



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

March 15, 2023

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

Maryanne Kellogg  
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Subject: Notification per PRN 98-10 – Trademark Revision  
Product Name: Argos  
EPA Registration Number: 81927-53  
Received Date: 02/23/23  
Action Case Number: 00437307

Dear Ms. Kellogg:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Antimicrobials Division (AD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The label submitted with the application has been stamped “Notification” and will be placed in our records.

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) lists 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 Assurance.

If you have any questions, you may contact Terria Northern by email at [northern.terria@epa.gov](mailto:northern.terria@epa.gov)

Sincerely,

A handwritten signature in black ink, appearing to read "T. Northern".

Terria Northern  
Registration Risk Manager (34)  
Antimicrobials Division (7510M)  
Office of Pesticide Programs  
US Environmental Protection Agency

[Note to reviewer: [Text] in brackets indicates optional text].

{Note to reviewer: {Text} in braces denotes where in the final label text will appear}.

**[[BOOKLET FRONT PANEL LANGUAGE]]**

**COPPER**

**GROUP**

**NOT CLASSIFIED**

**HERBICIDE**

**ARGOS®**

**ALGAECIDE and HERBICIDE**

**For Use In: Lakes; Potable Water Reservoirs; Farm, Fire, Fish, Fish Hatcheries and Raceways; Crop and Non-Crop Irrigation Conveyance Systems (Ditches, Canals and Laterals)**

**ACTIVE INGREDIENT:**

Copper Ethanolamine Complex, Mixed

(Mono CAS# 14215-52-2 and Tri CAS# 82027-59-6)\* .....27.9%

**OTHER INGREDIENTS:**.....72.1%

**TOTAL:** .....100.0%

\*Metallic copper equivalent, 9%. Contains 0.90 lb. of elemental copper per gallon.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

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.)

| <b>FIRST AID</b>  |  |
|---|--|
| <b>IF ON SKIN OR CLOTHING</b>   | <ul style="list-style-type: none"> <li>Take off contaminated clothing.</li> <li>Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>  |
| <b>IF SWALLOWED</b>   | <ul style="list-style-type: none"> <li>Call a poison control center or doctor immediately for treatment advice.</li> <li>Have person sip a glass of water if able to swallow.</li> <li>Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>Do not give anything by mouth to an unconscious person.</li> </ul> |
| <b>IF IN EYES</b>   | <ul style="list-style-type: none"> <li>Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>  |
| <b>IF INHALED</b>   | <ul style="list-style-type: none"> <li>Move person to fresh air.</li> <li>If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li> <li>Call a poison control center or doctor for further treatment advice.</li> </ul>   |
| <b>HOT LINE NUMBER</b>  |  |
| Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information. |  |

[See] [inside] [label] [booklet] [for] [First Aid][,] [additional] [Precautionary Statements][,] [and] [Directions for Use] [including Storage and Disposal] [instructions][.]

**Manufactured for:**

Alligare, LLC

1565 5<sup>th</sup> Avenue

Opelika, AL 36801

**EPA Reg. No. 81927-53**

**EPA Est. No.**

**Net Contents:**

## [{LANGUAGE INSIDE BOOKLET}]

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Mixers, loaders, applicators, and other handlers must wear:

- Long-sleeved shirt and long pants,
- Shoes and socks

#### USER SAFETY REQUIREMENTS

Users must 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 products' concentrate. Do not reuse them.

#### USER SAFETY RECOMMENDATIONS

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

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

#### ENVIRONMENTAL HAZARDS:

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

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. This product has a 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. Do not contaminate water when disposing of equipment washwaters or rinsate.

**Fish Advisory Statement:** This copper product is toxic to fish and aquatic organisms. Unlike most organic pesticides, copper is an element and will not break down in the environment and will therefore accumulate in sediment with repeated applications. Copper is a micronutrient, but its pesticidal application rate exceeds the amount of copper needed as a nutrient.

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/precint>.

#### PRODUCT INFORMATION

Argos is a liquid copper-based formulation containing ethanolamine chelating agents to prevent the precipitation of copper with carbonates and bicarbonates in the water. Argos effectively controls a broad range of algae including: **Planktonic** (suspended) forms such as the Cyanobacteria (*Microcystis*, *Anabaena* & *Aphanizomenon*), Green algae (*Raphidocelis* & *Cosmarium*) Golden algae (*Prymnesium parvum*) and diatoms (*Navicula* & *Fragilaria*); **Filamentous** (mat-forming) forms such as the Green Algae (*Spirogyra*, *Cladophora*, *Ulothrix* & *Rhizoclonium*) and **Benthic** (bottom-growing) forms such as *Chara* and *Nitella*. Argos has also been proven effective in controlling the rooted aquatic plant, **Hydrilla**, **Myriophyllum spp.** and **Potamogeton spp.** as well as several other submersed aquatic plant species

susceptible to copper treatment. Waters treated with Argos may be used for swimming, fishing, further potable water treatment, livestock watering or irrigating turf, ornamental plants 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. Read entire label and use strictly in accordance with precautionary statements and directions.

### APPLICATION RESTRICTIONS:

For applications in waters destined for use as drinking water, those waters must receive additional and separate potable water treatment. Do not apply more than 1.0 ppm as metallic copper in these waters.

Do not apply this product in a way that will contact workers or persons, either directly or through drift. Only protected handlers may be in the area during application. For requirements specific to your State or Tribe, consult the State or Tribal 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 3 gallons of Argos (2.74 lbs. metallic copper) per acre-foot per application.

Do not make applications less than 14 days apart.

**For direct applications to whole water bodies:** Do not exceed the maximum annual application rate of 21.9 lbs. of metallic copper per acre-foot (8 applications per year at up to 1 ppm). This is equivalent to 24.3 gallons of Argos per acre-foot. This rate/frequency is calculated based on staggering the treatment of each half of the water body every 14 days (at a rate of 2.74 lbs. metallic copper (3 gallons Argos) 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 sources, applicators must receive authorization from applicable state, local or tribal water sources 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).

**For direct applications to water management units (waterbody sections):** Do not exceed the 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 is equivalent to 51.75 gallons of Argos per acre-foot. This rate/frequency is calculated based on the maximum number of possible applications allowed based on a 14-day minimum (at a rate of 2.74 lbs. metallic copper (3 gallons Argos) 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 sources, 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.

### **Aquatic Uses (excluding swimming pools, spas, hot tubs, fountains and aquatic agriculture)**

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 ½ 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 outward 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. 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 (3.0 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. 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 if present. Please contact your Alligare regional specialist before attempting to treat water suspected of harboring these sensitive species.

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-TREATMENT CONSIDERATIONS:**

**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.

In **Potable Water Reservoirs, Lakes, Industrial Ponds & Wastewater** or other water systems, regular monitoring of odor complaints; high cell counts or chlorophyll 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 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.

In Ponds (Farm, Fire, Fish, Golf Course, Irrigation, Ornamental, Storm Water Retention, Swimming), Small Lakes, Fish Hatcheries, Aquaculture Facilities, treatment with this product should be started when visible, actively growing algae and susceptible plants appear in the spring, preferably before significant surface accumulations occur. Aeration and/or fountain system, where available, should be in operation at the time of treatment.

#### **SPRAY DRIFT ADVISORIES**

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

#### **IMPORTANCE OF DROPLET SIZE**

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

#### **SHIELDED SPRAYERS**

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

#### **TEMPERATURE AND HUMIDITY**

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

#### **TEMPERATURE INVERSIONS**

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

#### **WIND**

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.

Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

## RESISTANCE MANAGEMENT

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 was effective.

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

- Failure to control a 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 Alligare, LLC retailer, representative or call 888-ALLIGARE. 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 MOAs.

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).

Contact your local sales representative, local water management agency, or extension agent to find out if suspected resistant weeds to the MOA 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 actions for each target weed.

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

For effective control, proper chemical concentration should be maintained 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.

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). Use **Table 1 – Copper Concentration** to select the desired **PPM** (Parts per Million) **Copper** needed, based upon the algal form and density.

| 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  |

2. Refer to the **Table 2 – Argos Application Rate** and determine gallons of product needed per Acre-foot corresponding to the desired PPM concentration determined in step #1.

| Table 2 – Argos 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 |

3. 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:

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

4. Multiply Acre-Feet calculated in Step #3 times the gallons of Argos determined in Step #2 to determine number of gallons of Argos required for the intended treatment area.
5. Before applying, you may dilute the required amount of Argos with enough water to ensure even distribution with the type of equipment being used. Typical dilution range is 9:1 when using backpack-type sprayer or up to 50:1 when using water pump equipment or large tank sprayers.
6. 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 booms with weighted drop hoses, ensure boat pattern is uniform throughout treatment area. Spray shoreline areas first to avoid trapping fish.
7. 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.
8. Under conditions of heavy infestation, only treat up to ½ of the water body at a time to avoid fish suffocation caused by oxygen depletion from decaying algae. (See additional Environmental Hazards).

#### OTHER TREATMENT FACTORS AND CONSIDERATIONS

- Calm and sunny conditions when water temperature is at least 60°F will usually expedite control results.
- Effective control of algae requires direct contact with all cells throughout the water column, since these plants do not have vascular systems to transport copper from cell to cell.
- Visible reduction in algae growth should be observed in 24 to 48 hours following application with full 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 concentration that may be needed for control.
- Apply treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas.
- No more than ½ of the water body may be treated at one time. (Refer to Environmental Hazards for additional guidance).
- The minimum retreatment interval between consecutive treatments is 14 days.

**Permits:**

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

**HERBICIDE APPLICATION (For Hydrilla Control)**

Control of submersed aquatic vegetation such as *Hydrilla* can be obtained from copper concentrations of 0.4 to 1.0 ppm resulting from Argos treatment. Choose the application rate based upon stage and density of Hydrilla growth and respective water depth from the chart below.

**Application Rates  
Gallons/Surface Acre\***

| Growth/Stage<br>Relative Density | PPM<br>Copper | DEPTH IN FEET |          |          |          |           |           |
|----------------------------------|---------------|---------------|----------|----------|----------|-----------|-----------|
|                                  |               | 1             | 2        | 3        | 4        | 5         | 6         |
| Early Season<br>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       |
| Mid-Season<br>Moderate Density   | --0.6 --      | --1.8 --      | --3.6 -- | --5.4 -- | --7.2 -- | --9.0 --  | --10.8 -- |
|                                  | 0.7           | 2.1           | 4.2      | 6.3      | 8.4      | 10.5      | 12.6      |
| Late Season<br>High Density      | --0.8 --      | --2.4 --      | --4.8 -- | --7.3 -- | --9.6 -- | --12.0 -- | --14.4 -- |
|                                  | 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.

**ARGOS: DIQUAT HERBICIDE TANK MIX**

Argos may be tank mixed with aquatic herbicide products containing diquat as the active ingredient. In these mixtures Argos kills algae covering *Hydrilla* and thereby interfering with herbicide absorption. Refer to the diquat product label for specified rates. When tank mixing with diquat, the complete effect of these treatments will take 8-12 weeks to develop. In cases of dense weed growth, a second application can be necessary after 12 weeks.

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 all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

**ARGOS: ENDOTHALL TANK MIX**

Argos may be applied in combination with either the monopotassium salt or the dipotassium salt of endothall at a minimum rate of 1 gallon of Argos per acre foot and the label specified rate of either endothall formulation.

**FLOWING WATER****DRIP SYSTEM APPLICATION – FOR USE IN POTABLE WATER AND IRRIGATION CONVEYANCE SYSTEMS****PRE-TREATMENT CONSIDERATIONS**

**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.

In **Crop and Non-Crop Irrigation Conveyance Systems:** Irrigation Ditches, Canals & Laterals, Argos treatments must be applied as soon as algae or aquatic vascular plants begin to interfere 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.

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:



$$\text{Average Width (feet)} \times \text{Average Depth (feet)} \times \text{Velocity* (feet/second)} \times 0.9 = \text{Cubic Feet per Second (C.F.S.)}$$

\*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). This measurement should be repeated at least three times at the intended application site and then averaged.

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

| WATER FLOW RATE |         | ARGOS DRIP RATE* |         |              |
|-----------------|---------|------------------|---------|--------------|
| C.F.S           | Gal/Min | Qts./Hr.         | MI/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          |

- Normal application times will range from 15 minutes to 3 hours. For example, 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. Introduction of the chemical should be made in the channel at weirs or other turbulence-creating structures to promote the dispersion of chemical.
- Use a drum or tank equipped with a valve or other volume control device that can be calibrated to maintain a constant drip rate. Use a stop watch and appropriate measuring container to set the desired drip rate. Readjust accordingly if flow rate changes during the treatment period. Argos can be diluted with water to allow for a greater volume for metering.
- Distance of control obtained down the waterway will vary depending upon density of vegetation growth and on water chemistry at the time of application. Treatment period may have to be extended up to 8 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.

### Argos and Endothall

Argos may be applied as a tank mix or simultaneously injected with dipotassium salt of endothall or the monopotassium salt of endothall to broaden the weed control spectrum and/or reduce injection times or rates in canals, ditches and laterals. In flowing canals, apply Argos simultaneously via drip or injection at a rate of 0.1 to 1.0 ppm in conjunction with the label specified amount of monopotassium salt or dipotassium salt of endothall.

### Chemigation System Application

This product may be applied for the maintenance of chemigation systems. To control algae in chemigation systems, apply this product continuously during water application. For continuous addition application, apply 32 ounces of this product per 450 gallons/minute of water (0.60-3.0 gallons of this product per acre-foot of water). The copper concentration range is 0.20 to 1.0 ppm. Do not exceed 1.0 ppm of copper or 2.75 gallons of this product per 100,000 gallons of water. For additional guidance regarding specific calibrations or application techniques, contact application equipment manufacturer, supplier or pest control advisor. It is not necessary to agitate or dilute this product in the supply tank before application to chemigation systems.

| Application Rates for Chemigation Systems |  |
|---|--|
| Copper Concentration (ppm)                | Amount of This Product per Acre-Foot (Gallons) |
| 0.2                                       | 0.60   |
| 0.3                                       | 0.90   |
| 0.4                                       | 1.20   |
| 0.5                                       | 1.50   |
| 0.6                                       | 1.80   |

| <b>Application Rates for Chemigation Systems</b> |   |
|--|---|
| <b>Copper Concentration (ppm)</b>                | <b>Amount of This Product per Acre-Foot (Gallons)</b> |
| 0.7  | 2.10  |
| 0.8  | 2.40  |
| 0.9  | 2.70  |
| 1.0  | 3.00  |

### **CHEMIGATION SYSTEM APPLICATION**

- Apply this product only through sprinkler and drip irrigation systems including: center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move; flood (basin), furrow, border or drip 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 devices for public water systems are in place (refer to the Chemigation Systems Connected to a Public Water Supply section of this label).
- Trained personnel, 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. The system should be inspected, calibrated, and maintained before product application begins.

### **Chemigation Systems Connected to a Public Water Supply**

- Public water system is 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, back-flow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. There shall be a complete physical break (air gap) between the flow outlet end of the fill pipe and the top or 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 solution toward the injection.
- The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located at 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 pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides in use and capable of being fitted with a system interlock.
- Inspect, calibrate and maintain the system before application.

### **Sprinkler Chemigation Requirements**

- 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 backflow.

- 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 (e.g., 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 drift would extend beyond the area intended for treatment.

### **Floor (Basin), Furrow and Border Chemigation Requirements**

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

Pressurized water systems with a pesticide injection system must meet the following requirements:

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

### **Drip Chemigation Requirements**

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

### Submersed Plant Control Applications

This product can be applied to control hydrilla (*Hydrilla verticillata*), egeria (*Egeria densa*), and other aquatic weeds and algae susceptible to copper treatment. Apply at a rate to achieve a 0.70 to 1.0 ppm copper (2.1 to 3.0 Gallons/Acre foot). In heavily infested areas, a second application after the 14 day retreatment interval may be necessary.

### Tank Mix Applications

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.

## STORAGE AND 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 food or feed.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

**CONTAINER HANDLING: Nonrefillable Container (five gallons or less):** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. 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 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 if available, or puncture and dispose of container in a sanitary landfill, or by incineration.

**Nonrefillable Container (greater than five gallons):** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 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 puncture and dispose of container in a sanitary landfill, or by incineration.

## CONDITION OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

To the extent consistent with applicable law, upon purchase or use of this product, purchaser and user agree to the following terms:

**Warranty:** Alligare, LLC (the Company) warrants that this product conforms to the chemical description on the label in all material respects and is reasonably fit for the purpose referred to in the directions for use, subject to the exceptions noted below, which are beyond the Company's control. To the extent consistent with applicable law, the Company makes no other representation or warranty, express or implied, concerning the product, including no implied warranty of merchantability or fitness for a particular

purpose. To the extent consistent with applicable law, no such warranty shall be implied by law, and no agent or representative is authorized to make any such warranty on the Company's behalf.

**Terms of Sale:** The Company's directions for use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, and the manner of use or application (including failure to adhere to label directions), all of which are beyond the Company's control. To the extent consistent with applicable law, all such risks are assumed by the user.

**Limitation of Liability:** To the extent consistent with applicable law, the exclusive remedy against the Company for any cause of action relating to the handling or use of this product is a claim for damages, and in no event shall damages or any other recovery of any kind exceed the price of the product which caused the alleged loss, damage, injury or other claim. To the extent consistent with applicable law, under no circumstances shall the Company be liable for any special, indirect, incidental or consequential damages of any kind, including loss of profits or income. Some states do not allow the exclusion or limitation of incidental or consequential damages.

The Company and the seller offer this product, and the purchaser and user accept this product, subject to the foregoing warranty, terms of sale and limitation of liability, which may be varied or modified only by an agreement in writing signed on behalf of the Company by an authorized representative.

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