Sepro

## ACTIVE INGREDIENT:

IF IN EYES:

IF ON SKIN:

SWALLOWED:

IF INHALED:

Copper ethanolamine complex, mixed (Mono CAS# 14215-52-2 and Tri CAS# 82027-59-6)\*.. .88.2% .100.0%

\* Metallic copper equivalent, 3.8%

Clearigate contains 0.31 lbs. of copper per gallon

# Algaecide and Herbicide

not understand the label, find someone to explain it to you in detail.

**COPPER GROUP** NOT CLASSIFIED HERBICIDE

**KEEP OUT OF REACH OF CHILDREN** 

Read all Precautionary Statements and Directions for Use on panel before use

Take off contaminated clothing.

Move person to fresh air.

product, call INFOTRAC at 1-800-535-5053.

PRECAUTIONARY STATEMENTS

Mixers, loaders, applicators, and other handlers must wear: · Coveralls over long sleeved shirt and long pants;

· Chemical-resistant gloves made of any waterproof material;

· Chemical-resistant headgear for overhead exposure; and • Chemical-resistant apron when mixing, loading, or cleaning equipment.

injection of a short-acting barbiturate drug.

Avoid breathing dust or spray mist.

· Goggles or faceshield;

**User Safety Requirements** 

**User Safety Recommendations** 

potable water treatments.

PHYSICAL AND CHEMICAL HAZARDS

Do not use or store near heat or open flame

killed under such conditions if present.

**ENVIRONMENTAL HAZARDS** 

Personal Protective Equipment (PPE)

· Chemical-resistant footwear plus socks;

preferably mouth-to-mouth if possible

DANGER/PELIGRO

FIRST AID

Call a poison control center or doctor for treatment advice.

Call a poison control center or doctor for treatment advice.

Do not give anything by mouth to an unconscious person.

Call a poison control center or doctor for further treatment advice.

HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

Measures against circulatory shock as well as oxygen and measures to support breathing manually or

mechanically may be needed. If persistent, convulsions may be controlled by the cautious intravenous

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables

and other absorbent material that have been drenched or heavily contaminated with the product's

thoroughly and change into clean clothing. Wash the outside of gloves before removing.

exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Users

should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. As soon as possible, wash

Potable water sources treated with this product may be used as drinking water only after proper additional

Fish Advisory Statement: This copper product is toxic to fish and aquatic organisms. Unlike most

accumulate in sediment with repeated applications. Copper is a micronutrient, but its pesticidal

application rate exceeds the amount of copper needed as a nutrient.

organic pesticides, copper is an element and will not break down in the environment and will therefore

Do not use in waters containing Koi and hybrid goldfish. Not intended for use in small volume,

less than 50 ppm (e.g., soft or acid waters), as trout and other sensitive species of fish may be

garden pond systems. Avoid treating waters with pH values < 6.5, DOC levels < 3.0, and alkalinity

DANGER. CORROSIVE. Causes irreversible eye damage. Causes skin burns. May be fatal if

absorbed through skin. Harmful if swallowed or inhaled. Do not get in eyes, on skin or on clothing

going for treatment. In case of emergency endangering health or the environment involving this

Have person sip a glass of water if able to swallow.

Rinse skin immediately with plenty of water for 15 - 20 minutes.

Call a poison control center or doctor immediately for treatment advice.

Do not induce vomiting unless told to by a poison control center or doctor.

If person is not breathing call 911 or an ambulance, then give artificial respiration

Hold eve open and rinse slowly and gently with water for 15 - 20 minutes.

Remove contact lenses, if present, after the first 5 minutes, then continue rinsing

RESISTANCE MANAGEMENT

DIRECTIONS FOR USE:

Apply 8.7 gallons of product per acre-ft. (2.69 pounds active ingredient per acre-ft). • Do not apply more than 69.6 gallons of product per acre (or acre-foot) per year (21.5 pounds active ingredient per acre (or acre-foot) per year).

For applications 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 in these

For terrestrial use: This pesticide is toxic to fish and aquatic invertebrates and may contaminate

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

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below

the mean high water mark. Do not contaminate water when disposing of equipment washwater or

water through runoff. This product has a potential for runoff for several months or more after

• Do not apply more than 21.5 pounds active ingredient per acre (or acre-foot) per year · Do not make applications less than 14 days apart.

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

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

Water bodies or management units should be scouted after application to verify that the treatment

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

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

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

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

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

### Local resistant weeds:

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

Waters treated with this product may be hazardous to aquatic organisms. Treatment of aquatic weeds and algae can result in oxygen loss from decomposition of dead biomass. This oxygen loss can cause fish and invertebrate suffocation. To minimize this hazard, do not treat more than  $\frac{1}{2}$  of the water body (excluding water infrastructure and constructed conveyances such as drainage canals, ditches and pipelines or intakes and aqueducts for drinking water or irrigation use) to avoid depletion of oxygen due to decaying vegetation. Wait at least 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move in to untreated

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

Certain water conditions including low pH ( $\leq$  6.5), low dissolved organic carbon (DOC) levels (3.0mg/L or lower), and "soft" waters (i.e., alkalinity less than 50 mg/L), increases the potential acute toxicity to non-target aquatic organisms. The application rates on this label are appropriate for water with pH values > 6.5, DOC levels > 3.0 mg/L, and alkalinity greater than 50 mg/L. Avoid treating waters with pH values < 6.5, DOC levels < 3.0, and alkalinity less than 50 ppm (e.g., soft or acid waters), as trout and other sensitive species of fish may be killed under such conditions

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

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

## **GENERAL APPLICATION RESTRICTIONS:**

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. Do not enter or allow others to enter treated areas until sprays have dried. For any requirements specific to your state or tribe, consult the state or tribe agency responsible for pesticide regulation

# SURFACE SPRAY / INJECTION APPLICATION

For effective control, proper chemical concentration contact should be maintained for a minimum of three hours. Application rates in the chart below are based upon static or minimum flow situations in

Aquatic Vegetation Type or Species Dosage ppm Copper **Treatment Comments** ALGAE 0.27 - 1.36 Apply lower dosage rates on light infestations. Use higher rates on heavy blooms 0.1 - 0.5 0.9 - 4.4 1.5% - 5% and where algae masses are clumped and accumulated. 0.27 - 1.64 Filamentous 0.2 - 0.61.8 - 5.3 5% - 10% Apply lower dosage rates on early season, light infestations or treatment of regrowth Apply higher rates on surface mats and coarse species such as Pithorphora, Cladophora Lyngbya. Chara/Nitella 1.11 - 2.2 Apply lower dosage rates on new infestations or early season growth. Apply higher rates on older, established calcified plants. Apply as close to top of plant growth as SUBMERGED PLANTS Egeria densa (Brazilian Elodea) 5.4 - 8.7 1.67 - 2.69 10% - 20% 0.6 - 1.0 Elodea canadensis 0.8 - 1.0 7.1 - 8.7 2.2 - 2.69 10% - 20% Apply lower dose on early season, low density growth. Apply higher rates in thicker 0.4 - 1.0 1.11 - 2.69 Hydrilla verticillate 3.6 - 8.710% - 20% stands of plants. Product should be applied as close to the top of the plants as possible. Underwater injection is recommended when plants are more than one foot Myriophyllum spp. (Water Milfoil) 0.8 - 1.0 7.1 - 8.7 2.2 - 2.69 10% - 20% below water surface. 4.4 - 8.7 1.36 - 2.69 10% - 20% Najas spp. (Naiad) 0.5 - 1.0 Potamogeton spp. (Pondweeds) 0.5 - 1.0 4.4 - 8.7 1.36 - 2.69 10% - 20% FLOATING PLANTS Lemna spp. (Duckweed) 0.5 - 1.04.4 - 8.7 1.36 - 2.69 20% - 25% Apply lower rates to shallow (less than 1ft.) infestations. Use higher rates for large infestations in deeper water (1 foot or greater). Use a fine spray and wet plants Eichornia crassipes (Water Hyacinth) thoroughly. Do not disturb with motor wake or paddles after treatment.

lakes, ponds, reservoirs, and inactive irrigation conveyance systems or drainage systems Where significant inflow occurs (greater than 10% of total water volume in 24 hours), it is recommended that flow be stopped for 24 hours during and following treatment. If this is not possible, treat inflowing water in accordance with Flowing Water Treatment instructions.

Due to the potential toxicity to fish at dosages in excess of 0.5 ppm copper, the use of this product above this level is suggested only by experienced applicators. In areas where fish are net present or where some fish kill is not objectionable, total volume treatments can be made. In all other areas, treatments above 0.5 ppm copper should not exceed 1/3 to 1/2 of the entire  $\,$ water body, allowing one to two weeks between consecutive treatments

Select dosage rate based upon species/type of plants being controlled. Choose a dilution which will allow relatively even application throughout the intended treatment area with the type of equipment being used. Avoid drift by using coarse spray droplets, applying close to the water surface and/or injecting solution below the water surface through submersed hoses for treatment of submerged growth.

# FLOWING WATER TREATMENT DRIP SYSTEM/METERING PUMP APPLICATION

Effective aquatic plant control in flowing water (canals, ditches, laterals, etc.) is dependent upon maintaining suitable contact time with sufficient chemical concentrations. Other factors to consider include: type of growth present, degree of infestation, water temperature and weather conditions during and following treatment. Fish may be killed at dosages in excess of 0.5 ppm copper in flowing water. Use dosages over 0.5 ppm only in areas where some fish kill is not objectionable or where fish have access to downstream avoidance of these concentration levels.

1. Prior to treatment, it is important to accurately determine water flow rates. In the absence of weirs, orifices or similar devices which provide accurate water flow measurements, volume of flow may be estimated via the following formula:

#### Average Width (ft.) x Average Depth (ft.) x Velocity\* (ft./sec) x 0.9 = Cubic Feet per Second (CFS)

\*Velocity is the time it takes a floating object to travel a given distance. Dividing the distance traveled (ft) by the time (seconds will yield velocity (ft/sec). Repeat measurement at least 3 times at the intended application site and use the average of these measurements.

2. Calculate volume of ditch, canal, lateral or receiving pond in cubic feet based upon water levels at the time of treatment by using the following formula:

## Length (ft.) x Average width (ft.) x Average depth (ft.) = Cubic Feet of Water

3. Calculate turnover time (the amount of time it takes for the water in the system to be replace by new water). Convert to hours using the following formula

Canal Volume (ft.³) ÷ 3,600 = Turnover Time (hrs.)

4. Select dosage rate from the chart below and calculate total product requirements by using the formula following the chart.

Aquatic Vegetation Type	ppm Copper	Dosage Rate Qt. per CFS/Hour*	Dosage Rate <sup>1</sup> (lbs. per CFS/Hour)
PLANKTONIC ALGAE	0.1 - 0.5	0.3 - 1.4	0.07 - 0.10
FILAMENTOUS ALGAE	0.2 - 0.6	0.6 - 1.7	0.14 - 0.46
CHARA/NITELLA	0.4 - 0.8	1.2 - 2.3	0.31 - 0.62
SUBMERGED WEEDS	0.5 - 1.0	1.4 - 2. 8	0.38 - 0.77

NOTE: Use higher dosage range in cooler water (60°F - 70°F), under conditions of heavy growth and/or on matured plant growth. Lower dosage ranges may be used on maintenance control treatments, young plants and/or under minimal growth conditions in warmer waters (> 70°F).

#### Product Required (qts) = Dosage Rate (qt/CFS/hr) x Flow Rate (CFS) x Turnover Time (hrs)\*

NOTE: If turnover time is less than 3 hrs. substitute 3 hrs. into this calculation

5. For ditches, canals and laterals determine the number of drip/metering application sites required (based upon turnover time) by referring to the chart below

TURNOVER TIME (Hrs) NUMBER OF DRIP/METERING SITES		
Less than 4.5	1	
4.6 - 7.5	2	
7.6 - 10.5	3	
10.6 - 13.5	4	
13.6 - 16.5	5	

Sewage treatment ponds and other sites where water is stored for a calculated retention time and are fed by a single input source will require a single dripper/metering system. Inflowing water should be treated at the appropriate dosage rate from the chart in #4 for the duration of the entire turnover time calculated in #3.

6. Calculate distance between drip/metering sites by using the following formula:

Canal/Ditch/Lateral Length (ft) = Distance Between Drip/Metering Systems (ft)

7. Calculate amount of this product required per drip/metering site by using the following formula:

Total Product Required (qts.) = Product Required Per Site (qts.) No. of Drip/Metering Sites

8. Calculate drip/metering duration per site by using the following formula:

Product Required Per Site (gts) Dosage Rate (qt/CFS/hr) x Flow Rate (CFS = Drip Metering Duration (hrs) Per Site

9. Calculate Drip/Metering Rate by using the following formula to convert to oz./min

Flow Rate (CFS) x Drip Rate (qt./CFS/hr) x 0.533\* = Drip Rate (qt./CFS/hr) x 0.533\*

\*NOTE: 0.533 is a constant used to convert qt./hr to oz./min

METRIC CONVERSION: Drip Rate (oz./min) x 29.57 = Drip Rate (ml/min) Calibrate drip system, metering pump or similar dosage device to establish output rate

determined in Step No. 9. This can be done using a watch with a second hand and a calibrated measuring cup, graduated cylinder or similar vessel. If possible, calibrate all drip/metering devices prior to beginning actual treatment. Turn them on as simultaneously as possible, beginning with the device furthest upstream. Begin with only the amount of product required at each site or record your start-up time and shut down drip/metering systems after the drip/metering duration time period determined in Step No. 8.

Remove containers from application sites following treatment. Triple rinse application equipment. Dispose of empty containers in accordance with container disposal instructions on this label. Partially used containers should be resealed with original closures and stored in accordance with storage instructions on this label.

Continued on other side >>

Net contents: 5 gallons

### FOR OPTIMUM EFFECTIVENESS:

- Apply this product early in the day under bright or sunny conditions when water temperatures are at least 60° F (15.5° C)
- Apply when growth first begins to appear or create a nuisance.
- · Apply in a manner which will ensure even distribution of product within treatment area.
- · Repeat application, as needed, if regrowth begins to appear and seasonal control is desired.

#### MAXIMUM ANNUAL APPLICATION RATES Direct treatment of whole waterbodies:

Maximum annual application rate of 21.9 lbs. of metallic copper per acre-foot (8 applications per year at up to 1 ppm). This rate/frequency is calculated based on staggering the treatment of each half of the water body every 14 days (at a rate of 2.69 lbs. metallic copper per acre-foot = 1 ppm) for eight months (244 days). In situations where rapidly reproducing toxic algal species pose a public health threat to drinking or recreational water resources, applicators must receive

authorization from applicable state, local or tribal water resources authorities to apply copper in excess of 21.9 lbs. of metallic copper per acre-foot (8 applications per year at up to 1 ppm).

# Direct treatment to localized area of waterbody or water management units: Maximum annual application rate of 46.6 lbs. of metallic copper per acre-foot per year

(17 applications per year at up to 1 ppm). This rate/frequency is calculated based on the maximum number of possible applications allowed based on a 14-day minimum (at a rate of 2.69 lbs. metallic copper per acre-foot = 1 ppm) retreatment interval for eight months (244 days). Do not apply more than 46.6 lbs. of metallic copper to a water management unit, regardless of the pest(s) targeted by applications. In situations where rapidly reproducing toxic algal species pose a public health threat to drinking or recreational water resources, applicators must receive authorization from applicable state, local or tribal water resources authorities to apply copper in excess of 46.6 lbs. of metallic copper per acre-foot per year for a single water management unit.

Applicators must administer copper at a rate of 0.1 to 0.25 mg/L (0.27 to 0.69 lbs. metallic copper/  $\,$ acre-foot = 0.1 to 0.25 ppm). Applicators must monitor the copper concentration and when it falls below the desired concentration, apply additional copper to bring the concentration back up to the desired concentration. Copper can be applied once daily for 5 to 11 consecutive days. Do not apply to water for more than 11 days before waiting at least 14 days before retreating. Do not apply more than 46.6 lbs. metallic copper per acre-foot in one year.

#### Catfish:

Copper can be applied throughout the spring and summer when water temperatures are consistently above 70°F when total alkalinity and hardness concentrations fall between 100 and 300 mg/L as CaCO3. Applications are no longer needed in the fall after fish are harvested or the average water temperatures fall below 70°F. Apply mid-morning at a rate of 0.31 lbs. metallic copper per acre-foot (0.11 ppm metallic copper). Place copper crystals in a cloth bag and then put the filled bag into another cloth bag to slow the rate at which the copper dissolves. Suspend the double bagged unit of copper about 20 feet in front of a paddlewheel aerator. Run the aerator until all the copper sulfate is dissolved; this usually requires an hour or two. Use copper only if you plan to harvest fish before fall and anticipate problems with off-flavoring algae.

Do not make routine copper treatments for algae control in fingerling ponds or in broodfish ponds because off-flavors are not a problem in those fish. Do not use this treatment regimen in waters of low hardness and alkalinity (less than 50 ppm as CaCO3) because copper may stress or kill fish.

Water molds on catfish eggs are treated inside the hatchery using a flow-through hatching trough. Administer a rate of 6.9 lbs. metallic copper per acre-foot (2.5 ppm or mg/L based on metallic copper = 10 ppm or mg/L by product) to the water of a flow-through hatching trough once daily until the embryos (eggs) develop eyes; flow rate should allow for 1 exchange every 30 minutes.

#### Mussels:

For treatments to whole water bodies, administer copper at a rate of up to 1 ppm (2.74 lbs. metallic copper/acre-foot) at a maximum annual rate of 21.9 lbs. metallic copper per acre-foot. Monitor the copper concentration and when it falls below the desired concentration, apply additional copper to bring the concentration back up to the desired concentration. Monitor mussel populations and terminate the additional applications once mussels are dead or 14 days have passed since the initial application. Applicators must wait at least 14 days after the last application before making any

Algae and weeds in irrigation systems via pulse application:
Maximum annual application rate of 13 lbs. metallic copper per year per 5 miles of conveyance. Apply copper into irrigation conveyance system or lateral at up to a maximum rate of 0.5 lbs. metallic copper per cubic foot per second of water per 5 to 30-mile treatment depending on water hardness, alkalinity and algae concentration. This method may only be used in constructed irrigation conveyance systems, laterals, and aqueducts.

### STORAGE & DISPOSAL:

Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited.

PESTICIDE STORAGE: Keep container closed when not in use. Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Do not contaminate feed, feedstuffs, or drinking water. Do not store or transport near feed or food. Store at temperatures above 32° F Do not store near heat or flame

**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

**CONTAINER DISPOSAL:** Nonrefillable container. Do not reuse container. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 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 or reconditioning if available or puncture and dispose of in approved landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke. Consult Federal, State or local authorities for approved alternative procedures

Warranty Disclaimer: Neither the manufacturer nor the seller makes any warranty, expressed or implied concerning the use of this product in a manner that is not consistent with the use expressly set forth on the label. To the extent permitted by, and consistent with, applicable law, buyer assumes any risk of use of this product that is not consistent with label use instructions. Read and follow the label

Warranty: To the extent consistent with applicable law neither the manufacturer nor the seller makes any warranty, expressed or implied concerning the use of this product other than indicated on the label. To the extent consistent with applicable law buyer assumes risk of use of this material when such use is contrary to label instructions. Read and follow the label directions.