



# EMBARK® 2S IVM

## PLANT GROWTH REGULATOR

*Inhibits Seedheads and Reduces Frequency of Mowing and Trimming on Certain Grasses.*

**ACTIVE INGREDIENT:**

Diethanolamine salt of mefluidide (N-[2,4-dimethyl-5-[[trifluoromethyl)sulfonyl]amino]phenyl]acetamide) ..... 28.00%  
**OTHER INGREDIENTS:** ..... 72.00%  
 TOTAL 100.00%

**THIS PRODUCT CONTAINS:**

2.0 lbs. mefluidide acid equivalent (N-[2,4-dimethyl-5-[[trifluoromethyl)sulfonyl]amino]phenyl]acetamide) per gallon or 21% by weight.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**



**READ THE ENTIRE LABEL FIRST.  
OBSERVE ALL PRECAUTIONS AND  
FOLLOW DIRECTIONS CAREFULLY.**

**PRECAUTIONARY STATEMENTS**

**Hazards to Humans and Domestic Animals**

**CAUTION:** Causes moderate eye irritation. Avoid contact with eyes or clothing. Harmful if swallowed.

**Personal Protective Equipment (PPE)**

All mixers, loaders, applicators and other handlers must wear:  
 • Long-sleeved shirt,  
 • Long pants and,  
 • Shoes plus socks.

**User Safety Requirements**

Follow manufacturer's instructions for cleaning maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

**User Safety Recommendations**

- Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Users should 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.

**First Aid**

<b>If in eyes:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</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 treatment advice. <i>(cont. on next column)</i></li> </ul>

<b>First Aid (cont.)</b>	
<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 the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If on skin or on clothing:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-877-800-5556 for emergency medical treatment advice.	

**Environmental Hazards**

Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate.

This chemical (mefluidide) has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

**DIRECTIONS FOR USE**

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

Not for use on turf being grown for sale or other commercial use as sod, or for commercial seed production, or for research purposes.

**USE PRECAUTIONS AND RESTRICTIONS**

- Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.
- Do not enter or allow others to enter until sprays have dried.

Embark® 2S IVM can be incorporated into highway vegetation management programs to eliminate seedhead production and to reduce the mowing requirements. Embark® 2S IVM may be applied to bermudagrass and six species of established cool-season grasses in non-cropland sites. (See Tables 1 and 2). Embark® 2S IVM may be useful in the following noncropland areas:

- **Highway rights-of-way:** (principal, interstate, state, and county highways), interchange ramps, waysides, service areas, and unpaved roads
- **Municipal, state, and federal lands including:** airports, military installations, schools/universities, libraries, and hospitals
- **Commercial/Industrial areas including:** industrial parks, tank farms, plant sites, storage areas, fencerows, and utility rights-of-way.

Embark® 2S IVM inhibits the growth of tall fescue, Kentucky bluegrass, perennial ryegrass, smooth bromegrass, orchardgrass, and reed canarygrass and common bermudagrass. Mixed stands of these coarse textured species may respond unevenly to applications of Embark® 2S IVM and the tank mixtures. All established perennial grasses should be at least one year old.

**Spray Equipment and Mixing Instructions**

**Spray Equipment:**

Use conventional power spray equipment with bypass or mechanical agitation and fitted with a spray boom, off-center nozzles, or a spray gun.

It is essential that spray equipment is properly adjusted and calibrated to assure proper dosage and uniform spray coverage. Follow the spray equipment manufacturer's directions for cleaning, adjusting pressure and selecting appropriate nozzles.

**Spray Volumes:**

Spray volumes of 15 to 150 gallons per acre are recommended. Uniform application is essential. Avoid spray overlaps that will increase the dosage above those recommended.

**Surfactants and Spray Colorants:**

The use of a nonionic surfactant is recommended to increase the extent and consistency of the growth regulation. The suggested surfactant rate is 0.25 to 0.50% v/v or 1 to 2 quarts per 100 gallons of spray

solution. Temporary, slight discoloration of the turf may increase with the use of a surfactant.

The use of a colorant is recommended to allow the applicator to make uniform applications.

**Spray Preparation for Tank Mixtures:**

Embark® 2S IVM may be applied in combination with one or more of the specified herbicides or plant growth regulators. These tank mixtures must be used according to the most restrictive label limitations and precautions. No label dosage rate should be exceeded. Follow the labeling of each companion product for precautionary statements, directions for use, dosage rates, and application schedules. Tank mixture recommendations are for use only in states where the companion products and application site are registered.

Follow these guidelines and refer to the labeling of the companion product for further instructions.

1. Add 1/2 to 2/3 of the required amount of water into the spray tank.
2. Add the appropriate amount of the companion product (dispersible granules, ammonium salt formulations, or dimethylamine salt formulations) into the spray tank with agitation.
3. Pour the appropriate amount of Embark® 2S IVM into the spray tank.
4. Continue agitation while adding the remainder of water and add the measured amounts of nonionic surfactant and spray colorant.
5. Continue agitation throughout the spraying operation.

**Seedhead Suppression:**

The application window or timing is critical for the optimum seedhead control.

Generally, the application window for the best results will range from 2 to 3 weeks. The beginning of the application window for Embark® 2S IVM occurs in the spring after full green-up with rapid vertical growth. The end of the application window occurs approximately 2 weeks prior to the seedhead appearance or when the seedhead can be felt at the base of the stem. Applications of Embark® 2S IVM after the optimum window will result in reduced seedhead suppression.

Embark® 2S IVM must be applied prior to the seedhead appearance at the stem apex. Application of Embark® 2S IVM after the seedhead emergence will suppress only the later forming seedheads.

Inconsistencies of seedhead suppression may occur with mixed stands. Different grass species may vary in the inflorescence development and in their responses to the plant growth regulators.

Refer to Table 2 for the application rates for seedhead suppression and refer to Table 3 for recommendations appropriate for California.

**Vegetative Growth Suppression:**

Embark® 2S IVM will provide growth inhibition for 6 to 8 weeks under favorable growing conditions. Apply Embark® 2S IVM with a nonionic surfactant after full green-up of turfgrass in the spring. At the time of treatment, turf should have developed the desired appearance, the desired height, and sufficient leaf area for uptake.

Apply 24 to 32 fl. oz. (1.5 to 2.0 pints) of Embark® 2S IVM per acre with a nonionic surfactant to actively growing turf for growth suppression up to 8 weeks. If temporary discoloration of the turfgrass occurs and is objectionable, reduce the 2 pints of product rate to 1.5 pints of product per acre. Refer to Tables 1 and 2 for the recommended rates for tank mixtures applied to low maintenance turf. Refer to Table 3 for the recommendations appropriate for California.

Embark® 2S IVM may be applied more than once per season, however follow an application interval of at least 6 weeks between applications.

The maximum application rate is 4.0 pints of product per acre per application (1.0 lb. mefluidide ae per acre per application). The maximum seasonal rate is 8.0 pints of product per acre per year (2.0 lb. mefluidide ae per acre per season).

**Cultural Practices:**

**MOWING:**

- **Mowing before application:** Grass may be mowed up to two days before applying Embark® 2S IVM. Clippings and other debris should be removed before spraying. If mowing removes most of the green leaf tissue, spraying should be delayed until sufficient new growth develops to assure product absorption into green leaves.
- **Mowing after application:** For an evenly trimmed appearance grass may be mowed 3 to 7 days after Embark® 2S IVM is applied.
- **When mowing is not desired or practical:** Apply Embark® 2S IVM after full green-up in the spring, but before mowing is necessary.

**IRRIGATION AND RAINFALL:**

Optimum results may not be obtained if rainfall or overhead irrigation occurs within 8 hours following application. Do not contaminate water intended for irrigation or domestic purposes. Do not apply through any type of irrigation system. To prevent product run-off, do not apply when raining or when rain is expected within 8 hours. Do not irrigate for 8 hours after application.

**STRESSES:**

Applications of Embark® 2S IVM to turfgrass that is stressed because of high air temperatures, drought, excessive soil water, diseases, or insects may cause temporary discoloration. Management practices to promote the health and vigor of the turfgrass should be continued on the treated areas.

**PRECAUTIONS AND LIMITATIONS:**

- Turf treated with Embark® 2S IVM may appear less dense and temporarily discolored when compared with untreated, actively growing turf.
- In turfgrass renovation programs, areas treated with Embark® 2S IVM may be reseeded 3 days following application (except California where reseeding may not occur within 2 weeks).
- Do not apply to any body of water such as lakes, streams, rivers, canals, ponds, reservoirs, or bays. Also, do not apply to areas where water is present on the soil surface such as swamps, bogs, potholes, or marshes. However, it is allowable to treat seasonally dry swamps, bogs, potholes, or marshes, berms of ditches, and road shoulders.
- Do not contaminate food or feed.
- Do not feed clippings to livestock. Do not graze livestock in treated areas.
- Keep out of lakes, streams, and ponds.

**Table 1.** Application Rates for Embark® 2S IVM and tank mixtures for six cool-season turfgrasses (tall fescue, Kentucky bluegrass, perennial ryegrass, orchardgrass, smooth brome grass and reed canarygrass) established in non-cropland sites.

Product Name	Amount of Product	
	fl. oz./acre	ounces/acre
1. Embark® 2S IVM	24 to 32	—
2. Embark® 2S IVM plus Event™ Grass Growth Regulator	8 4	— —
3. Embark® 2S IVM plus Telar® Herbicide Dispersible Granule	12 to 16 —	— 0.25
4. Embark® 2S IVM plus Event™ Grass Growth Regulator plus Arsenal® Herbicide (2 lbs./gal.)	8 4 1.5	— — —
5. Embark® 2S IVM plus Arsenal® Herbicide (2 lbs./gal.)	8 2	— —
6. Embark® 2S IVM plus Escort® Herbicide Dry Flowable	8 —	— 0.125 to 0.25

**Table 2.** Application Rates for Embark® 2S IVM for common bermudagrass established in noncropland sites.

Product Name	Amount of Product	
	fl. oz./acre	ounces/acre
Embark® 2S IVM	64	—

**Table 3.** Application Rates for Embark® 2S IVM for use on roadsides and low maintenance turfgrass in California only.

Turfgrass	Amount of Product	
	pints/acre	fl. oz./acre
Kentucky bluegrass, tall fescue, perennial ryegrass, reed canarygrass	1.5	24
Common Bermudagrass	4	64
<b>Native Grasses:</b> Wild barley, red brome, riggut brome, wild oats <b>Broadleaf Vegetation:</b> Cheeseweed, sour clover, fiddleneck, redstem filaree, black mustard	2	32

### STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store in original container in a locked storage area inaccessible to children or pets.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**CONTAINER HANDLING:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available, 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.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

OR

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

### LIMITED WARRANTY AND DISCLAIMER

**IMPORTANT:** Read this LIMITED WARRANTY AND DISCLAIMER before buying or using this product. By opening and using this product, buyer and all users agree to accept the terms of this LIMITED WARRANTY AND DISCLAIMER in their entirety and without exception. If the terms are not acceptable, return this product unopened immediately to the point of purchase, and the purchase price will be refunded in full.

It is impossible to eliminate all risks inherently associated with use of this product. Damage to the treated article, ineffectiveness, or other unintended consequences can result from use of the product under abnormal conditions such as weather, presence of other materials, or the manner of use or application, etc. Such factors and conditions are beyond the control of the manufacturer, and **BY PURCHASING AND USING THIS PRODUCT THE BUYER AND ALL USERS OF THIS PRODUCT AGREE TO ACCEPT ALL SUCH RISKS.** Buyer and all users further agree to assume all risks of loss or damage from the use of the product in any manner that is not explicitly set forth in or that is inconsistent with label instructions, warnings and cautions.

The manufacturer warrants only that this product conforms to the chemical description given on the label, and that the product is reasonably suited for the labeled use when applied according to the Directions for Use, subject to the inherent risks described below. **TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE MANUFACTURER NEITHER MAKES NOR INTENDS ANY OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY EXPRESSLY DISCLAIMED.**

**TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF BUYER AND ALL USERS OF THIS PRODUCT, AND THE EXCLUSIVE LIABILITY OF THE MANUFACTURER, FOR ANY AND ALL LOSSES, DAMAGES, OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER OR NOT BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, SHALL BE LIMITED, AT THE MANUFACTURER'S OPTION, TO REPLACEMENT OF OR THE REPAYMENT OF THE PURCHASE PRICE FOR THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, IN NO CASE SHALL THE MANUFACTURER BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.** The Manufacturer must be promptly notified in writing of any claims, whether based in contract, tort, negligence, strict liability, or otherwise, to be eligible to receive either remedy stated above.

The terms of this LIMITED WARRANTY AND DISCLAIMER cannot be varied by any written or verbal statements or agreements at the point of sale or elsewhere. No employee or agent of the manufacturer or seller is authorized to vary or exceed the terms of this Limited Warranty and Disclaimer in any manner.

ATTENTION: This product contains a chemical known to the state of California to cause cancer.

EMBARC® is a registered trademark of PBI-GORDON CORPORATION.

ARSENAL® is a registered trademark of BASF.

ESCORT® and TELAR® are registered trademarks of E.I. DUPONT DE NEMOURS AND CO. INC.

EVENT™ is a trademark of BASF.

686/3-2013 AP020813  
EPA REG. NO. 2217-759



MANUFACTURED BY  
PBI/GORDON CORPORATION  
1217 WEST 12TH STREET  
KANSAS CITY, MISSOURI 64101  
[www.pbigordon.com](http://www.pbigordon.com)

ATTENTION: This specimen label is provided for informational use only. This pesticide product may not yet be available for sale in your state or area. The information found in this label may differ from the information found on the product label you are using. Always follow the instructions for use and precautions on the label of the pesticide you are using.