

PM 23

62719-124

printed 3/6/92

1069

(Base Label)

(Logo) DowElanco

Sonar* A.S. Herbicide

A herbicide for management of aquatic vegetation in fresh water ponds, lakes, reservoirs, drainage canals and irrigation canals.

Active Ingredient:

fluridone: 1-methyl-3-phenyl-5-[3-(trifluoromethyl)

phenyl]-4(1H)-pyridinone

41.7%

Inert Ingredients

58.3%

Total

100.0%

Contains 4 pounds active ingredient per gallon.

Precautionary Statements

Hazards to Humans and Domestic Animals:

Keep Out of Reach of Children

CAUTION

Harmful If Swallowed, Absorbed Through Skin, Or If Inhaled

Avoid breathing of spray mist or contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling. Wash exposed clothing before reuse.

First Aid:

If In eyes: Flush eyes or skin with plenty of water. Get medical attention if irritation persists.

If swallowed: Call a physician or poison control center, drink one or two glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

If inhaled: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

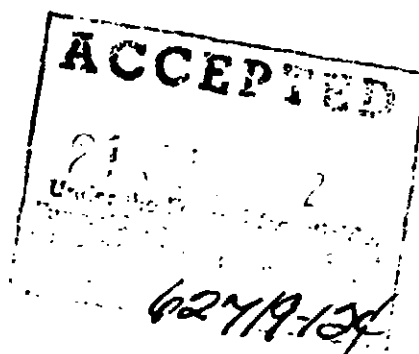
Environmental Hazards

Follow use directions carefully so as to minimize adverse effects on nontarget organisms. In order to avoid impact on threatened or endangered aquatic plant or animal species, users must consult their State Fish and Game Agency or the U.S. Fish and Wildlife Service before making applications.

Do not contaminate water when disposing of equipment washwaters. Trees and shrubs growing in water treated with Sonar may occasionally develop chlorosis. Do not apply in tide water/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.

BEST AVAILABLE COPY



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.
- Shake well before using.

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, 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 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.

Refer to attached label booklet for additional precautionary information and Directions for Use.

Notice: Read the entire label before using. Use only according to label directions. Before buying or using this product, read "Warranty Disclaimer" and "Limitation of Remedies" elsewhere on this label.

In case of emergency endangering health or the environment involving this product, call collect 517-636-4400

Specialty Chemical: Keep away from food, feedstuffs and water supplies. Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-124.

EPA Est. 1812-GA-03

*Trademark of DowElanco

DowElanco • Indianapolis, Indiana 46268, U.S.A.

Herbicide
Net Contents - 1 quart

02/21/92

(Label Booklet)

(Logo) DowElanco

Sonar* A.S. Herbicide

A herbicide for management of aquatic vegetation in fresh water ponds, lakes, reservoirs, drainage canals and irrigation canals.

Active Ingredient:

fluridone: 1-methyl-3-phenyl-5-[3-(trifluoromethyl)	
phenyl]-4(1H)-pyridinone.....	41.7%
Inert ingredients.....	58.3%
Total.....	100.0%

Contains 4 pounds active ingredient per gallon.

Keep Out of Reach of Children**CAUTION**

Refer to inside of label booklet for additional precautionary information and Directions for Use including 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 "Limitation of Remedies" elsewhere on this label.

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EPA Reg. No. 62719-124

EPA Est. 1812-GA-03

*Trademark of DowElanco

DowElanco • Indianapolis, IN 46268, U.S.A.

Herbicide**Net Contents - X quarts**

Precautionary Statements

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Sonar AS General 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. Sonar is absorbed from water by plant shoots and from hydrosol by the roots of aquatic vascular plants. It is important to maintain the recommended concentration of Sonar in contact with the weeds 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 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.

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

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.

• **Chemigation:** Do not apply Sonar A.S. through any type of irrigation system.

Potable Water Intakes: In lakes and reservoirs, do not apply Sonar A.S. within one-fourth mile (1320 feet) of any functioning potable water intake.

• **Irrigation:**

Irrigation with Sonar A.S. treated water may result in injury to the irrigated vegetation. DowElanco recommends informing those who irrigate from Sonar A.S. treated areas of the irrigation time frames presented in the table below. These time frames are suggestions which should be followed to reduce the potential for injury to vegetation irrigated with Sonar A.S. treated water:

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
¹ Ponds and Static Canals	7	30	30
Canals	7	14	30
² Lakes and Reservoirs	7	14	14

¹ 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.

² In lakes and reservoirs where one-half or greater of the body of water is treated, use the pond and static canal irrigation restrictions.

Weed Control Information

Vascular Aquatic Plants Controlled by Sonar AS :

Floating Plants:

Common duckweed (*Lemna minor*)*

Emersed Plants:

Spatterdock (*Nuphar luteum*)

Water-lily (*Nymphaea* spp.)

*Controlled only with a surface application of Sonar AS.

Submersed Plants:

Bladderwort (*Utricularia* spp.)

Common coontail (*Ceratophyllum demersum*)

Common Elodea (*Elodea canadensis*)

Egeria, Brazilian Elodea (*Egeria densa*)

Farwort, Cabomba (*Cabomba caroliniana*)

Hydrilla (*Hydrilla verticillata*)

Naiad (*Najas* spp.)

Pondweed (*Potamogeton* spp., except Illinois pondweed)

Watermilfoil (*Myriophyllum* spp.)

Shoreline Grasses:

Paragrass (*Brachiaria mutica*)

Vascular Aquatic Plants Partially Controlled by Sonar A.S. :

Alligatorweed (*Alternanthera philoxeroides*)

American lotus (*Nelumbo lutea*)

Cattail (*Typha* spp.)

Common watermeal (*Wolffia columbiana*)**

Creeping Waterprimrose (*Ludwigia peploides*)

Giant cutgrass (*Zizaniopsis miliacea*)

Illinois pondweed (*Potamogeton illinoensis*)

Parrotfeather (*Myriophyllum brasiliense*)

Reed Canarygrass (*Phalaris arundinaceae*)

Smartweed (*Polygonum* spp.)

Spikerush (*Eleocharis* spp.)

Southern watergrass (*Hydrochloa caroliniensis*)

Torpedograss (*Panicum repens*)

Waterpurslane (*Ludwigia palustris*)

Watershield (*Brasenia schreberi*)

**Partial control only with a surface application of Sonar A.S. at the maximum labeled rate.

Vascular Aquatic Plants Not Controlled by Sonar A.S.:

Algae (*Chara* and *Nitella*)

American frogbit (*Limnobium spongia*)

Arrowhead (*Sagittaria* spp.)

Bacopa (*Bacopa* spp.)

Big floatingheart, Banana Lily (*Nymphoides aquatica*)

Bulrush (*Scirpus* spp.)

Floating waterhyacinth (*Eichhornia crassipes*)

Maldenecane (*Panicum hemitomon*)

Pickersweed, lanceleaf (*Portulaca cordata*)

Rush (*Juncus* spp.)

Tapegrass, American Eelgrass (*Vallisneria spiralis*)

Waterlettuce (*Pistia stratiotes*)

Water pennywort (*Hydrocotyle umbellata*)

Mixing and 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 recommended 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. Rates may be selected to provide 0.06 to 0.09 ppm of active ingredient in the treated water. Application rates necessary to obtain these active ingredient concentrations in treated water are shown in the following table. When average water depth of the treatment site is greater than 5 feet, apply 1 to 1.5 quarts of Sonar A.S. per treated surface acre.

Average Water Depth of Treatment Site (feet)	Quarts of Sonar A.S. per Treated Surface Acre
1	0.16 - 0.25
2	0.33 - 0.50
3	0.50 - 0.75
4	0.65 - 1.00
5	0.80 - 1.25

Use the higher rate within the rate range where there is a dense weed mass or when treating more difficult to control species.

Application to Lakes and Reservoirs

For best results in 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. In lakes and reservoirs, do not apply Sonar A.S. within one-fourth mile (1320 feet) of any functioning potable water intake.

Rates may be selected to provide 0.075 to 0.15 ppm of active ingredient in the treated water. Application rates necessary to obtain these active ingredient concentrations in treated water are shown in the following table. When average water depth of the treatment site is greater than 10 feet, apply 3 to 4 quarts of Sonar A.S. per treated surface acre.

Average Water Depth of Treatment Site (feet)	Quarts of Sonar A.S. per Treated Surface Acre
1	0.2 - 0.4
2	0.4 - 0.8
3	0.6 - 1.2
4	0.8 - 1.6
5	1.0 - 2.0
6	1.2 - 2.4
7	1.4 - 2.8
8	1.6 - 3.2
9	1.8 - 3.6
10	2.0 - 4.0

Use the higher rate within the rate range where there is a dense weed mass or when treating more difficult to control species.

Application Rate Calculation - Ponds, Lakes and Reservoirs

The amount of Sonar A.S. to be applied to provide the desired ppm 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 ppm concentration of active ingredient x 2.7

For example, the quarts per acre of Sonar A.S. required to provide a concentration of 0.075 ppm of active ingredient in water with an average depth of 5 feet is calculated as follows:

$$5 \times 0.075 \times 2.7 = 1.0 \text{ quart per treated surface acre.}$$

When measuring quantities of Sonar A.S., quarts may be converted to fluid ounces by multiplying quarts to be measured x 32. For example, 0.25 quarts x 32 = 8 fluid ounces.

Note: Calculated rates should 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 Drainage Canals and Irrigation Canals

In drainage and irrigation canals, Sonar A.S. should be applied at the rate of 2 quarts per treated surface acre. Where water retention is possible, the performance of Sonar A.S. will be enhanced by restricting water flow. In moving bodies of water, use an application pattern that will provide a uniform distribution and avoid concentration of the herbicide.

WARRANTY DISCLAIMER

DowElanco warrants that this 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. DowElanco 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 the 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 DowElanco or the seller. All such risks shall be assumed by the 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 DowElanco'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.

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

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

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9 of 9

Revisions:

1. Sonar A.S. label reformatted and edited for clarity.
2. Environmental Hazards section updated.
3. Use prohibition in areas used for crayfish farming removed.
4. Weeds (plants) controlled section revised and plants "not controlled" by Sonar A.S. added.
5. Application rate recommendations for ponds, lakes and reservoirs refined to provide more accurate control of herbicide concentrations in water.
6. Added DowElanco Warranty and Disclaimer, Inherent Risks of Use, and Limitation of Remedies sections.
- 7) Precautions section revised as per EPA request.