contain a functional check valve, vacuum relief valve, and low pressure drain approximately located on the irrigation pipeline to prevent water source contamination from backflow. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. This pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump, such as a positive displacement injection pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

APPLICATION INSTRUCTIONS

Do not apply when wind speed favors drift beyond the area intended for treatment. When mixing, fill nurse tank half full with water. Add this product slowly to tank while hydraulic or mechanical agitation is operating and continue filling with water. Stickers, spreaders, insecticides, nutrients, etc. should be added last. If compatibility is in question, use the compatibility jar test before mixing a whole tank. Because of the wide variety of possible combinations which can be encountered, observe all use precautions and limitations on the label of all products used in mixtures. This product should be added through a traveling irrigation system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. Agitation is recommended.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store unused product in original container only in a cool, dry area out of reach of children and animals. Store copper sulfate solution in stainless steel, fiberglass, polypropylene, PVC or plastic equipment. Do not use mild steel, nylon, brass or copper. Keep away from galvanized pipe and nylon equipment. If container or bag is damaged, place the container or bag in a plastic bag. Shovel any spills into plastic bags and seal with tape. In the event copper sulfate solution is spilled, neutralize with limestone or baking soda before disposal. The copper sulfate solution may deteriorate concrete.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of 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 dumping is prohibited.

CONTAINER DISPOSAL: Do not reuse empty container. Completely empty liner by shaking and tapping sides at bottom to loosen clinging particles. Place the pesticide into application equipment. Then dispose of liner in a sanitary landfill or, by incineration if allowed by State and Local authorities. If burned, stay out of smoke.

WARRANTY—CONDITIONS OF SALE

OUR RECOMMENDATIONS FOR USE of this product are based upon tests believed reliable. Follow directions carefully. Timing and method of application, weather and crop conditions, mixtures with other chemicals not specifically recommended and other influencing factors in the use of this product are beyond the control of the Seller. To the extent consistent with applicable law, Buyer assumes all risks of use, storage and handling of this material not in strict accordance with directions given herewith.

To the extent consistent with applicable law, in no case shall the Manufacturer or the Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product when such use and/or handling is not in strict accordance with direc-