



# Specimen Label

## Sonar® A.S.

FLURIDONE	GROUP	12	HERBICIDE
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An herbicide for management of aquatic vegetation in fresh water ponds, lakes, reservoirs, potable water sources, drainage canals and irrigation canals.

For use in New York State, comply with Section 24 (C) Special Local Need labeling for Sonar AS, SLN NY

### Active Ingredient

fluridone: 1-methyl-3-phenyl-5-[3-(trifluoromethyl)phenyl]-4(1*H*)-pyridinone ..... 41.7%

Other Ingredients ..... 58.3%

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

Contains 4 pounds active ingredient per gallon.

### Keep Out of Reach of Children

## CAUTION / PRECAUCIÓN

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 to 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 for treatment advice.</li> </ul>
<i>If on skin or clothing</i>	<ul style="list-style-type: none"> <li>Take off contaminated clothing.</li> <li>Rinse skin immediately with plenty of water for 15 to 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 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>
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> .	

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## PRECAUTIONARY STATEMENTS

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### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION.** Harmful if swallowed, absorbed through skin, or inhaled. Avoid breathing of spray mist or contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

**Gloves are required for the following application scenarios:**

- Mixing/loading/applying with hand wand sprayer to ponds/lakes or static canals.
- Mixing/loading/applying with backpack sprayer to static canals.

#### ENGINEERING CONTROLS (AIRCRAFT)

Aircraft pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides 40 CFR 170.305.\*

\*Not for use in California.

#### ENVIRONMENTAL HAZARDS

Do not apply to water except as specified on the label. Do not contaminate water by disposal of equipment washwaters. Do not apply in tidewater/brackish water. Lowest rates should be used in shallow areas where the water depth is considerably less than the average depth of the entire treatment site, for example, shallow shoreline areas. Trees and shrubs growing in water treated with Sonar A.S. herbicide may occasionally develop chlorosis. Follow use directions carefully so as to minimize adverse effects on non-target organisms.

#### Non-Target Organisms Advisory Statement

This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

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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.

#### SHAKE WELL BEFORE USING.

#### PRODUCT INFORMATION

Sonar A.S. herbicide is a selective systemic aquatic herbicide for management of aquatic vegetation in fresh water ponds, lakes, reservoirs, drainage canals and irrigation canals, including dry or de-watered areas of these sites. Sonar A.S. is absorbed from water by plant shoots and from hydrosol by the roots of aquatic vascular plants. For in-water treatments, it is important to maintain the specified concentration of Sonar A.S. in contact with the target plants for a minimum of 45 days. Rapid water movement or any condition which results in rapid dilution of Sonar A.S. in treated water will reduce its effectiveness. In susceptible plants, Sonar A.S. inhibits the formation of carotene. In the absence of carotene, chlorophyll is rapidly degraded by sunlight. Herbicidal symptoms of Sonar A.S. appear in seven to ten days and appear as white (chlorotic) or pink growing points. Under optimum conditions, 30 to 90 days are required before the desired level of aquatic plant management is achieved with Sonar A.S.

Species susceptibility to Sonar A.S. may vary depending on time of year, stage of growth, and water movement. For best results, apply Sonar A.S. prior to initiation of weed growth or when weeds begin active growth. Application to mature target plants may require an application rate at the higher end of the specified rate range and may take longer to control.

Sonar A.S. is not corrosive to application equipment.

The label provides recommendations on the use of a chemical analysis for the active ingredient. SePRO Corporation recommends the use of a High-Performance Liquid Chromatography (HPLC) for the determination of the active ingredient concentration in the water. Contact SePRO Corporation to incorporate this test, known as a FasTEST<sup>®</sup>, into your treatment program. Other proven chemical analyses for the active ingredient may also be used. The FasTEST is referenced in this label as the preferred method for the rapid determination of the concentration of the active ingredient in the water.

Application rates are provided in ounces or quarts of Sonar A.S. to achieve a desired concentration of the active ingredient in parts per billion (ppb). **The maximum application rate or sum of all application rates is 90 ppb in ponds and 150 ppb in lakes, reservoirs and static canals per annual growth cycle.** This maximum concentration is the amount of product calculated as the target application rate, NOT determined by testing the residues of the active ingredient in the treated water.

### **Weed Resistance Management**

For resistance management, Sonar A.S. is a Group 12 herbicide. Any weed population may contain or develop plants naturally resistant to Sonar A.S. and other Group 12 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same area. Appropriate resistance management strategies should be followed.

To delay herbicide resistance take one or more of the following steps:

- Rotate the use of Sonar A.S. or other Group 12 herbicides within a growing season or among growing seasons with different herbicide groups that control the same weeds.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or pest control advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and that considers mechanical control methods, cultural (e.g., timing to favor the desirable plants and not the weeds), biological (weed-competitive varieties) and other management practices.
- Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method. Prevent movement of resistant weed seeds to other areas by cleaning equipment.

- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your sales representative, pest control advisors, or local extension specialist for additional pesticide resistance-management and/or integrated weed-management recommendations for specific types of plants and weed biotypes.

### Use Restrictions

- **Obtain Required Permits:** Consult with appropriate state or local water authorities before applying this product. Permits may be required by state or local public agencies.
- **Chemigation:** Do not apply Sonar A.S. through any type of irrigation system.
- **Hydroponic Farming:** Do not use Sonar A.S. treated water for hydroponic farming unless a FastEST has been run and confirmed that concentrations are less than 1 ppb.
- **Greenhouse and Nursery Plants:** Consult with SePRO Corporation for site-specific recommendations prior to any use of Sonar A.S. treated water for irrigating greenhouse or nursery plants. Without site-specific guidance from SePRO, do not use Sonar A.S. treated water for irrigating greenhouse or nursery plants unless a FastEST has been run and confirmed that concentrations are less than 1 ppb.
- **Water Use Restrictions Following Applications With Sonar A.S. (Days)**

Application Rate	Drinking <sup>†</sup>	Fishing	Swimming	Livestock/Pet Consumption	Irrigation <sup>††</sup>
Maximum Rate (150 ppb) or less	0	0	0	0	See irrigation instructions below

<sup>†</sup> Note below, under *Potable Water Intakes*, the information for application of Sonar A.S. within ¼ mile (1,320 feet) of a functioning potable water intake.

<sup>††</sup> Note below, under *Irrigation*, specific time frames or fluridone residues that provide the widest safety margin for irrigating with fluridone treated water.

- **Potable Water Intakes:** In lakes and reservoirs or other sources of potable water, do not apply Sonar A.S. at application rates greater than 20 ppb within one-fourth mile (1,320 feet) of any functioning potable water intake. At application rates of 6 - 20 ppb, Sonar A.S. may be applied where functioning potable water intakes are present. **NOTE: Existing potable water intakes which are no longer in use, such as those replaced by potable water wells or connections to a municipal water system, are not considered to be functioning potable water intakes.**
- Aircraft pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides 40 CFR 170.305.\*  
\*Not for use in California.

### Use Precautions

- **Irrigation:** Irrigation from a Sonar A.S. treated area may result in injury to the irrigated vegetation. Follow these precautions and inform those who irrigate from areas treated with Sonar A.S. of the irrigation time frames or water assay requirements presented in the table below. Follow the following time frames and assay directions to reduce the potential for injury to vegetation irrigated with water treated with Sonar A.S. Greater potential for crop injury occurs where Sonar A.S. treated water is applied to crops grown on low organic and sandy soils.

Application Site	DAYS AFTER APPLICATION		
	Established Tree Crops	Established Row Crops/Turf/Plants	Newly Seeded Crops/Seedbeds or Areas to be Planted Including Overseeded Golf Course Greens
Ponds and Static Canals †	7	30	Assay required
Canals	7	14	Assay required
Lakes and Reservoirs ††	7	14	Assay required
Dry or De-watered Canals †††	0	0	†††

† For purposes of Sonar A.S. labeling, a pond is defined as a body of water 10 acres or less in size. A lake or reservoir is greater than 10 acres.

†† In lakes and reservoirs where one-half or greater of the body of water is treated, use the pond and static canal irrigation precautions. When applying Sonar A.S. to exposed sediments of aquatic sites such as lakes and reservoirs, follow these time frames prior to using water for irrigation once sites are reflooded.

††† When Sonar A.S. is applied to exposed sediments of dry or de-watered canals, allow canals to refill for a minimum of 24 hours before using water for irrigation.

Where the use of Sonar A.S. treated water is desired for irrigating crops prior to the time frames established above, the use of a FastEST assay is recommended to measure the concentration in the treated water. Where a FastEST has determined that the concentrations are less than 10 parts per billion, there are no irrigation precautions for irrigating established tree crops, established row crops or turf. **For tobacco, tomatoes, peppers or other plants within the Solanaceae Family and newly seeded crops or newly seeded grasses such as overseeded golf course greens, do not use Sonar A.S. treated water if measured fluridone concentrations are greater than 5 ppb. Furthermore, when rotating crops, do not plant members of the Solanaceae family in land that has been previously irrigated with fluridone concentrations in excess of 5 ppb. It is recommended that an aquatic specialist be consulted prior to commencing irrigation of these sites.**

## PLANT CONTROL INFORMATION

Sonar A.S. selectivity is dependent upon dosage, time of year, stage of growth, method of application and water movement. The following categories, controlled, partially controlled, and not controlled are provided to describe expected efficacy under ideal treatment conditions using higher to maximum label rates. Use of lower rates will increase selectivity of some species listed as controlled or partially controlled. Additional aquatic plants may be controlled, partially controlled, or tolerant to Sonar A.S. Consult an aquatic specialist prior to application of Sonar A.S. to determine a plant's susceptibility to Sonar A.S. **NOTE: algae (chara, nitella, and filamentous species) are not controlled by Sonar A.S.**

### Vascular Aquatic Plants Controlled

#### **Submersed Plants**

- bladderwort (*Utricularia* spp.)
- common coontail (*Ceratophyllum demersum*)
- common elodea (*Elodea canadensis*)
- egeria, Brazilian elodea (*Egeria densa*)
- fanwort, cabomba (*Cabomba caroliniana*)
- hydrilla (*Hydrilla verticillata*)

naiad (*Najas* spp.)  
pondweed (*Potamogeton* spp., except Illinois pondweed)  
watermilfoil (*Myriophyllum* spp., except variable-leaf milfoil)

### **Emerald Plants**

spatterdock (*Nuphar luteum*)  
water-lily (*Nymphaea* spp.)

### **Floating Plants**

common duckweed (*Lemna minor*)

### **Shoreline Grasses**

paragrass (*Urochloa mutica*)

## **Vascular Aquatic Plants Partially Controlled**

### **Submersed Plants**

Illinois pondweed (*Potamogeton illinoensis*)  
limnophila (*Limnophila sessiliflora*)  
tapegrass, American eelgrass (*Vallisneria americana*)  
watermilfoil-variable-leaf milfoil (*Myriophyllum heterophyllum*)

### **Emerald Plants**

alligatorweed (*Alternanthera philoxeroides*)  
American lotus (*Nelumbo lutea*)  
cattail (*Typha* spp.)  
creeping waterprimrose (*Ludwigia peploides*)  
parrotfeather (*Myriophyllum aquaticum*)  
smartweed (*Polygonum* spp.)  
spikerush (*Eleocharis* spp.)  
waterpurslane (*Ludwigia palustris*)  
watershield (*Brasenia schreberi*)

### **Floating Plants**

common watermeal (*Wolffia columbiana*) †  
salvinia (*Salvinia* spp.)

### **Shoreline Grasses**

barnyardgrass (*Echinochloa crusgalli*)  
giant cutgrass (*Zizaniopsis miliacea*)  
reed canarygrass (*Phalaris arundinaceae*)  
southern watergrass (*Hydrochloa caroliniensis*)  
torpedograss (*Panicum repens*)

†Partial control only with Sonar A.S. applied at the maximum labeled rate.

## Vascular Aquatic Plants Not Controlled

### **Emerald Plants**

American frogbit (*Limnobium spongia*)  
arrowhead (*Sagittaria* spp.)  
bacopa (*Bacopa* spp.)  
big floatingheart, banana lily (*Nymphoides aquatica*)  
bulrush (*Scirpus* spp.)  
floating waterhyacinth (*Eichhornia crassipes*)  
pickerelweed, lanceleaf (*Pontederia* spp.)  
rush (*Juncus* spp.)  
water pennywort (*Hydrocotyle umbellata*)

### **Floating Plants**

waterlettuce (*Pistia stratiotes*)

### **Shoreline Grasses**

maidencane (*Panicum hemitomon*)

## **TANK MIX DIRECTIONS**

Sonar A.S. may be tank mixed with other aquatic herbicides and algaecides to enhance efficacy and plant selectivity. Refer to the companion herbicide or algaecide label for use directions, precautions, and restrictions on use.

## **APPLICATION DIRECTIONS**

The aquatic plants present in the treatment site should be identified prior to application to determine their susceptibility to Sonar A.S. It is important to determine the area (acres) to be treated and the average depth in order to select the proper application rate. Do not exceed the maximum labeled rate for a given treatment site per annual growth cycle.

**Shake Sonar A.S. well before using.** Add the specified amount of Sonar A.S. to water in the spray tank during the filling operation. Agitate while filling and during spraying. Surface or subsurface application of the spray can be made with conventional spray equipment. Sonar A.S. can also be applied near the surface of the hydrosol using weighted trailing hoses. A spray volume of 5 to 100 gallons per acre may be used. Sonar A.S. may also be diluted with water and the concentrated mix metered into the pumping system.

### **Application to Ponds**

Sonar A.S. may be applied to the entire surface area of a pond. For single applications, rates may be selected to provide 45 to 90 ppb to the treated water. Use the higher rate within the rate range where there is a dense weed mass, when treating more difficult to control species, and for ponds less than 5 acres in size with an average depth less than 4 feet. Application rates necessary to obtain these concentrations are shown in the following table. For additional application rate calculations, refer to the *Application Rate Calculation—Ponds, Lakes and Reservoirs* section of this label. Split or multiple applications may be used where dilution of treated water is anticipated; however, the sum of all applications must not exceed a total of 90 ppb per annual growth cycle.

Average Water Depth of Treatment Site (feet)	Quarts of Sonar A.S. per Treated Surface Acre to Achieve		Fluid Ounces of Sonar A.S. per Treated Surface Acre to Achieve	
	45 ppb	90 ppb	45 ppb	90 ppb
1	0.12	0.24	3.8	7.7
2	0.24	0.49	7.7	15.7
3	0.37	0.73	11.8	23.4
4	0.49	0.98	15.7	31.4
5	0.61	1.22	19.5	39.0
6	0.73	1.46	23.4	46.7
7	0.85	1.70	27.2	54.4
8	0.98	1.95	31.4	62.4
9	1.10	2.19	35.2	70.1
10	1.22	2.44	39.0	78.1

### Application to Lakes and Reservoirs

The following treatments may be used for treating both whole lakes or reservoirs and partial areas of lakes or reservoirs (bays, etc.). For best results in treating partial lakes and reservoirs, Sonar A.S. treatment areas should be a minimum of 5 acres in size. Treatment of areas smaller than 5 acres or treatment of narrow strips such as boat lanes or shorelines may not produce satisfactory results due to dilution by untreated water. Rate ranges are provided as a guide to include a wide range of environmental factors, such as, target species, plant susceptibility, selectivity and other aquatic plant management objectives. Application rates and methods should be selected to meet the specific lake/reservoir aquatic plant management goals.

### ***Whole Lake or Reservoir Treatments (Limited or No Water Discharge)***

#### **Single Application to Whole Lakes or Reservoirs**

Where single applications to whole lakes or reservoirs are desired, Sonar A.S. may be applied at an application rate of 10 to 90 ppb. Application rates necessary to obtain these concentrations in treated water are shown in the following table. For additional rate calculations, refer to the *Application Rate Calculation—Ponds, Lakes, and Reservoirs* section of this label. Choose an application rate from the table below to meet the aquatic plant management objective. **Where greater plant selectivity is desired such as when controlling Eurasian watermilfoil and curlyleaf pondweed, an application rate lower in the rate range may be chosen.** For other plant species, SePRO recommends contacting an aquatic specialist in determining when to choose application rates lower in the rate range to meet specific plant management goals. Use the higher rate within the rate range where there is a dense weed mass or when treating more difficult to control plant species. Retreatments may be required to control more difficult to control species or in the event of a heavy rainfall event where dilution of the treatment concentration has occurred. In these cases, a second application or more may be required; however, the sum of all applications must not exceed 150 ppb per annual growth cycle. Refer to the section of this label entitled, *Split or Multiple Applications to Whole Lakes or Reservoirs*, for guidelines and maximum rate allowed.

**SINGLE APPLICATION OF SONAR A.S.**

Average Water Depth of Treatment Site (feet)	Quarts of Sonar A.S. per Treated Surface Acre to Achieve		Fluid Ounces of Sonar A.S. per Treated Surface Acre to Achieve	
	10 ppb	90 ppb	10 ppb	90 ppb
	1	0.03	0.24	0.86
2	0.05	0.49	1.73	15.55
3	0.08	0.73	2.59	23.33
4	0.11	0.97	3.46	31.10
5	0.14	1.22	4.32	38.88
6	0.16	1.46	5.18	46.66
7	0.19	1.70	6.05	54.43
8	0.22	1.94	6.91	62.21
9	0.24	2.19	7.78	69.98
10	0.27	2.43	8.64	77.76
11	0.30	2.67	9.50	85.54
12	0.32	2.92	10.37	93.31
13	0.35	3.16	11.23	101.1
14	0.38	3.40	12.10	108.9
15	0.41	3.65	12.96	116.6
16	0.43	3.89	13.82	124.4
17	0.46	4.13	14.69	132.2
18	0.49	4.37	15.55	140.0
19	0.51	4.62	16.42	147.7
20	0.54	4.86	17.28	155.5

**Split or Multiple Applications to Whole Lakes or Reservoirs**

To meet certain plant management objectives, split or multiple applications may be desired in making whole lake treatments. Split or multiple application programs are desirable when the objective is to use the minimum effective dose and, through the use of a water analysis, e.g. a FastEST, add additional Sonar A.S. to maintain this lower dose for the sufficient time to ensure efficacy and enhance selectivity. Water may be treated at an initial application of 4 to 50 ppb. Additional split applications should be conducted to maintain a sufficient concentration for a minimum of 45 days or longer. **In controlling Eurasian watermilfoil and curlyleaf pondweed and where greater plant selectivity is desired, an application rate lower in the rate range may be chosen.** For other plant species, SePRO recommends contacting an aquatic specialist in determining when to choose application rates lower in the rate range to meet specific plant management goals. When utilizing split or multiple applications of Sonar A.S., the utilization of a FastEST is strongly recommended to determine the actual concentration in the water over time. For split or multiple applications, the sum of all applications must not exceed 150 ppb per annual growth cycle.

**NOTE:** In treating lakes or reservoirs that contain functioning potable water intakes and the application requires treating within ¼ mile of a potable water intake, no single application can exceed 20 ppb. Additionally, the sum of all applications must not exceed 150 ppb per annual growth cycle.

### ***Partial Lake or Reservoir Treatments***

Where dilution of Sonar A.S. with untreated water is anticipated, such as in partial lake or reservoir treatments, split or multiple applications may be used to extend the contact time to the target plants. The application rate and use frequency of Sonar A.S. in a partial lake is highly dependent upon the treatment area. An application rate at the higher end of the specified rate range may be required and frequency of applications will vary depending upon the potential of untreated water diluting the Sonar A.S. concentration in the treatment area. Use a rate at the higher end of the rate range where greater dilution with untreated water is anticipated.

#### **Treatment Areas Greater Than ¼ Mile from a Functioning Potable Water Intake**

For single applications, Sonar A.S. may be applied at application rates from 30 to 150 ppb. Split or multiple applications may be made; however, the sum of all applications must not exceed 150 ppb per annual growth cycle. Split applications should be conducted to maintain a sufficient concentration in the target area for a period of 45 days or longer. The use of a FasTEST is recommended to maintain the desired concentration in the target area over time.

#### **Treatment Areas within ¼ Mile of a Functioning Potable Water Intake**

In treatment areas that are within ¼ mile of a potable water intake, no single application can exceed 20 ppb. When utilizing split or multiple applications of Sonar A.S. for sites which contain a potable water intake, a FasTEST is required to determine the actual concentration in the water. Additionally, the sum of all applications must not exceed 150 ppb per annual growth cycle.

### **Application Rate Calculation — Ponds, Lakes and Reservoirs**

The amount of Sonar A.S. to be applied to provide the desired ppb concentration of active ingredient in treated water may be calculated as follows:

**Quarts of Sonar A.S. required per treated surface acre** = Average water depth of treatment site (feet) x Desired ppb concentration of active ingredient x 0.0027

For example, the quarts per acre of Sonar A.S. required to provide a concentration of 25 ppb of active ingredient in water with an average depth of 5 feet is calculated as follows:

$$5 \times 25 \times 0.0027 = 0.33 \text{ quarts per treated surface acre}$$

When measuring quantities of Sonar A.S., quarts may be converted to fluid ounces by multiplying quarts to be measured x 32. For example, 0.33 quarts x 32 = 10.5 fluid ounces.

**NOTE:** Calculated rates may not exceed the maximum allowable rate in quarts per treated surface acre for the water depth listed in the application rate table for the site to be treated.

### **Application to Sediments of Dry or De-Watered Aquatic Sites**

For application of Sonar A.S. to sediments of dry or de-watered aquatic sites, including exposed sediments of lakes or reservoirs, irrigation canals, non-irrigation canals and drainage canals, apply a maximum of 2 quarts of Sonar A.S. per surface acre per annual growth cycle.

Apply Sonar A.S. evenly to the sediment surface, with a minimum spray solution of 30 to 100 gallons per surface acre. High levels of organic matter in treated-sediments may reduce efficacy. Sonar A.S. may be applied with other aquatic herbicides labeled for this use. Please contact your SePRO Aquatic Specialist for further use recommendations.

## **Application to Drainage Canals and Irrigation Canals**

### ***Static Canals***

In static drainage and irrigation canals, Sonar A.S. may be applied at the rate of 30 to 150 ppb per treated surface acre. The maximum application rate or sum of all application rates must not exceed 150 ppb per annual growth cycle.

### ***Moving Water Canals***

The performance of Sonar A.S. will be enhanced by restricting or reducing water flow. In slow moving bodies of water use an application technique that maintains a concentration of 15 - 40 ppb in the target area for a minimum of 45 days. Sonar A.S. can be applied by split or multiple broadcast applications or by metering in the product to provide a uniform concentration of the herbicide based upon the flow pattern. The use of a FasTEST is recommended to maintain the desired concentration in the target area over time.

### ***Static or Moving Water Canals Containing a Functioning Potable Water Intake***

In treating a static or moving water canal which contains a functioning potable water intake, applications of Sonar A.S. greater than 20 ppb must be made more than ¼ mile from a functioning potable water intake. Applications less than 20 ppb may be applied within ¼ mile from a functioning potable water intake; however, if applications of Sonar A.S. are made within ¼ mile of a functioning potable water intake, a FasTEST must be utilized to demonstrate that concentrations must not exceed 150 ppb at the functioning potable water intake.

### ***Application Rate Calculation — Moving Water Drainage and Irrigation Canals***

The amount of Sonar A.S. to be applied through a metering system to provide the desired ppb concentration of active ingredient in treated water may be calculated as follows:

1. Average flow rate (feet per second) x average canal width (ft.) x average canal depth (ft.) x 0.9 = CFS (cubic feet per second).
2. CFS x 1.98 = acre feet per day (water movement)
3. Acre feet per day x desired ppb x 0.0027 = Quarts of Sonar A.S. required per day

## **SPRAY DRIFT MANAGEMENT**

### **Boom-less Ground Applications**

Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

### **Handheld Technology Applications**

Take precautions to minimize spray drift.

## **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.\*  
\*Not for use in California.

## **Boom Height – Ground Boom**

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.\*

\*Not for use in California.

## **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 or disposal.

**Pesticide Storage:** Store in original container only. Do not store near feed or foodstuffs. In case of leak or spill, use absorbent materials to contain liquids and dispose as waste.

**Pesticide Disposal:** Wastes resulting from use of this product may be used according to label directions or disposed of at an approved waste disposal facility.

### Container Handling

**Nonrefillable 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 incineration, or by other procedures 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 too large 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 or a 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.

**Refillable Container.** Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

Triple rinse as follows: To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

When this container is empty, replace the cap and seal all openings that have been opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with a pesticide product. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

**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

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