CLEARIGATE® EC9
Algaecide/Herbicide

Chelated copper algaecide and herbicide developed by professional applicators to fight the toughest algae and weed problems

ACTIVE INGREDIENTS:
Copper Ethanolamine Complex, Mixed 3.825%
(Mono CAS# 14215-52-2 and Tri CAS# 82027-59-6)*
OTHER INGREDIENTS:.....96.175%
TOTAL: 100.0%
Contains 0.31 lbs. of copper per gallon

KEEP OUT OF REACH OF CHILDREN

DANGER / PELIGRO

Read all Precautionary Statements before use.

Sold By:
Applied Biochemists
1400 Bluegrass Lakes Pkwy
Alpharetta, GA 30004
1-800-558-5106

Pat. No. 5,407,899
EPA REG NO 8959-62
EPA Est. No. 42291-GA-1

FIRST AID

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.
IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor. Do not give anything to an unconscious person.

Have the product container or label with you when calling a Poison Control Center or doctor, or going for treatment.
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 injection of a short-acting barbiturate drug.
IN CASE OF EMERGENCY CALL: 1-800-654-6911

PRODUCT INFORMATION

This product is a highly effective algaecide, herbicide and cyanobacteriocide (blue-green algae) for use in: Crop and Non-crop Irrigation Conveyance Systems, Potable Water Reservoirs, Lakes, and Farm, Fire, Fish, Golf Course, Industrial, Irrigation, Stormwater Detention, and Wastewater Ponds. This product controls coarse Filamentous Algae (thick cell-walled string algae), muscilaginous Planktonic Algae (colonial), Chara and aquatic vegetation species that have a sensitivity to copper in conjunction with a penetrant. Waters treated with this product may be used for animal consumption, further potable water treatment, or irrigating turf or crops after treatment.

DIRECTIONS FOR USE

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

1.Determine species and/or type of vegetation present.

2.Use Table 1 to determine the dosage rate.

3. Determine acre-feet within the intended treatment area (area of infestation) by measuring length, width and average depth using the formula:

length (ft.) x width (ft.) x average depth (ft.)/43,560 = acre-feet

Note: 43,560 sq. ft. = 1 acre-foot

4. Multiply acre-feet from step #3 times the dosage rate from step #2 to calculate the total gallons required for the treatment area.

5. The following are techniques to apply this product: Surface Spray Application: Prepare solution at dilution rate from Table 1. Ensure dilution rate will allow relatively even application throughout the intended treatment area with the type of equipment being used. Apply close to the water surface. Injection Application: Prepare solution at dilution rate from Table 1. Inject solution below the water surface through submersed hoses for treatment of submerged growth.

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

Table 1. Product Dosage Rate by Type

Species or Type of Vegetation	PPM Copper	Amount of Product Required (gal/acre-ft)	Dilution (%Spray Solution V/V)	Treatment Comments
Colonial Diatoms[1] *Navicula & Fragilaria*	0.3	1.8 - 2.6	5% - 10%	Diatom treatments may require treating the entire water volume and repeat applications may be needed.
Planktonic Algae	0.5	0.9 - 4.4	1.5% - 5%	Apply lower dosage rates on light infestations. Use higher rates on heavy blooms and where algae masses are clumped and accumulated.
Filamentous Algae	0.6	1.8 - 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 *Pithophora*, *Cladophora* or *Lyngbya*.
Chara/Nitella	0.8	3.6 - 7.1	10% - 15%	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 possible.
SUBMERGED PLANTS				
Hydrilla *Hydrilla verticillata*	1.0	3.6 - 8.7	10% - 20%	Apply lower dose on early season, low density growth. Apply higher rates in thicker 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 below water surface.
Naiad *Najas spp.*, Pondweeds Po*tamogeton* spp.	1.0	4.4 - 8.7		
Brazilian Elodea *Egeria densa*	1.0	5.4 - 8.7		
Water Milfoil *Myriophyllum* spp., Elodea *Elodea canadensis*	1.0	7.1 - 8.7		
FLOATING PLANTS				
Duckweed *Lemna* spp., Water Hyacinth *Eichornia crassipes*, Giant Salvinia *Salvinia molesta*	0.5 - 1.0	4.4 - 8.7 gal/surface acre	20% - 25%	Apply lower rates in shallow water (<1 ft.). Use higher rates for large infestations in deeper water (≥1 ft.). Use a fine spray and wet plants thoroughly. Do not disturb with motor wake or paddles after treatment.

[1] *Colonial diatoms are a form of algae characterized by having cell walls made of silica, a mineral substance. Certain species of diatoms grow in colonies, usually on sand or concrete surfaces, and produce gelatinous masses. Effective control has been achieved using the rates listed.*

TANK MIX APPLICATION

This product can be tank mixed with other herbicides to improve efficacy; and to control algae in areas where heavy algae growth may cover target submersed plant species and interfere with herbicide exposure. Do not mix concentrates in tank without first adding water. To ensure compatibility, conduct a jar test before application. This product must not be mixed with any product containing a label prohibition against such mixing and must be used in accordance with the most restrictive label limitations and precautions. Label dosage rates must not be exceeded.

To ensure compatibility, a jar test is recommend before field application of any tank mix combination.

FLOWING WATER APPLICATION

1. Accurately determine water flow rate. 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 replaced by new water). Convert to hours using the following formula:

$$\frac{\text{canal volume (ft}^3\text{)}}{\text{low rate (CFS)}} \div 3600 = \text{turnover time (hrs)}$$

4. Use Table 2 to determine the dosage rate

Table 2. Flowing Water Application Dosage Rate by Type		
Species or Type of Vegetation	PPM Copper	Dosage Rate[1] (Qt. per CFS/Hour)
Planktonic algae	0.1 - 0.5	0.3 - 1.4
Filamentous algae	0.2 – 0.6	0.6 - 1.7
Chara/Nitella	0.4 - 0.8	1.2 - 2.3
Submerged weeds	0.5 - 1.0	1.4 - 2.8

[1] 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).

5. Calculate amount of product required using the dosage rate from step #4, times the flow rate from step #2, times the turnover rate from step #3.

   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.

Use Table 3 to determine the number of drip/metering application sites required (based upon turnover time). 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. Treat inflowing water at the dosage rate from Table 2 for the turnover time calculated in step #3.

Table 3. Required Drip/Metering Sites	
Turnover Time (Hrs)	Number of 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

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

$$\frac{\text{Canal\Ditch\Lateral Length (ft)}}{\text{No. of Drip\Metering Sites}} = \text{Distance Between Drip\Metering Systems}$$

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

$$\frac{\text{Total Product Required (qts)}}{\text{No. of Drip\Metering Sites}} = \text{Product Required Per Site}$$

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

$$\frac{\text{Product Required Per Site(qts)}}{\text{Dosage Rate (qt\CFS\hr)x Flow Rate (CFS)}}$$

=Drip Metering Duration Per Site

9. Calculate drip/metering rate by using the following formula to convert to fl. oz./min or mL/min.:

Flow Rate (CFS) x Drip Rate (qt/CFS/hr) x 0.533‡ = Drip Rate (fl. oz/min).

Note: ‡ 0.533 is a constant used to convert qt/hr to fl. oz./min
METRIC CONVERSION: Drip Rate (fl. 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 #10. 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 #8.

PRE-TREATMENT CONSIDERATIONS:
The following suggestions apply to the use of this product in all approved use sites:

- Apply during calm and sunny conditions with 8 to 10 hours of daylight remaining, when water temperature is at least 60°F for best results.
- Treat when growth first begins to appear or create a nuisance, as evidenced by initial taste and odor complaints, high cell counts or chlorophyll a concentrations, high MIB or geosmin concentrations, visible surface scum formations, low Secchi disk readings, significant daily fluctuations in dissolved oxygen, and/or sudden increases in pH. Monitoring these parameters to optimize the timing of treatments and reducing the amounts of product needed for seasonal control.
- Identify primary nuisance species to determine the most accurate dosage rates.
- Apply in a manner that will ensure even distribution of the chemical within the treatment area. Effective control of algae requires direct contact with all cells throughout the water column, since these plants do not have vascular systems to transport active ingredient from cell to cell.
- Visible reduction in algae growth should be observed in 24 to 48 hours following application.
- Wait at least 2 days to re-treat areas if re-growth or new growth begins to appear and seasonal control is desired. Identify the new growth to re-check required copper concentration that may be needed for control.
- Clean spray equipment by flushing with clean water after treatment.

The following suggestions apply to the use of this product in flowing water:

- Maintain suitable contact time through proper concentration or additional metering sites to achieve effective aquatic plant control.
- Level of control is also affected by type of growth present, degree of infestation, water temperature and weather conditions during and following treatment.

PRODUCT 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. For any requirements specific to your State or Tribe, consult the State or Tribe agency responsible for pesticide regulation. Do not enter or allow others to enter until application of product has been completed. Do not apply more than 1.0 ppm as metallic copper in these waters.

Spray Drift Management
A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and the method of application (e.g., spray tank, backpack sprayers, sprayer-equipped boats) 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 down wind.

Temperature Inversions
If applying at wind speeds less than 3 mph, the applicator must determine if a) conditions of temperature inversion exist, 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 ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

Permits:
Some states may require permits for the application of this product to public waters. Check with your local authorities.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS
DANGER
Corrosive. Fatal if absorbed through skin. Causes irreversible eye damage. Harmful if swallowed. Do not get in eyes, on skin, or on clothing.
Personal Protective Equipment (PPE)
Mixers, loaders, applicators, and other handlers must wear the following:
• Long-sleeve shirt & Long pants
• Protective Eyewear
• Shoes and Socks
• Waterproof Gloves

USER SAFETY REQUIREMENTS
Users must wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing. Wash outside of gloves before removing.

USER SAFETY INSTRUCTIONS
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 material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

ENVIRONMENTAL HAZARDS
Do not use in waters containing Koi and hybrid goldfish. Not intended for use in small volume, garden pond systems.
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 ½ 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 include low pH ($\leq$ 6.5), low dissolved organic carbon (DOC) levels (3.0 mg/L or lower), and "soft" waters (i.e., alkalinity less than 50 mg/L), increases the potential acute toxicity to non-target aquatic organisms. This product may be toxic to trout and other species of fish. Fish toxicity is dependent upon the hardness of water. Do not use in water containing trout if the carbonate hardness of water is less than 50 ppm. For applications in waters destined for use as drinking water, those waters must receive additional and separate potable water treatment.

To protect listed species in California, contact your County Agricultural Commissioner or refer to the Department of Pesticide Regulation's PRESCRIBE Internet Database: http://www.cdpr.ca.gov/docs/endspec/prescint.htm

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 reuse or refill container. Do not contaminate feed, feedstuffs, or drinking water. Do not store or transport near feed or food.

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.

{For <5 gallon non-refillable containers only}:

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 ¼ 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.

{For >5 gallon non-refillable containers only}:

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 ¼ 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. Consult Federal, State or local authorities for approved alternative procedures.

{For 275 Gallon refillable container only}:

CONTAINER DISPOSAL: Refillable container. 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 container about 10 percent full with water. Agitate vigorously or recirculate water with pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat rinsing procedure two more times. Then offer for recycling or reconditioning if available or puncture and dispose of in approved landfill, or incineration. 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 directions.