

# Sonar<sup>®</sup> H4C

## Aquatic Herbicide

**SPECIMEN**



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

fluridone: 1-methyl-3-phenyl-5-[3-(trifluoromethyl)phenyl]-4(1H)  
 pyridinone ..... 2.7%  
**Other Ingredients** ..... 97.3%  
**TOTAL** ..... 100.0%

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.)

Refer to inside of label booklet for additional precautionary statements and directions for use including first aid and storage and disposal.

**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

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**SePRO Corporation**

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### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

## Keep Out of Reach of Children CAUTION/PRECAUCIÓN

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.

#### FIRST AID

<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 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 to 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 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. 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>

#### 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.**

### 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.

### 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.

### 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 hydrosol 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.

### 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:

- A FasTEST has been run and the concentration in water at the intake is less than 1 ppb; or
- 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:
  - For the irrigation of woody ornamental plants, a FasTEST has been run and the concentration at the intake is less than 5 ppb; or
  - For the irrigation of other greenhouse or nursery plants, the concentration is confirmed less than 1 ppb; or
  - 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 <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 this product within ¼ miles (1,320 feet) of a functioning potable water intake.

<sup>††</sup> 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.

**Use Precautions**

- **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.

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 <sup>†</sup>	7	30	FasTEST required
Canals	7	7	FasTEST required
Rivers	7	7	FasTEST required
Lakes and Reservoirs <sup>††</sup>	7	7	FasTEST required

<sup>†</sup> 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.

<sup>††</sup> 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:<sup>1</sup>**

**Submersed Plants:**

- bladderwort (*Utricularia* spp.)
- common coontail (*Ceratophyllum demersum*)<sup>†</sup>
- common Elodea (*Elodea canadensis*)<sup>†</sup>
- egeria, Brazilian Elodea (*Egeria densa*)
- fanwort, Cabomba (*Cabomba caroliniana*)
- hydrilla (*Hydrilla verticillata*)
- naiad (*Najas* spp.)<sup>†</sup>
- pondweed (*Potamogeton* spp., except Illinois pondweed)<sup>†</sup>
- watermilfoil (*Myriophyllum* spp. except variable-leaf milfoil)

**Floating Plants:**

- azolla (*Azolla* spp.)
- duckweed (*Lemna*, *Landoltia*, and *Spirodela* spp.)

**Shoreline Grasses:**

- paragrass (*Urochloa mutica*)

<sup>1</sup> Species denoted by a dagger (†) are 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 is desired.

**Vascular Aquatic Plants Partially Controlled:**

**Submersed Plants:**

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

**Emerged 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 (*Phalaris arundinaceae*)
- southern watergrass (*Hydrochloa carolinensis*)
- torpedograss (*Panicum repens*)

**Vascular Aquatic Plants Not Controlled:**

**Emerged Plants:**

- American frogbit (*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 Treatment Site (feet)	Pounds of product per Treated Surface Acre	
	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.

#### A. 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, apply this product 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, choose an application rate lower in the rate range.** 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 cannot 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 Treatment Site (feet)	Pounds of product Per Treated Surface Acre	
	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, choose an application rate lower in the rate range.** 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 ¼ mile of a potable water intake, no single application can exceed 20 ppb. Additionally, the sum of all applications cannot exceed 150 ppb per annual growth cycle.

#### B. 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 ¼ Mile from a Functioning Potable Water Intake

For single applications, apply this product 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 cannot 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 cannot 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 =**

$$\frac{\text{Average water depth of treatment site} \times \text{Desired ppb concentration of active ingredient} \times 0.1}{1}$$

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:

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

**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.

**C. Application to Drainage Canals, Irrigation Canals and Rivers**

Static Canals:

In static drainage and irrigation canals, apply this product at typical use rates of 37 to 74 pounds per surface acre. The maximum application rate or sum of all application rates cannot 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 x desired ppb 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**

**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 if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**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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