Sonar® H4C

Aquatic Herbicide



For management of aquatic vegetation in fresh water ponds, lakes, reservoirs (including inlets and tributaries), potable water sources, drainage canals, irrigation canals and rivers.

Active Ingredient

Contains 0.027 lbs. active ingredient per pound.

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.)

Notice: Read the entire label before using. Use only according to label directions. Before buying or using this product, read *Warranty Disclaimer* and *Misuse* statements inside label booklet. If terms are unacceptable, return at once unopened.

EPA Reg. No. 67690-61

FPL20190517

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11550 North Meridian Street, Suite 600, Carmel, IN 46032, U.S.A.

FIRST AID				
If	Call a poison control center or doctor immediately for			
swallowed	treatment advice.			
	Have person sip a glass of water if able to swallow.			
	Do not induce vomiting unless told to do so by a poison			
	control center or doctor.			
	Do not give anything by mouth to an unconscious person.			
If on skin	Take off contaminated clothing.			
or clothing	Rinse skin immediately with plenty of water for 15 to 20			
	minutes.			
	Call a poison control center or doctor for treatment advice.			
If inhaled	Move person to fresh air.			
	If person is not breathing, call 911 or an ambulance; then			
	give artificial respiration, preferably mouth-to-mouth, if			
	possible.			
	Call a poison control center or doctor for further treatment			
	advice.			
If in eyes	Hold eye open and rinse slowly and gently with water for 15			
	to 20 minutes. Remove contact lenses, if present, after the			
	first 5 minutes; then continue rinsing eye.			
	Call a poison control center for treatment advice			

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 INFOTRAC at 1-800-535-5053.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Caution. Harmful if swallowed. Harmful if absorbed through skin. Harmful if inhaled. Causes moderate eye irritation. Avoid contact with eyes or clothing. Avoid breathing dust. Wear long sleeved shirt, long pants, shoes and socks.

USER SAFETY RECOMMENDATIONS

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

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].

ENVIRONMENTAL HAZARDS

Follow use directions carefully so as to minimize adverse effects on non-target organisms. Trees and shrubs growing in water treated with this product may occasionally develop chlorosis. 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.

Non-Target Organisms Advisory Statement

Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift. 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.

DIRECTIONS FOR USE

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

Read all directions carefully before applying this product.

PRODUCT INFORMATION

This product is a selective systemic aquatic herbicide for management of aquatic vegetation in fresh water ponds, lakes, reservoirs (including inlets and tributaries), drainage canals, irrigation canals, and rivers. This product is a pelleted formulation containing 2.7% fluridone designed to provide enhanced numbers of pellets (greater coverage) in treated areas versus other Sonar pellet formulations at equivalent herbicide dosing. This higher density of pellets has the potential to improve herbicide contact with target vegetation in higher exchange treatment scenarios such as spot or small-partial application designs. This product is absorbed from water by plant shoots and from hydrosoil by the roots of aquatic vascular plants. It is important to maintain this product in contact with the target plants for as long as possible. Rapid water movement or any condition which results in rapid dilution of this product in treated water will reduce its effectiveness. In susceptible plants, this product inhibits the formation of carotene. In the absence of carotene, chlorophyll is rapidly degraded by sunlight.

Herbicidal symptoms of this product 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 weed management is achieved with this product. Species susceptibility to this product may vary depending on time of year, stage of growth and water movement. For best results, apply this product 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.

This product 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®, 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 pounds of product 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 (< 10 Acres) and 150 ppb in lakes and reservoirs per annual growth cycle. This maximum concentration is the amount of product calculated as the target application rate, NOT determined by testing the concentrations of the active ingredient in the treated water.

Weed Resistance Management

For resistance management, Sonar H4C is a Group 12 herbicide. Any weed population may contain or develop plants naturally resistant to Sonar H4C 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 H4C 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.
- New York State: Application of this product is not permitted in waters less than two (2) feet deep, except as permitted under FIFRA Section 24(c), Special Local Need registration.
- Hydroponic Farming: Do not use water from a Sonar-treated area for hydroponic farming unless one of the following has been verified for the relevant active water intake and its withdrawal of surface water:
 - o A FasTEST has been run and the concentration in water at the intake is less than 1 ppb; or
 - o A filtration or water treatment process following water intake has been verified analytically to reduce the concentration in potential irrigation water below 1 ppb.
- Greenhouse and Nursery Plants: Do not use water from a Sonar-treated area for greenhouse and nursery irrigation unless one of the following has been verified for the relevant active water intake and its withdrawal of surface water:
 - o For the irrigation of woody ornamental plants, a FasTEST has been run and the concentration at the intake is less than 5 ppb; or
 - o For the irrigation of other greenhouse or nursery plants, the concentration is confirmed less than 1 ppb; or
 - o A filtration or water treatment process following water intake has been verified analytically to reduce the concentration in potential irrigation water below either the 1 or 5 ppb levels cited above.
- Water Use Restrictions Following Application (Days)

Application Rate	Drinking [†]	Fishing	Swimming	Livestock/Pet Consumption	Irrigation ^{††}
Maximum Rate (150 ppb) or less	0	0	0	0	See irrigation instructions below

- [†] Note below, under *Potable Water Intakes*, the information for application of this product within 1/4 miles (1,320) feet of a functioning potable water
- ^{††} Note below, under *Irrigation*, specific time frames or fluridone concentrations that provide the widest safety margin for irrigating with fluridone treated water
- Potable Water Intakes: Concentrations of the active ingredient fluridone up to 150 ppb are allowed in potable water sources; however, in lakes and reservoirs or other sources of potable water, do not apply this product at application rates greater than 20 ppb within one- fourth (1/4) mile (1,320 feet) of any functioning potable water intake. At application rates of up to 20 ppb, this product 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 connections to potable water wells or a municipal water system, are not considered to be functioning potable water intakes.

- Irrigation: 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 water treated with this product if concentrations are greater than 5 ppb. It is recommended that a SePRO Aquatic Specialist be consulted prior to commencing irrigation of these sites. 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 without consultation with a SePRO Aquatic Specialist.
- Aircraft pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides [40 CFR 170.305].

• Irrigation: Irrigation with water treated with this product may result in injury to the irrigated vegetation. Follow these precautions and inform those who irrigate from areas treated with this product of the irrigation time frames or FasTEST requirements presented in the table below. Follow these time frames and FasTEST recommendations to reduce the potential for injury to vegetation irrigated with water treated with this product. Greater potential for crop injury occurs where water treated with this product is applied to crops grown on low organic and sandy soils.

	Days After Application			
Application Site	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	FasTEST required	
Canals	7	7	FasTEST required	
Rivers	7	7	FasTEST required	
Lakes and Reservoirs ^{††}	7	7	FasTEST required	

- [†] For purposes of this product'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.

Where the use of water treated with this product is desired for irrigating crops prior to the time frames established above, the use of a FasTEST is recommended to measure the concentration in the treated water. Where a FasTEST has determined that concentrations are less than 10 parts per billion, there are no irrigation precautions for irrigating established tree crops, established row crops or turf.

PLANT CONTROL INFORMATION

This product'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 this product. It is recommended to consult a SePRO Aquatic Specialist prior to application of this product to determine a plant's susceptibility to it.

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)

Floating Plants

azolla (Azolla spp.)

duckweed (Lemna, Landoltia, and Spirodela spp.)

Shoreline Grasses

paragrass (Urochloa mutica)

Native plants that are often tolerant to fluridone at lower use rates. Please consult a SePRO Aquatic Specialist for appropriate use rates (not to exceed maximum labeled rates) when selective control of exotic species

Vascular Aquatic Plants Partially Controlled

Submersed Plants

Illinois pondweed (Potamogeton illinoensis)

limnophila (Limnophila sessiliflora)

tapegrass, American eelgrass (Vallisneria americana)

watermilfoil--variable-leaf (Myriophyllum heterophyllum)

Emersed Plants

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

Floating Plants

salvinia (Salvinia spp.)

Shoreline Grasses

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

Vascular Aquatic Plants Not Controlled

Emersed Plants

American frogsbit (Limnobium spongia) arrowhead (Sagittaria spp.) bacopa (Bacopa spp.) big floatingheart, banana lily (Nymphoides aquatica) bulrush (Scirpus spp.) pickerelweed, lanceleaf (Pontederia spp.) rush (Juncus spp.) water pennywort (Hydrocotyle spp.)

Floating Plants

floating waterhyacinth (Eichhornia crassipes) waterlettuce (Pistia stratiotes)

Shoreline Grasses

maidencane (Panicum hemitomon)

NOTE: algae (chara, nitella, and filamentous species) are not controlled by this product.

APPLICATION DIRECTIONS

The aquatic plants present in the treatment site should be identified prior to application to determine their susceptibility to this product. 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.

Application to Ponds

This product 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, although actual concentrations in treated water may be substantially lower at any point in time due to the slow-release formulation of this product. When treating for optimum selective control, lower rates may be applied for sensitive target species. 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 in treated water 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 should total 45 to 90 ppb and must not exceed a total of 90 ppb per annual growth cycle.

Average Water Depth of	Pounds of product per Treated Surface Acre		
Treatment Site (feet)	45 ppb	90 ppb	
1	4.5	9	
2	9	18	
3	13.5	27	
4	18	36	
5	22.5	45	
6	27	54	
7	31.5	63	
8	36	72	
9	40.5	81	
10	45	90	

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, 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, this product may be applied at an application rate not to exceed 90 ppb, and in a suggested range of 16 to 90 ppb. Application rates necessary to obtain these concentrations in treated water 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. Choose an application rate not to exceed 90 ppb 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 a SePRO 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 or in the event of a heavy rainfall event where dilution 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.

Average Water Depth of	Pounds of product Per Treated Surface Acre		
Treatment Site (feet)	16 ppb	90 ppb	
1	1.6	9	
2	3.2	18	
3	4.8	27	
4	6.4	36	
5	8	45	
6	9.6	54	
7	11.2	63	
8	12.8	72	
9	14.4	81	
10	16	90	
11	17.6	99	
12	19.2	108	
13	20.8	117	
14	22.4	126	
15	24	135	
16	25.6	144	
17	27.2	153	
18	28.8	162	
19	30.4	171	
20	32	180	

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 to maintain this lower dose for the sufficient time to ensure efficacy and enhance selectivity. Under these situations, use the lower rates within the rate range. 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 a SePRO Aquatic Specialist in determining when to choose application rates lower in the rate range to meet specific plant management goals. For split or repeated applications, the sum of all applications must not exceed 150 ppb per annual growth cycle.

NOTE: In treating lakes or reservoirs that contain potable water intakes and when the application requires treating within $\frac{1}{4}$ 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 this product 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 this product 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 this product'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.

Application Sites Greater Than 1/4 Mile from a Functioning Potable Water Intake

For single applications, this product may be applied at rates not to exceed 150 ppb, and in a suggested range of 45 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.

Application Sites 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 repeated applications of this product 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 product to be applied to provide the desired ppb concentration of active ingredient in treated water may be calculated as follows:

Pounds of product required per treated acre = Average water depth of treatment site **x** Desired ppb concentration of active ingredient **x** 0.1

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

 $5 \times 25 \times 0.1 = 12.5$ pounds per treated surface acre.

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

Application to Drainage Canals, Irrigation Canals and Rivers Static Canals

In static drainage and irrigation canals, this product may be applied at typical use rates of 37 to 74 pounds per surface acre. The maximum application rate or sum of all application rates must not exceed 150 ppb per annual growth cycle.

Moving Water Canals and Rivers

This product's performance will be enhanced by restricting or reducing water flow. In slow moving bodies of water use an application technique that maintains a concentration of 10 to 40 ppb in the applied area for typically a minimum of 45 days. This product 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 or Rivers Containing a Functioning Potable Water Intake

In treating a static or moving water canal or river which contains a functioning potable water intake, applications of this product 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 this product are made within ¼ mile from a functioning water intake, a FasTEST must be utilized to demonstrate that concentrations do not exceed 150 ppb at the potable water intake.

Application Rate Calculation — Drainage Canals, Irrigation Canals and Rivers

The amount of this product 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 width (ft.) **x** average 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 \mathbf{x} desired ppb \mathbf{x} 0.1 = pounds product required per day.

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, contain material 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

warranties are expressly disclaimed.

Non-refillable Container. DO NOT reuse or refill this container.

Completely empty container into application equipment, then offer for recycling if available or dispose of empty container 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

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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