

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 Sonar PR Precision Release.

Storage and Disposal

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

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 Disposal: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

General Information

Sonar PR Precision Release herbicide is a selective systemic aquatic herbicide for management of aquatic vegetation in fresh water ponds, lakes, reservoirs, drainage canals, irrigation canals, and rivers. Sonar PR Precision Release is a pelleted formulation containing 5% fluridone. Sonar is absorbed from water by plant shoots and from hydrosol by the roots of aquatic vascular plants. It is important to maintain Sonar in contact with the target plants for as long as possible. Rapid water movement or any condition which results in rapid dilution of Sonar in treated water will reduce its effectiveness. In susceptible plants, Sonar inhibits the formation of carotene. In the absence of carotene, chlorophyll is rapidly degraded by sunlight. Herbicidal symptoms of Sonar 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 Sonar. Species susceptibility to Sonar PR Precision Release may vary depending on time of year, stage of growth and water movement. For best results, apply Sonar PR Precision Release prior to initiation of weed growth or when weeds begin active growth. Application to mature target plants may require higher application rates and may take longer to control.

Sonar PR Precision Release 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 an Enzyme-Linked Immunoassay (ELISA Test) for the determination of the active ingredient concentration in the water. Contact SePRO Corporation for the utilization of this test, known as FasTEST, for the incorporation of this analysis in your treatment program. Other proven chemical analyses for the active ingredient may also be used. The chemical analysis, 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 Sonar PR Precision Release to achieve a desired concentration of the active ingredient in part per billion (ppb). The maximum application rate or sum of all application rates is 90 ppb in ponds 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 residues of the active ingredient in the treated water.

General Use Precautions

• **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 Sonar PR is not permitted in waters less than two (2) feet deep.

• **Hydroponic Farming:** Do not use Sonar PR treated water for hydroponic farming.

• **Greenhouse and Nursery Plants:** Do not use Sonar PR treated water for irrigating greenhouse or nursery plants. Use of an approved assay should confirm that residues are <1 ppb.

WATER USE RESTRICTIONS FOLLOWING APPLICATIONS WITH SONAR PR PRECISION RELEASE (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 Sonar PR within ¼ miles (1320) feet of a functioning potable water intake.

** 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:** 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 Sonar PR Precision Release at application rates greater than 20 ppb within one-fourth mile (1320 feet) of any functioning potable water intake. At application rates of 8-20 ppb, Sonar PR Precision Release 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:** Irrigation with Sonar PR Precision Release treated water may result in injury to the irrigated vegetation. SePRO Corporation recommends following these precautions and informing those who irrigate from areas treated with Sonar PR Precision Release of the irrigation time frames or water assay requirements presented in the table below. These time frames and assay recommendations are suggestions which should be followed to reduce the potential for injury to vegetation irrigated with water treated with Sonar PR Precision Release. Greater potential for crop injury occurs where Sonar PR Precision Release 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	7	Assay required
Rivers	7	7	Assay required
**Lakes and Reservoirs	7	7	Assay required

†For purposes of Sonar PR Precision Release 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 Sonar PR Precision Release treated water is desired for irrigating crops prior to the time frames established above, the use of FasTEST assay is recommended to measure the concentration in the treated water. Where 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. **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 PR treated water if concentration 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 PR Precision Release 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 PR Precision Release. Consult an aquatic specialist prior to application of Sonar PR Precision Release to determine a plant's susceptibility to Sonar PR Precision Release.

Vascular Aquatic Plants Controlled by Sonar PR Precision Release†

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)

Shoreline Grasses:

paragrass (*Urochloa mutica*)

†Species denoted by an asterisk are native plants that are often tolerant to Sonar at lower use rates. Please consult an aquatic specialist for recommended Sonar PR Precision Release use rates when selective control of exotic species is desired.

Vascular Aquatic Plants Partially Controlled by Sonar PR Precision Release:

Floating Plants:

Salvinia (*Salvinia* spp.)

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*)

Submersed Plants:

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

Shoreline Grasses:

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

Vascular Aquatic Plants Not Controlled by Sonar PR Precision Release:

Floating Plants:

floating waterhyacinth (*Eichhornia crassipes*)
waterlettuce (*Pistia stratiotes*)

Emersed 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.)

Shoreline Grasses:

maidencane (*Panicum hemitomon*)

Note: algae (chara, nitella, and filamentous species are not controlled by Sonar PR Precision Release).

Application Directions

The aquatic plants present in the treatment site should be identified prior to application to determine their susceptibility to Sonar PR Precision Release. 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

Sonar PR Precision Release 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 page 5—Application Rate Calculations-Ponds, Lakes and Reservoirs. Split or multiple applications are recommended 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 Sonar PR Precision Release per Treated Surface Acre	
	45 ppb	90 ppb
1	2.5	5
2	5	10
3	7.5	15
4	10	20
5	12.5	25
6	15	30
7	17	34
8	19.5	39
9	22	44
10	24.5	49

Application to Lakes and Reservoirs

The following treatments are recommended 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 PR Precision Release 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)

1. Single Application to Whole Lakes or Reservoirs

Where single applications to whole lakes or reservoirs are desired, apply Sonar PR Precision Release at an application rate of 16 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 page 5—Application Rate Calculation-Ponds, Lakes and Reservoirs. Choose an application rate 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 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 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 following Section (No. 2) Split or Multiple Applications for guidelines and maximum rate allowed.

Average Water Depth of Treatment Site (feet)	Pounds of Sonar PR Precision Release Per Treated Surface Acre	
	16 ppb	90 ppb
1	0.9	5
2	1.7	10
3	2.6	15
4	3.5	20
5	4.3	25
6	5.2	30
7	6.0	34
8	6.9	39
9	7.8	44
10	8.6	49
11	9.5	54
12	10.4	59
13	11.2	64
14	12.1	68
15	13.0	73
16	13.8	78
17	14.7	83
18	15.6	88
19	16.4	93
20	17.3	98

2. 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 (16 to 75 ppb) 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 an 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 the application requires treating within 1/4 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 Sonar PR Precision Release 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 PR Precision Release in a partial lake is highly dependent upon the treatment area. Higher application rates may be required and frequency of applications will vary depending upon the potential of untreated water diluting the Sonar PR Precision Release concentration in the treatment area. Use higher rates where greater dilution with untreated water is anticipated.

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

For single applications, apply Sonar PR Precision Release at application rates from 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 FasTEST is recommended to maintain the desired concentration in the target area over time.

2. Application Sites Within 1/4 Mile of a Functioning Potable Water Intake

In treatment areas that are within 1/4 mile of a potable water intake, no single application can exceed 20 ppb. When utilizing split or repeated applications of Sonar PR Precision Release for sites which contain a potable water intake, 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 Sonar PR Precision Release to be applied to provide the desired ppb concentration of active ingredient equivalents in treated water may be calculated as follows:

- Pounds of Sonar PR Precision Release required per treated acre = Average water depth of treatment site x Desired ppb concentration of active ingredient equivalents x 0.054

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

$$5 \times 25 \times 0.054 = 6.75 \text{ pounds per treated surface acre.}$$

Note: Calculated rates should 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, Sonar PR Precision Release should be applied at the rate of 20 to 40 pounds per surface acre.

Moving Water Canals and Rivers:

The performance of Sonar PR Precision Release 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 a minimum of 45 days. Sonar PR Precision Release 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 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 Sonar PR Precision Release greater than 20 ppb must be made more

than 1/4 mile from a functioning potable water intake. Applications less than 20 ppb may be applied within 1/4 mile from a functioning potable water intake; however, if applications of Sonar PR Precision Release are made within 1/4 mile from a functioning water intake, the 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 Sonar PR Precision Release 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 0.054 = pounds Sonar PR Precision Release required per day.

WARRANTY DISCLAIMER

SePRO Corporation warrants that the product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. SEPRO CORPORATION MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

INHERENT RISKS OF USE

It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of SePRO Corporation as the seller. All such risks shall be assumed by buyer.

LIMITATION OF REMEDIES

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories) shall be limited to, at SePRO Corporation's election, one of the following:

- (1) Refund of purchase price paid by buyer or user for product bought, or
- (2) Replacement of amount of product used.

SePRO Corporation shall not be liable for losses or damages resulting from handling or use of this product unless SePRO Corporation is promptly notified of such losses or damages in writing. In no case shall SePRO Corporation be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer above and this Limitation of Remedies can not be varied by any written or verbal statements or agreements. No employee or sales agent of SePRO Corporation or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or Limitations of Remedies in any manner.

