



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

January 23, 2018

Luz G. Chan
Registration Manager
Drexel Chemical Company
P.O. Box 13327
Memphis, TN 38113-0327

Subject: Label Amendment – adding additional me-too crops and directions for use; minor formatting changes; addition of sublabel
Product Name: KOP-5
EPA Registration Number: 19713-695
Application Date: 9/06/2017
Decision Number: 533131

Dear Ms. Chan:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

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

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with FIFRA section 6. If you have any questions, please contact Heather Garvie by phone at 703-308-0034, or via email at garvie.heather@epa.gov.

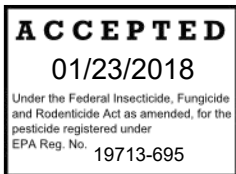
Sincerely,

A handwritten signature in cursive script that reads "Heather Garvie for".

Tony Kish
Product Manager 22
Fungicide Branch
Registration Division

Enclosure

SUB-LABEL A: AGRICULTURAL CROP USES



GROUP	M	FUNGICIDE
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KOP™-5

Algaecide/ Bactericide*/ Fungicide

For use against diseases caused by bacteria* and fungi in Citrus, Field crops, Small fruits, Tree crops, Vegetables, Vine crops, greenhouse and shade house grown crops, miscellaneous crops, and Turf and Ornamentals. Also for use as post-harvest wash on agricultural commodities and against algae in aquatic systems.

ACTIVE INGREDIENT:

Copper sulfate pentahydrate [CAS No. 7758-99-8]**..... 20.0%

OTHER INGREDIENTS: 80.0%

TOTAL: 100.0%

**Equivalent to 5% metallic copper.

This product contains 0.49 pound of metallic copper per gallon.
A chelated copper product.

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.)

**SHAKE WELL BEFORE USING
[RECIRCULATE CONTENTS BEFORE USE]**

See FIRST AID Below

EPA Reg. No. 19713-695

EPA Est. No. 19713-XX-XXX

Net Content: _____ Gals. (_____ L)

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 person.
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also call CHEMTREC at 800-424-9300 for emergency medical treatment information.	
NOTE TO PHYSICIAN:	Probable mucosal damage may contraindicate the use of gastric lavage.

*Non-public health bacteria.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

DANGER: Corrosive. Causes irreversible eye damage. Harmful if absorbed through skin. Harmful if swallowed. Do not get in eyes or on clothing. Avoid contact with skin. Wear protective eyewear (goggles, face shield or safety glasses). Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Mixers, loaders, applicators and other handlers must wear: Protective eyewear (goggles, face shield or safety glasses), long-sleeved shirt, long pants, shoes, socks, and chemical-resistant gloves made of any waterproof material such as butyl rubber, nitrile rubber, polyvinyl chloride, polyethylene, and viton. For overhead exposure, wear chemical-resistant headgear.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate.

Engineering Controls:

When handlers use closed systems, enclosed cabs or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should: 1) Wash hands thoroughly 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. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates and may contaminate water through runoff. This product has 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 or areas where surface water is present or to intertidal areas below the mean high mark. Do not contaminate water when disposing of equipment washwaters or rinsate.

PRODUCT INFORMATION

KOP-5 is a copper sulfate pentahydrate formulation that is used against diseases caused by bacteria* and fungi in Citrus, Field crops, Small fruits, Tree crops, Vegetables, Vine crops, greenhouse and shade house grown crops, miscellaneous crops, and Turf and Ornamentals. It is also for use as post-harvest wash on agricultural commodities and against algae in aquatic systems and tadpole shrimp in Rice fields.

Using water containing moderate to high amounts of sulfur may cause this product to neutralize. Whenever possible, use a compatibility jar test before mixing a whole tank.

***Note:** Everywhere that bacteria is listed on this label refers to non-public health bacterial/bactericide.

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.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard (WPS), 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 restricted entry interval (REI) of 48 hours. For greenhouse uses, the REI may be reduced to 24 hours provided that the following conditions are met:

For at least 7 days following the application of this product in greenhouses:

- At least one container or station designed specifically for flushing eyes is available in operating conditions with the WPS-required decontamination supplies for workers entering the area treated with this product.
- Workers are informed orally in a manner they can understand that, **i)** residues in the treated area may be highly irritating to the eyes, **ii)** they should take precautions, such as refraining from rubbing their eyes to keep the residues out of their eyes, **iii)** if they do get residues in their eyes, they should immediately flush their eyes with the eye flush container or in the eye flush station that is located with the decontamination supplies, and **iv)** how to operate the eye flush container or eye flush station.

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, protective eyewear, and shoes plus socks.

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 (WPS) 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 allow people or pets to enter treated areas until sprays have dried.

RESISTANCE MANAGEMENT

GROUP M FUNGICIDE

This product is a Group M* fungicide. Fungal isolates with acquired resistance to Group M fungicide may eventually dominate the fungal population if Group M fungicides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by this product or other Group M fungicides.

To delay fungicide resistance, consider:

- Avoiding consecutive use of this product or other target site of action Group M fungicides that have a similar target site of action on the same pathogens.
- Using tank-mixtures or pre-mixes with fungicides from different target site of action Groups as long as the involved products are all registered for the same use and are both effective at the mix or pre-pack rate on the pathogens(s) of concern.
- Basing fungicide use on a comprehensive IPM program.
- Monitoring treated fungal populations for loss of field efficacy.
- Contacting your local extension specialist, certified crop advisors, and/or manufacturer for fungicide resistance management and/or IPM recommendations for specific crops and resistant pathogens.

*The multi-site activity grouping, designated by the symbol "M", comprises a collection of various chemicals that act as general toxophores with several sites of action. These sites may differ between group members.

SPRAY DRIFT MANAGEMENT

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

Droplet Size

Apply only as a medium or coarser spray (ASAE standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

Wind Speed

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

Temperature Inversions

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

Other State and Local Requirements

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

Equipment

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

Additional Requirements for Aerial Applications

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

Additional Requirements for Ground Boom Applications

- Do not apply with a nozzle height greater than 4 feet above the crop canopy.

CHEMIGATION INSTRUCTIONS

Apply this product only through one or more of the following types of systems: Sprinkler including center pivot, lateral move, end row, side (wheel) roll, traveler, big gun, solid set or hand move; flood (basin); furrow; border or drip (trickle) irrigation and system(s). Do not apply this product through any other type of irrigation systems.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform 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 device 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 areas to be chemigated is required when 1) any part of a treated area is within 300 feet of sensitive areas such as residential areas, 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 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 the listed sensitive area. When there are no usual points of entry, signs must be posted in the corners of the treated areas and in any other locations 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 posted 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.

All words shall consist of letters of at least 2.5 inches tall and all letters and the symbol shall be in a color which sharply contrasts with their immediate background. 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".

This sign is in addition to any sign posted to comply with the Workers Protection Standard (WPS).

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 serves 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 a 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 of the 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 liquid back toward the injection.

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.

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 the pesticide distribution is adversely affected. Systems must use a metering pump, such as a positive displacement injection pump (i.e., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

When mixing, agitation is not necessary. Adjust the pH of the water to 7 or below. If using stickers, spreaders, insecticides, nutrients, etc., add this product **last**. If compatibility is in question, use a compatibility jar test before mixing a whole tank. Because of a wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in the mixtures.

This product may be added through a traveling system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. This product readily disperses and needs no agitation.

SPRINKLER CHEMIGATION

The system must contain a functional check valve, vacuum relief valve, and low pressure drains appropriately located on the irrigation pipeline to prevent water source contamination from back flow.

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 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 (i.e., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

When mixing, agitation is not necessary. Adjust the pH of the carrier water to 7 or below. If using stickers, spreaders, insecticides, nutrients, etc., add this product **last**. If compatibility is in question, use a compatibility jar test before mixing a whole tank. Because of a wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in the mixtures.

May be added through a traveling irrigation system or at the last 30 minutes of solid set or hand moved irrigation systems. This product readily disperses and needs no agitation.

FLOOR (BASIN), FURROW AND BORDER CHEMIGATION

Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field downstream of a hydraulic discontinuity such as drop structure or weir box to decrease potential for water source contamination from back flow if water flow stops.

Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

- a. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
- b. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of liquid back toward the injection pump.
- c. The pesticide injection 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.
- d. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- e. 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.
- f. Systems must use a metering pump, such as a positive displacement pump (i.e. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

When mixing, agitation is not necessary. Adjust the pH of the carrier water to 7 or below. If using stickers, spreaders, insecticides, nutrients, etc., add this product **last**. If compatibility is in question, use a compatibility jar test before mixing a whole tank. Because of a wide variety of possible combinations which can be encountered, observe all cautions and limitations on the labels of all products used on the mixtures.

This product may be added through a traveling irrigation system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. This product readily disperses and needs no agitation.

DRIP (TRICKLE) CHEMIGATION

The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.

The pesticide injection pipeline must contain a functional, automatic, quick closing check valve to prevent the flow of liquid back toward the injection pump.

The pesticide injection 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 (i.e., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

When mixing, agitation is not necessary. Adjust the pH of the carrier water to 7 or below. If using stickers, spreaders, insecticides, nutrients, etc, add this product **last**. If compatibility is in question, use a compatibility jar test before mixing a whole tank. It is the pesticide user's responsibility to ensure that the combination product is registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on the product label involved in tank-mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank-mixture.

This product may be added through traveling irrigation system continuously or at the last 30 of solid set or hand moved irrigation systems. This product readily disperses and needs no agitation.

FOR SPRAY AND SOIL DRENCH APPLICATIONS

Always spray for total foliage coverage. When respraying, the application rates may be varied within the specified rate range depending on the severity of the disease and environmental conditions. At times, lower rates can be as effective as higher rates and should be tried first. Usually, preventive programs may be maintained at lower rates. Use of low volume spraying is effective against Botrytis and not effective against established powdery mildew and *Xanthomonas* infections. Also, applications on actively growing tissue may be more effective than applications on dormant tissue.

MINIMUM SPRAY VOLUME WHEN APPLYING THIS PRODUCT

GALS./AC.			
CROP	BY AIR	BY GROUND	
		Dilute	Concentrate*
Citrus	10	125	30
Field crops	3	20	-
Small fruits	5	150	30
Tree crops	10	400	50
Vegetables	3	20	-
Vines	5	150	30

*Pesticide application equipment such as Curtec® or other similar sprayers capable of obtaining coverage at low volumes may be used as low as 20 gals./Ac. of spray volume.

FROST INJURY PROTECTION - BACTERIAL ICE NUCLEATION INHIBITOR

Application of this product at specified rates to all crops on this label at stages of growth at least 24 hours prior to anticipated frost conditions will afford control of ice nucleating bacteria (*Erwinia herbicola*, *Pseudomonas fluorescens*, and *Pseudomonas syringae*) and may, therefore, provide some protection against light frost. This product is not recommended for use in geographical areas where conditions favor severe frost.

FOR USE AS POST-HARVEST WASH ON AGRICULTURAL COMMODITIES

For use as a post-harvest wash, this product may be applied with any type of application equipment that gives thorough and uniform coverage. Devices may include, but are not limited to, dunk and dip tanks, spray applicators or fogging.

Washing raw agricultural commodities will both clean and control bacteria* and fungi that cause spoilage. Depending on water quality and cleaning conditions or when adding new processing water, add from 103 to 128 fluid ounces of this product per 1,000 gallons of water. Allow thorough coverage of the commodity and then let dry. Rinsing is not required.

Depending on water quality, cleaning conditions or when adding new processing water, start at lower rinse rates. Add this product as per the table below.

Amount of This Product (fl. oz.)	Amount of Rinse Water (Gals.)
25.6 to 32	250
51.2 to 64	500
103 to 128	1,000

Note: Commodities need only be immersed long enough to allow complete coverage.

*Non-public health bacteria.

FOR USE TO CONTROL ALGAE AND TADPOLE SHRIMP IN RICE FIELDS

Apply this product at the first sign of algae growth on the surface of the field or at any time tadpole shrimp appears between planting time and when the seedlings are well rooted and have emerged through the water. Applications are most effective when made prior to algae leaving the soil surface and rising to the water surface. Factors such as water depth, temperature, pH, and the amount of algae can affect the amount of this product required. If the depth of water is 8 inches, apply 9 gallons of this product per acre. If the depth of water is 4 inches, apply 4.5 gallons of this product per acre. This product can be metered into the Rice field as water is being applied or slug fed into each paddy when water is being held. Do not exceed a metallic copper concentration in water of 2.5 ppm (9 gals. of this product per acre with 8 inch depth of water or 13.5 gals. of this product per acre foot of water). Do not exceed 1 ppm of metallic copper concentration (3.5 gals. of this product per acre with 8 inch depth of water of 5.33 gallons or product per acre at a one foot depth of water) if tadpole shrimp are not present.

FOR USE AS A FUNGICIDE/BACTERICIDE* ON GROWING AGRICULTURAL COMMODITIES

(*Non-public health bacteria)

USE INSTRUCTIONS

This product may be applied with any type of application equipment that gives uniform coverage of foliage, including ground, aerial and low volume sprayers as specified on this label. Use application equipment that is made of PVC or 316L stainless steel.

This product is compatible with most fungal and insecticidal biopesticides when applied at least 2 days before or after application of the biopesticide(s). 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 the product label involved in tank-mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank-mixture.

Phytotoxicity: Although this product has been tested on a wide variety of fruits, vegetables and nuts without phytotoxicity, some varieties and cultivars may become sensitive to this product due to environmental factors and stages of growth. Depending on the equipment used and the specific crop, the spray volume applied per acre will differ. Refer to the table “*MINIMUM SPRAY VOLUME*”. Complete spray coverage is essential to assure optimum performance from this product. When treating by aerial application or with low volume application equipment, unless you have had specific previous experience, it is advisable to test for compatibility and tolerance to crop injury prior to full scale commercial utilization.

Read this label for specific rates and timing of application by crop. Where application rates and intervals are provided in a range (e.g., 2 to 4 fl. ozs. and 7 to 10 day intervals), use the higher specified rate and shorter spray time intervals when rainfall is heavy and/or disease pressure is high. Use the higher specified rates for large mature tree crops. The use of a surfactant such as Surf-AC® 820, Cell-U-Wett™ are acceptable for plants having waxy or hairy surfaces. This product works via surface contact with the plants and materials being treated. It is important to ensure that all surfaces are thoroughly wetted. This product does not produce any visible residue or have a distinct odor. It does have a residual, especially if applied with a surfactant.

SPECIAL PRECAUTIONS

- DO NOT mix with acidic compounds such as fosetyl-aluminum (e.g., Alliette™) within 14 days before or after application of same.
- Environmental conditions such as extended periods of wet weather, acid rain, etc., which alter the pH of the leaf surface may affect the performance of this product resulting in possible phytotoxicity or loss of effectiveness.
- This product may be reactive on masonry and metal surfaces such as galvanized roofing. Avoid contact with metal surfaces. Do not spray on cars, houses or other metal surfaces susceptible to damage.
- DO NOT mix with potash.
- It must be determined in the selection process if proper application equipment is available and if the waste associated with its use can be properly handled. Materials used in the construction of application equipment is also an important factor as agricultural chemicals are often reactive with soft metals such as aluminum and even some synthetic materials such as plastics, rubbers, etc. Therefore, it is necessary when using equipment containing these materials that they be thoroughly flushed with clean water after each days use.

FOR USE ON CROPS, TURF, AND ORNAMENTALS

CITRUS (such as Grapefruit, Kumquat, Lemon, Lime, Oranges, Pummelo, Tangelo, Tangerine)

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Alternaria brown rot	25.6 to 60	60	On susceptible varieties, apply when the first Spring flush appears and each following flush. On the fruit, start application after two-thirds of the petals have fallen. Repeat at 21 day intervals or as needed. Use the higher specified rates when conditions favor disease development.
Canker (suppression)	12.8 to 64	64	Spray flushes 7 to 14 days after shoots begin to grow. Young fruit may require additional applications. Number and timing of applications will be dependent on disease pressure. Under heavy pressure, spray each new flush of growth.
Greasy spot, Pink pitting	9 to 64	64	Apply during mid-summer.
Melanose, Algal spot	25.6 to 85	85	Apply 2 times per year before the onset of Spring and Autumn rains.
Phytophthora brown rot, Septoria spot	25 to 70	70	Apply at first indication of rain or first appearance of disease. Repeat application as needed during wet weather.
Scab	25.6 to 64	64	Apply shortly before trees begin to flush. Re-apply at two-thirds petal fall. Repeat application 4 weeks later if necessary.
Do not apply more than 12.6 lbs. of copper (25.4 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

FIELD CROPS

Alfalfa

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Cercospora leaf spot, Leptosphaerulina leaf spot	9 to 32	32	Apply 10 to 14 days before each harvest or earlier if disease threatens. Note: Spray injury may occur with sensitive varieties of Lahontan.
Do not apply more than 1.12 lbs. of copper (2.2 gals. of this product) per acre per year. Minimum retreatment interval is 30 days.			

Barley, Oats, Wheat

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Helminthosporium spot, Blotch, Septoria leaf blotch	9 to 25.6	25.6	Make first application at early heading and follow with second spray 10 days later. Use the higher specified rates when conditions favor disease.
Do not apply more than 1.06 lbs. of copper (2.1 gals. of this product) per acre per year. Minimum retreatment interval is 10 days.			

Corn

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Bacterial stalk rot	9 to 32	32	Begin treatment when disease first appears and repeat every 7 to 10 days or as needed. Use the higher specified rates and shorter spray intervals when conditions favor disease.
Do not apply more than 4.2 lbs. of copper (8.4 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Peanuts

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Cercospora leaf spot	13 to 25.6	25.6	Begin spraying at 35 to 40 days after planting or when disease symptoms first appear. Repeat at 10 to 14 day intervals or as needed. Reduce sprays to 7 day intervals during humid weather. Use the higher specified rates when conditions favor disease. Sulfur may be added at their label specified rates.
Do not apply more than 4.74 lbs. of copper (9.5 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Potatoes

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Early blight, Late blight	9 to 32	32	Apply at 7 to 10 day intervals or as needed starting when plants are 2 to 6 inches high in locations where disease is light. Use the higher specified rate when conditions favor disease. Under severe disease conditions, disease control using this product will be improved by tank mixing with other compatible fungicides registered for use in Potatoes. Read and follow the most restrictive label.
Do not apply more than 25 lbs. of copper (50.5 gals. of this product) per acre per year. Minimum retreatment interval is 5 days.			

Sugar beets

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Cercospora leaf spot	9 to 38.4	38.4	Begin applications when conditions first favor disease development. Repeat at 10 to 14 day intervals or as needed. Use higher specified rates when conditions favor disease. Addition of a sticker/spreader is recommended.
Do not apply more than 7.86 lbs. of copper (15.8 gals. of this product) per acre per year. Minimum retreatment interval is 10 days.			

Tobacco

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Angular Leaf Spot, Downy Mildew	19.2 to 25.6	25.6	Apply at first sign of disease or when conditions favor disease development.
Do not apply more than 2.0 lb. of copper (4 gals. of this product) per acre per application. Do not apply more than 8.0 lbs. of copper (16.1 gals. of this product) per acre per year. Minimum retreatment interval is 3 days.			

ORNAMENTALS

Spray foliage thoroughly for good coverage. Re-application rates and intervals can vary according to disease severity and adversity of environmental conditions. Lower rates may be as effective as higher rates and should be tried first. Routine preventive programs may be maintained using lower rates.

Use of low volume equipment is effective against Botrytis but may not be effective against established Powdery mildew and/or Xanthomonas infections.

Applications on actively growing tissues may be more effective than applications on dormant tissues.

USE PRECAUTION

- Rates above 15 fluid ounces of this product per 100 gallons of water may damage some tender, open blooms.

USE RESTRICTIONS

- On Easter Lilies, do not apply more than 2.5 pounds of copper [640 fl. ozs. (5 gals.) of this product] per acre per application. Do not apply more than 75 pounds of copper [150 gals. of this product] per acre per year. Minimum retreatment interval is 7 days. Do not apply any additional pesticide containing copper to this land for 36 months.
- On other Ornamentals, do not apply more than 2 pounds of copper [512 fl. ozs. (4 gals.) of this product] per acre per application. Do not apply more than 20 pounds of copper [40 gals. of this product] per acre per year. Minimum retreatment interval is 7 days.

Annual and Perennial Bedding Plants

Plant	Disease(s) / Pathogen(s)	This Product (fl. oz./100 gals.)
Alyssum	Botrytis, Downy Mildew	13 to 20
Argyranthemum*	Botrytis, Erwinia	13 to 20
Begonia	Botrytis	13 to 20
	Powdery Mildew, Xanthomonas	15 to 30
Chrysanthemum*	Botrytis, Pseudomonas	15 to 25
Daylily	Botrytis	13 to 20
	Erwinia, Powdery Mildew	15 to 25
Dusty Miller	Alternaria	15 to 25
	Botrytis	13 to 20
Fuchsia	Botrytis	13 to 20
	Powdery Mildew	13 to 25

Geranium	Botrytis, Rust (Preventive)	15 to 20
	Preventive: Pseudomonas, Xanthomonas	15 to 45
	Therapeutic: Pseudomonas, Xanthomonas	50
	Therapeutic: Rust	25 to 40
Hollyhock*	Botrytis	13 to 20
	Powdery Mildew, Rust	15 to 25
Hosta*	Botrytis	15 to 20
	Erwinia	15 to 30
Impatiens	Alternaria	15 to 35
	Botrytis	13 to 15
	Phytophthora	15 to 20
	Powdery Mildew	13 to 25
	Pseudomonas	15 to 35
Lisianthus	Botrytis	13 to 20
	Erwinia*, Pseudomonas*, Xanthomonas*	13 to 25
New Guinea Impatiens	Botrytis	13 to 15
	Powdery Mildew	13 to 20
Pachysandra*	Botrytis	13 to 15
	Volutella	13 to 25
Pansy	Botrytis	13 to 20
	Cercospora, Phytophthora	15 to 20
Periwinkle	Botrytis	13 to 20
	Phytophthora	15 to 20
Ranunculus	Bacterial Blight, Botrytis	13 to 20
	Powdery Mildew	15 to 25
Snapdragon	Botrytis	13 to 20
	Downy Mildew, Rust	13 to 25
Zinnia	Botrytis	13 to 20
	Powdery Mildew	15 to 30
	Pseudomonas, Xanthomonas	13 to 25
Additional annuals & perennials ^{1,*}	Botrytis	13 to 20
	Downy Mildew	15 to 30
	Powdery Mildew, Pseudomonas	15 to 25

¹ Additional annuals and perennials include Anemone, Aster, Bacopa, Baptista, Carnation, Coleus, Columbine, Coneflower, Coreopsis, Cuphea, Dahlia, Daisy, Dianthus, Delphinium, Echinacea, Ipomoea, Lantana, Lead Plant, Liatris, Lobelia, Lupine, Marigold, Monarda, Ornamental Grasses, Pentas, Petunia, Phlox, Poppy, Prairie Smoke, Primrose, Pulmonaria, Rudbeckia, Salvia, Scabiosa, Sedum, Silphium, Verbena, Veronica, Vinca, Viola.

* Not registered for use in California.

Cut Flowers

Plant	Disease	This Product (fl. oz./100 gals.)
Alstromeria*	Botrytis	13 to 15
Carnation*	Botrytis	13 to 20
Chrysanthemum*	Botrytis	15 to 25
Delphinium*	Botrytis	13 to 15
Freesia*	Botrytis	13 to 15
Gerbera	Botrytis	15 to 25
Gladiola	Botrytis	13 to 15
Lisianthus	Botrytis	13 to 20
Orchid	Botrytis	13 to 15
Rose**	Botrytis	15 to 50
Snapdragon*	Botrytis	13 to 20
Sweetpea*	Botrytis	13 to 15

* Not registered for use in California

** On Roses, rates up to 70 fluid ounces of this product per 100 gallons of water may be used against Powdery mildew if no blooms are open.

Nursery Plants

Plant	Disease(s) / Pathogen(s)	This Product (fl. oz./100 gals.)
Azalea	Anthracnose	15 to 25
	Botrytis	13 to 25
	Cylindrocladium	15 to 35
	Phytophthora	20 to 25
Buxus	Volutella	15 to 25
Cherry Laurel*	Xanthomonas	20 to 35
Conifers*	Botrytis	13 to 25
	Diplodia	10 to 13
Crape Myrtle*	Botrytis	13 to 25
	Powdery Mildew	20 to 30
Dogwood	Anthracnose, Powdery mildew	20 to 30
	Botrytis	13 to 25
Elm*	Erwinia	20 to 40
Euonymus	Anthracnose	15 to 30
	Botrytis	13 to 25
Hawthorn	Cedar Apple Rust	15 to 25
Hydrangea	Botrytis, Powdery mildew	13 to 25
	Cercospora	15 to 25
Indian Hawthorn	Botrytis	13 to 25
	Cercospora	15 to 25
	Entomosporium	15 to 30
Japanese Maple	Botrytis	13 to 25
	Pseudomonas, Verticillium	15 to 25
Juniper	Phomopsis	13 to 25
Leyland Cypress	Cercospora	13 to 25
Lilac	Botrytis, Pseudomonas	13 to 25
	Powdery Mildew	15 to 25
Nandina*	Xanthomonas	15 to 25
Oak*	Anthracnose	35
	Botrytis	13 to 25
Oak (Trunk Spray)*	Phytophthora	30 to 45
Photinia*	Entomosporium	15 to 30
Rhododendron	Botrytis	13 to 25
	Cylindrocladium	15 to 35
	Phytophthora	20 to 35
Rosaceae: Cotoneaster (Malus), Mountain Ash, Ornamental Crabapple, Ornamental Pear, Pyracantha	Apple Scab	40
	Botrytis	13 to 25
	Fireblight	20 to 40
	Pseudomonas	15 to 35
Rose**	Preventive: Black Spot, Powdery mildew	15 to 30
	Therapeutic: Black Spot, Powdery mildew	35 to 50
	Preventive: Botrytis, Cylindrocladium, *Downy mildew	15 to 20
	Therapeutic: Botrytis, Cylindrocladium, *Downy mildew	25 to 50
Ruscus*	Pseudomonas	13 to 25
Sycamore*	Anthracnose	35
	Botrytis	13 to 25
Viburnum*	Botrytis	13 to 25
	Cercospora	15 to 25
	Phytophthora	20 to 25
Additional nursery plants ¹	Botrytis, Rhizoctonia	13 to 25
	Fireblight	20 to 40
	Dothistroma*	20 to 40
	Powdery Mildew	20 to 25
	Pseudomonas	15 to 35

¹ Additional Nursery Plants include: Shrubs/Vines* - Barberry, Bougainvillea, Clematis, Cornus, Cotinus, Forsythia, Gardenia, Holly, Paeonia, Philadelphus, Physocarpus, Potentilla, Ribes, Rosa, Spirea, Weigela, Wisteria; Deciduous* - Acer, Amelanchier, Betula, Celtis, Cercis, Crataegus, Ficus, Fraxinus, Ginkgo, Gleditsia, Magnolia, Malus, Populus, Prunus, Pyrus, Tilia; Conifers* - Abies, Juniper, Picea, Pinus, Pittosporum, Pseudotsuga, Taxus, Thuja, Tsuga; Non-Bearing Fruit Trees and Vines – Apple (In California, Fireblight only), Pear*, Grape (In California, Botrytis only), Citrus*

* Not registered for use in California.
 ** On Roses, rates up to 70 fluid ounces of this product per 100 gallons of water may be used against Powdery mildew if no blooms are open.

Potted Flowering Plants

Plant	Disease(s) / Pathogen(s)	This Product (fl. oz./100 gals.)
African Violet	Botrytis, Powdery Mildew	13 to 15
Azalea	Botrytis	13 to 25
	Colletotrichum	15 to 25
	Cylindrocladium	15 to 35
Calla lily	Botrytis, Erwinia	13 to 20
Chrysanthemum	Botrytis, Crown gall, Erwinia, Powdery mildew	15 to 25
Cineraria*	Botrytis	13 to 20
Cyclamen	Botrytis	15 to 20
	Erwinia	15 to 20
Daffodil*	Botrytis	13 to 20
Easter Lily	Botrytis	13 to 20
Exacum*	Botrytis	13 to 20
Gerbera	Botrytis, Powdery mildew	15 to 25
Gloxina*	Botrytis	13 to 20
Holiday Cactus*	Botrytis	13 to 25
	Erwinia, Pseudomonas, Xanthomonas	15 to 50
Hyacinth*	Botrytis	13 to 20
Hydrangea	Botrytis	13 to 25
	Powdery Mildew	12 to 25
Iris*	Botrytis	13 to 20
	Erwinia	15 to 20
Kalanchoe	Botrytis	15 to 25
	Erwinia, Powdery mildew	15 to 35
Lisianthus	Botrytis	13 to 20
Orchid	Botrytis	13 to 15
	Erwinia, Pseudomonas, Xanthomonas	15 to 40
Poinsettia	Botrytis	15 to 20
	Scab	20 to 35
	Powdery Mildew (Preventive)	15 to 20
	Powdery Mildew (Therapeutic)	20 to 35
Primula	Botrytis	13 to 20
	Erwinia	15 to 20
Rose bush**	Preventive: Black Spot, Powdery mildew	15 to 30
	Therapeutic: Black Spot, Powdery mildew	35 to 50
	Preventive: Botrytis, Cylindrocladium, *Downy mildew	15 to 20
	Therapeutic: Botrytis, Cylindrocladium, *Downy mildew	25 to 50
Tulip	Botrytis	13 to 20

* Not registered for use in California.

** On Roses, rates up to 70 fluid ounces of this product per 100 gallons of water may be used against Powdery mildew if no blooms are open.

Tropical Foliage Plants

Plant	Disease(s) / Pathogen(s)	This Product (fl. oz./100 gals.)
Dracaena	Rust	13 to 15
Ferns*	Botrytis, Erwinia, Rhizoctonia	13 to 20
Hibiscus	Botrytis	13 to 25
	Pseudomonas	15 to 25
	Xanthomonas	15 to 50
Ivy	Botrytis	13 to 20
	Xanthomonas	15 to 50
Palms*	Botrytis, Erwinia	13 to 20
Hibiscus	Botrytis	13 to 25
	Pseudomonas, Xanthomonas	15 to 25
Palms*	Botrytis, Erwinia	13 to 20
	Pseudomonas, Xanthomonas	13 to 25
Philodendron selloum*	Fireblight	20 to 40
Spathiphyllum	Botrytis	13 to 25
	Cylindrocladium	15 to 25
	Phytophthora	15 to 30
Tropical Foliage	Botrytis, Powdery mildew	13 to 25
	Erwinia, Pseudomonas, Xanthomonas	20 to 50

*Not registered for use in California.

SPRAY AND DIP APPLICATIONS DURING PROPAGATION

Harvesting Cuttings on Site

When harvesting cuttings on site, spray or fog stock plants using the rates in the following table 1 to 2 days prior to taking cuttings. Spray cuttings to drench again at same rate 2 to 3 days after sticking in rooting medium or dip cuttings for a few seconds prior to sticking.

Delivered Rooted, Callused or Unrooted Cuttings

When using shipped-in rooted, callused or unrooted cuttings, spray cuttings to drench using the rates in the following table 2 to 3 days after planting or sticking, or dip cuttings for few seconds prior to sticking. Under severe disease pressure, repeat application in 7 to 10 days.

Herbaceous and Woody Stock Plants and Cuttings

Plant	Disease(s) / Pathogen(s)	This Product (fl. oz./100 gals.)
Azalea	Botrytis*	13 to 25
	Cylindrocladium	15 to 35
Chrysanthemum	Botrytis*, Erwinia	15 to 25
Geranium	Botrytis	15 to 20
	Xanthomonas	15 to 50
Holiday Cactus*	Botrytis	13 to 25
	Erwinia	15 to 20
Hydrangea	Botrytis*	13 to 25
	Xanthomonas	15 to 25
Lavender*	Botrytis	15 to 20
Mini-Rose	Botrytis*	15 to 20
	Cylindrocladium	15 to 50
Poinsettia	Botrytis	15 to 20
	Erwinia, Scab, Xanthomonas*	20 to 35
Tropical Foliage	Botrytis*	13 to 25
	Cylindrocladium	15 to 25
	Erwinia	20 to 50

*Not registered for use in California.

POST-HARVEST DIP APPLICATIONS ON CUT FLOWERS

Dip cut flowers and buds for a few seconds soon after cutting.

Plant	Disease	This Product (tsp./5 gals.)
Alstromeria	Botrytis	0.75 to 1
Carnation*	Botrytis	2 to 3
Chrysanthemum*	Botrytis	1 to 2
Delphinium*	Botrytis	1 to 2
Freesia	Botrytis	0.75 to 1
Gerbera*	Botrytis	2 to 3
Gladiola	Botrytis	1.5 to 3
Orchid*	Botrytis	2 to 3
Rose	Botrytis	3 to 3.75
Snapdragon*	Botrytis	1 to 2
Sweet pea	Botrytis	1 to 2

*Not registered for use in California.

BULB APPLICATIONS

Dip bulbs for 5 minutes or spray bulbs to drip, then allow to dry before planting.

Plant	Pathogen	This Product (fl. oz./100 gals.)
Calla Lily	Erwinia	30

SOIL DRENCH APPLICATIONS (GREENHOUSE, FIELD, LANDSCAPE AND INTERIOR)

Plant	Disease(s) / Pathogen(s)	This Product (fl. oz./100 gals.)
African Violet	Phytophthora	13 to 20
Aster	Phytophthora	20 to 30
Azalea	Cylindrocladium	20 to 35
	Rhizoctonia	20 to 35
Calla Lily*	Erwinia	15 to 30
Cyclamen	Erwinia	15
Ferns	Rhizoctonia	15 to 30
Geranium	Botrytis	20 to 35
Hosta	Erwinia	15 to 25
Impatiens	Phytophthora	20 to 35
Japanese Maple	Verticillium	25
Pansy	Phytophthora	15 to 25
	Pythium	15 to 25
Periwinkle	Phytophthora	15 to 20
Pittosporum	Rhizoctonia	15 to 20
Poinsettia	Phytophthora	15 to 25
	Rhizoctonia	20 to 35
Rhododendron	Rhizoctonia	20 to 35
Rose	Black spot	20 to 35
	Cylindrocladium	20 to 35
Spathiphyllum	Cylindrocladium	20 to 35
	Phytophthora	20 to 35
Vinca Minor*	Rhizoctonia	15 to 25

*Not registered for use in California.

SPRAY APPLICATION (SHADE AND ORNAMENTAL TREES)

Sycamore

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthracnose	9 to 18	18	Apply as a full cover spray in 100 gals. of water or sufficient volume for thorough coverage at bud crack. Repeat 7 to 10 days later at 10% leaf expansion. Use the higher specified rates when disease is severe.
Do not apply more than 0.37 lbs. of copper (0.75 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

TRUNK INJECTION APPLICATIONS (SHADE AND ORNAMENTAL TREES)

Elm [Dutch elm disease and Cankers (Botryodiplodia, Cytospora, Tubercularia)]

Inject once during the growing season for control or prevention. Injection sites should be six inches or less above the soil line. Injection should not be done against Dutch elm disease if the Elm appears more than 20% diseased or if the disease may have entered through root grafts from another diseased tree or stump. Remove dead and diseased limbs within 10 days after treatment.

Elm Size (diameter at chest height)	This Product (fl. oz.)	Water (gals.)
12 to 19 inches	2	2
20 to 26 inches	3	3
27 to 33 inches	4	4
34 to 40 inches	5	5
41 to 48 inches	6	6

On Red elm, use the dosage specified below for Red oak.

Oak and Sycamore* [Anthracnose, Oak Wilt, Phytophthora]

On Red oak, use as preventative treatment only. Follow the injection directions in the "ELM" section, taking care that holes are not too deep on shallow-barked Oaks.

Treatment is best in the month before Fall color in northern climates.

Elm Size (Diameter at Chest Height)	This Product (fl. oz.)	This Product (fl. oz.)	Water (gals.)
	Red Elm / Red Oak	Oak / Sycamore	
12 to 19 inches	1.0	1.5	3.0
20 to 26 inches	1.5	2.0	4.5
27 to 33 inches	2.0	3.0	6.0
34 to 40 inches	2.5	3.5	7.5
41 to 48 inches	3.0	4.5	9.0

*Not registered for use in California.

Shade Trees [Cankers: Cytospora on Cottonwood, Green Ash, Paper Birch; Botryodiplodia and Cytospora on Hackberry, Silver Maple; Nectria on Honey Locust]

Follow injection directions in the "ELM" section.

Elm Size (Diameter at Chest Height)	This Product (fl. oz.)	Water (gals.)
10 inches	1.3	1.0
20 inches	2.5	2.0

SMALL FRUITS

Blackberries (such as Aurora, Boysen, Cascade, Chehalem, Logan, Marion, Santiam, Thornless Evergreen)

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthracnose, Cane spots, Leaf spots, Purple blotch, Yellow rust	9 to 19.2	19.2	Apply when leaf buds begin to open. Repeat when flower buds show white. If needed, agricultural type spray oil may be added. Note: Crop injury may occur if applied to foliage under certain environmental conditions such as hot or prolonged moist periods. Discontinue applications if signs of crop injury appear.
Anthracnose, Cane spots, Leaf spots, Pseudomonas blight, Purple blotch, Yellow rust	17 to 32	32	Make Fall application after harvest. Apply delayed dormant spray after pruning/training in the Spring. If needed, agricultural type spray oil may be added.
Do not apply more than 10 lbs. of copper (20.2 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Blueberries

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Bacterial canker	26 to 51.2	51.2	Make application before fall rains and a second application 4 weeks later. Use the higher specified rate when conditions favor disease.
Fruit rot, Phomopsis twig blight	17 to 51.2	51.2	Dormant Application: Begin applications when bloom buds begin to swell. Make additional applications at 10 to 14 day intervals or as needed before blooms open.
Do not apply more than 8.4 lbs. of copper (16.9 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Cranberries

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Bacterial stem canker	51.2	51.2	Apply post-harvest and again in Spring at bud swell. Apply one or two additional applications at 10 to 14 intervals or as needed depending on disease severity.
Fruit rot	51.2	51.2	Make application in late bloom. Apply one or two additional applications at 10 to 14 day intervals or as needed depending on disease severity.
Leaf blight, Red leaf spot, Stem blight, Tip blight (<i>Monilinia</i>)	51.2	51.2	Apply delayed dormant spray in the Spring. Repeat at 10 to 14 day intervals or as needed through prebloom.
Rose bloom	51.2	51.2	Apply three sprays on 10 to 14 day schedule or as needed as soon as symptoms are observed.
Do not apply more than 12.6 lbs. of copper (25.7 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Currants, Gooseberries

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthraco-nose, Leaf spots	52 to 64	64	Make initial application after first leaves have expanded. Continue on a 10 to 14 day schedule or as needed during wet conditions in the Spring. Make additional application after harvest.
Do not apply more than 16 lbs. of copper (32.6 gals. of this product) per acre per year. Minimum retreatment interval is 10 days.			

Raspberries

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthraco-nose, Cane spots, Leaf spots, Purple blotch, Yellow rust	17 to 19.2	19.2	Apply when leaf buds begin to open. Repeat when flower buds show white. If needed, agricultural type spray oil may be added. Note: Crop injury may occur if applied to foliage under certain environmental conditions such as hot or prolonged moist periods. Discontinue applications if signs of crop injury appear.
Anthraco-nose, Cane spots, Leaf spots, Pseudomonas blight, Purple blotch, Yellow rust	17 to 32	32	Make Fall application after harvest. Apply delayed dormant spray after pruning/training in the Spring. If needed, agricultural type spray oil may be added.
Do not apply more than 10 lbs. of copper (20.2 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Strawberries

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Angular leaf spots (<i>Xanthomonas</i>), Leaf blight, Leaf scorch, Leaf spots	9 to 25.6	25.6	Begin application when plants are established and continue on a weekly schedule throughout the season. Apply in at least 20 gallons of water. Use the higher specified rates when conditions favor disease. Note: Discontinue applications if signs of crop injury appear.
Do not apply more than 8.19 lbs. of copper (16.5 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

TURFGRASS

Target	Rate/1000 ft ² (fl. oz.)	Maximum Rate Per 1000 ft ² Application (fl. oz.)	Use Instructions
Black algae, Moss	6	17.7	Apply as first indication of rain or first appearance of Black algae or Moss. Repeat application as needed during wet weather.
Do not apply more than 21 lbs. of copper (42 gals. of this product) per acre per year. Minimum retreatment interval is 10 days.			

TREE CROPS

Almonds, Apricots, Cherries, Plums, Prunes

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Bacterial blast	9	9	Almonds Only: For Bacterial blast in sprinkler irrigated orchards or where disease is severe, apply post-bloom at 14 day intervals or as needed just before sprinkling. Note: Foliar injury may occur post-bloom sprays especially on NePlus varieties of Almonds.
Bacterial blast (<i>Pseudomonas</i>), Bacterial canker, Coryneum blight (Shothole)	51.2 to 103	103	Make first and second applications before Fall rains and at late dormant, respectively. Use the higher specified rates when conditions favor disease. If needed, agricultural type spray oil may be added. For Cherries: Where disease is severe, an additional application shortly after harvest may be required. Note: Foliar injury may occur from post-bloom sprays on Almonds, especially on NePlus varieties.
Black knot (Plums)	32 to 64	64	Make application at bud swell up to early bloom for early disease suppression. Apply before full bloom. Use the higher specified rates when rainfall is heavy and disease pressure is high. Note: To avoid plant injury, do not use after full bloom.
Blossom brown rot, Coryneum blight (Shothole)	51.2 to 64	64	Apply during early bloom. Do not apply after full bloom or injury may occur. Use the higher specified rates when rainfall is heavy and disease pressure is high.
Cherry leaf spots	38.4 to 64	64	Sour Cherries Only: Apply at petal fall as well as one to two times after petal fall. Use the lower specified rates where disease infection is light and use the higher rates for a dormant application or where disease infection is moderate to heavy. As Cherry varieties (such as Sweet Cherry and English Morello) differ in sensitivities to copper, evaluate injury potential of this product before treating Cherry orchard.
Do not apply more than 18 lbs. of copper (36.7 gals. of this product) per acre per year. Minimum retreatment interval is 5 days for bloom/growing season applications; minimum retreatment interval is 7 days for dormant/late dormant applications (up to pink bud in Apricot, Cherry, Peach, Plum, and Prune fruits).			

Apples

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthracnose, Blossom blight, European canker (<i>Nectria</i>), Shoot blast (<i>Pseudomonas</i>)	51.2 to 103	103	Apply before Fall rains. Use the higher specified rates when conditions favor disease. Note: Use on yellow varieties may cause discoloration. To avoid discoloration, pick before spraying. Only one application is permitted per season.
Apple scab, Fire blight	9 to 26	26	Extended spray schedule where fruit finish is not a concern: Continued applications may be made at 5 to 7 day intervals or as needed between one-half inch green-tip and first cover spray. Note: Moderate to severe crop injury may result from this extended spray schedule. It is not intended for fresh market Apples or for Apples where fruit finish is a concern as it is likely to cause fruit russetting.
Apple scab, Fire blight	51.2 to 103	103	Make application between silvertip and green-tip. Apply as a full cover spray for early season disease suppression. Note: Moderate to severe crop injury may occur from late application. Discontinue use when green-tip reaches one-half inch. Only one application is permitted per season.
Collar rot, Crown rot	32	32	Apply 4 gallons of solution as a drench on the lower trunk area of each tree. For best results, apply in early Spring or Fall after harvest. Do not apply to foliage or fruit. Only one application is permitted per season.
Do not apply more than 16 lbs. of copper (32.3 gals. of this product) per acre per year. Minimum retreatment interval is 5 days. Only one application is permitted during Fall / late dormant stage. Only one application is permitted between silver-tip and green-tip.			

Avocados

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthracnose, Blotch, Scab	35 to 64	64	Apply when bloom buds begin to swell. Continue application at monthly intervals for 5 to 6 applications. Use the higher specified rates when conditions favor disease.
Do not apply more than 18.9 lbs. of copper (38.1 gals. of this product) per acre per year. Minimum retreatment interval is 14 days.			

Bananas

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Black pitting	26 to 32	32	Mix 100 gallons of water. Apply to the fruit stem and the basal portion of the leaf crown. Apply during the first and second weeks after fruit emergence.
Sigatoka (Black, Yellow)	19.2 to 26	26	Apply by air in 3 gallons of water. If needed, agricultural type spray oil may be added. Apply on a 14 day schedule or as needed throughout the wet season. Apply at 21 day intervals or as needed during dry periods.
Do not apply more than 18.9 lbs. of copper (38.1 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Cacao

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Black pod	9 to 64	64	Begin applications at the start of the rainy season and continue while infection conditions persist.
Do not apply more than 15.75 lbs. of copper (31.8 gals. of this product) per acre per year. Minimum retreatment interval is 14 days.			

Coffee

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Bacterial blight	35 to 64	64	Begin spray program before the onset of long rainy periods. Continue throughout the rainy season at 14 to 21 day intervals or as needed. The critical time for spraying to control disease is just before, during and after flowering(s), especially when coinciding with wet weather. Use the higher specified rates when rainfall is heavy and disease pressure is high.
Coffee berry disease (<i>Colletotrichum coffeanum</i>)	35 to 64	64	Apply first spray after flowering and before onset of long rains and then at 21 to 28 day intervals or as needed until picking. Use the higher specified rates when conditions favor disease.
Iron spot (<i>Cercospora coffeicola</i>), Pink disease (<i>Corticium salmonicolor</i>)	9 to 19.2	19.2	Use concentrate or dilute spray. Begin treatment at the start of wet season and continue at monthly intervals for three applications.
Leaf rust (<i>Hemileia vastatrix</i>)	9 to 32	32	Apply before the onset of rain and then, at 21 day intervals or as needed while the rains continue. Use the higher specified rates when rainfall is heavy and disease pressure is high.
Do not apply more than 12.6 lbs. of copper (25.4 gals. of this product) per acre per year. Minimum retreatment interval is 14 days.			

Filbert (OR & WA Only)

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Bacterial blight	64 to 155	155	Apply as a post-harvest spray. In seasons of heavy rainfall, apply a second spray when three-fourths of the leaves have dropped. Use the higher rates when rainfall is heavy and disease pressure is high. If needed, agricultural type spray oil may be added.
Eastern filbert blight	64 to 155	155	Apply as a dilute spray in adequate water for thorough coverage. Make applications starting at bud swell to bud break and continue at 14 day intervals or as needed until early May. Thorough coverage is essential. Use the higher specified rates when rainfall is heavy and disease pressure is high. If needed, agricultural type spray oil may be added.
Do not apply more than 24 lbs. of copper (48.9 gals. of this product) per acre per year. Minimum retreatment interval is 14 days.			

Mango

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthracnose	26 to 64	64	Apply monthly after fruit set until harvest. Use the higher specified rates when rainfall is heavy and disease pressure is high.
Do not apply more than 48 lbs. of copper (97.9 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Olive

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Olive knot, Peacock spot	52 to 86	86	Make first application before Winter rains begin. Repeat application in early Spring if disease is severe. Apply the higher specified rates for heavy disease pressure or when conditions favor disease development.
Do not apply more than 18 lbs. of copper (36.7 gals. of this product) per acre per year. Minimum retreatment interval is 30 days.			

Peaches, Nectarines

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Bacterial blast (<i>Pseudomonas</i>), Bacterial canker, Bacterial spot (<i>Xanthomonas</i>), Coryneum blight (Shothole), Leaf curl	51.2 to 103	103	Make first application before Fall rains and a second at late dormant. For Peach leaf curl, apply at late dormant application before leaf buds swell. Use the higher specified rates when rainfall and disease pressure is high. If needed, agricultural type spray oil may be added.
Bacterial spot	4.5 to 19.2	19.2	Spotting of leaves and defoliation may occur from use in cover sprays. Varietal differences occur.
Blossom brown rot, Coryneum blight (Shothole), Leaf curl	35 to 76.8	76.8	Apply as full cover spray at pink bud. Use the higher specified rates when conditions favor disease.
Do not apply more than 18 lbs. of copper (36.7 gals. of this product) per acre per year. Minimum retreatment interval is 5 days during the bloom/growing season. Minimum retreatment interval is 7 days during the dormant/late dormant season up to pink bud.			

Pears

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Blossom blight (<i>Pseudomonas</i>)	51.2 to 103	103	Apply before Fall rains and again, during dormancy before Spring growth starts. Use the higher specified rates when disease pressure is high or when conditions favor disease development.
Fire blight	9 to 19.2	19.2	Apply at 5 day intervals or as needed throughout the bloom period. Note: Russetting may occur in copper sensitive varieties. Excessive dosages may cause fruit russet on any variety.
Do not apply more than 16 lbs. of copper (32.3 gals. of this product) per acre per year. Minimum retreatment interval is 5 days during the bloom/growing season. Only one application is permitted during Fall / late dormant stage. Only one application is permitted between silver-tip and green-tip.			

Pecans

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Ball moss, Spanish moss	35 to 64	64	Apply in the Spring when ball moss is actively growing using 1.5 gallons of spray solution per foot of tree height. Make sure to wet ball moss tufts thoroughly. The addition of a nonionic surfactant will improve control. A second application may be required after 12 months.
Kernel rot, Shuck rot (<i>Phytophthora cactorum</i>), Zonate leaf spot (<i>Cristulariella pyramidalis</i>)	9 to 32	32	For suppression, apply in sufficient water to ensure complete spray coverage at 2 to 4 week intervals or as needed starting at kernel growth. Continue until shucks open. Use the higher specified rates and shorter spray intervals if frequent rainfall occurs.
Do not apply more than 8.4 lbs. of copper (16.9 gals. of this product) per acre per year. Minimum retreatment interval is 14 days.			

Pistachio

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Botryosphaeria panicle and shoot blight, Botrytis blight, Late blight (<i>Alternaria alternata</i>), Septoria leaf blight	26 to 64	64	Make initial application at bud swell. Repeat at 14 to 28 day intervals or as needed. If disease conditions are severe, use the higher specified rates and shorter spray intervals.
Do not apply more than 8.4 lbs. of copper (16.9 gals. of this product) per acre per year. Minimum retreatment interval is 14 days.			

Quince

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Fire blight	9 to 19.2	19.2	Apply at 5 day intervals or as needed throughout the bloom period. Apply in adequate water for thorough coverage.
Do not apply more than 16 lbs. of copper (32.3 gals. of this product) per acre per year. Minimum retreatment interval is 5 days during the bloom season. Only one application is permitted during Fall / late dormant stage. Only one application is permitted between silver-tip and green-tip.			

Walnut

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Walnut blight	38.4 to 103	103	Apply at first spray at early pre-bloom prior to or when catkins are partially expanded. Make additional applications during bloom and early nutlet stage or as needed when frequent rainfall or extended periods of moisture occur. Thorough coverage of catkins, leaves and nutlets is essential for effective control. Note: Adequate control may not be obtained when copper tolerant species of <i>Xanthomonas</i> bacteria are present.
Do not apply more than 32 lbs. of copper (65.3 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

VEGETABLES

Beans (Dry, Green)

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Brown spot, Common blight, Halo blight	9 to 25.6	25.6	For protective sprays, apply when plants are 6 inches high. Repeat on a 7 to 14 day schedule or as needed depending on environmental conditions. Use the higher specified rates for more severe disease.
Do not apply more than 4.74 lbs. of copper (9.6 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Beets (Green, Table)

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Cercospora leaf spot	9 to 32	32	Begin applications when conditions first favor disease development. Repeat at 10 to 14 day intervals or as needed. Use the higher specified rates when conditions favor disease.
Do not apply more than 7.86 lbs. of copper (15.8 gals. of this product) per acre per year. Minimum retreatment interval is 10 days.			

Carrots

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Alternaria leaf spot, Cercospora leaf spot	9 to 26	26	Begin applications when conditions first favor disease development. Repeat at 10 to 14 day intervals or as needed.
Do not apply more than 5 lbs. of copper (10.1 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Celery, Celeriac

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Bacterial blight, Cercospora early blight, Septoria late blight	9 to 17	17	Begin applications as soon as plants are first established in the field. Repeat at 7 to 14 day intervals or as needed depending on disease severity
Do not apply more than 5.3 lbs. of copper (10.8 gals. of this product) per acre per year. Minimum retreatment interval is 7 days. Not for use on Celeriac in California.			

Crucifers (Broccoli, Brussels sprouts, Cabbage, Cauliflower, Collard greens, Mustard greens, Turnip greens)

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Black leaf spot (<i>Alternaria</i>), Black rot (<i>Xanthomonas</i>), Downy mildew	9 to 25.6	25.6	Begin application after transplants are set in the field or shortly after emergence of field seeded crops or when conditions favor disease development. Apply at 7 to 10 day intervals or as needed. Use the higher specified rates when conditions favor disease. Note: Reddening of older leaves may occur on Broccoli and a flecking of wrapper leaves may occur on Cabbage.
Do not apply more than 2.65 lbs. of copper (5.3 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Cucurbits (Cantaloupes, Cucumbers, Honeydew, Muskmelons, Pumpkins, Squash, Watermelons)

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Alternaria leaf spot, Angular leaf spot, Anthracnose, Downy mildew, Gummy stem blight, Powdery mildew, Watermelon bacterial fruit blotch (suppression)	9 to 25.6	25.6	Begin applications prior to disease development and continue while conditions are favorable for disease development. Repeat at 5 to 7 day intervals or as needed. Use the higher specified rates when conditions favor disease. Note: Crop injury may occur from application at higher specified rates and shorter intervals. Discontinue use if injury occurs.
Do not apply more than 5.25 lbs. of copper (10.6 gals. of this product) per acre per year. Minimum retreatment interval is 5 days.			

Eggplant

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Alternaria blight, Anthracnose, Phomopsis	9 to 25.6	25.6	Begin applications prior to development of disease symptoms. Repeat sprays at 7 to 10 day intervals or as needed depending on disease severity.
Do not apply more than 7.9 lbs. of copper (15.9 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Okra

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthracnose, Bacterial leaf spot, Leaf spots, Pod spot, Powdery mildew	9 to 32	32	Begin treatment when disease first threatens. Repeat every 5 to 10 days or as needed depending on disease severity. Use the higher specified rates and shorter spray intervals when conditions favor disease.
Do not apply more than 5.25 lbs. of copper (10.6 gals. of this product) per acre per year. Minimum retreatment interval is 5 days.			

Onions, Garlic

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Bacterial blight, Downy mildew, Purple blotch	9 to 25.6	25.6	Begin when plants are 4 to 6 inches high. Repeat at 7 to 10 day intervals or as needed depending on disease severity. Can cause phytotoxicity to leaves.
Do not apply more than 6 lbs. of copper (12.1 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Peas

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Powdery mildew	9 to 25.6	25.6	Begin applications when disease symptoms first appear. Repeat at weekly intervals or as needed. Use the higher specified rates when conditions favor disease.
Do not apply more than 3.95 lbs. of copper (7.9 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Peppers

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthracnose, Bacterial spot, Cercospora leaf spot	9 to 52	52	Begin applications when conditions first favor disease development. Repeat at 7 to 10 day intervals or as needed depending on disease severity. Use the higher specified rates when conditions favor disease.
Do not apply more than 11.85 lbs. of copper (23.9 gals. of this product) per acre per year. Minimum retreatment interval is 3 days.			

Spinach

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthracnose, Blue mold spot, Cercospora leaf spot, White rust	9 to 25.6	25.6	Begin application when disease first appears or when conditions favor disease development. Repeat at 7 to 10 day intervals or as needed. Use the higher specified rates when conditions favor disease. Note: Flecking may occur on Spinach leaves.
Do not apply more than 3.95 lbs. of copper (7.9 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Tomatoes

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthracnose, Bacterial speck, Bacterial spot, Early blight, Gray leaf mold, Late blight, Septoria leaf spot	9 to 52	52	Begin applications when disease first threatens. Repeat at 5 to 10 day intervals or as needed depending on disease severity. Use the higher specified rates when conditions favor disease.
For Tomatoes (fresh): Do not apply more than 8 lbs. of copper (16.3 gals. of this product) per acre per year. Minimum retreatment interval is 3 days.			
For Tomatoes (processing): Do not apply more than 17.4 lbs. of copper (35.1 gals. of this product) per acre per year. Minimum retreatment interval is 3 days.			

Watercress (Except CA)

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Cercospora, Leaf spot	9 to 19.2	19.2	Begin applications when plants are first established in the field. Repeat at 7 to 14 day intervals or as needed depending on disease severity. Do not exceed four applications per crop. Apply using ground spray equipment at no less than 50 gallons of spray solution per acre.
For applications made to Watercress, production fields must be drained of water at least 24 hours prior to each application and water must not be re-applied to the field for a minimum of 24 hours following each application. Do not apply more than 2.12 lbs. of copper (4.2 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

VINES

Grapes

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Black rot, Downy mildew, Phomopsis, Powdery mildew	17 to 52	52	Begin applications at bud break with subsequent applications throughout the season depending on disease severity. Use the higher specified rates when conditions favor disease. Note: Foliage injury may occur on copper sensitive varieties such as Concord, Delaware, Niagara, and Rosette.
Do not apply more than 20 lbs. of copper (40.4 gals. of this product) per acre per year. Minimum retreatment interval is 3 days.			

Hops

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Downy mildew	9 to 19.2	19.2	Make crown treatments after pruning but before training. After training, additional treatments are needed at minimum 10 day intervals. Note: Discontinue use two weeks before harvest.
Do not apply more than 2.65 lbs. of copper (5.3 gals. of this product) per acre per year. Minimum retreatment interval is 10 days.			

Kiwi

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
<i>Erwinia herbicola</i> , <i>Pseudomonas fluorescens</i> , <i>Pseudomonas syringae</i>	26 to 52	52	Apply in 200 gallons of water per acre. Make applications on a monthly basis. A maximum of three applications can be made per year.
Do not apply more than 0.6 lbs. of copper (1.22 gals. of this product) per acre per year. Minimum retreatment interval is 30 days.			

MISCELLANEOUS CROPS

Atemoya/Sugar Apple (Except CA)

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthracnose	9 to 103	103	Make initial application just before flowering. Repeat at weekly intervals until just before harvest. Apply in sufficient water for thorough coverage. Use the higher specified rates when disease is severe.
Do not apply more than 12.6 lbs. of copper (25.4 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Carambola (Except CA)

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthracnose	35 to 52	52	Make initial application just before flowering. Repeat at weekly intervals until just before harvest. Apply in sufficient water for thorough coverage. Use the higher specified rates when disease is severe.
Do not apply more than 10.5 lbs. of copper (21.2 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Chives (Except CA)

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Downy mildew	9 to 19.2	19.2	Begin application when plants are established in the field. Repeat every 7 to 10 days or as needed depending on disease conditions.
Do not apply more than 2.65 lbs. of copper (5.3 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Dill (Except CA)

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Phoma leaf spot, Rhizoctonia foliage blight	9 to 25.6	25.6	Begin applications when plants are first established in the field. Repeat at 7 to 10 day intervals or as needed depending on disease severity and environmental conditions. Use the higher specified rates when disease is severe.
Do not apply more than 3.95 lbs. of copper (7.9 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Ginseng

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Alternaria leaf blight, Stem blight	9 to 26	26	Apply this product in tank mixture with label specified rates of iprodione (e.g., Rovral® 50 WG / SP) in 100 gals. of water. Follow the most restrictive label limitations and precautions. Begin application as soon as plants have emerged in Spring. Repeat at 7 day intervals or as needed until plants become dormant in Fall. Apply at least 8 hours before rain. The use of sticker/spreader is advised. Note: Alternaria leaf and stem blight are severe in humid conditions such as those found in dense canopies of 2 to 4 year old Ginseng plants. Thoroughly cover the stems and canopy with spray. Use a spray equipment that provides good coverage.
Do not apply more than 5.25 lbs. of copper (10.7 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Guava

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthracoise, Red algae	9 to 38.4	38.4	Apply before flowering. Repeat at weekly intervals until just before harvest. Apply in sufficient water for through coverage. Use the higher specified rates when disease is severe.
Do not apply more than 4.92 lbs. of copper (9.9 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Litchi (Except CA)

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthracnose	9 to 38.4	38.4	Apply before flowering. Repeat at weekly intervals until just before harvest. Use the higher specified rates when disease is severe.
Do not apply more than 4.92 lbs. of copper (9.9 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Macadamia

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthracnose	26 to 64	64	Initiate sprays at first sign of flowering. Repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage. Use the higher specified rates when disease is severe.
Phytophthora blight (<i>P. capsici</i>), Raceme blight (<i>Botrytis cinerea</i>)	17 to 64	64	Apply during raceme development and bloom periods in sufficient water for thorough coverage. Use the higher specified rates when conditions favor disease.
Do not apply more than 9.44 lbs. of copper (19 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Mamey Sapote (Except CA)

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Algal leaf spot, Anthracnose	35 to 64	64	Apply when conditions favor disease development. Repeat on a 14 to 30 schedule or as needed as disease severity and environmental conditions dictate. Use the higher specified rates when conditions favor disease.
Do not apply more than 8.4 lbs. of copper (16.9 gals. of this product) per acre per year. Minimum retreatment interval is 14 days.			

Papaya

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthracnose	26 to 52	52	Apply before disease appears. Repeat at 10 to 14 day intervals under light disease pressure. Shorten spray intervals to 7 days under heavy disease pressure. Addition of a spreader is desirable. Use the higher specified rates when disease is severe.
Do not apply more than 21.2 lbs. of copper (43.2 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

Parsley

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Bacterial blight (<i>Pseudomonas</i> sp.)	9 to 26	26	Begin application when plants are first established in the field. Repeat at 10 day intervals or as needed depending on disease severity and environmental conditions
Do not apply more than 2 lbs. of copper (4 gals. of this product) per acre per year. Minimum retreatment interval is 10 days.			

Passion Fruit

Disease(s)	Rate/Ac. (fl. oz.)	Maximum Rate Per Acre Per Application (fl. oz.)	Use Instructions
Anthracnose	35 to 52	52	Apply just before flowering. Repeat at 7 day intervals just before harvest. Apply in sufficient water for thorough coverage. Use the higher specified rates when disease is severe.
Do not apply more than 9.44 lbs. of copper (19.2 gals. of this product) per acre per year. Minimum retreatment interval is 7 days.			

GREENHOUSE AND SHADE HOUSE GROWN CROPS

Notice to Users: This product may be used in greenhouses and shade houses to control diseases on crops which appear on this label and specific instructions have been developed for the below listed crops. The grower should bear in mind that the sensitivity of crops grown in greenhouses and shade houses differs greatly from crops grown under field conditions. Neither the Manufacturer nor the Seller has determined whether or not this product can be used safely on all greenhouse and shade house grown crops. Consequently, injury arising from the use of this product on these types of greenhouse and shade house crops is the responsibility of the user. The user should determine if this product can be used safely prior to commercial use. In a small area, apply the specified rates to the plants in question, i.e. foliage, fruit etc., and observe for 7 to 10 days for symptoms of phytotoxicity prior to commercial use.

Apply this product according to specific rates given for the crops listed on this label in fluid ounces per acre.

One fluid ounce = 29.5 milliliters (mL) = 6 teaspoons per 1,000 square feet is equivalent to 43.5 fluid ounces per acre. Apply this product in adequate water for thorough coverage of plant parts. Begin application at first sign of disease and repeat at 7 to 14 day intervals or as needed. Use the shorter spray intervals during periods when severe disease conditions persist.

NOTE: On Citrus seedlings grown in greenhouses or shade houses, phytotoxicity may occur on young tender flush when this product is applied.

Crop	Disease(s)	Rate/1,000 sq. ft. (mL)*	Use Instructions
Citrus (Non-bearing)	Brown rot, Citrus canker, Greasy spot, Melanose, Pink pitting, Scab	15 (3 tsp.)	Begin applications when disease first threatens. Repeat at 30 day intervals or as needed depending on disease severity. Minimum retreatment interval is 7 days.
Cucumber	Angular leaf spot, Downy mildew	5 to 12 (1 to 2.4 tsp.)	Apply weekly when plants begin to vine. Use the higher specified rates when conditions favor disease. Minimum retreatment interval is 5 days.
Eggplant	Alternaria blight, Anthracnose, Phomopsis	9 (1.8 tsp.)	Begin applications prior to development of disease symptoms. Repeat at 7 to 10 day intervals or as needed depending on disease pressure. Minimum retreatment interval is 7 days.
Pepper	Bacterial spot	9 to 15 (1.8 to 3 tsp.)	Begin applications when conditions favor disease development. Repeat at 5 to 10 day intervals or as needed depending on severity. Use the higher rates when conditions favor disease. Minimum retreatment interval is 3 days.
Tomato	Anthracnose, Bacterial speck, Bacterial spot, Early blight, Gray leaf mold, Late blight, Septoria leaf spot	9 to 15 (1.8 to 3 tsp.)	Begin applications when disease first threatens. Repeat at 5 to 10 day intervals or as needed depending on disease severity. Use the higher specified rates when conditions favor disease. Minimum retreatment interval is 3 days.
*29.5 milliliters (mL) = 1 fl. oz. = 6 tsps./1,000 sq. ft. which is equivalent to 43.5 fl. ozs./Ac.			

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in original container. Keep container tightly closed. Store this product above 30°F. If this product freezes, allow to thaw and thoroughly agitate before use. Keep away from galvanized pipe and any nylon storage handling equipment. In the event of a spill, neutralize with limestone or baking soda before disposal. Concentrate may deteriorate concrete.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER HANDLING:

Nonrefillable Container (rigid material; less than 5 gallons): Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container one-fourth full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then, offer for recycling if available or dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Nonrefillable Container (rigid material; 5 gallons up to < 250 gallons): Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container one-fourth full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then, offer for recycling if available or dispose of empty container in a sanitary landfill or by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Refillable Container (≥ 250 gallons & Bulk): Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

WARRANTY—CONDITIONS OF SALE

OUR DIRECTIONS FOR USE of this product are based upon tests believed reliable. Follow directions carefully. Timing and method of application, weather and crop conditions, mixture with other chemicals not specifically directed and other influencing factors in the use of this product are beyond the control of the Seller. To the extent consistent with applicable laws, 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 laws, 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 directions given herewith. The foregoing is a condition of sale by the Seller and is accepted as such by the Buyer.



KOP, SURF-AC and the DREXEL logo are either trademarks or registered trademarks of Drexel Chemical Company. All other brand names, product names or trademarks belong to their respective holders.



KOP-5
Algaecide/ Bactericide*/ Fungicide

For use against Algae, Aquatic weeds/plants, Bacteria*, Leeches, Mollusks, Mussels, Snails in various listed sites.

ACTIVE INGREDIENT:

Copper sulfate pentahydrate [CAS No. 7758-99-8]** 20.0%

OTHER INGREDIENTS: 80.0%

TOTAL: 100.0%

**Equivalent to 5% metallic copper.

This product contains 0.49 pound of metallic copper per gallon.

A chelated copper product.

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.)

SHAKE WELL BEFORE USING
[RECIRCULATE CONTENTS BEFORE USE]

See **FIRST AID** Below

EPA Reg. No. 19713-695

EPA Est. No. 19713-XX-XXX

Net Content: Gals. (L)

FIRST AID
<p>IF IN EYES:</p> <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.
<p>IF SWALLOWED:</p> <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 person.
<p>IF ON SKIN OR CLOTHING:</p> <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. You may also call CHEMTREC at 800-424-9300 for emergency medical treatment information.</p>
<p>NOTE TO PHYSICIAN:</p> <p>Probable mucosal damage may contraindicate the use of gastric lavage.</p>

*Non-public health bacteria.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

DANGER: Corrosive. Causes irreversible eye damage. Harmful if absorbed through skin. Harmful if swallowed. Do not get in eyes or on clothing. Avoid contact with skin. Wear protective eyewear (goggles, face shield or safety glasses). Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Mixers, loaders, applicators and other handlers must wear: Protective eyewear (goggles, face shield or safety glasses), long-sleeved shirt, long pants, shoes, socks, and chemical-resistant gloves made of any waterproof material such as butyl rubber, nitrile rubber, polyvinyl chloride, polyethylene, and viton. For overhead exposure, wear chemical-resistant headgear.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate.

Engineering Controls:

When handlers use closed systems, enclosed cabs or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should: 1) Wash hands thoroughly 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. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates. Waters treated with this product may be hazardous to aquatic organisms. Treatment of aquatic weeds and algae can result in oxygen loss from decomposition of dead algae and weeds. This oxygen loss can cause fish and invertebrate suffocation. To minimize this hazard, do not treat more than one-half 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.

PRODUCT INFORMATION

KOP-5 is a copper sulfate pentahydrate formulation that is used for the suppression of bacterial odors and toxic gases in sewage lagoons, feedlot runoff pits, animal confinement facilities, and organic sludge pits containing organic matter of algae/bacteria*. It may be used to control algae, bacteria*, aquatic weeds, mollusks, leeches and snails in irrigation reservoirs, lakes, swimming areas, farm, industrial, retention and golf course ponds, ornamental water features or fountains, aquaculture ponds, livestock watering systems, biological fish ponds or systems, irrigation and chemigation systems, and waters destined for use as drinking water. This product may also be used to control Quagga and Zebra mussels in lakes, ponds, lagoons, reservoirs, sedimentation basins, canals and ditches and also for the control of algae and suppression of bacterial* growth in private and public pools, spas and hot tubs.

***Note:** Everywhere that bacteria is listed on this label refers to non-public health bacteria / bactericide.

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 requirement 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 (WPS) 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 allow people or pets to enter treated areas until sprays have dried.

RESISTANCE MANAGEMENT

GROUP M FUNGICIDE

This product is a Group M* fungicide. Fungal isolates with acquired resistance to Group M fungicide may eventually dominate the fungal population if Group M fungicides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by this product or other Group M fungicides.

To delay fungicide resistance, consider:

- Avoiding consecutive use of this product or other target site of action Group M fungicides that have a similar target site of action on the same pathogens.
- Using tank-mixtures or pre-mixes with fungicides from different target site of action Groups as long as the involved products are all registered for the same use and are both effective at the mix or pre-pack rate on the pathogens(s) of concern.
- Basing fungicide use on a comprehensive IPM program.
- Monitoring treated fungal populations for loss of field efficacy.
- Contacting your local extension specialist, certified crop advisors, and/or manufacturer for fungicide resistance management and/or IPM recommendations for specific crops and resistant pathogens.

*The multi-site activity grouping, designated by the symbol "M", comprises a collection of various chemicals that act as general toxophores with several sites of action. These sites may differ between group members.

SPRAY DRIFT MANAGEMENT

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

Droplet Size

Apply only as a medium or coarser spray (ASAE standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

Wind Speed

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

Temperature Inversions

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

Other State and Local Requirements

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

Equipment

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

Additional Requirements for Aerial Applications

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

Additional Requirements for Ground Boom Applications

- Do not apply with a nozzle height greater than 4 feet above the crop canopy.

USE DIRECTIONS

***Note: Everywhere that bacteria is listed on this label refers to non-public health bacteria / bactericide.**

FOR CONTROL OF BACTERIAL ODOR AND TOXIC GAS PRODUCED BY BACTERIAL ACTION

Apply up to 1 gallon of this product per 60,000 gallons (8,000 cubic feet) of organic matter (sewage). Application rates may vary depending on amounts of sewage in lagoons and pits. Apply by pouring this product into the pit or lagoon. Several application points speed up dispersal. For faster results, disperse this product evenly throughout sewage. Bacterial odors should be noticeably reduced in 1 to 2 weeks. Repeat application when odors recur. Minimum retreatment interval is 14 days.

Feedlot Runoff Lagoons: Add a portion of the required dosage of this product at several locations around the lagoon to speed dispersal of the product. A minimum of two applications per year (Spring and Fall) is recommended. Additional applications may be required as needed or when the lagoon is pumped.

Animal Confinement Pits: If pits are located under the confinement buildings, add this product directly to these pits. If the pits are outside, add this product to transfer line to the pit.

Organic Sludge Pits: Apply 1 gallon this product in 60,000 gallons of sludge. Mix thoroughly.

FOR AQUATIC PLANT, ALGAE AND BACTERIA* CONTROL IN IMPOUNDED WATERS, LAKES, PONDS, LIVESTOCK WATERING SYSTEMS, RESERVOIRS, SWIMMING AREAS, FARM, INDUSTRIAL, RETENTION AND GOLF COURSE PONDS, AQUACULTURE PONDS, BIOLOGICAL FISH PONDS OR SYSTEMS, IRRIGATION AND CHEMIGATION SYSTEMS, ORNAMENTAL WATER FEATURES AND FOUNTAINS

Apply this product through metering pump, sub-surface hoses or from a properly equipped moving boat into the body of water. No more than one-half of the body of water may be treated in a single application.

For small ponds and ornamental water features and fountains, apply this product by directly pouring 2 fluid ounces per 125 cubic feet (1/4 tsp./20 gals.) of water for 1 ppm of copper into the water around half of the perimeter of the body of water.

When applying from boat, use minimal speed to allow the prop wash to disperse and mix the product into the treated waters. Dispense up to 5.5 gallons per acre-foot of water (see use rate chart below). Apply in late spring or early summer when algae/bacteria* first appear. For best results, disperse this product evenly to warm, still water on a sunny day when algae are near the surface. Several application points speed up dispersal.

Use rates vary, depending on algae/bacteria* species, water hardness, water temperature, and amount of algae/bacteria* present; as well as whether water is clear, turbid, flowing or static. Preferably, the water should be clear with temperatures above 60°F (15.6°C). Higher dosages are required at lower water temperatures, higher algae/bacteria* concentrations, and for hard waters. Static water requires less chemical for

algae/bacteria* control than does flowing water. Use higher dosages for Chara, Nitella, and filamentous algae (pond scum), and lower dosages for planktonic algae. If there is uncertainty about the dosage, begin with a lower dose and increase until control is achieved or until the maximum allowable level has been reached. See the "USE RATE" chart below.

FOR LEECH AND SNAIL CONTROL IN IMPOUNDED WATERS, LAKES, PONDS, LIVESTOCK WATERING SYSTEMS, RESERVOIRS, SWIMMING AREAS, FARM, INDUSTRIAL, RETENTION AND GOLF COURSE PONDS, AQUACULTURE PONDS, BIOLOGICAL FISH PONDS OR SYSTEMS, IRRIGATION AND CHEMIGATION SYSTEMS, ORNAMENTAL WATER FEATURES AND FOUNTAINS

Apply this product through metering pump, subsurface hoses or from a properly equipped moving boat into body of water. No more than one-half of the body of water may be treated in a single application.

For small ponds and ornamental water features and fountains, apply this product by directly pouring 2 fluid ounces per 125 cubic feet (1/4 tsp./20 gals.) of water for 1 ppm of copper into the water around half of the perimeter of the body of water.

When applying from boat, use minimal speed to allow the prop wash to disperse and mix the product into the treated waters. Dispense up to 8.25 gallons per acre-foot of water. See the "USE RATE" chart below.

USE RATE

This Product (Gals./Ac./Ft.)	Equivalent Metallic Copper (ppm)
0.33	0.06
0.50	0.09
3.30	0.60
5.50	1.00
8.25	1.50

Before treating bodies of water, consult proper state authorities, such as the fisheries commission or conservation department to obtain any necessary permits. Do not apply copper sulfate to water less than 40 ppm alkalinity without first testing for fish toxicity in a separate container.

Treatment of algae can result in oxygen loss from the decomposition of dead algae, which may cause fish suffocation. Treat one-third to one-half of the water area in a single operation and wait 14 days between treatments. Begin treatment along the shore and proceed outward in bands to allow fish to move into untreated areas. In regions where ponds freeze in Winter, treatment should be done 6 to 8 weeks before expected freeze time to prevent masses of decaying algae under an ice cover.

The following are useful formula for calculating water volume and flow rates:

- To find the capacity of water storage containment in gallons, use the following formula:

$$\text{Capacity of Water Storage Containment} = \text{Water Volume (cu. ft.)} \times 7.5$$

Note: 1 Cubic Foot per Second of Flow = 27,000 gallons per hour
1 Acre Foot = 326,000 gallons

- Calculate the Acre Foot of water in the body of water to be treated by calculating the surface area in square feet. Then divide by 43,560 (sq.ft./acre) and then multiply by the average depth in feet.

1 Acre Foot of Water = an area of water measuring 43,560 sq. ft. x 1 foot deep
1 Acre Foot of Water = 43,560 cubic feet = 325,851.6 gallons
1 Cubic Foot of Water = 62.4 pounds
1 Acre Foot of Water = 43,560 x 62.4 = 2,720,000 pounds

DIRECT AQUATIC RATES

Target	Maximum Cu ⁺⁺ /Ac. Per Application	Maximum Annual Rate (Lbs. Cu ⁺⁺ /Ac.)	Minimum Retreatment Interval (days)	Use Instructions
Algae, Cyanobacteria, Aquatic Weeds (<i>Elodea</i> spp., Hydrilla, <i>Potamogeton</i> spp., Irrigation canal weeds, Annual Naiads) for all aquatic application sites	1 ppm*	N/A	14	No more than one-half 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.
Control of Schistosome infected freshwater Snail	1.5 ppm	N/A	N/A	No more than one-half 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.
Leech control	1.5 ppm	N/A	N/A	No more than one-half 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.

*ppm = parts per million

CONTROL OF QUAGGA AND ZEBRA MUSSELS IN LAKES, PONDS, LAGOONS, RESERVOIRS, SEDIMENTATION BASINS, CANALS AND DITCHES

Treat Mussels only as a curative measure. Treat one-half of the surface of the body of water at a time.

To control adult and juvenile Mussels: Apply 1 gallon of this product per 60,000 gallons of water to yield a rate of 1.0 ppm metallic copper.

To control of Veligers in the larval mollusk stage: Apply 3 gallons of this product per 1,000,000 gallons of water to yield a concentration of 0.18 ppm metallic copper.

CONTROL OF ALGAE / BACTERIA* IN RESERVOIRS AND TANKS FOR WATER DESTINED FOR USE AS DRINKING WATER

This product may be used in waters destined for use as drinking water. These waters must receive additional and separate potable water treatment. DO NOT apply more than 1.0 ppm as metallic copper.

Water intended for human use in municipal water reservoirs and tanks: To control algae/bacteria* in municipal water supplies before they are purified for drinking, apply 2 fluid ounces per 125 cubic feet (1/4 tsp./20 gals.) of water for 1 ppm of copper. Apply by boat or from side of reservoir/ tank at equal intervals.

Reservoirs of water intended for drinking water use: To control of algae/bacteria* in water reservoirs destined for use as drinking water, refer to the following table for specific application rates. Treated water must receive additional and separate potable water treatment. Applications may be repeated in 14 days. Apply by boat or from side of reservoir at equal intervals.

This Product (Gals./Ac./Ft.)	Equivalent Metallic Copper (ppm)
0.33	0.06
0.50	0.09
3.30	0.60
5.50	1.00

Stock watering ponds, tanks, and troughs: To control of algae/bacteria* in stock water ponds, tanks, and troughs, add one-fourth teaspoon of this product to 30 gallons of water for a final ppm of 0.7 ppm. Do not exceed 1 ppm (1/4 tsp./20 gals). Apply by boat or from side of tank or trough at equal intervals.

For drip-system use in livestock watering tanks: Tanks fed by a continuous flow of spring or well water may be equipped with a chemical drip-system designed to meter-in this product based upon water flow rates. Adjust the systems to maintain a concentration of 0.7 ppm copper in incoming stock water (0.15 fl. oz. of product per minute to a water flow of 100 gallons per minute). Treat continuously or as needed to control and prevent algae regrowth.

CONTROL OF ROOTED AND SUBMERGED PLANTS

Rooted and submerged plants such as Hydrilla and Potamogeton can be controlled using 0.4 to 1.0 ppm of this product which is equal to 0.22 to 5.5 gallons per acre per foot. Application rates are dependent on the density, stage of growth, and depth of the water. Only treat one-half of the body of water at one time. Start at the edge and spray towards the center of the body of water. Applications may be repeated in 14 days.

CONTROL OF FLOATING AQUATIC PLANTS

Water hyacinth and other floating aquatic vegetation can be suppressed BUT NOT ERADICATED by using a mixture of 1.03 gallons of this product per 7 gallons of water. Apply this solution as a coverage spray to thoroughly wet all exposed vegetation. Only treat one-half of the body of water at one time. In areas of heavy infestation, multiple applications may be required. Applications may be repeated in 14 days. Do not exceed 5.46 gallons of this product per acre foot of water.

IN NON-SPRINKLER, NON-DRIP IRRIGATION CONVEYANCE SYSTEMS AND CHEMIGATION SYSTEMS, DITCHES, CANALS, AND SIMILAR OPEN IRRIGATION CONVEYANCES

For continuous addition, add 2 fluid ounces of this product for each 1,000 gallons of water per hour. For conveyance systems longer than 30 miles, dispense this rate among injection points every 30 miles. Do not exceed the total dosage of 1 gallon of this product in 60,000 gallons of water (1 ppm metallic Cu).

TO CONTROL ALGAE / BACTERIA* IN SPRINKLER, DRIP OR OTHER TYPES OF CLOSED IRRIGATION EQUIPMENT

Use 16 pints of this product per 7,500 to 300,000 gallons of water. Agitation is not required. Do not mix with basic substances. This product must be applied continuously for the duration of the water application.

EXAMPLE CALCULATIONS

CHEMIGATION AND IRRIGATION FLOW RATES (0.06 ppm metallic Cu)

Water Flow Rate (Gals./Min./Ac./ft.) (gpm)	Water Flow Rate (Cu. Ft./Min.) (cfm)	Dosage Rate (ppm Metallic Cu)	This Product (Fl. Oz./Min.)	Feeder Pump Setting (This Product mL/Min.)
3,000	400	0.06	0.4	11.3
6,000	800	0.06	0.8	22.6
9,000	1,200	0.06	1.1	34.0
12,000	1,600	0.06	1.5	45.3

CHEMIGATION AND IRRIGATION FLOW RATES (1.0 ppm metallic Cu)

Water Flow Rate (Gals./Min./Ac./ft.) (gpm)	Water Flow Rate (Cu. Ft./Min.) (cfm)	Dosage Rate (ppm Metallic Cu)	This Product (Fl. Oz./Min.)	Feeder Pump Setting (This Product, mL/Min.)
3,000	400	1.0	6.4	188.7
6,000	800	1.0	12.8	377.5
9,000	1,200	1.0	19.1	566.2
12,000	1,600	1.0	25.5	755.0

BIOLOGICAL FISH PONDS AND AQUACULTURE SYSTEMS

Before treating ponds containing fish with this product, measure total alkalinity (not hardness or pH). The toxicity of copper to fish increases as the total alkalinity decreases. Sensitivity to copper varies between fish species. For copper sensitive species, do not exceed 0.06 ppm metallic copper. When algae concentrations are high, to avoid suffocation of fish after treatment, either treat in a series of smaller doses over time or have emergency aeration available. Apply at the rate of 2 to 4 pints of this product per acre foot (326,000 gallons) of water to yield concentrations ranging from 0.05 ppm to .09 ppm metallic copper, respectively. Metallic copper concentration is directly proportional to amount of this product added per acre foot. A maintenance dose of 4 to 8 ounces per acre foot may be used every 14 days. The rate is dependent on water temperature, fish density and the degree of suppression targeted.

Amount of This Product in Aquacultural Ponds Applied One Acre Foot (12 Inches Deep)		
This Product (Gals.)	Water (Gals.)	Metallic Copper (ppm)
0.25	326,000	0.05
0.50	326,000	0.09

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in original container. Keep container tightly closed. Store this product above 30°F. If this product freezes, allow to thaw and thoroughly agitate before use. Keep away from galvanized pipe and any nylon storage handling equipment. In the event of a spill, neutralize with limestone or baking soda before disposal. Concentrate may deteriorate concrete.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER HANDLING:

Nonrefillable Container (rigid material; less than 5 gallons): Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container one-fourth full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then, offer for recycling if available or dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Nonrefillable Container (rigid material; 5 gallons up to < 250 gallons): Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container one-fourth full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then, offer for recycling if available or dispose of empty container in a sanitary landfill or by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Refillable Container (≥ 250 gallons & Bulk): Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

WARRANTY—CONDITIONS OF SALE

OUR DIRECTIONS FOR USE of this product are based upon tests believed reliable. Follow directions carefully. Timing and method of application, weather and crop conditions, mixture with other chemicals not specifically directed and other influencing factors in the use of this product are beyond the control of the Seller. To the extent consistent with applicable laws, 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 laws, 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 directions given herewith. The foregoing is a condition of sale by the Seller and is accepted as such by the Buyer.

Manufactured By:



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