AQUATRINE

ALGAECIDE

Pat. No. 3,930,834 E.P.A. Reg. No. 8959-33 E. P. A. Est. No. 42291-GA-1

FOR USE IN FISH AND SHRIMP AQUACULTURE FACILITIES PONDS - TANKS - RACEWAYS

ACTIVE INGREDIENTS	
Copper as elemental*	9.0%
INERT INGREDIENTS	91.0%
Total	100.0%

AQUATRINE contains 0.909 lbs. of elemental copper per gallon. (109 grams of elemental copper per liter)

*From mixed Copper-Ethanolamine complexes

KEEP OUT OF REACH OF CHILDREN

CAUTION

See other cautions on side panel

GENERAL INFORMATION

AQUATRINE has been proven effective in the management of potential problem-producing algae populations in both fish and shrimp aquaculture facilities. A broad range of algae species are controlled by **AQUATRINE**, including, but not limited to: Chara, Spirogyra, Cladophora, Microcystis, Leucothrix, Spirulina, Enteromorpha, and Oscillatoria. **AQUATRINE** is equally effective in freshwater, saltwater, and brackish water since the mixed ethanolamine complexes prevent the reaction of copper with other chemical components in the water. Fish or shrimp may be harvested immediately after treatment.

FIVE GALLONS (18.92 Liters)

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DIRECTIONS FOR USE

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

Treatment area formulas, application rates, and use instructions which ensure proper product usage within various systems are provided in the following directions. Follow instructions which best describe your facility. See cautions on side panel.

For effective control, proper chemical concentration must be maintained for a minimum of 3 hours contact time. **Static systems** (those with minimal or no flow) can be treated using surface spray application methods. **Flow-through systems** (those where significant dilution or loss of water from unregulated inflows or outflows will not allow for a 3 hour contact period) require metering-in of the **AQUATRINE™** in order to maintain effective contact time.

DETERMINING VOLUME OF WATER TO BE TREATED

Calculate volume of water within the water body or structure to be treated by using the most applicable formula from the charts below.

L = Length D = Average Depth (m) = meters (min) = minute
W = Width V = Velocity (ft) = feet

STATIC SYSTEMS

Use Site	Formula		Volume Units
Ponds	$\frac{L(ft)\times W(ft)\times D(ft)}{43,560}$	=	Acre-feet
	$\frac{L(m)\times W(m)\times D(m)}{10,000}$	=	Hectare-meters
Rectangular Tanks	$L(ft)\times W(ft)\times D(ft)\times 7.5$	=	Gallons
	$L(m)\times W(m)\times D(m)\times 1000$	=	Liters
Circular or Elliptical Tanks	$L(ft)\times W(ft)\times D(ft)\times 5.9$	=	Gallons
	$L(m)\times W(m)\times D(m)\times 785$	=	Liters

FLOW-THROUGH SYSTEMS

If a flow meter, current meter, weir, or pre-set pump-fill-drain-fill and water flow rate is unknown the following formula can be used for calculation of flow rates in streams or raceway structures.

Use Site	Formula		Volume Units
Raceways & Streams	$W(ft)\times D(ft)\times V^{*}(ft/min)\times 6.23$	=	Gallons/minute
	$W(m)\times D(m)\times V^{*}(m/min)\times 1000$	=	Liters/minute

*Velocity is the distance traveled by a floating object in one minute.

DOSAGE RATE & METHOD OF APPLICATION

PONDS

For planktonic (suspended) and free-floating filamentous algae mats, application rates should be based upon treating only the upper 3 to 4 feet (0.9 to 1.2 meters) of water where algae is growing. Refer to the chart below:

APPLICATION RATES FOR PONDS

Algae Type	PPM Copper	Gallons per Surface Acre: Depth in Feet 1	2	3	4	Liters per Hectare: Depth in Meters 0.5	0.75	1.0	1.25
Planktonic	0.2	0.8	1.2	1.8	2.4	9.2	13.8	18.4	23.0
Filamentous	0.2	0.8	1.2	1.8	2.4	9.2	13.8	18.4	23.0
Chara/Nitella	0.4	1.2	2.4	3.6	4.8	18.4	27.6	36.8	46.0

Depending upon the type of applicating equipment being used, dilute the required amount of **AQUATRINE™** with sufficient water to ensure even chemical distribution. Break up floating algae mats before spraying or wide application is being made. Use hand or power sprayer adjusted to rain sized droplets. Spray shoreline areas first to avoid trapping fish or shrimp.

SMALL VOLUME TANKS & POOLS (up to 50,000 gal. or 200,000 L)

- For tanks or raceways connected to water supply systems, close water supply valve prior to treatment. If this is not possible, refer to instructions for **FLOW-THROUGH SYSTEMS**. Aeration devices and water recirculation pumps (if so equipped) should remain in operation during treatment period.
- To facilitate accurate measurement, use a dilute solution of **AQUATRINE™** to treat small volume tanks and pools. Prepare a 10% solution of **AQUATRINE™** by diluting 1 part **AQUATRINE™** with 9 parts water, by volume. Refer to the chart below to determine the amount of 10% **AQUATRINE™** solution required to obtain 0.1 to 1.0 ppm copper in shrimp culture tanks or 0.2 to 0.4 ppm copper in fish culture tanks. Within the concentration range use higher rates for heavy infestations; lower rates for light infestations.

APPLICATION RATES FOR SMALL VOLUME TANKS AND PONDS

	PPM Copper	Ounces of 10% AQUATRINE™: Tank Capacity (Gallons) 1,000	20,000	50,000	Milliliters of 10% AQUATRINE™: Tank Capacity (Liters) 5,000	75,000	200,000
Shrimp Tanks	0.1	12	24	60	46	690	1840
	0.2	24	48	120	92	1380	3680
	0.3	36	72	180	138	2070	5520
	0.4	48	96	240	184	2760	7360
Fish Tanks	0.5	60	120	300	230	3450	9200
	0.6	72	144	360	276	4140	11040
	0.7	84	168	420	322	4830	12880
	0.8	96	192	480	368	5520	14720
	0.9	108	216	540	414	6210	16560
	1.0	120	240	600	460	6900	18400

- If necessary, further dilute the 10% **AQUATRINE™** solution with water to ensure even distribution across the water surface. Use a portable sprayer, sprinkling device, or incorporate solution at the intake of the recirculation pump.
- For systems equipped with flow shut-off valve, normal delivery of water may be resumed between 12 to 24 hours following application.

FLOW-THROUGH SYSTEMS

- Facilities where water flow into tanks or raceways cannot be shut off, require treatment with a chemical drip system or metering device. Accurate measurement of water flow rate is necessary for proper calibration of these units.
- Prepare a 10% solution of **AQUATRINE™** by diluting 1 part **AQUATRINE™** with 9 parts water, by volume. Refer to the chart below to determine the amount of 10% **AQUATRINE™** required per minute to maintain 0.1 to 0.5 ppm copper in shrimp culture raceways or 0.2 to 0.4 ppm copper in fish culture raceways. Within the range provided, use high concentrations and longer duration for heavy infestations, lower concentrations and shorter duration for light infestations.

CALIBRATION OF DRIP OR METERING SYSTEMS FOR FLOW-THROUGH SYSTEMS

	PPM Copper	Oz. 10% AQUATRINE™/Min. Water Flow Rate Gal./Min. 50	250	500	Ml of 10% AQUATRINE™/Min. Water Flow Rate Liters/Min. 200	1,000	2,000
Shrimp	0.1	0.06	0.3	0.6	1.8	9	18
	0.2	0.12	0.6	1.2	3.6	18	36
Fish	0.3	0.18	0.9	1.8	5.4	27	54
	0.4	0.24	1.2	2.4	7.2	36	72
	0.5	0.30	1.5	3.0	9.0	45	90

Treatment should be maintained for a 12 to 24 hour period to allow for a minimum of 3 hours contact time at the desired copper concentration throughout the entire system. That is, maintain drip for 3 hours longer than the water turnover time within the system. The final 3 hours of treatment should occur during daylight hours. Place a sufficient amount of 10% **AQUATRINE™** solution in the drip system or meter tank reservoir to sustain application for the entire treatment period.

GENERAL TREATMENT NOTES

The following suggestions apply to the use of **AQUATRINE™** in all approved use sites.

For optimum effectiveness...

- Apply under calm, sunny conditions when water temperatures are at least 60°F (15°C).
- Treat when growth first begins to appear or create a nuisance.
- Apply in a manner that will ensure even distribution of the chemical within the treatment area.
- Re-treat areas if regrowth begins to appear and seasonal control is desired. Allow 1 to 2 weeks between consecutive treatments.

Precautionary Statements

CAUTION

HAZARDS TO HUMANS AND DOMESTIC ANIMALS:

AQUATRINE™ may cause skin damage. Do not get on skin, eyes or clothing. In case of contact, wash thoroughly. For eyes, wash thoroughly and get medical attention. Harmful if swallowed. If swallowed, call a doctor.

ENVIRONMENTAL HAZARDS:

(Fish and Shrimp Cautions)

- **AQUATRINE™** may be toxic to trout and other aquatic organisms in soft water. Do not use **AQUATRINE™** in waters containing trout if carbonate hardness of the water does not exceed 50 ppm.
- Where algae growth is excessive, decomposition following **AQUATRINE™** treatment could deplete dissolved oxygen concentrations resulting in loss of fish or shrimp. To prevent this occurrence, follow one or more of the prescribed procedures below, depending upon your facility.
  - a) Treat ½ to ⅔ of the water area at a time allowing 1 to 2 weeks between consecutive treatments.
  - b) Maintain operation of mechanical aerators and recirculators during post-treatment period until visible decomposition of the algae has occurred.
  - c) Resume water flow in controllable flow-through systems 12 to 24 hours following chemical application.
- **AQUATRINE™** should not be applied in systems where biofilters are utilized for water purification as this may inhibit microbial activity.

STORAGE & DISPOSAL:

Keep container closed when not in use. Do not contaminate water, food or feed by storage or disposal. Pesticide spray mixture or rinsate that cannot be used according to label instructions must be disposed of according to Federal, State, or Local procedures under the Resource Conservation and Recovery Act. Triple rinse (or equivalent) and offer for recycling or reconditioning, or dispose of in a sanitary landfill or by incineration, if permitted by State and Local authorities.

PERMITS:

Some states may require permits for the application of this product. Check with your local authorities.

NOTICE

Neither Applied Biochemists, nor the seller makes any warranty, guarantee or representation, expressed or implied, concerning this material except that it conforms to the chemical description on the label. Neither shall be held responsible in any manner for any personal injury or property damage or other type of loss resulting from the handling, storage and use of this material not in strict accordance with directions given herewith.

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