

CLICK HERE TO JUMP TO USE DIRECTIONS

# Embark<sup>®</sup> 2-S

## Plant Growth Regulator

### Reduces Frequency of Mowing and Trimming of Certain Grasses and Ornamentals.

**ACTIVE INGREDIENT:**

Diethanolamine salt of mefluidide (N-[2,4-dimethyl-5-  
[[trifluoromethyl)sulfonyl]amino]phenyl]acetamide) . . . . . 28.0%

**OTHER INGREDIENTS:** . . . . . 72.0%  
100.0%

Equivalent to 2.0 lbs. mefluidide acid equivalent (N-[2,4-dimethyl-5-  
[[trifluoromethyl)sulfonyl]amino]phenyl]acetamide) per gallon or 21% by weight.  
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,  
First Aid and Full Directions for Use.



**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 the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>

(cont. on next column)

### FIRST AID (cont.)

<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 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 washwater. 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.

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

### STORAGE & 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.

EMBARC 2-S Plant Growth Regulator (PGR) may be applied to various species of turfgrass, groundcovers, ornamental shrubs and trees in public, commercial, or industrial areas for reducing the frequency of mowing and trimming.

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

**Spray Equipment:**

The following spray equipment is suitable for:

**Ornamentals and Groundcovers:** Use a power sprayer equipped with hand-held spray gun or vehicular-mounted equipment that will deliver sufficient spray to penetrate dense foliage and provide thorough coverage of all parts of shrubs or plants.

**Turfgrasses and Low Maintenance Grasses:** Use conventional power spray equipment fitted with a spray boom, off-center nozzles, or spray gun. Hand pump sprayers are suitable for edging or spot treatments.

**Spray Preparation:**

Pour the required amount of EMBARK 2-S PGR into the spray tank containing approximately one-half (1/2) the required amount of water. Fill the tank as required with water and spray as recommended. Minimal agitation in the spray tank is necessary.

**Calibration:**

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.

**Rinsing:**

Triple rinse the EMBARK 2-S 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.

### TURFGRASS

**Use Sites:**

EMBARC 2-S PGR may be applied to specified turfgrasses in commercial and public areas such as:

- **COMMERCIAL-INDUSTRIAL AREAS:** Highway rights-of-way, utility rights-of-way, buildings, industrial parks, tank farms, airports.
- **PUBLIC AREAS:** Schools, libraries, hospitals, cemeteries, golf courses (except greens), parks, roads, walkways, condominiums and apartment complexes.

• **UNCULTIVATED AGRICULTURAL AREAS:** Around farm buildings, storage sheds, implement storage sheds, implement storage areas, and roadsides.

**Mowing:**

**When mowing after application:** For an evenly trimmed appearance grass may be mowed 3-7 days after EMBARK 2-S PGR is applied.

**When mowing before application:** Grass may be mowed up to two days before applying EMBARK 2-S PGR. 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.

**When mowing is not desired or practical:** Apply EMBARK 2-S PGR in the spring, after greenup, but before mowing is necessary, thus avoiding mowing until growth regulation wears off.

**Tank Mixing with Herbicides:**

EMBARK 2-S PGR may be tank mixed with one of the following herbicides to control broadleaf weeds:

Herbicides	Maximum Rate
TRIMEC® Classic Brand Broadleaf Herbicide	4 pints of product/acre
2,4-D amine salt formulations	2 lbs. acid equivalent/acre
MCPP amine salt formulations	2 lbs. acid equivalent/acre

**Roadside, Low Maintenance Grasses and Uncultivated Agricultural Areas:**

Maximum benefits, including season-long seedhead suppression of cool-season grasses, can be attained by applying 2 pints of EMBARK 2-S PGR per acre with surfactant after uniform grass greenup until approximately 2 weeks before seedhead appearance. EMBARK 2-S PGR applications will give vegetative growth suppression for up to 8 weeks; however, a mowing will be necessary to eliminate escape seedheads which have not emerged. If temporary discoloration of turf occurs and is objectionable, reduce the 2 pint rate to 1½ pints/acre (See Tables 1 and 2).

For roadside and low maintenance turf in California, follow the recommended rates according to **Table 2**.

**Surfactants:**

The use of a nonionic surfactant (except Calif.) is recommended to increase the extent and consistency of turfgrass regulation on low maintenance turf only. The recommended surfactant rate is 0.25 to 0.5% V/V (1 to 2 quarts/100 gallons spray solution). Temporary, slight discoloration of turf may increase with the use of a surfactant.

**Limitations on Turfgrass:**

Do not apply EMBARK 2-S PGR to golf greens. Do not apply to turf areas within 4 growing months after seeding and do not reseed within 3 days following application (except Calif. where reseeding may not occur within 2 weeks). Turf treated with EMBARK 2-S PGR may appear less dense and temporarily discolored when compared with untreated, actively growing turf. However, turf may appear darker green than untreated areas with time. Optimum results may not be obtained if rainfall or overhead irrigation occurs within 8 hours following application. Do not allow animals to graze on treated areas. Do not apply this product through any type of irrigation system

**Cultural Tips:**

EMBARK 2-S PGR, applied to turfgrass, reduces mowing requirements for 6 weeks following treatment by regulating growth and preventing seedhead formation. Apply EMBARK 2-S PGR uniformly to green, actively growing turf. 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. Remove excessive grass clippings and leaves prior to treatment. Avoid spray overlaps that will increase dosage above those recommended. EMBARK 2-S PGR may be applied more than once per season, however, wait at least 6 weeks between applications. In turfgrass renovation programs, areas treated with EMBARK 2-S PGR may be reseeded 3 days following application (except Calif. where reseeding may not occur within 2 weeks).

Species	Application Rates of Embark 2S		Remarks
	Per Acre in 15-150 Gals./Water*	Fl. Oz. Per 1,000 Sq. Ft.*	
Annual Bluegrass** (Poa annua) (seedhead suppression only)	½ pint	⅓ fl. oz.	For seedhead suppression only apply after uniform greenup but before the first appearance of seedheads. Applications after first seedhead appearance will suppress seedheads which have not emerged.
Kentucky and Annual Bluegrass Tall, Red and Chewings Fescue Perennial Ryegrass Timothy Reed Canarygrass Quackgrass Kikuyugrass Crested Wheatgrass** Orchardgrass** Smooth Bromegrass** Centipedegrass	1½ pints	⅓ fl. oz.	For those grasses recommended at the 1½ pint/acre rate a slightly longer period of growth regulation can be attained with a 2 pint/acre rate. If temporary discoloration of turf occurs and is objectionable reduce the rate from 1½ pint/acre to 1 pint/acre.
St. Augustinegrass	1 pint	⅓ fl. oz.	
Common Bermudagrass	4 pints	1½ fl. oz.	

\* The amount of water used to give adequate and uniform spray coverage is dependent on the type of spray equipment used.  
 \*\* Except California.

Species	Application Rates of Embark 2S		Remarks
	Per Acre in 15-150 Gals./Water*	Fl. Oz. Per 1,000 Sq. Ft.*	
Kentucky and Annual Bluegrass Tall, Red and Chewings Fescue Perennial Ryegrass Timothy Reed Canarygrass Quackgrass Centipedegrass Kikuyugrass	1½ pints	⅓ fl. oz.	For grasses recommended at the 1½ pint/acre rate, reduce the rate to 1 pint/acre if temporary discoloration of turf occurs and is objectionable.
St. Augustinegrass	1 pint	⅓ fl. oz.	
Common Bermudagrass	4 pints	1½ fl. oz.	In turfgrass renovation programs, areas treated with EMBARK 2-S PGR may be reseeded 2 weeks following application.
<b>Native Grass and Broadleaf Vegetation</b>  <b>Grasses:</b> Wild Barley, Red Brome, Wild Oats <b>Broadleaves:</b> Cheeseweed, Sour Clover, Fiddleneck, Redstem Filaree, Black Mustard	2 pints	⅓ fl. oz.	For native grasses and broadleaf vegetation, areas with high soil fertility may require up to 4 pints/acre.

\* The amount of water used to give adequate and uniform spray coverage is dependent on the type of spray equipment used.

**ORNAMENTALS AND GROUNDCOVERS**

**Use Sites:**

EMBARK 2-S PGR may be applied to specified ornamentals and groundcovers in commercial and public areas such as:

- **COMMERCIAL-INDUSTRIAL AREAS:** Highway rights-of-way, utility rights-of-way, buildings, industrial parks, tank farms, airports.
- **PUBLIC AREAS:** Schools, libraries, hospitals, cemeteries, golf courses, parks, roads, walkways, condominiums, office and apartment complexes.

**Limitations:**

Avoid spray drift on nontarget foliage. Avoid drift on food crops. Do not wash foliage for at least 8 hours after application. If rain occurs within 8 hours, dilution of spray may occur. Do not apply to plants that are stressed, diseased, or otherwise unhealthy. Do not apply to plants grown in containers. Before using EMBARK 2-S PGR on ornamentals, thoroughly clean spray tank to remove any broadleaf herbicide that may be present. Do not apply this product through any type of irrigation system. This product is intended to eliminate undesired (nuisance) fruit on ornamental olive trees, and this product is not intended for fresh fruit (olive) production.

**Application Rates for Ornamentals and Groundcovers:**  
 EMBARK 2-S PGR applied as a full cover spray to specified ornamental shrubs, hedges, trees and groundcovers reduces trimming and pruning for up to 8 weeks.

**RATES OF EMBARK 2-S PGR FOR ORNAMENTALS THROUGHOUT THE U.S.**

Species of Ornamental Plant Common/botanical name	Scientific name	Pints per 100 gallons of water	Fl. oz. per gallon of water
<b>GROUNDCOVERS:</b>			
African Daisy	<i>Arctotis spp.</i>	4 pints	¾ fl. oz.
Algerian Ivy	<i>Hedera canariensis</i>		
English Ivy	<i>Hedera helix</i>		
Capweed, Matgrass or Turkey-Tangle	<i>Phyla nodiflora</i>		
Ice plant	<i>Mesembryanthemum crystallinum</i>		
Rosemary	<i>Rosmarinus officinalis</i>		
Periwinkle, Trailing or Myrtle	<i>Vinca minor</i>		
<b>Remarks:</b> For growth regulation, apply Embark 2-S PGR as a full cover spray with foliage penetration to the drip point. 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.			
<b>SHRUBS AND TREES:</b>			
Abelia	<i>Abelia x grandiflora</i>	4 pints	¾ fl. oz.
Acacia	<i>Acacia spp.</i>		
Barberry	<i>Berberis spp.</i>		
Bottlebrush	<i>Callistemon spp.</i>		
Bougainvillea	<i>Bougainvillea spp.</i>		
Box or Boxwood, Common, Korean or Japanese	<i>Buxus spp.</i>		
Brazilian Pepper Tree or Christmas Berry Tree	<i>Schinus terebinthifolius</i>		
Carob	<i>Ceratonia siliqua</i>		
Coprosmas	<i>Coprosma</i>		
Crape Myrtle	<i>Lagerstroemia indica</i>		
Elaeagnus, Oleaster, Wild Olive, Silverberry, Thorny Elaeagnus	<i>Elaeagnus spp.</i>		
Euonymus	<i>Euonymus spp.</i>		
Eugenias and Brush Cherry or Australian Bush Cherry	<i>Eugenia myrtifolia</i>		
Fig, Creeping Fig, Climbing Fig or Creeping Rubber Plant	<i>Ficus repens</i> or <i>Ficus pumila</i>		
Fig, Laurel, Benjamin Tree or Weeping Fig	<i>Ficus nitida</i>		
Fire Thorn and Scarlet Fire Thorn	<i>Pyracantha spp.</i>		
Heavenly Bamboo or Sacred Bamboo	<i>Nandina spp.</i>		
Hibiscus, Rose of China, Mallow or Rose Mallow	<i>Hibiscus spp.</i>		
Holly, Japanese <sup>1</sup>	<i>Ilex crenata</i>		
Holly, Chinese or Burford	<i>Ilex cornuta</i> cv. 'Burfordii'		
Holly, English, European or Oregon	<i>Ilex aquifolium</i>		
Holly, Yaupon, Cassina or Cassena	<i>Ilex vomitoria</i>		
Honeysuckle	<i>Lonicera spp.</i>		
Italian Buckthorn	<i>Rhamnus alaternus</i>		
Indian Hawthorn	<i>Raphiolepis indica</i>		
Jasmine or Jessamine	<i>Jasminum spp.</i>		
Laurel	<i>Laurus</i>		
Melaleuca, Honey Myrtle or Bottlebrush	<i>Melaleuca spp.</i>		
Myoporum	<i>Myoporum spp.</i>		
Myrtle	<i>Myrtus spp.</i>		

(cont. on next column)

Species of Ornamental Plant Common/botanical name	Scientific name	Pints per 100 gallons of water	Fl. oz. per gallon of water		
<b>SHRUBS AND TREES (cont.):</b>					
Myrtle, Common, Compact, Dwarf, Greek, Swedish, German and Polish	<i>Myrtus communis</i>	4 pints	¾ fl. oz.		
Nandina species including Heavenly Bamboo or Sacred Bamboo	<i>Nandina spp.</i>				
Oleander, Common Oleander or Rosebay	<i>Nerium oleander</i>				
Osmanthus species including American Olive, Fragrant Olive, Holly Olive, Chinese Holly, False Holly	<i>Osmanthus spp.</i>				
Photinia, Red tip	<i>Photinia fraseri</i>				
Photinia, Japanese	<i>Photinia glabra</i>				
Pittosporum, Japanese Pittosporum, Mock Orange, Tobira or Australian Laurel	<i>Pittosporum tobira</i>				
Podocarpus, Southern Yew, Japanese Yew or Buddhist Pine	<i>Podocarpus macrophyllus</i>				
Privet, Amur, Border, Chinese, California, European and Wax-leaf Privet	<i>Ligustrum spp.</i>				
Viburnum	<i>Viburnum spp.</i>				
Xylosma	<i>Xylosma spp.</i>				
<b>Remarks:</b> For growth regulation, apply Embark 2-S PGR as a full cover spray with foliage penetration to the drip point. 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.					
Ornamental Olives				1 pint	¼ fl. oz.
<b>Remarks:</b> For fruit suppression of olive trees, apply Embark 2-S PGR as a full cover spray at prebloom (tight bud stage) through the 5% bloom stage. See footnotes 2 and 3.					

Footnote 1: Except California

Footnote 2: Embark 2-S PGR will reduce or eliminate undesirable fruit from olive trees. Two foliar applications are recommended during the prebloom or tight bud stage through the 5% bloom stage of the trees. Mix 1 pint of product per 100 gallons of water per application. The interval between the first and the second applications (± 2 weeks) may vary between seasons and will be determined by the local environmental conditions. Full cover sprays are required, and all surfaces of the leaves and flower buds should be sprayed to the drip point. Flowers that have pollinated will set fruit. Spray volumes will depend on tree size. Generally, trees 20 to 30' in height may require 10 to 15 gallons of spray solution per tree.

Footnote 3: This product is intended to eliminate undesired (nuisance) fruit on ornamental olive trees, and this product is not intended for fresh fruit (olive) production.

**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. To the extent consistent with applicable law, 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.

EMBARK® and TRIMEC® are registered trademarks of PBI/GORDON CORPORATION.

© 2007, PBI/Gordon Corporation.

686/7-2008 AP061307  
 EPA REG. NO. 2217-759



An Employee-Owned Company  
 1217 West 12th Street  
 Kansas City, Missouri 64101

www.pbigordon.com