

[CLICK HERE TO JUMP TO USE DIRECTIONS](#)



## Turf and Ornamental Growth Regulator

### ACTIVE INGREDIENT:

Diethanolamine salt of mefluidide (N-[2,4-dimethyl-5-  
[[trifluoromethyl]-sulfonyl]amino]phenyl]acetamide) . . . . . 3.2%

**OTHER INGREDIENTS:** . . . . . 96.8%  
TOTAL 100.0%

Equivalent to 0.2 lbs. (2.4% by weight) (N-[2,4-dimethyl-5-[[trifluoromethyl]-sulfonyl]amino]phenyl]acetamide) per gallon.

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

## KEEP OUT OF REACH OF CHILDREN

# CAUTION

See below for additional Precautionary Statements and First Aid.



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

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION:** Causes eye irritation. Harmful if inhaled, swallowed or absorbed through the skin. Avoid breathing spray mist. Avoid contact with skin, eyes or clothing. Wear protective clothing including rubber gloves when handling.

### 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.</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 a poison control center or doctor.</li> <li>Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If on skin or 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 lakes, ponds, or streams. Do not contaminate water when disposing of equipment washwaters. For terrestrial uses, 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 allow spray to drift onto nontarget crops or vegetation.

## DIRECTIONS FOR USE

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

## STORAGE AND DISPOSAL

**PESTICIDE STORAGE:** Do not contaminate water, food, or feed by storage or disposal.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or 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.

**RECOMMENDED USE AREAS and BENEFITS:** EMBARK® Turf and Ornamental Growth Regulator may be applied to cool season and warm season turfgrass in commercial, public and noncropland areas such as:

- Commercial lawns defined as areas around properties or facilities providing a service to public or private organizations including, but not limited to office buildings, hospitals, nursing homes, schools, universities, museums, libraries, sport facilities (golf courses), recreation areas, and athletic fields.
- Residential lawns, defined as areas associated with the household or home life including, but not limited to, apartment complexes, condominiums, and patient care areas of nursing homes, mental institutions, or convalescent homes.
- Noncropland areas defined as vacant lots, road and curbside grass, fencelines, steep banks, rocky or rough terrain, and other fringe turf areas.
- Agricultural premises such as around farm buildings, storage sheds, implement storage areas, and roadsides.

EMBARK® suppresses seedhead formation, decreases the amount of clippings, and reduces the mowing requirements for up to 4 weeks.

## SPRAY EQUIPMENT AND MIXING INSTRUCTIONS

**EQUIPMENT:** Use conventional power spray equipment fitted with a spray boom, off-center nozzles, or spray gun. Hose-end sprayers and backpack sprayers are appropriate for localized spot treatments or broadcast treatments on larger turfgrass areas. Hand pump and backpack sprayers are suitable for edging or spot treatments.

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

### MIXING:

- Pour the required amount of EMBARK® into the spray tank containing approximately one-half the required amount of water.
- Gordon's Professional Spray Colorant is recommended to ensure the uniformity of the application. Refer to instructions for this colorant for the proper concentration.
- Fill the tank as required with water and spray as recommended.

**SURFACTANTS:** For low-maintenance turf only, 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.

**RINSING:** Triple rinse the EMBARK® 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 water and Gordon's Spray Tank Cleaner immediately after use and dispose the rinsate by approved procedures.

## RECOMMENDATIONS FOR GROWTH SUPPRESSION

**WHEN TO USE:** Apply EMBARK® uniformly to green, actively growing grass. At the time of treatment, turf should have developed the desired appearance, the desired height, and sufficient foliage for uptake. 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 two weeks prior to seedhead appearance).

**DOSAGE RATES:** Rate recommendations with broadcast applications for cool season and warm season turfgrass are presented in Table 1.

### MOWING AND IRRIGATION:

**Mowing before application:** Grass may be mowed up to two days before applying EMBARK®. 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® is applied.

Treated areas can be irrigated within 24 hours after application. Optimum results may not be obtained if rainfall or overhead irrigation occurs within 8 hours following application. If rain occurs within 8 hours, dilution of spray may occur.

Species	Amount of EMBARK®	
	Pints/Acre	Fl. Ozs./1000 Sq. Ft.
I. Cool Season Turf: Kentucky Bluegrass Perennial Ryegrass Tall Fescue Red Fescue (Chewings Fescue, Slender Creeping Fescue, Spreading Fescue)	5.0	1.8
Mixtures	See Footnote 1.	See Footnote 1.
Annual Bluegrass/ <i>Poa annua</i>		
Single Application	2.0-3.0	0.75-1.1
Multiple Applications – at 2 week intervals	—	0.5
at 4 week intervals	—	0.75-1.0
II. Warm Season Turf: St. Augustinegrass	5.0	1.8
Hybrid Bermudagrass (Tifgreen, Tifway, Tifdwarf, Tifway 419, and Tifgreen 328)	20.0	7.4
Centipedegrass	20.0	7.4
Zoysiagrass	15 to 20.0	5.5 to 7.4

Footnote 1: **For mixed species of turfgrass:** Differential responses of mixed turf species may occur with EMBARK® and may result in irregular heights or a non-uniform appearance. Determine the predominant species in the mixed turf and follow the appropriate application instructions for the species that is most commonly found.

**SPRAY VOLUMES:** Spray volumes of 20 to 175 gallons per acre or 0.5 to 4.0 gallons per 1000 square feet are recommended. Uniform applications are essential. Avoid spray overlaps that will increase the dosage above those recommended.

**MULTIPLE APPLICATIONS FOR COOL SEASON AND WARM SEASON TURFGRASS:** EMBARK® may be applied more than once per season, however, wait at least 6 weeks between applications. For fall applications, apply at least 1 month before winter dormancy. In turfgrass renovation programs, areas treated with EMBARK® may be reseeded 3 days following application (except California where reseeding may not occur within 2 weeks).

**TURF COLOR AND NITROGEN-IRON COMBINATIONS:** Turf treated with EMBARK® may appear less dense and temporarily discolored when compared with untreated turf. However, turf quality and color may be increased when compared to the untreated areas after the growth regulation period.

Turf color and quality during week 1 through week 3 of the growth regulation period may be improved with an application of FeRRROMEAC® AC Liquid Iron. Schedule the application of FeRRROMEAC® AC Liquid Iron within 10 days before the application of EMBARK®. Refer to FeRRROMEAC® AC Liquid Iron label for the fertilizer rate recommendations.

**HERBICIDE COMBINATIONS FOR TURFGRASS:** EMBARK® is a plant growth regulator and will not provide weed control. EMBARK® may be applied with a broadleaf herbicide such as TRIMEC® CLASSIC BRAND BROADLEAF HERBICIDE, SUPER TRIMEC® BROADLEAF HERBICIDE, TRIMEC® SOUTHERN BROADLEAF HERBICIDE, and other herbicides EPA-registered for use in turfgrass. It is essential to follow label directions exactly for both the EMBARK® and the broadleaf herbicide used.

**ANNUAL BLUEGRASS/*Poa annua* SEEDHEAD SUPPRESSION BENTGRASS (Golf Course Fairways):**

Apply EMBARK® after uniform green-up but before the first appearance of *Poa annua* seedheads (approximately two weeks prior to *Poa annua* seedhead appearance). Applications after the first seedhead appearance will suppress only seedheads which have not emerged. Seedheads that have emerged will not be controlled.

**Pre-Treatment Turf Management:**

Turf color and quality during week 1 through week 3 of the growth

regulation period may be improved with an application of FeRRROMEAC® AC Liquid Iron. Schedule the application of FeRRROMEAC® AC Liquid Iron within 10 days before the application of EMBARK®. Refer to FeRRROMEAC® AC Liquid Iron label for the fertilizer rate recommendations. Applications at the rate of 3 fl. oz./1,000 square feet FeRRROMEAC® AC Liquid Iron are often adequate.

Optimum seedhead control may not be obtained if rainfall or overhead irrigation occurs within 8 hours following application.

**Single Application Program:** Apply EMBARK® to fairway height (approximately 3/8 to 1/2 inch) bentgrass at a rate of 2.0-3.0 pts/acre (0.75 to 1.1 fl. oz./1,000 square feet). The effect of EMBARK® is dependent upon the timing and rate of application.

**Multiple Application Program:** Apply EMBARK® to fairway height (approximately 3/8 to 1/2 inch) bentgrass at a rate of 0.5 fl. oz./1,000 square feet at 2 week intervals or 0.75 to 1.0 fl. oz./1,000 square feet at 4 week intervals. The effect of EMBARK® is dependent upon the timing and rate of application.

**Note:** Turfgrass treated with EMBARK® may appear temporarily discolored. This program is not recommended unless some discoloration of bentgrass and *Poa annua* can be tolerated. This color change can appear 1 week after treatment and may persist an additional 2 weeks. Treated areas should continue to receive management care designed to encourage the growth of a healthy vigorous turf.

To avoid turf injury, use only on turfgrass that is reasonably free of stress from diseases, insects, excess heat, cold or frost, drought or excess rainfall/irrigation, shaded areas, low soil pH, nematodes, improper mowing or improper applications of fertilizer and pesticides. Injury can occur if this product is applied under any of these or other stress conditions. Under any of these stress conditions, any turf damage caused by the use of this product is beyond the control of PBI/Gordon Corporation and all risk is assumed by the buyer and/or user.

**EDGING WITH PUMP TYPE SPRAYERS:** EMBARK® may be used for edging grass when uniformly applied with pump type sprayers. The benefits of EMBARK® will be extended trimming intervals, reduced time and labor associated with yard maintenance, and reduced growth in areas difficult to trim.

This edging treatment can be used as a substitute for trimming in areas including:

- along sidewalks, driveways, parking areas, road and curbside grass
- around trees, shrubs, ornamental plantings, and under fencelines or guardrails
- around rocks, signposts, or fringe areas
- around buildings, patios, houses, mobile homes, and areas associated with household or home life
- and other turfgrass areas requiring hand or mechanical trimming.

**WHEN TO USE:** Generally, begin applications in the spring after full green-up and continue applications until early fall.

At the time of application, the turfgrass should have developed the desired appearance, the desired height, and sufficient foliage for uptake. Avoid scalping for all turf species. If mowing or trimming removes most of the green leaf tissue, spraying should be delayed until sufficient new growth develops to assure product absorption into green leaves. Allow one or two days after mowing or trimming before applying EMBARK®. Clippings and other debris should be removed before spraying.

Species	Amount of EMBARK®*	
	Fl. Oz./1000 Sq. Ft.	
I. Cool Season Turf		
Kentucky Bluegrass	4	
Perennial Ryegrass	4	
Tall Fescue	4	
Red Fescue (Chewings Fescue, Slender Creeping Fescue, Spreading Fescue)	4	
II. Warm Season Turf		
Common Bermudagrass	16	
Hybrid Bermudagrass	8	
St. Augustinegrass	4	
Centipedegrass	8	
Zoysiagrass	8	

\*Apply the recommended amount of product in a 12-inch band for 1000 linear feet. Or, apply the recommended amount of product in a 6-inch band for 2000 linear feet.

## FIELD MARKING PAINTS:

**FIELD MARKINGS:** Temporary field markings can be achieved by applying EMBARK® with line marking paints.

**WHERE TO USE:** Sport stadiums, sport fields (schools, colleges/universities, parks, professional facilities), and athletic fields (football, baseball, soccer, lacrosse, softball, others).

## TURFGRASS:

**Cool Season Species:** Including Kentucky bluegrass, perennial ryegrass, and fescues.

**Warm Season Species:** Including bermudagrass and St. Augustinegrass. This product is not recommended for bahiagrass.

**EQUIPMENT:** Powered strippers/sprayers, walk behind strippers, or wet line paint applicators, capable of delivering lines (bands) 2 to 6 inches wide.

**MATERIALS:** Water based or latex formulations of paint. Line marking paints should comply with the requirements of the appropriate governing body (eg. National Collegiate Athletic Association (NCAA), State High School Athletic Association, or others).

**APPLICATION SCHEDULE:** Generally, begin applications after full green-up in the spring and apply during active growth until early fall. Applications to turfgrass weakened by drought, insects, or disease may increase the potential for discoloration or injury.

**NUMBER OF APPLICATIONS:** Top quality water based latex paints may remain visible for one season provided that heavy use areas are resprayed or touched-up periodically. Generally, one application of EMBARK® with the line marking paint is recommended per season.

**APPLICATION RATE:** The amount of paint per unit area to assure complete opacity and color of the lines should be recommended by the manufacturer. Our recommendations for plant growth regulation with EMBARK® are based upon applying one gallon of marking paint per 1,000 square feet.

**For Cool Season Turfgrass:** Apply 2 to 4 fluid ounces of EMBARK® per one gallon of marking paint to treat 1,000 square feet of line surface area.

**For Warm Season Turfgrass:** Apply 2 to 16 fluid ounces of EMBARK® per one gallon of marking paint to treat 1,000 square feet of line surface area.

Refer to Table 3 for specific rate recommendations.

Species	AMOUNT TO USE
	Fl. Ozs. of EMBARK® per 1 Gallon of Marking Paint per 1,000 Sq. Ft.
<b>Cool Season Turf</b>	
Kentucky Bluegrass	2-4 fl. oz.
Perennial Ryegrass	2-4 fl. oz.
Fescues	2-4 fl. oz.
<b>Warm Season Turf</b>	
Common Bermudagrass	15-16 fl. oz.
Hybrid Bermudagrass	6-8 fl. oz.
St. Augustinegrass	2-4 fl. oz.

## OVERSEEDING ESTABLISHED COOL SEASON TURFGRASS

Overseeding established turf with cool season grass can improve the turf density and restore the aesthetic quality of turf. EMBARK® can increase the success of overseeding by suppressing the growth of the existing turfgrass and by reducing the frequency of mowing by 50 percent. The reduction of mowing prevents damage to the newly established seedlings. Refer to Table 4.

Season	Application Window (Days before Seeding)	Dosage Rate	Comments
I. Spring:	3 to 14 days	See Table 1.	Aeration and seedbed preparation should be completed after the application of EMBARK®.
II. Fall:	3 to 14 days	See Table 1.	In California, the application window is 14 days before seeding for spring and fall applications.

## OVERSEEDING BERMUDAGRASS TURF

Hybrid bermudagrass is overseeded with perennial ryegrass, annual ryegrass, and other cool season grasses during the fall to enhance the appearance during winter. EMBARK® can reduce the persistence of the cool season grasses during spring and can improve the hybrid bermudagrass recovery during the transition period.

Apply 5.0 pints of product per acre to the cool season grasses used for overseeding during early spring or prior to the recovery of the dormant bermudagrass.

## LIMITATIONS FOR TURFGRASS

Do not use in areas where there is heavy foot traffic. Do not apply to stressed, diseased, or unhealthy grass.

Optimum results may not be obtained if rainfall or overhead irrigation occurs within 8 hours following application. Do not wash foliage for at least 24 hours. If rain occurs within 8 hours, dilution of spray may occur.

Avoid spray drift onto nontarget foliage. Avoid drift onto food crops. Do not allow animals to graze on treated areas.

Do not apply EMBARK® to turf areas within four growing months after seeding and do not reseed within 3 days following application (except California where reseeding may not occur within 2 weeks).

Do not apply this product through any type of irrigation system.

## ORNAMENTALS

EMBARK® may be applied to specified ornamentals and groundcovers in commercial, residential, and public areas.

EMBARK® reduces pruning and trimming for up to 8 weeks by regulating growth and/or inhibiting flower formation.

### TIMING:

Applications should be made to healthy, actively growing plants 7 to 14 days after pruning or trimming. Once the plant resumes active growth, pruning and repeat applications may be made.

For flower inhibition of ornamental olive trees, apply EMBARK® to foliage as a full cover spray at prebloom (tight bud stage) through the 5% bloom stage.

### SPRAY VOLUME:

For ornamentals, apply EMBARK® to foliage as a full cover spray to the drip point. Spray penetration of dense foliage and thorough coverage of all parts of shrubs, trees, and ornamentals are essential. The spray volumes will vary according to tree/shrub size, but trees 20' to 30' in height will require 10 to 15 gallons of spray solution per tree.

Species	Amount of EMBARK® Per Gallon of Water
Acacia, Abelia, African Daisy, Algerian Ivy, Barberry, Bottlebrush, Bougainvillea, Boxwood ( <i>Buxus sp.</i> ), Brazilian Pepper Tree, Burford Holly, Capeweed, Carob, Crepe Myrtle, Elaeagnus, English Ivy, Euonymus, Ficus, Hibiscus, Holly ( <i>Ilex sp.</i> ), Iceplant, Jasmine, Laurel, Melaleuca, Nandina, Oleander, Osmanthus, Photinia, Pittosporum, Podocarpus, Privet ( <i>Ligustrum sp.</i> ), Pyracantha, Raphiolepis, Viburnum, Xylosma, Yaupon	6½ fl. ozs./gal. of water
Ornamental Olive Trees*	1½ fl. ozs./gal. of water

\*For flower inhibition of olive trees, apply EMBARK® to foliage as a full cover spray at prebloom (tight bud stage) through the 5% bloom stage.

## LIMITATIONS FOR ORNAMENTALS:

Do not apply to plants grown in containers. Optimum results may not be obtained if rainfall or overhead irrigation occurs within 8 hours following application. Do not wash foliage for at least 24 hours. If rain occurs within 8 hours, dilution of spray may occur. Avoid spray drift onto nontarget foliage. Avoid drift onto food crops. Do not allow animals to graze on treated areas. Do not apply this product through any type of irrigation system.

## LIMITED WARRANTY AND DISCLAIMER

The manufacturer warrants only that the chemical composition of this product conforms to the ingredient statement given on the label, and that the product is reasonably suited for the labeled use when applied according to the Directions for Use.

**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 EXPRESSLY DISCLAIMED.** This limited warranty does not extend to the use of the product inconsistent with label instructions, warnings or cautions, or to use of the product under abnormal conditions such as drought, excessive rainfall, tornadoes, hurricanes, etc. These factors are beyond the control of the manufacturer or the seller. Any damages arising from a breach of the manufacturer's warranty shall be limited to direct damages, and shall not include indirect or consequential damages such as loss of profits or values, except as otherwise provided by law.

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

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