

# Nautique®

AQUATIC HERBICIDE

COPPER	GROUP	<b>NOT CLASSIFIED</b>	HERBICIDE
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For use in potable and non-potable water sources in still or flowing aquatic sites including lakes, reservoirs, and ponds, slow-flowing or quiescent water bodies, crop and non-crop irrigation and drainage systems (canals, ditches, and laterals), golf course, ornamental, swimming, and fire ponds and fish, shrimp and other aquaculture.

### Active Ingredients:

Copper Ethylenediamine Complex <sup>†</sup> (CAS# 13426-91-0)	13.2%
Copper Triethanolamine Complex <sup>†</sup> (CAS# 82027-59-6)	14.9%

**Other Ingredients:**.....71.9%

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

<sup>†</sup>Metallic Copper equivalent = 9.1%

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

FIRST AID	
<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. 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 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 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>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>
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In case of emergency endangering health or the environment involving this product, call <b>INFOTRAC</b> at <b>1-800-535-5053</b> .	
<b>NOTE TO PHYSICIAN:</b> Probable mucosal damage may contraindicate the use of gastric lavage.	

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## PRECAUTIONARY STATEMENTS

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### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**Danger. Corrosive. Causes irreversible eye damage. Causes skin burns. May be fatal if absorbed through skin. Harmful if swallowed. Harmful if inhaled. Do not get in eyes, on skin or on clothing. Avoid breathing spray or mist vapor. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wash skin thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.**

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

#### Applicators and other handlers **must** wear:

- Coveralls (such as Tyvek suit or similar) worn over long-sleeved shirt and long pants;
- Socks and chemical resistant footwear;
- Chemical-resistant gloves (such as nitrile or butyl rubber);
- Protective eyewear such as goggles, safety glasses, or face shield; and
- A chemical-resistant apron when mixing and loading or cleaning equipment.

#### **Exception:** Aquatic Subsurface Application or Closed Application System

After Nautique has been diluted or tank mixed with water, users must, at a minimum, wear (**Note** - Mixers and loaders for this application method must still wear the PPE as described in the above section):

- Long-sleeved shirt and long pants; and
- Shoes plus socks.

### 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 this product's concentrate. Do not reuse them.

### ENGINEERING CONTROLS

Pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides 40 CFR 170.305.

### USER SAFETY RECOMMENDATIONS

#### Users should:

- Wash the outside of gloves before removing.
- 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 Nautique. As soon as possible, wash thoroughly and change into clean clothing.

## **ENVIRONMENTAL HAZARDS**

**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 with repeated applications. Copper is a micronutrient, but its pesticidal application rate exceeds the amount of copper needed as a nutrient.

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## **DIRECTIONS FOR USE**

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It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read all directions for use carefully before applying this product. Use only according to label directions.

DO NOT apply this product in a way that concentrate will contact workers or other persons, either directly or through drift; only protected handlers may be in close proximity to the mixing area or application equipment while in use.

Treatment with this product will not by itself make water potable. 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 any waters during any single treatment.

## **PRODUCT INFORMATION**

Nautique® controls a variety of submersed, floating, and emergent aquatic weeds and algae in potable and non-potable water sources in still or flowing aquatic sites including lakes, reservoirs, and ponds, slow-flowing or quiescent water bodies, crop and non-crop irrigation and drainage systems (canals, ditches, and laterals), golf course, ornamental, swimming, and fire ponds and fish, shrimp and other aquaculture.

Nautique is formulated with dual chelating agents. This aids in copper uptake by aquatic plants and reduces the precipitation of copper with carbonates and bicarbonates in the water. Nautique has a broad spectrum of activity to weed species that are susceptible to copper.

### **Treatment Notes**

Product performance is enhanced under certain conditions. SePRO recommends consulting a SePRO Aquatic Specialist for guidance in implementing a treatment program to achieve optimal results. To achieve optimum effectiveness:

- Treat when growth first begins to appear (if possible) or when target vegetation and algae are actively growing.
- Apply in a manner that will ensure even distribution of the chemical within the treatment area.
- Aquatic weeds typically drop below the surface within 3 to 14 days after treatment. The complete results of treatment will be observed 1 to 4 weeks post-treatment in most cases.
- In heavily infested areas a second application may be necessary. Retreat areas if regrowth begins to appear and seasonal control is desired. Repeating application of Nautique too soon after initial application may have no effect.

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 biomass. This oxygen loss can cause fish and invertebrate suffocation. To minimize this hazard, do not treat more than ½ of the water body and wait at least 14 days between treatments to avoid depletion of oxygen due to decaying vegetation (excluding water infrastructure and constructed conveyances such as drainage canals, ditches and pipelines or intakes and aqueducts for drinking water or irrigation use). 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.

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 koi, trout and other sensitive species of fish may be killed under such conditions.

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

### **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 retailer, or local SePRO representative at 1-800-419-7779. 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 SePRO representative, local water management agency, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified or your local conditions. Tank mix products so that there are multiple effective mechanisms of actions for each target weed.

### **Restrictions**

- **DO NOT** apply Nautique directly to, or otherwise permit it to come into contact with any desirable plants as injury may result. Do not apply in such a way that concentrated Nautique comes in contact with crops, ornamentals, grass or other desirable plants.
- Pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides 40 CFR 170.305.

### **Precautions**

- Wash spray equipment thoroughly before and after each application.

### **APPLICATION DIRECTIONS**

For aquatic weed control (including vascular plants and algae), do not exceed a concentration of 1.0 ppm copper (3 gallons of product or 2.74 lbs metallic copper per acre-foot) during any single application. When treating aquaculture ponds when fish are present, do not exceed a concentration of 0.4 ppm during any single application when targeting nuisance algae.

### **Whole Waterbodies**

Maximum annual application rate of 21.9 lbs of metallic copper per acre-foot (8 applications per year at up to 1 ppm). This rate/frequency is calculated based on staggering the treatment of each half of the water body every 14 days (at a rate of 2.74 lbs. metallic copper per acre-foot = 1 ppm) for eight months (244 days). In situations where rapidly reproducing toxic algal species pose a public health threat to drinking or recreational water resources, applicators must receive authorization from applicable state, local or tribal water resources authorities to apply copper in excess of 21.9 lbs of metallic copper per acre-foot (8 applications per year at up to 1 ppm).

### **Water Management Units**

For large waterbodies such as lakes and reservoirs that support aquatic habitat, this product may be applied in multiple individual treatments to different, discreet sections of a waterbody, or water management units, within the 14-day retreatment interval, provided that the sum of those areas together constitute no more than half of the total area of the entire waterbody. Maximum annual application rate of 46.6 lbs. of metallic copper per acre-foot per year (17 applications per year at up to 1 ppm). This rate/frequency is calculated based on the maximum number of possible applications allowed based on a 14-day minimum (at a rate of 2.74 lbs. metallic copper per acre-foot = 1 ppm) retreatment interval for eight months (244 days). Do not apply more than 46.6 lbs. of metallic copper to a water management unit, regardless of the pest(s) targeted by applications. In situations where rapidly reproducing toxic algal species pose a public health threat to drinking or recreational water resources, applicators must receive authorization from applicable state, local or tribal water resources authorities to apply copper in excess of 46.6 lbs. of metallic copper per acre-foot per year for a single water management unit.

## Pre-Application Dose Determination

For algae and aquatic plant treatments, applicators should conduct initial dose determination test 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.

## Target Species

Nautique is a chelated copper formulation that provides effective control of floating, submersed, and emergent aquatic plants having sensitivity to copper including:

Brazilian elodea ( <i>Egeria densa</i> )	Naiad
Coontail	Pondweed spp.(e.g. sago, American) †
Curlyleaf pondweed	Salvinia spp. (e.g. giant and common)
Duckweed	Starry stonewort†
Elodea	Thinleaf pondweed
Eelgrass ( <i>Vallisneria</i> ) †	Watermilfoil, Eurasian†
Horned pondweed <sup>1</sup>	Water hyacinth
Hydrilla	Water lettuce
Macroalgae (Chara, Nitella)	Widgeon grass

† Variable control may be obtained, especially in waters with higher alkalinity, and repeat applications may improve control.

## Application Methods

Nautique can be applied directly as a surface spray, subsurface through trailing weighted hoses, by aerial application, or by metering/drip in flowing water. Tank mixing or using in combination with other aquatic herbicides and algaecides can broaden the spectrum of control. Surfactants, sinking agents, polymers (except CA), penetrants, or other adjuvants may be combined with Nautique to improve the retention time, sinking, and distribution of the herbicide. Nautique inverts easily using either tank mix or multi-fluid mixer techniques. For submersed plants, invert applications should be made through weighted hoses dragged below the water surface; for heavy infestations, direct application is preferable.

When treating moving water, apply the spray solution counter to the flow of water (unless metering Nautique into flowing water – see the *Flowing Water Treatment* section of this label). Nautique can be applied diluted or undiluted, whichever is most suitable to insure uniform coverage of the area to be treated. Dilution with water may be necessary at the lower application rates and when targeting floating or emergent vegetation. Dilute the required amount of Nautique with enough water to ensure even distribution in the treated area with the type of equipment being used. For best results, dilute Nautique in water to provide a minimum spray mix of 20 to 50 gallons per acre; in areas with heavy weed infestations, a total tank mix of >50 gallons per acre may be necessary.

For effective control, proper Nautique concentrations should be maintained for a minimum of three (3) hours. The rates in Table 1, *Application Rates*, are based on static or minimal flow situations. Where significant dilution occurs from untreated waters or loss of water within a three (3) hour period, Nautique may have to be metered in (refer to the *Flowing Water Treatment* section of this label).

Use the lower rates for treating soft water (less than 50 ppm alkalinity) or when targeting species with greater susceptibility to Nautique. Use the higher rates for treating less susceptible species, heavier infestations, and/or treating hard water (above 50 ppm alkalinity). Surface applications may be made from shore into shallow water along the shoreline.

## Application Rates

Application rates in Table 1 are based on minimal water flow in ponds, lakes, reservoirs, and irrigation conveyance or drainage systems. Treatments that extend chemical contact time with target vegetation will generally result in improved efficacy. In conveyance systems where significant water flow results in rapid off-site movement of Nautique, consult Table 2 and the Flowing Water Treatment section of this label for application instructions.

Application rates are calculated by using the following formula to obtain the appropriate Nautique dose/rate:

$$\text{Gallons of Nautique per surface acre} = \text{desired concentration of metallic copper (ppm)} \times \text{average depth of water (feet)} \times 3.0$$

TABLE 1			
Application Rates			
Relative Plant Density	ppm copper <sup>†</sup>	Gallons per Acre Foot	Treatment Comments
Low Density	0.4 – 0.6	1.2 - 1.8	Use lower rates for new infestations with minimal growth. Use higher rates for established low density growth.
Medium Density	0.6 – 0.8	1.8 – 2.4	Use lower rates for moderate early season infestations. Use higher rates for established medium density growth.
High Density	0.8 – 1.0	2.4 – 3.0	Use higher rates for heavy infestations with established mature growth. Apply as close to the plant as possible.

<sup>†</sup> Use 0.4ppm copper only in low density situations or in aquaculture when fish are present for suppression of algae.

## Free-Floating Plants

Apply Nautique using a foliar spray at a rate of 8 - 12 gallons/acre (7.3 – 10.9 lbs copper/acre) for control of water hyacinth, duckweed, and salvinia, and up to 4 - 6 gallons/acre (3.6 – 5.5 lbs copper/acre) for control of water lettuce (do not exceed 3 gallons/acre foot). Add Nautique and the appropriate surfactant to a minimum of 20 to 50 gallons per acre with water. Use an adequate spray volume to ensure good coverage of the plant. Apply Nautique to the area where the greatest concentration of foliage is located in a manner that will optimize herbicide contact on leaf surfaces.

## Drip System or Metering Pump Application For Flowing Water Treatments

For use in potable water, canals, ditches, and irrigation and drainage systems.

For optimal control, apply Nautique as soon as submersed macrophytes or algae begin active growth or interfere with normal delivery of water (clogging of lateral head gates, suction screens, weed screens, and siphon tubes). Delaying treatment could perpetuate the problem causing massing and

compacting of biomass. Heavy infestations and low flows may result in pooling or uneven product distribution resulting in unsatisfactory control. Under these conditions repeated applications or increasing the water flow rate during application may be necessary.

To best achieve desired control in flowing waters, maintain a minimum exposure period of three hours at a concentration of 0.5 to 1.0 ppm. Other factors to consider include: plant species and density of infestation and water temperature and hardness. Longer contact times and the highest rates may be required for less susceptible species and in difficult treatment conditions (e.g. less susceptible weed species, dense weed beds, hard water).

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

$$\text{Cubic feet per second (cfs)} = \text{average width (feet)} \times \text{average depth (feet)} \times \text{average velocity}^\dagger \text{ (feet/second)} \times 0.9$$

† The velocity can be estimated by determining the length of time it takes a floating object to travel a defined distance. Divide the distance (feet) by the time (seconds) to estimate velocity (feet/seconds). This measure should be repeated 3 times at the intended application site and then use to calculate the average velocity.

After accurately determining the water flow rate in cfs or gallons/minute, find the corresponding Nautique rate in Table 2 or use the formula below.

$$\text{cfs} \times \text{desired concentration of metallic copper (ppm)} = \text{quarts/hour of application}$$

<b>TABLE 2</b>				
<b>Application Rates for Flowing Water</b>				
<b>Water Flow Rate</b>		<b>PPM Copper</b>	<b>Nautique Drip Rate</b>	
<b>cfs</b>	<b>gal/min.</b>		<b>Quart/ hr</b>	<b>ml / min</b>
1	450	0.5 - 1.0	0.5 - 1.0	7.9 - 15.7
2	900	0.5 - 1.0	1.0 - 2.0	15.7 - 31.5
3	1,350	0.5 - 1.0	1.5 - 3.0	23.6 - 47.3
4	1,800	0.5 - 1.0	2.0 - 4.0	31.5 - 63.0
5	2,250	0.5 - 1.0	2.5 - 5.0	39.4 - 78.8
10	4,500	0.5 - 1.0	5.0 - 10.0	78.8 - 157.7
100	45,000	0.5 - 1.0	50 - 100	789 - 1,577

Calculate the amount of Nautique needed to maintain the drip rate for a treatment period of 3 hours by multiplying:

$$\text{Quart(s) / hour} \times 3; \text{ Milliliters / minute} \times 180; \text{ or Fluid ounces /Minutes} \times 180.$$

Rates will target up to 1.0 ppm copper concentration in the treated water for the treatment period. Lower concentrations may be used on susceptible plant species or if longer exposure/injection times are maintained. Introduction of Nautique should be made in the channel at weirs or other turbulence-creating structures to promote the dispersion of the chemical. For injection periods longer than 3 hours, calculate the amount of Nautique needed by multiplying the rate by desired time in minutes or hours as appropriate.



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 stopwatch and appropriate measuring container to set the desired drip rate. Readjust accordingly if the canal flow rate changes during the treatment period. A small pump or other metering device may be used to meter Nautique into the water more accurately. Application can be made using diluted or undiluted material.

Results can vary depending upon species and density of vegetation, desired distance of control and flow rate, and impact of water quality on Nautique and efficacy. Periodic maintenance treatments may be required to maintain seasonal control (every 2 to 6 weeks). In addition, Nautique can be used in a rotational program with other herbicides labeled for flowing water for an integrated management approach. SePRO recommends consulting a SePRO Aquatic Specialist to determine optimal use rate location of treatment stations and duration of treatment period under local conditions.

### **Pulse Application Method**

This method may only be used in constructed irrigation conveyance systems, laterals and aqueducts. Do not use this method of application in locations with functioning potable water intakes at or downstream from the application site.

For optimal control, apply Nautique as soon as plants begin active growth or interfere noticeably with normal delivery of water. Heavy infestations and low flow may cause poor distribution resulting in unsatisfactory control. Under these conditions repeated applications or increasing water flow rate during application may be necessary. Maximum annual application rate of 13 lbs metallic copper per year per 5 miles of conveyance per cubic foot per second (CSF). Apply copper into irrigation conveyance system or lateral at up to a maximum rate of 0.5 lbs metallic copper (0.55 gallons of product) per cubic foot per second of water per 5 to 30-mile treatment depending on water hardness, alkalinity and algae concentration. High water hardness or alkalinity levels may require the use of higher rates within the rate range above to achieve control. When velocity levels are higher (>1 foot per second) distance between drop stations for pulse applications can be increased.

### **Irrigation Ponds or Reservoirs**

When applying to irrigation ponds or reservoirs, it is best to hold water for a minimum of 3 hours before irrigating to ensure proper exposure of Nautique at targeted rates to plants. If water is to be continually pumped from the treated system during application, application techniques (drip, injection, or multiple spray applications) should be made to compensate for dilution of Nautique within the targeted area.

### **Tank Mix**

Nautique may be mixed with other herbicides or algacides registered for aquatic use provided that no labeling prohibits such mixing. It 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 exceed labeled rate or dose of any of the products in the combination. 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 mixtures. To ensure compatibility, a jar test is recommended before field application of any tank mix combination. SePRO recommends consulting with a SePRO Aquatic Specialist for latest tank mix recommendations.

Tank mixing or use of Nautique with any other product which is not specifically listed on the Nautique label shall be at the exclusive risk of the user, applicator and/or application adviser, to the extent allowed by applicable law.

### ***Nautique + Sonar® (e.g. Sonar A.S., Sonar Genesis) Tank Mix [Except California]***

Nautique can be mixed with these formulations to broaden the submersed weed control spectrum of either product alone and be applied as a uniform surface spray or injected under the water's surface. For best results, apply this tank mix at a minimum of 0.5 ppm Nautique and a low to moderate rate of the tank mix product. Lower concentrations may be effective on more susceptible species.

### ***Nautique + Diquat Tank Mix –***

For best results, apply Nautique/diquat (e.g. Littora®) combinations in a 2:1 ratio of Nautique:Diquat. Do not exceed maximum labeled rates for any product. For hydrilla control and control of other species with high sensitivity to copper, lower rates of Nautique may also enhance the activity of diquat. Nautique must be applied at a minimum of 0.1 ppm in combination with diquat. Higher rates may be needed in areas with dense weeds.

### ***Nautique + Endothall Tank Mix –***

For best results apply Nautique at a minimum rate of 1 gallon per acre foot, in combination with a low rate of endothall.

Nautique may be applied as a tank mix or simultaneously injected or used with the dipotassium salt of endothall (e.g. Cascade®) or the mono (N,N-dimethylalkylamine) salt of endothall (e.g. Teton®) to broaden the weed control spectrum and/or reduce injection times or rates in canals, ditches, and laterals. In flowing canals, apply Nautique via drip or injection at a typical use rate of 0.1 to 1.0 ppm in conjunction with low labeled rates of endothall for a minimum of one hour. Use longer application times for areas with denser weeds.

### ***Tank Mix Adjuvants/Surfactants –***

The addition of a surfactant is recommended to improve efficacy on floating and emergent plants. **Silicone surfactants are not recommended for floating plants as they generally can cause the plant to sink causing the spray solution to be washed off the plant.** Observe all cautions and restrictions on the labels of both products used in this mixture. Adjuvants/surfactants may also enhance performance on other species. Consult manufacturer recommendations.

## **Spray Drift Management**

### ***Aerial Applications***

- Do not release spray at a height greater than 10 ft above the vegetative canopy or water, unless a greater application height is necessary for pilot safety.
- Applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Do not apply when wind speed exceeds 15 mph at the application site. If the windspeed is greater than 10mph, the boom length must not be 65% or less of the wingspan for fixed wing aircraft and 75% or less if the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.
- Applicators must use ½ swath displacement upwind at the downwind edge of the application area.
- Do not apply during temperature inversions.

### ***Ground Boom Applications***

- Apply with the spray release height recommended by the manufacturer, but no more than 4 feet above the water surface.
- Applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

## **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.

### ***Controlling Droplet Size – Ground Boom***

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

### ***Controlling Droplet Size – Aircraft***

- Adjust Nozzles - Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

### ***Boom Height – Ground Boom***

Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom should remain level with the crop and have minimal bounce.

**Release Height - Aircraft**

Higher release heights increase the potential for spray drift. When applying aurally to crops, do not release spray at a height greater than 10 ft above the crop canopy, unless a greater application height is necessary for pilot safety.

**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.

## **STORAGE AND DISPOSAL**

Do not contaminate water, food or feed by storage and disposal.

**Pesticide Storage:** Store in a cool dry place. Do not store near feed or foodstuffs. In case of leak or spill, use absorbent materials to contain liquids and dispose in a manner consistent with the pesticide disposal instructions.

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

### **Container Handling**

**Non-refillable Container.** DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying, then offer for recycling, if available or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedure approved by state and local authorities.

**Triple rinse containers small enough to shake (capacity  $\leq$  5 gallons) 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  $\frac{1}{4}$  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.

**Triple rinse containers small enough to shake (capacity  $>$  5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container  $\frac{1}{4}$  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, mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

**Pressure rinse as follows:** Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**Container Handling (bulk):** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

**Warranty Disclaimer:** SePRO Corporation warrants that this product conforms to the chemical description on the product label. Testing and research have also determined that this product is reasonably fit for the uses described on the product label. To the extent consistent with applicable law, SePRO Corporation makes no other express or implied warranty of fitness or merchantability nor any other express or implied warranty and any such warranties are expressly disclaimed.

**Misuse:** Federal law prohibits the use of this product in a manner inconsistent with its label directions. To the extent consistent with applicable law, the buyer assumes responsibility for any adverse consequences if this product is not used according to its label directions. In no case shall SePRO Corporation be liable for any losses or damages resulting from the use, handling or application of this product in a manner inconsistent with its label.

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