Department of Agriculture
STATE OF HAWAII

LICENSED

PERIOD 2014-2016 LIC. NO.

9123.23

CUTRINE®-ULTRA

ALGAECIDE/HERBICIDE/CYANOBACTERICIDE

FOR USE IN:
LAKES; RIVERS; POTABLE WATER RESERVOIRS; FARM, FIRE, FISH, GOLF COURSE, INDUSTRIAL, IRRIGATION, RECREATIONAL, STORMWATER DETENTION AND WASTEWATER PONDS; FISH HATCHERIES AND RACEWAYS; CROP AND NON-CROP IRRIGATION CONVEYANCE SYSTEMS (DITCHES, CANALS AND LATERALS)

ACTIVE INGREDIENTS:
Copper Ethanolamine Complex, Mixed.....27.8%
(Mono CAS# 14215-52-2 and Tri CAS# 82027-59-6)*
OTHER INGREDIENTS:.....72.2%
TOTAL.....100.0%

*Contains 0.9 lbs. of elemental copper per gallon.
Metallic copper equivalent, 9%

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 label, find someone to explain it to you in detail.)

See Additional Precautions Inside Booklet

Manufactured for:
Applied Biochemists
W175N11163 Stonewood Drive, Suite 234
Germantown WI 53022
1-800-558-5106
www.appliedbiochemists.com
Pat. No. 5,407,899
EPA Reg. No. 8959-53
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 eye. 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 the 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 inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to- mouth if possible. Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling doctor, or going for treatment.

In case of emergency call 1-800-654-6911

For spill or cleanup information call CHEMTREC at 1-800-424-9300

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
DANGER / PELIGRO

Corrosive. Causes irreversible eye damage and skin burns. Harmful if swallowed or absorbed through the skin. Do not get in eyes, on skin, or on clothing. Wear protective eyewear, clothing, and chemical resistant gloves. Wash thoroughly with soap and water 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 the following:

- long-sleeve shirt,
- long pants,
- socks plus shoes,
- goggles or face shield and rubber gloves.

User Safety Requirements
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.

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

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

GENERAL INFORMATION

This product is a chelated copper formulation containing an emulsified surfactant/penetrant combination for highly effective control of coarse (thick cell-walled) filamentous algae, mucilaginous (colonial) planktonic algae, Chara and copper-sensitive vascular aquatic plants. This product controls Planktonic (suspended) forms such as the Cyanobacteria (*Anabaena, Aphanizomenon, Microcystis, Pseudanabaena, Oscillatoria*), Green algae (*Pandorina, Volvox, & Eudorina*) Golden Algae (Prymnesium parvum) and Diatoms (*Achnanthes, Chaetoceros, & Surirella*); Filamentous (mat-forming) forms such as *Spirogyra, Cladophora, Hydrodictyon, Vaucheria,* and *Ulothrix*, and attached, Benthic (bottom-growing) attached forms such as *Chara, Nitella Gleotrichia* and *Lyngbya*. This product has also been proven effective in controlling the rooted aquatic plant, *Hydrilla verticillata, Egeria densa* and other copper-sensitive species. The ethanolamines in this product prevent the precipitation of copper with carbonates and bicarbonates in the water. Waters treated with this product may be used for swimming, fishing, further potable water treatment, livestock watering or irrigating turf, ornamental plants or crops immediately after treatment.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read entire label and use strictly in accordance with precautionary statements and directions.

GENERAL APPLICATIONS RESTRICTIONS:

(For end-use products in containers ≥ 5 gallons or ≥ 50 pounds.) 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.

(For end-use consumer products in containers less than 5 gallons or less than 50 pounds) Do not apply this product in a way that will contact adults, children, or pets, either directly or through drift. Some states may require permits for the application of this product to public waters. Check with your local authorities.

(For all sizes) Do not enter or allow others to enter until application of product has been completed in the area.

PRE-TREATMENT CONSIDERATIONS:

(For end-use products in containers ≥ 5 gallons or ≥ 50 pounds.) In Potable Water Reservoirs, Lakes, Industrial Ponds & Wastewater or other monitored water systems, make initial product treatment at the onset of nuisance bloom conditions 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 of several of these parameters on a regular basis will assist in optimizing the timing of treatments and reducing the amounts of this product needed for seasonal control. Identification of primary nuisance species or genera may also be helpful in determining and refining dosage rates.

(For end-use consumer products in containers < 5 gallons or < 50 pounds) In Ponds (Farm, Fire, Fish, Golf Course, Irrigation, Ornamental, Stormwater Retention, Swimming), Small Lakes, Fish Hatcheries, Aquaculture Facilities), start treatment with this product when visible, actively growing algae and susceptible plants appear in spring, preferably before significant surface accumulations occur. Conduct treatments with operating aeration and/or fountain systems, when available.

SURFACE SPRAY / INJECTION
SLOW-FLOWING OR QUIESCENT WATER BODIES
ALGAECIDE APPLICATION

For effective control, maintain proper chemical concentration for a minimum of three hours contact time. The application rates in the chart are based on static or minimal flow situations. Where significant dilution or loss of water from unregulated inflows or outflows occur (raceways) within a three hour period, chemical may have to be metered in (see FLOWING WATER Directions).

1. Identify the form of algae growth present as one of the following types: Planktonic (suspended), Filamentous (mat forming), or Benthic (Chara/Nitella) and estimate the density of growth (Low, Medium, High).
2. Use Table 1 - Copper Concentration to select the desired PPM (Parts per Million) Copper needed, based upon the algal form and density.
3. Refer to Table 2 – Product Application Rate and determine gallons of product needed per Acre-foot corresponding to the desired PPM concentration determined in step #2.

Table 1 - Copper Concentration

Form of Algal Growth	Density of Growth		
	Low	Medium	High
Planktonic	0.2	0.4	0.6
Filamentous	0.2	0.6	0.8
Benthic	0.4	0.7	1.0

Table 2 - Product Application Rate (Gallons)

PPM Copper	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Gallon per Acre-ft	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.7	3.0

4. Determine acre-feet within the intended treatment area (area of infestation) by measuring length, width plus averaging several depth readings within the treatment area. Use the formula:

$$\frac{\text{Length (ft.) x Width (ft.) X Avg. Depth (ft.)}}{43{,}560} = \text{Acre-Feet}$$

5. Multiply Acre-Feet calculated in Step #4 times the gallons of this product determined in Step #3 to determine number of gallons of this product required for the intended treatment area.
6. Before applying, dilute the required amount of this product with enough water to ensure even distribution with the type of equipment being used. Typical dilution range is 9:1 when using hand-type sprayer or up to 50:1 when using water pump equipment or large tank sprayers.
7. Break up floating algae mats manually before spraying or with force of power sprayer if one is used. Use hand or power sprayer adjusted to rain-sized droplets to cover area evenly taking water depth into consideration. If using underwater injection systems such as drop hoses or injection booms, ensure boat pattern is uniform throughout treatment area. Treat shoreline areas first to avoid trapping fish.
8. Clean spray equipment by flushing with clean water after treatment and follow STORAGE AND DISPOSAL instructions on the label for empty or remaining partial containers.

CUTRINE-PLUS Granular Algaecide may be used as an alternative in low volume flow situations, spot treatments or treatment of bottom-growing algae in deep water.

HERBICIDE APPLICATION

This product controls *Hydrilla verticillata, Egeria densa* and other copper-sensitive vascular aquatic plant species can be obtained from copper concentrations of 0.4 to 1.0 ppm resulting from product treatment. Choose the application rate based upon stage and density of plant growth and respective water depth from the chart to the right.

Application Rates - Gallons/Surface Acre*

Growth/Stage Relative Density	PPM copper	Depth In Feet					
		1	2	3	4	5	6
Early Season Low Density	0.4	1.2	2.4	3.6	4.8	6.0	7.2
	0.5	1.5	3.0	4.5	6.0	7.5	9.0
	0.6	1.8	3.6	5.4	7.2	9.0	10.8
Mid-Season Moderate Density	0.7	2.1	4.2	6.3	8.4	10.5	12.6
	0.8	2.4	4.8	7.3	9.6	12.0	14.4
Late Season High Density	0.9	2.7	5.4	8.1	10.8	13.5	16.2
	1.0	3.0	6.0	9.0	12.0	15.0	18.0

*Application rates for depths greater than six feet may be obtained by adding the rates given for the appropriate combination of depths. Application rates should not result in excess of 1.0 ppm copper concentration within treated water.

FLOWING WATER
DRIP SYSTEM APPLICATION -
FOR USE IN POTABLE WATER AND IRRIGATION CONVEYANCE SYSTEMS

PRE-TREATMENT CONSIDERATIONS

In Crop and Non-Crop Irrigation Conveyance Systems: Ditches Canals & Laterals, apply product treatments as soon as algae or aquatic vascular plants begin to interfere noticeably with normal delivery of water (clogging of lateral headgates, suction screens, weed screens and siphon tubes). Delaying treatment could perpetuate the problem causing massing and compacting of plants. Heavy infestations and low flow conditions may require increasing water flow rate during application.

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

Average Width (feet) x Average Depth (feet) x Velocity* (feet/second) x 0.9 = Cubic Feet per Second (C.F.S.)

*Velocity is the time it takes a floating object to travel a given distance. Dividing the distance traveled (feet) by the time (seconds) will yield velocity (feet/second). Repeat this measurement at the intended application site at least three times, then average the values.

- After accurately determining the water flow rate in C.F.S. or gallons/minute, find the corresponding product drip rate on the chart to the right.

WATER FLOW RATE		PRODUCT DRIP RATE*		
C.F.S.	Gal/Min	Qts/Hr.	mL/Min.	Fl.Oz./Min.
1	450	1	16	0.5
2	900	2	32	1.1
3	1350	3	47	1.6
4	1800	4	63	2.1
5	2250	5	79	2.7

Calculate the amount of this product needed to maintain the drip rate for a period of 3 hours by multiplying Qts./Hr. x 3; ml/Min. x 180; or Fl. Oz./Min. x 180. Dosage will maintain 1.0 ppm Copper concentration in the treated water for the 3 hour period. Introduce this product into the channel at weirs or other turbulence-creating structures to effectively disperse it.

Pour the required amount of this product into a drum or tank equipped with a brass needle valve and constructed to maintain a constant drip rate. Use a stopwatch and appropriate measuring container to set the desired drip rate. Readjust accordingly if flow rate changes during the 3 hour treatment period.

Distance of control obtained down the waterway will vary depending upon density of vegetation growth. Treatment period may have to be extended up to 6 hours in areas where control may be difficult due to high flows or significant growth. Periodic maintenance treatments may be required to maintain seasonal control.

TANK MIXING

On waters where enforcement of use restrictions for recreational, domestic and irrigation uses are acceptable, the following mixture can be used as an alternative Hydrilla control method.

Tank mix 3 gallons of this product with 2 gallons of HARVESTER®. Apply mixture at the rate of 5 gallons per surface acre. Dilute with at least 9 parts water and apply as a surface spray or underwater injection. Observe all cautions and restrictions on the labels of both this product and HARVESTER® used in this mixture.

OTHER TREATMENT FACTORS AND CONSIDERATIONS

The following suggestions apply to the use of this product as an algaecide or herbicide in all approved use sites:

- Calm and sunny conditions when water temperature is at least 60ºF will usually expedite control results.
- Treat when growth first begins to appear or create a nuisance, if possible.
- 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 of algae is commonly observed in 24 to 48 hours following application, with full effects of treatments sometimes taking 7 – 10 days depending upon algae forms, weather, degree of infestation and water temperatures.
- Re-treat areas if re-growth or new growth begins to appear and seasonal control is desired. Identify new growth to re-check required copper concentrations that may be needed for control.
- Under conditions of heavy infestation, treat only ⅓ to ½ of the water body at a time to avoid fish suffocation caused by oxygen depletion from decaying algae. (See ENVIRONMENTAL HAZARDS).

ENVIRONMENTAL HAZARDS:

(For end-use products in containers < 5 gallons or < 50 pounds): This product may be hazardous to 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 does not exceed 50 ppm. Do not use in waters containing Koi and hybrid goldfish. Not intended for use in small volume, garden pond systems.

(For end-use products in containers ≥ 5 gallons or ≥ 50 pounds): Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

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 10-14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Consult with the State or local agency with primary responsibility for regulating pesticides before applying to public waters, to determine if a permit is required.

Certain water conditions including low pH (≤ 6.5), low dissolved organic carbon (DOC) levels (3.0 mg/L or lower), and "soft" waters (i.e. alkalinity less than 50 mg/L), increases the potential acute toxicity to non-target aquatic organisms.

STORAGE & DISPOSAL:

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

PESTICIDE STORAGE:

(For non-refillable containers only): Nonrefillable container. 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. Store at temperatures above 32ºF.

(For 275 Gallon refillable container only): Refillable container. Keep container closed when not in use. Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Refill this container with CUTRINE®-ULTRA only. Do not reuse this container for any other purpose. Do not contaminate feed, feedstuffs, or drinking water. Do not store or transport near feed or food. Store at temperatures above 32ºF.

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 DISPOSAL:

(For <5 gallon non-refillable containers only): 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): Do not reuse container. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ with water and recap. 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 container on its 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 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 275 Gallon refillable container only): 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, 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

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.

Cutrine® and Harvester® are registered trademarks of Arch Chemicals, Inc.

CUTRINE®-ULTRA

ALGAECIDE/HERBICIDE/CYANOBACTERICIDE

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If swallowed: Call a poison control center or doctor immediately for treatment advice. Have the 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 inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to- mouth if possible. Call a poison control center or doctor for further treatment advice.

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NET CONTENTS:
2.5 GALLONS (9.46 Liters)

SKU No. 392025A
Part No. 352160
051112/ESL050411

MOCK UPC
038005910253
0 38005 9520