

2217-766

06-24-2010

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U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs  
Registration Division (7504P)  
Ariel Rios Building  
1200 Pennsylvania Ave., NW  
Washington, D.C. 20460

EPA Reg. Number:

2217-766

Date of Issuance:

JUN 24 2010

NOTICE OF PESTICIDE:

Registration  
 Reregistration  
(under FIFRA, as amended)

Term of Issuance:

Name of Pesticide Product:

Embark 2-L Plant Growth Regulator

Name and Address of Registrant (include ZIP Code):

PBI Gordon Corporation  
1217 West 12<sup>th</sup> Street  
Kansas City, Missouri 6410

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act. Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is reregistered in accordance with FIFRA provided that you:

- 1) Submit and/or cite all data required for registration/reregistration review of your product when the Agency requires all registrants of similar products to submit data.

Signature of Approving Official:

Erik Kraft  
Acting Product Manager 20  
Fungicide Branch  
Registration Division (7504P)

Date:

JUN 24 2010

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- 2) To the label add “Not for use on turf being grown for sale or other commercial use such as sod, or for commercial seed production, or for research purposes.”
  - 3) The text “User should remove clothing PPE immediately if pesticide gets inside” appearing in the User Safety Recommendations section must be revised per the RED to read “User should remove clothing/PPE immediately if pesticide gets inside.”
- Note: The text “Wash the outside of gloves before removing” may be deleted from the User Safety Recommendation statements because gloves are not required for handlers.
- 4) Change “inert ingredients” to “other ingredients”, on page 1.
  - 5) No Hazards to Humans and Domestic Animals and First Aid Statements are needed, per the acute tox. review.
  - 6) On page 2, delete “General” from “General Use Precautions and Restrictions” and change “general information” to “product information”.
  - 7) You must specify the use sites on page 2, “recommended for use in public, commercial, and industrial areas” is not acceptable.
  - 8) Add “to the extent consistent with applicable law” in front of “it is impossible to eliminate all risks” and “the exclusive remedy of buyer and all users of this product”, on page 6.

You must submit the results of the storage stability and corrosion characteristics studies within 12 months of the date of this notice.

A stamped copy of the label is enclosed for your records. You must submit one copy of the final printed label before you release the product for shipment. Products shipped after 12 months from the date of this letter or the next round of printing must bear the new revised label. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA. Your release for shipment of the product constitutes acceptance of these conditions. This label supersedes all other previously accepted labels. If you have any questions please call Erik Kraft at 703-308-9358 or email at Kraft.Erik@epa.gov.

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# EMBARK® 2-L PLANT GROWTH REGULATOR

## EPA Reg. No. 2217-766

### ACTIVE INGREDIENT:

**Potassium salt of mefluidide* (N-[2,4-dimethyl-5-[[trifluoromethyl)-sulfonyl]amino]phenyl]acetamide) .....	24.0%
INERT INGREDIENTS: .....	76.0%
TOTAL .....	100.0%

\*U.S. Patent Nos. 3,639,474; 3,894,078; 4,013,444.

\*\*Equivalent to 2.0 lb (21% by weight) (N-[2,4-dimethyl-5-[[trifluoromethyl)-sulfonyl]amino]phenyl]acetamide) per gallon.

EMBARK® is a registered trademark of PBI/GORDON CORPORATION for Mefluidide.

**ACCEPTED  
with COMMENTS  
In EPA Letter Dated:  
JUN 24 2010**

**KEEP OUT OF REACH OF CHILDREN**

### CAUTION

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.

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

2217-766

## 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)

Some materials that are chemical-resistant to this product are natural rubber. If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart.

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.



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<b>User Safety Recommendations</b>	
<ul style="list-style-type: none"> <li>• Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.</li> <li>• Users should remove clothing PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.</li> <li>• 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.</li> </ul>	

<b>First Aid</b>	
<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.</li> </ul>
<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.

**GENERAL 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.

**GENERAL INFORMATION:**

Embark® 2-L Plant Growth Regulator (PGR) is recommended for use in public, commercial, and industrial areas for regulating the growth of various species of turf grasses and broadleaf vegetation. Embark® 2-L PGR reduces mowing requirements for up to 8 weeks following treatment by regulating growth and suppressing seedhead formation.

**SPRAY EQUIPMENT:**

Embark® 2-L PGR may be applied to localized areas with small spray units, such as backpack sprayers, or to larger areas with conventional spray equipment. To be assured of proper dosage and uniform spray coverage it is essential that spray equipment is properly calibrated. When calibrating with small spray equipment, a trial application is recommended over a small measured turf area.

**MIXING:**

Pour the required amount of Embark® 2-L PGR into the spray tank containing approximately one-half the required amount of water. Fill the tank as required with water and spray as recommended. Minimal agitation in the spray tank is necessary.

**RINSING:**

Triple rinse the Embark® 2-L PGR container with water and pour the rinse solution into the spray tank prior to spraying. Do not use spray equipment for other purposes until thoroughly cleaned. Flush spray equipment with plenty of water immediately after use to avoid contamination of later sprays.

**BROADCAST APPLICATIONS:**

Apply Embark® 2-L PGR uniformly to green, actively growing turf. At the time of treatment, turf should be at the height which is desired to be maintained during the period of growth regulation. For season long seedhead suppression of cool season grasses apply no later than when the seedhead can be felt at the base of the stem. (Approximately 2 weeks prior to seedhead appearance.)

Do not apply to closely mowed areas where most of the green growth has been cut. Turf may be mowed up to 1 day before or 3 to 7 days after application. Remove all grass clippings and leaves prior to treatment.

Avoid spray overlaps that will increase dosage above those recommended.

Embark® 2-L PGR may be applied twice per season on Kentucky bluegrass, fescues, and bermudagrass; however, an interval of at least 6 weeks should occur before the second application. Use the higher rate of application where the greatest growth regulation and seedhead suppression are desired.

**USE AREAS:**

Embark® 2-L PGR applied uniformly as a broadcast spray to turf will reduce mowing requirements for up to 8 weeks in the following commercial and public areas:

- **Commercial-Industrial:** Highway Right-of-Ways, Utility Right-of-Ways, Buildings, Industrial Parks, Tank Farms, Airports.
- **Public:** Schools, Libraries, Hospitals, Cemeteries, Golf Courses, Parks, Roads and Walkways.

**Tank Mixing with 2,4-D or Mecoprop (MCP):**

Embark® 2-L PGR may be tank mixed with up to 1.5 lb active ingredient per acre of 2,4-D in low volatile ester and amine salt formulations and MCP in amine salt formulations. Follow the instructions and precautionary statements on the 2,4-D and MCP product labels.

APPLICATION RATE TABLE		
USE ON	AMOUNTS OF EMBARK® 2-L PGR	
	Per Acre in 15 to 50 Gallons of Water	Per 10,000 Square Feet in 3 to 30 Gallons of Water
<b>TURFGRASSES</b>		
Kentucky and Annual Bluegrass, Fescues (Tall, Red, and Chewings), Perennial Ryegrass, Timothy, Reed Canarygrass, Quackgrass, Kikuyugrass, Centipedegrass,	1 to 2 pints	4 to 8 fl.oz. (8 to 16 Tbs.)
Crested Wheatgrass, Orchardgrass, Smooth Brome	1.5 to 2 pints	6 to 8 fl.oz. (12 to 16 Tbs.)
St. Augustinegrass	1 pint	4 fl.oz. (8 Tbs.)
Common Bermudagrass	4 pints	16 fl.oz. (32 Tbs.)
<b>CALIFORNIA NATIVE GRASSES &amp; BROADLEAF VEGETATION</b>		
<b>GRASSES:</b> Wild Barley, Red Brome, Rippgut Brome, Wild Oats	2 to 4 pints	8 to 16 fl.oz. (16 to 32 Tbs.)
<b>BROADLEAVES:</b> Ice Plant, Algerian Ivy, Cheeseweed, Sour Clover, Fiddleneck, Redstem Filaree, Black Mustard	2 to 4 pints	8 to 16 fl.oz. (16 to 32 Tbs.)

**NOTE:** In comparison with untreated, actively growing turf areas, treated turf which is being maintained in height by Embark® 2-L PGR may appear less dense and temporarily discolored following application. However, with increasing time turf may appear darker green than untreated areas.

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).

**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.

**LIMITATIONS:**

- Embark® 2-L PGR should not be applied to golf greens.
- Do not apply Embark® 2-L PGR to turf areas within 4 growing months after seeding and do not reseed within 2 weeks following application.
- 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.

**Spray Drift Requirements**

**Wind direction**

Only apply this product if the wind direction favors on target deposition.

**Wind Speed**

Do not apply when the wind velocity exceeds 15 mph.

**Temperature Inversions**

Do not make ground spray applications into temperature inversions. Inversions are characterized by stable air and increasing temperatures with height above the ground. Mist or fog may indicate the

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presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing a smoke layer near the ground surface.

**Droplet Size**

Use only Medium or coarser spray nozzle (ASAE S572)

**Additional Requirements for Groundboom Applications**

All ground boom application equipment must be properly maintained and calibrated using appropriate carriers or surrogates. Do not apply with a nozzle height greater than 4 feet above the ground or foliage canopy.

**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.

**[For Plastic Containers – Nonrefillable with capacities equal to or less than 5 gallons:]**

**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.

[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.]

**[For Plastic Containers – Nonrefillable with capacities greater than 5 gallons:]**

**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. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

[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.]

**[For Refillable Containers:]**

**CONTAINER HANDLING:** Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Container cleaning: Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

**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.**

**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.



## **APPENDIX**

**1. Statements which may appear on different label components depending on packaging configuration.**

- See next panel for additional Precautionary Statements and First Aid
- Net Contents: \_\_\_\_\_
- EPA Est. No. \_\_\_\_\_

## **DOCUMENT CONTROL INFORMATION**

**1. Unique Label Identifier:** 002217-00766.20090410.amend-proposed.doc

**2. Reason for Issue:** Various changes pertaining to re-registration. Re-format label.