

Avast![®]

AQUATIC HERBICIDE



ACTIVE INGREDIENT

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

INERT INGREDIENTS 58.3%

TOTAL 100.0%

Contains 4 Pounds of Fluridone Per Gallon

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

**KEEP OUT OF REACH OF CHILDREN
CAUTION – PRECAUCION**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

FIRST AID	
IF IN EYES	<ul style="list-style-type: none"> • 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 posion control center or doctor for treatment advice.
IF ON SKIN OR CLOTHING	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a posion control center or doctor for treatment advice.
IF SWALLOWED	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
IF INHALED	<ul style="list-style-type: none"> • 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 posion control center or doctor for further treatment advice.
<p>Have product container or label with you when calling a posion control center or doctor, or going for treatment. For medical emergencies involving this product, call toll free 1-888-324-7598.</p>	
<p>See Label for Additional Precautions and Directions for Use</p>	

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

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

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 untreated water when disposing of equipment washwaters. Trees and shrubs growing in water treated with Avast! 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 for Use 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.

GENERAL INSTRUCTIONS

Avast! is a selective systemic aquatic herbicide for management of aquatic vegetation in fresh water ponds, lakes, reservoirs, drainage canals and irrigation canals. Avast! 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 Avast! in contact with the target plants for a minimum of 45 days. Rapid water movement or any condition that results in rapid dilution of Avast! in treated water will reduce its effectiveness.

In susceptible plants, Avast! inhibits the formation of carotene. In the absence of carotene, chlorophyll is rapidly degraded by sunlight. Herbicidal symptoms of Avast! appear in 7 to 10 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 Avast!. Species susceptibility to Avast! may vary, depending on time of year, stage of growth, and water movement. For best results, apply Avast! prior to initiation of weed growth or when weeds begin active growth. Mature target plants may require higher application rates and take longer to control.

Avast! is not corrosive to application equipment.

The label provides recommendations on the use of chemical analysis for the active ingredient. Griffin recommends the use of an Enzyme-Linked Immunoassay (ELISA Test) for the determination of the concentration of the active ingredient in treated water. Contact Griffin for the utilization of this test, known as the AvasTest™, for the incorporation of this analysis into your treatment program. Other proven chemical analyses for the active ingredient may also be used. The chemical analysis, AvasTest, is referenced in this label as the preferred method for the rapid determination of the active ingredient concentration in treated water.

Application rates are provided in fluid ounces or quarts of Avast! to achieve a desired concentration of the active ingredient in parts per billion (ppb). The maximum application rate or sum of all application rates is 90 ppb in ponds and 150 ppb in lakes 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.

SPECIAL PRECAUTIONS

- **Obtain required permits:** Permits may be required by state or local agencies. Consult with appropriate state or local water authorities before applying this product.
- **Chemigation:** Do not apply this product through any type of irrigation system.
- **Hydroponic Farming:** Do not use water treated with Avast! for hydroponic farming.
- **Greenhouse and Nursery Plants:** Do not use water treated with Avast! for irrigating greenhouse or nursery plants unless use of an approved assay, such as AvasTest, confirms that residues are less than 1 ppb.
- **Water Use Restrictions Following Application of Avast! (Days)**

Application Rate	Drinking ¹	Fishing	Swimming	Livestock/Pet Consumption	Irrigation ²
Maximum Rate (150 ppb) or less	0	0	0	0	See irrigation instructions below

¹ Note below, under Potable Water Intakes, the information for application to Avast! within ¼ mile (1320 feet) of a functional potable water intake.

² Note below, under Irrigation, the specific time frames or fluridone residues that provide the widest margin of safety for irrigating with water treated with Avast!.

– **Potable Water Intakes:** In lakes and reservoirs or other sources of potable water, DO NOT apply Avast! at application rates greater than 20 ppb within ¼ mile (1320 feet) of any functioning potable water intake. At application rates of 6 to 20 ppb, Avast! may be applied where functioning potable water intakes are present.

NOTE: Existing potable water intakes that are no longer in use, such as those that have been replaced by potable water wells or connections to a municipal water system, are not considered to be functioning potable water intakes.

– **Irrigation:** Irrigation with water treated with Avast! may result in injury to the irrigated vegetation. Those who irrigate from areas treated with Avast! should be informed of the irrigation time frames or water assay requirements presented in the table below. These time frames and assay recommendations are suggestions that should be followed to reduce the potential for injury to vegetation irrigated with water treated with Avast!. There is a greater potential for crop injury when water treated with Avast! is applied to crops grown in low organic and sandy soils.

Recommended Waiting Periods Before Irrigating with Water Treated with Avast! (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 ¹	7	30	Assay required
Canals	7	14	Assay required
Lakes and Reservoirs ²	7	14	Assay required

¹ For purposes of Avast! 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 precautions.

Where the use of Avast! treated water is desired for irrigating crops prior to the time frames established above, the use of AvasTest is recommended to measure the concentration in the treated water. Where AvasTest has determined that concentrations are less than ten parts per billion (ppb), 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 for newly seeded crops or newly seeded grasses, such as overseeded golf course greens, do not use Avast! SRP treated water if concentrations are greater than five parts per billion. Furthermore, when rotating crops, do not plant members of the Solanaceae family in land that had been previously irrigated with fluridone concentrations in excess of 5 ppb. It is recommended that an aquatic specialist be consulted prior to commencing irrigation to these sites.

WEED CONTROL INFORMATION

Avast! 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 application 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 Avast!. Consult an aquatic specialist prior to application to determine a plant's susceptibility to Avast!.

Vascular Aquatic Plants Controlled by Avast!

Floating Plants:

Duckweed, Common (*Lemna minor*)

Emerald Plants:

Spatterdock (*Nuphar luteum*)

Waterlily (*Nymphaea* spp.)

Submersed Plants:

Bladderwort (*Utricularia* spp.)

Coontail, Common (*Ceratophyllum demersum*)

Egeria, Brazilian Elodea (*Egeria densa*)

Elodea, Common (*Elodea canadensis*)

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*)

Vascular Aquatic Plants Partially Controlled by Avast!

Floating Plants:

Salvinia (*Salvinia* spp.)

Watermeal, Common (*Wolffia columbiana*)¹

¹ Partial control only with Avast! applied at the maximum labeled rate.

Emerald Plants:

Alligatorweed (*Alternanthera philoxeroides*)

Cattail (*Typha* spp.)

Lotus, American (*Nelumbo lutea*)

Parrotfeather (*Myriophyllum aquaticum*)

Smartweed (*Polygonum* spp.)

Spikerush (*Eleocharis* spp.)

Waterprimrose, Creeping (*Ludwigia peploides*)

Waterpurslane (*Ludwigia palustris*)

Watershield (*Brasenia schreberi*)

Submersed Plants:

Limnophila (*Limnophila sessiliflora*)

Pondweed, Illinois (*Potamogeton illinoensis*)

Tapegrass; American Eelgrass (*Vallisneria americana*)

Watermilfoil, Variable-Leaf (*Myriophyllum heterophyllum*)

Shoreline Grasses:

Barnyardgrass (*Echinochloa crusgalli*)

Canarygrass, Reed (*Phalaris arundinaceae*)

Cutgrass, Giant (*Zizaniopsis miliacea*)

Torpedograss (*Panicum repens*)

Watergrass, Southern (*Hydrochloa carolinensis*)

Vascular Aquatic Plants Not Controlled by Avast!

Floating Plants:

Water Lettuce (*Pistia stratiotes*)

Emerald Plants:

Arrowhead (*Sagittaria* spp.)

Bacopa (*Bacopa* spp.)

Big Floatingheart; Banana Lily (*Nymphoides aquatica*)

Bulrush (*Scirpus* spp.)

Frogbit, American (*Limnobium spongia*)

Pickerelweed; Lanceleaf (*Pontederia* spp.)

Rush (*Juncus* spp.)

Waterhyacinth, Floating (*Eichornia crassipes*)

Water Pennywort (*Hydrocotyle umbellata*)

Shoreline Grasses:

Maidencane (*Panicum hemitomon*)

NOTE: Algae (*Chara*, *Nitella* and filamentous species) are not controlled by Avast!.

MIXING AND APPLICATION DIRECTIONS

The aquatic plants present in the treatment site should be identified prior to application to determine their susceptibility to Avast!. It is also 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 Avast! well before using. Add the recommended amount of Avast! 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. Avast! 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. Avast! may also be diluted with water and the concentrated mix metered into the pumping system.

Tank Mix Recommendations

Avast! may be tank mixed with other aquatic herbicides and algacides to enhance efficacy and plant selectivity. Refer to the label of the companion herbicide or algacide for use directions, precautions and restrictions.

Application to Ponds

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

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

Application to Lakes and Reservoirs

The following treatments 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, Avast! 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, apply Avast! at an application rate of 10 to 90 ppb. Application rates necessary to obtain these concentrations in treated water are shown in the following table. For additional application rate calculations, refer to the section of this label entitled 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, an aquatic specialist should be contacted to determine when to choose application rates lower in the rate range to meet specific plant management goals. Use the higher rate within the rate range where there is a dense weed mass or when treating more difficult to control plant species. Retreatments may be required to control more difficult to control species or in the event of a heavy rainfall event where dilution of the treatment concentration has occurred. In these cases, a second application or more may be required; however, the sum of all applications cannot exceed 150 ppb per annual growth cycle. Refer to the following section, Split or multiple Applications to Whole Lakes or Reservoirs, for guidelines and maximum rate allowed.

Average Water Depth of Treatment Site (feet)	Quts. of Avast! per Treated Surface Acre		Fluid Ozs. of Avast! per Treated Surface Acre	
	10 ppb	90 ppb	10 ppb	90 ppb
1	0.03	0.24	1.0	7.7
2	0.05	0.49	1.6	15.7
3	0.08	0.73	2.6	23.4
4	0.11	0.98	3.2	31.4
5	0.14	1.22	4.5	39.0
6	0.16	1.46	5.1	46.7
7	0.19	1.70	6.1	54.4
8	0.22	1.95	7.0	62.4
9	0.24	2.19	7.6	70.1
10	0.27	2.44	8.6	78.1
11	0.30	2.68	9.6	86.0
12	0.32	2.93	10.2	93.8
13	0.35	3.17	11.2	101.4
14	0.38	3.42	12.1	109.4
15	0.41	3.66	13.1	117.1
16	0.43	3.90	13.8	124.8
17	0.46	4.15	14.7	132.2
18	0.49	4.39	15.7	140.5
19	0.51	4.63	16.3	148.2
20	0.54	4.88	17.3	156.2

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, through the use of water analysis, e.g. AvasTest, add additional Avast! to maintain this lower dose for sufficient time to ensure efficacy and enhance selectivity. Water may be treated with an initial application of 6 to 50 ppb. Additional split applications should be made to maintain a sufficient concentration for a minimum of 45 days. 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, an aquatic specialist should be contacted to determine when to choose application rates lower in the rate range to meet specific plant management goals. When utilizing split or multiple applications of Avast!, the utilization of AvasTest is strongly recommended to determine the actual concentration in the water over time. For split or multiple applications, the sum of all applications must not exceed 150 ppb per annual growth cycle.

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

Partial Lake or Reservoir Treatments

Where dilution of Avast! 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 with the target plants. The application rate and use frequency of Avast! 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 for untreated water to dilute the Avast! concentration in the treatment area. Use higher rates where greater dilution with untreated water is anticipated.

Treatment Areas Greater than ¼ Mile from a Functional Potable Water Intake: For single applications, apply Avast! at application rates from 30 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 made to maintain a sufficient concentration in the target area for a period of 45 days or longer. The use of AvasTest is recommended to maintain the desired concentration in the target area over time.

Treatment Areas Within ¼ Mile of a Functional Potable Water Intake: In treatment areas that are within ¼ mile of a potable water intake, no single application can exceed 20 ppb. When utilizing split or multiple applications of Avast! for sites that contain a potable water intake, AvasTest 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 Avast! to be applied to provide the desired ppb concentration of active ingredient in treated water may be calculated as follows:

$$\text{Quarts of Avast! required per treated surface acre} = \text{Average water depth of treatment site (feet)} \times \text{Desired ppb concentration of active ingredient} \times 0.0027$$

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

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

When measuring quantities of Avast!, quarts may be converted to fluid ounces by multiplying quarts to be measured by 32.

For example, 0.33 quarts x 32 = 10.5 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

Static Canals: In static drainage and irrigation canals, Avast! should be applied at the rate of 1 to 2 quarts per treated surface area.

Moving Water Canals: The performance of Avast! will be enhanced by restricting or reducing water flow. In slow moving bodies of water, use an application technique that maintains a concentration of 15 to 40 ppb in the target area for a minimum of 45 days. Avast! 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 AvasTest is recommended to maintain the desired concentration in the target area over time.

Static or Moving Water Canals Containing a Functional Potable Water Intake: In treating a static or moving water canal that contains a functional potable water intake, DO NOT apply Avast! at application rates greater than 20 ppb within ¼ mile (1320 feet) of any functional potable water intake. Applications of less than 20 ppb may be applied within ¼ mile from a functioning potable water intake; however, if applications of Avast! are made within ¼ mile from a potable water intake, the AvasTest must be utilized to demonstrate that concentrations do not exceed 150 ppb at the potable water intake.

Application Rate Calculation – Moving Water Drainage Canals and Irrigation Canals

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

1. Average flow rate (feet per second) x Average canal width (feet) x Average water depth (feet) x 0.9 = Cubic feet per second (CFS)
2. CFS x 1.98 = acre-feet per day (water movement)
3. Acre-feet per day x desired ppb x 0.0027 = Quarts of Avast! required per day

WARRANTY STATEMENT

GRIFFIN warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials or the manner of use or application, all of which are beyond the control of GRIFFIN. In no case shall GRIFFIN be liable for consequential, special or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the Buyer. The exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damages resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall not exceed the purchase price paid for this product or at GRIFFIN'S election, the replacement of this product. GRIFFIN MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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