



## MEMORANDUM

TO: Board of Commissioners  
FROM: Environmental Advisory Council  
RE: Insecticide, Herbicide and Pesticide Use (Township and Residential)  
DATE: May 2, 2023

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The Environmental Advisory Council (EAC) has prepared this memo to inform the Board of Commissioners about the use of pesticides, insecticides and herbicides on Township property and guidelines for their use by residents. Improper use and application of Herbicides, Insecticides and Pesticides can adversely impact our local streams and habitats. Upper Gwynedd storm drains, swales and detention/retention ponds all discharge to local water ways with no filters or treatment. Any pollutants that enter the waterways can impact aquatic life and the water we drink.

### **Township Herbicide Usage Notes:**

The EAC has received from the Township Manger a list of herbicides used by the Township's contractors, these are included as Attachment A. The herbicides - Vessel and Dimension 2EW - are intended to be used by commercial and professional landscapers only, who are trained in proper mixing, application, storing and disposal of these herbicides. The Township uses only commercial and professional landscapers to apply these herbicides to public property within the Township. Applicators apply these herbicides in targeted locations where invasive plants are identified, especially invasive species that have a potential to create a public safety hazard (i.e growth around utility lines that pose a threat to distribution). Additionally, Applicators use the following guidelines to apply these herbicides in a safe and environmentally friendly manner:

- Follow all manufacturer precautions and directions,
- Apply herbicides in targeted areas where needed (not broadly applied, reducing the chance for excess runoff),

- Avoid applying/spraying near waterways, drainage swales, runoff areas, areas prone to flooding and away from wells and other water sources,
- Properly store and dispose of all herbicides (no dumping unused material on the ground, careful mixing to avoid spilling/splashing and proper disposal of any unused material).

These guidelines reduce or eliminate the potential for the herbicides to reach waterways where they can have adverse effects to aquatic invertebrates and the environment.

### **Residential Guidance for use of Herbicides, Insecticides and Pesticides:**

The following guidelines should be used by residents to help protect our waterways, environment and wildlife when using herbicides, pesticides and insecticides on their lawns.

- Always follow manufacturer instructions on packaging, pay particular attention to what weather should be avoided, most applications require no application for a specific duration after a rain event and/or when rain is expected within a certain time frame. Also, if applying a dry material avoid applying during windy days.
- Apply the appropriate amounts and specified frequency, over application can cause excess material to run off during rain events.
- Avoid applying near drainage swales, drainage ditches, storm drains and potable water wells.
- Consider hand pulling weeds or using a targeted approach instead of applying across large areas.
- If applying granules or dry material, sweep up any material on paved surfaces (asphalt, concrete, etc....) back onto the lawn to avoid runoff.
- Consider using organic materials and/or planting native plants as they are more likely to be naturally resistant to local pests. Organic herbicides (for use on invasive plants/weeds) typically include active ingredients such as: Acetic Acid, Citric Acid, d-limonene (Citrus Oil), Clove Oil or Clover Leaf Oil, Cinnamon Oil, Lemon Grass Oil, Eugenol, and Sodium Lauryl Sulfate (South Dakota State University Extension)
- Organic pesticides/insecticides typically include active ingredients such as: Horticultural Oil (e.g. insecticidal soap), Neem Oil (derived from the Neem tree), Cedar oil,

diatomaceous earth, Bacteria (specific to certain pests), Pyrethrin (derived from chrysanthemums), capsaicin (derived from chili peppers deters pests such as rodents), vinegar, and garlic.

- Note: Even organic herbicides, pesticides, and insecticides can be harmful to the environment if not applied correctly, always follow application instructions. Pay special attention to warnings and restrictions if using for home gardens with food producing plants.

For more information, please explore the following links:

Penn State Extension Stormwater Basics: <https://extension.psu.edu/stormwater-basics>

The Homeowner's Guide to Stormwater:

<https://www.stormwaterguide.org/static/HomeownersGuide.pdf>

How to be Stormwater Smart (Pennsylvania Department of Environmental Protection):

<https://www.dep.pa.gov/Business/Water/CleanWater/StormwaterMgmt/pages/be-stormwater-smart-.aspx>

**Attachment A: Upper Gwynedd Township Herbicide Information**



# 3-WAY HERBICIDE

# VESSEL™

Contains TRIMEC® Herbicide

**For Sale To And Use By Commercial Applicators And Professional Landscapers Only.**

**Not For Sale To Or Use By Homeowners.**

### KEEP FROM FREEZING

#### ACTIVE INGREDIENTS:

Dimethylamine salt of 2,4-dichlorophenoxyacetic acid	30.56%
Dimethylamine salt of (+)-(R)-2-(2-methyl-4-chlorophenoxy) propionic acid	8.17%
Dimethylamine salt of dicamba: 3,6-dichloro-o-anisic acid	2.77%
<b>INERT INGREDIENTS:</b>	<b>58.50%</b>
<b>TOTAL 100.00%</b>	

#### THIS PRODUCT CONTAINS:

2.38 lbs. 2,4-dichlorophenoxyacetic acid equivalent per gallon or 25.38%.  
 0.63 lbs. (+)-(R)-2-(2-methyl-4-chlorophenoxy) propionic acid equivalent per gallon or 6.75%.  
 0.21 lbs. 3,6-dichloro-o-anisic acid equivalent per gallon or 2.30%.  
 Isomer Specific by AOAC Methods.  
 Contains the single isomer form of Mecoprop-p.

For TRANSPORTATION Emergencies ONLY  
 Call 24 Hours A Day 1-800-424-9300.

## KEEP OUT OF REACH OF CHILDREN DANGER-PELIGRO

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.)

See below for additional Precautionary Statements and First Aid.

For PRODUCT USE Information  
 Call 1-770-619-9832.



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

### PRECAUTIONARY STATEMENTS

#### Hazards to Humans & Domestic Animals:

**DANGER:** Corrosive. Causes irreversible eye damage. Causes skin irritation. Do not get into eyes, on skin or on clothing. May be fatal if swallowed.

#### NON-WPS USES:

Applicators and other handlers who handle this pesticide for any use NOT covered by the Worker Protection Standard (40 CFR Part 170) — in general, only agricultural-plant uses are covered by the WPS — must wear the following:

- Wear face shield or goggles when mixing, loading or applying this product. When mixing, loading or applying this product, wear long-sleeved shirt, long pants, socks, shoes, chemical-resistant gloves and eye protection. It is recommended that safety glasses include front, brow, and temple protection.

After using this product, rinse gloves before removing, remove clothing and launder separately before reuse, and promptly and thoroughly wash hands and exposed skin with soap and water. Remove saturated clothing as soon as possible and shower.

#### Engineering Control Statements For Non-WPS Uses:

**Containers over 1 gallon and less than 5 gallons:** Persons engaged in open pouring of this product must also wear coveralls or a chemical resistant apron.

**Containers of 5 gallons or more:** Do not open pour from this container. A mechanical system (such as a probe and pump or spigot) must be used for transferring the contents of this container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal.

#### WPS USES:

Applicators and other handlers who handle this pesticide for any uses covered by the Worker Protection Standard (40 CFR Part 170) — in general agricultural-plant uses are covered — must wear the following:

- Coveralls over short-sleeved shirt and short pants.
- Waterproof gloves.
- Chemical-resistant footwear plus socks.
- Protective eyewear.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. After each day of use, clothing or PPE must not be reused until it has been cleaned.

#### Engineering Control Statements For WPS Uses:

**Containers over 1 gallon and less than 5 gallons:** Mixers and loaders who do not use a mechanical system (probe and pump) to transfer the contents of this container must wear coveralls or a chemical-resistant apron in addition to the other required PPE.

**Containers of 5 gallons or more:** Do not open pour product from this container. A mechanical system (such as a probe and pump or spigot) must be used for transferring the contents of this container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal. If the mechanical system is used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)], the handler PPE requirements may be reduced or modified as specified in the WPS.

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

#### User Safety Recommendations:

##### Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- 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 on skin:</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>
<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 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>

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.

**NOTE TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage.

**Environmental Hazards:** This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and nontarget plants. 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. When cleaning equipment, do not pour the washwater on the ground; spray or drain over a large area away from wells and other water sources. Do not apply when weather conditions favor drift from target area. Do not contaminate domestic or irrigation waters.

Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D and MCPP-p have been associated with mixing, loading and disposal sites. Caution should be exercised when handling 2,4-D and MCPP-p pesticides at such sites to prevent contamination of groundwater supplies. Use of closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.

### DIRECTIONS FOR USE

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

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.

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170.

This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 48 hours.

For early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, wear: • Coveralls over short-sleeved shirt and short pants • Waterproof gloves • Chemical-resistant footwear plus socks • Protective eyewear.

### SOD FARMS:

VESSEL™ is intended for use on sod farms. VESSEL™ provides selective broadleaf control in warm season and cool season turfgrass established for commercial sod production.

### APPLICATION SCHEDULES FOR SOD FARMS:

Apply VESSEL™ to broadleaf weeds that are actively growing. Follow-up applications may be required for dense infestations of perennial and biennial weeds. Do not apply this product to 'Floritam' St. Augustinegrass.

### NEWLY SEEDDED AREAS:

The application of VESSEL™ to grass seedlings is recommended after the second mowing.

### NEWLY SODDED, SPRIGGED OR PLUGGED AREAS:

The application of VESSEL™ to newly sodded, sprigged, or plugged grasses should be delayed until 3 to 4 weeks after the sodding, sprigging, or plugging operations. Also, applications to dormant bermudagrass, dormant zoysiagrass, and dormant bahiagrass are suggested.

### APPLICATION RATES FOR SOD FARMS:

Dosage rates and spray volume recommendations of VESSEL™ for use in commercial sod production are presented in Table 1.

Generally, the lower application rates within the specified range will provide satisfactory control of sensitive weed species. The higher application rates within the specified range will be required for dense infestations of perennial weeds, for adverse/extreme environmental conditions, or for weeds beyond the appropriate growth stages.

The maximum application rate to turf is 1.3 pounds 2,4-D acid equivalent per acre per application per site.

**SEE NEXT COLUMN FOR TABLE 1 –  
RATE RECOMMENDATIONS FOR SOD FARMS**

**Table 1. Rate Recommendations for Sod Farms.**

Species	Amount of Product, Pints/Acre	Spray Volume, Gallons/Acre
<b>Cool Season Turf</b>		
Kentucky Bluegrass	3.0 to 4.0	5 to 175
Perennial Ryegrass	3.0 to 4.0	5 to 175
Fescue spp.	3.0 to 4.0	5 to 175
Creeping Bentgrass	1.8	5 to 175
<b>Warm Season Turf</b>		
Common Bermudagrass	2.0 to 2.5	5 to 175
Hybrid Bermudagrass	2.0 to 2.5	5 to 175
Bahiagrass	2.0 to 2.5	5 to 175
Zoysiagrass	2.0 to 2.5	5 to 175
St. Augustinegrass	2.0 to 2.5	5 to 175

### USE PRECAUTIONS AND LIMITATIONS FOR SOD FARMS:

1. Do not apply this product through any type of irrigation system.
2. Avoid drift of spray mist onto vegetables, flowers, ornamental plants, shrubs, trees, and other desirable plants. Do not pour spray solutions near these plants.
3. Delay mowing 1 to 2 days before and after the application of this product.
4. Do not apply this product immediately before rainfall or irrigation. Do not irrigate or water the turfgrass within 24 hours after application.
5. Treated areas may be reseeded 3 to 4 weeks after application.

### Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

**Reentry Statement:** Do not allow people (other than applicator) or pets on treatment area during application. Do not enter treatment area until spray has dried or dust has settled.

### ORNAMENTAL LAWNS AND TURFGRASS

#### WHERE TO USE:

VESSEL™ is intended to be applied by lawn care operators and landscape personnel for use in ornamental lawns and turf established in institutional, ornamental, and residential/domestic sites. Institutional sites are defined as turf areas around properties or facilities providing a service to public or private organizations including, but not limited to hospitals, nursing homes, schools, museums, libraries, sport facilities, golf courses, and office buildings. Ornamental sites include turfgrass established around residences, parks, streets, retail outlets, cemeteries, industrial and institutional buildings. Finally, residential/domestic sites are 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, hospitals, or convalescent homes.

#### HOW MUCH TO USE:

The maximum application rate to turf is 1.3 pounds 2,4-D acid equivalent per acre per application per site. The maximum number of broadcast applications per treatment site is 2 per year.

**FOR KENTUCKY BLUEGRASS, FESCUE spp., PERENNIAL RYEGRASS, BERMUDAGRASS AND ZOYSIAGRASS.** Apply 3.0 to 4.0 pints of VESSEL™ per acre with spray volumes ranging from 5 to 220 gallons per acre. Or, apply 1.1 to 1.5 fluid ounces of VESSEL™ per 1,000 square feet with spray volumes ranging from 0.5 to 5 gallons per 1,000 square feet of turf. For mature weeds, apply 3.25 to 4.0 pints of VESSEL™ per acre. The best time to control clover is in the fall. When making a spring application to control clover, a 4 pint per acre rate is recommended.

**FOR CLOSELY MANAGED BENTGRASS.** Apply a maximum rate of 1.8 pints of VESSEL™ per acre with spray volumes greater than 145 gallons per acre. The equivalent application rate would be 1.0 fluid ounce of VESSEL™ mixed with 5 gallons of water and applied to 1,500 square feet.

Note: Care should be taken to avoid overdosing bentgrass or injury may result. High spray volumes will provide uniform coverage.

**FOR ST. AUGUSTINEGRASS.** Apply 2.3 pints of VESSEL™ per acre with spray volumes ranging from 40 to 150 gallons per acre. The equivalent application rate would be 1.3 fluid ounces of VESSEL™ in 5 gallons of water per 1,500 square feet.

Do not spray St. Augustinegrass when stressed from heat or drought. Slight turf yellowing should disappear after about one week.

Cultivars vary in tolerance to this product. Do not apply this product to 'Floratum' St. Augustinegrass.

Note: Care should be taken to avoid overdosing St. Augustinegrass or injury may result. High spray volumes will provide uniform coverage.

REFER TO THE CHART BELOW FOR ADDITIONAL APPLICATION INSTRUCTIONS.	
APPLICATION METHODS	REMARKS
<b>A. KENTUCKY BLUEGRASS, FESCUE spp., PERENNIAL RYEGRASS, BERMUDAGRASS AND ZOYSIAGRASS.</b>	
Conventional Equipment:	Use 5 to 80 gallons of water per acre. (0.5 to 2 gallons water per 1,000 square feet.)
Professional Lawn Maintenance:	Use 0.5 to 5 gallons of water per 1,000 square feet. Higher spray volumes may be used when tank-mixed with a turf fertilizer. Follow fertilizer labels for proper amounts to add.
Controlled Droplet Applicators (CDA):	Reduced rates of VESSEL™ must be used when grass is stressed from heat or drought. Add 2 pints VESSEL™ to the Herbi container then fill with 3 pints of water. Keeping the container agitated, spray entire contents over 33,000 square feet (approximately ¾ acre). Do not overlap between spray patterns. Do not use this application rate on warm season grasses.
<b>B. CLOSELY MANAGED BENTGRASS.</b>	
	On closely managed bentgrass (e.g. bowling greens) apply VESSEL™ at a maximum rate of 1.0 fluid ounce in 5 gallons of water per 1,500 square feet preferably in May or mid-August through September. Slight turf yellowing will disappear after about one week. (See Note.)
<b>C. ST. AUGUSTINEGRASS.</b>	
	Apply VESSEL™ at 2.3 pints in up to 150 gallons of water per acre (1.3 fluid ounces VESSEL™ in 5 gallons of water per 1,500 square feet). Do not spray St. Augustinegrass when stressed from heat or drought. Slight turf yellowing should disappear after about one week. (See Note.)
NOTE: Care should be taken to avoid overdosing bentgrass and St. Augustinegrass or injury may result. High spray volumes will aid in obtaining uniform coverage.	

### VESSEL™ CONTROLS:

Annual fleabane	Deadnettle
Aster, white heath & white prairie	Dock
Bedstraw	Dogfennel
Beggarticks	Dovefoot geranium
Beggarweed, creeping	English daisy
Bindweed	False dandelion (*spotted catsear & common catsear)
Birdsfoot trefoil	Field bindweed (*morningglory & creeping jenny)
Black medic	Field madder
Broadleaf plantain	Field oxeye-daisy (*creeping oxeye)
Buckhorn plantain	Field pennycress
Bull thistle	Filaree, whitestem & redstem
Burclover	Florida pusley
Burdock, common	Ground ivy
Buttercup, creeping	Groundsel
Carolina geranium	Hairy bittercress
Carpetweed	Hawkweed
Chickweed, common	Healall
Chicory	Henbit
Cinquefoil	Horsenettle
Clover	Horseweed
Cocklebur	Innocence (Blue-eyed Mary)
Compassplant	Jimsonweed
Curly dock	Kochia
Dandelion	
Dayflower	

Lambsquarters	Roundleaf greenbriar
Lawn burweed	Shepherdspurge
Lespedeza, common	Spotted spurge
Mallow, common	Spurge
Matchweed	Sunflower
Mouseear chickweed	Thistle
Mustard	Velvetleaf (*buttonweed)
Nettle	Venice mallow
Old world diamond flower	Veronica (*corn speedwell)
Oxalis (*yellow woodsorrel & creeping woodsorrel)	Virginia buttonweed
Parsley-piert	Virginia-creeper
Pennsylvania smartweed	Western salsify
Pennywort (*dollarweed)	White clover (*Dutch clover, honeysuckle clover, white trefoil & purplewort)
Pepperweed	Wild carrot
Pigweed	Wild garlic
Pineappleweed	Wild geranium
Plantain	Wild lettuce
Poison ivy	Wild mustard
Poison oak	Wild onion
Prostrate knotweed (*knotweed)	Wild strawberry
Puncturevine	Yarrow
Purple cudweed	Yellow rocket
Purslane	
Ragweed	
Redweed	
Red sorrel (*sheep sorrel)	*Synonyms

### USE PRECAUTIONS FOR ORNAMENTAL LAWNS AND TURFGRASS:

Do not apply this product through any type of irrigation system. Avoid drift of spray mist to vegetables, flowers, ornamentals, shrubs, trees and other desirable plants. Do not pour spray solutions near these plants. Do not spray on carpetgrass, dichondra, nor on lawns or turf where desirable clovers are present.

Use only lawn type sprayers. Coarse sprays are less likely to drift. Use coarse spray droplets. Avoid fine mists. Do not spray roots of ornamentals and trees. Do not exceed specified dosages for any area. Be particularly careful within the dripline of trees and other ornamental species. Do not broadcast apply when air temperatures exceed 85°F; some injury may be expected with spot treatments when air temperatures exceed 85°F. Seed can be sown 3 to 4 weeks after application at recommended rates. After using this product, clean sprayer with soap or detergent and water or an approved spray tank cleaner and rinse thoroughly before applying other pesticides. Failure to observe the above precautions may result in injury.

Some hybrid bermudagrass may be sensitive to this product. Contact your Local Extension Service Weed Control Specialist.

Do not apply this product to St. Augustinegrass during spring green-up which is the transition period between dormancy and active growth.

### STORAGE & DISPOSAL

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

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

**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your state Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:** FOR METAL CONTAINERS: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities. FOR PLASTIC CONTAINERS: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

### 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.

VESSEL™ is a trademark of PROKoZ, Inc.

TRIMEC® is a registered trademark of PBI/Gordon Corporation.

**992/12-2005 AP093005**  
**EPA REG. NO. 2217-656-72112**  
**EPA EST. NO. 2217-KS-1**

**Manufactured for:**  
**PROKoZ, Inc.**  
**100 North Point Center E.**  
**Suite 330**  
**Alpharetta, GA 30022**

**SPECIMEN  
LABEL**



# Specimen Label

DITHIOPYR	GROUP	3	HERBICIDE
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## Dimension<sup>®</sup> 2EW

### SPECIALTY HERBICIDE

<sup>TM</sup>Trademarks of Corteva Agriscience and its affiliated companies

Provides control of listed annual grasses and broadleaf weeds in:

- Established lawns
- Commercial sod farms
- Ornamental and sports turf (including but not limited to sport fields, golf course fairways, roughs, tee boxes, unimproved turfgrass areas)
- Container grown ornamentals
- Field-grown ornamentals
- Landscape ornamentals
- Non-cropland such as: airports, barrow ditches, cemeteries, communication transmission lines, electrical power and utility rights-of-way, fencerows, gravel pits, hard-surface cracks, industrial sites, military lands, mining and drilling areas, non-irrigation ditch banks, gas and oil pads, parking lots, petroleum tank yards, pipelines, pump stations, railroads, roadsides, debris retention areas, service roads, solar fields, storage areas or yards, substations, vacant lots and other non-crop residential and commercial areas
- Natural areas (open space) such as: restoration sites, campgrounds, parks, prairie management, trails and trailheads, recreation areas, wildlife openings and wildlife habitat and management areas
- Christmas tree farms

In New York State, this product may be used by commercial applicators only, at no more than 2 pints (0.5 lb active ingredient) per acre per year. In Nassau and Suffolk counties of New York, do not exceed 1 pint per acre per year of this product (equivalent to 0.25 lb of active ingredient per acre).

Active Ingredient

dithiopyr: S,S'-dimethyl 2-(difluoromethyl)-4-(2-methylpropyl)-6-(trifluoromethyl)-3,5-pyridinedicarbothioate.....	24%
Other Ingredients.....	76%
Total.....	100%

Contains petroleum distillates

Contains 240 grams per liter or 2 lb active ingredient per U.S. gallon.

### Precautionary Statements

#### Hazards to Humans and Domestic Animals

EPA Reg. No. 62719-542

### Keep Out of Reach of Children

## WARNING

Causes Skin Irritation • Causes Moderate Eye Irritation • Prolonged Or Frequently Repeated Skin Contact May Cause Allergic Reactions In Some Individuals

Do not get on skin or on clothing. Avoid contact with eyes. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

### Personal Protective Equipment (PPE):

**WPS Uses: Applicators and other handlers who handle this product for any use covered by the Worker Protection Standard (40 CFR Part 170) – in general, agricultural plant uses are covered - must wear:**

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves ≥14 mils made of barrier laminate or butyl rubber
- Chemical-resistant footwear plus socks

**WPS Uses: Mixers and loaders must wear:**

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves ≥14 mils made of barrier laminate or butyl rubber
- Chemical-resistant footwear plus socks
- Chemical-resistant apron

**Non-WPS Uses: Applicators and other handlers, mixers and loaders who handle this product for any use NOT covered by the Worker Protection Standard (40 CFR Part 170) – in general, agricultural plant uses are covered - must wear:**

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves >14 mils made of barrier laminate or butyl rubber

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

### Engineering Controls

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### User Safety Recommendations

Users should:

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

**If on skin or on clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 day or night, for emergency treatment information.

**Note to Physician:** Contains petroleum distillate. Vomiting may cause aspiration pneumonia.

### Environmental Hazards

This product is toxic to fish and highly toxic to other aquatic organisms including oysters and shrimp. Use with care when applying to turf areas adjacent to any body of water. Drift and runoff from treated turf may be hazardous to aquatic organisms in water adjacent to treated areas. 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 apply when weather conditions favor drift from treated areas. Do not contaminate water when disposing of equipment washwater or rinsate.

**Non-Target Organism Advisory:** This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift. For further guidance and instructions on how to minimize spray drift, refer to the Spray Drift Management section of this label.

**Ground Water Advisory:** This pesticide has properties and characteristics associated with chemicals detected in ground water. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow.

**Surface Water Advisory:** This pesticide may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soil and soils with shallow ground water. This product is classified as having a high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams and springs will reduce the potential load of dithiopyr from run off water and sediment.

### 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.

### REFORMULATION OR REPACKAGING OF THIS PRODUCT IS PROHIBITED.

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. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

### Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on the label about personal protective equipment, restricted-entry interval, and notification to workers (as applicable). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

For early entry into treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, wear:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves  $\geq 14$  mils made of barrier laminate or butyl rubber
- Chemical-resistant footwear plus socks

### Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

- Keep unprotected persons out of treated area until sprays have dried.

### Storage and Disposal

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

**Pesticide Storage:** Store this product only in its original container in a dry, cool, secured storage area. Store this product above 32°F to avoid crystallization. If crystals form or product freezes, move product to area with ambient temperature above 32°F and shake well until crystals have dissolved.

**Pesticide Disposal:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

#### Nonrefillable containers 5 gallons or less:

**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 by other procedures allowed by state and local authorities.

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 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.

### Storage and Disposal (Cont.)

#### Refillable containers larger than 5 gallons:

**Container Handling:** Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. 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% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

#### Nonrefillable containers larger 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 by other procedures allowed by state and local authorities.

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.

### Product Information

Dimension® 2EW specialty herbicide provides control of crabgrass and other annual grasses and broadleaf weeds in established lawns, commercial sod farms, ornamental and sports turf (including but not limited to sport fields, golf course fairways, roughs, tee boxes, unimproved turfgrass areas), container-grown ornamentals, field-grown ornamentals, landscape ornamentals, non-cropland (see list above), natural areas and Christmas trees.

This product will not control established weeds, except for crabgrass in early stages of growth. For optimum control, applications of this product should be made preemergence (prior to germination of target weeds).

This product is most effective when activated by 1/2 inch or more of rainfall or irrigation. To optimize control, ensure that activation has occurred prior to germination of most grass and broadleaf weeds.

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

### Mixing Directions

#### Dimension 2EW Alone with Water as the Carrier

Fill a previously cleaned spray tank with water to about three-fourths of the desired volume. Add the recommended amount of Dimension 2EW to the tank. Complete the filling process while maintaining agitation. Remove the hose from the mixing tank immediately after filling to avoid siphoning back into the water source.

#### Dimension 2EW Alone with Liquid Fertilizer as the Carrier

Determine the compatibility of Dimension 2EW with the desired liquid fertilizer by mixing small proportional quantities in advance. See the Physical Compatibility Test section of this label. Then follow the mixing procedure listed below for tank mixtures.

#### Tank Mixtures

Dimension 2EW may be applied in tank mix combination with labeled rates of liquid fertilizers or other herbicides, such as but not limited to Gallery, Defendor and Accord XRT II, provided (1) the tank mix product is labeled for the timing and method of application for the use site to be treated; and (2) tank mixing is not prohibited by the label of the tank mix product. Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels. When tank mixing, use the most restrictive label limitations for each of the products being used in the tank mix.

When tank mixing Dimension 2EW with other materials, a compatibility test (jar test) using relative proportions of the tank mix ingredients should be conducted prior to mixing ingredients in the spray tank. See the Physical Compatibility Test Mixing Instructions section of this label.

**Mixing Order for Tank Mixes:** Place a 20 to 35 mesh screen or wetting basket over the filling port. Fill the spray tank 1/2 full with the appropriate carrier. Start agitation. Slowly add different formulation types in the order indicated below, allowing time for complete dispersion and mixing after addition of each product.

1. Compatibility agent (if needed)
2. Wettable powder or water dispersible granules (if used)
3. Suspension concentrates
4. Dimension 2EW and liquid (emulsifiable concentrate or liquid concentrate) pesticide (if used)
5. Water soluble liquid products
6. Surfactants, marker dyes or drift control additives

Maintain an air buffer between the hose and the solution in the tank to avoid siphoning back into the carrier source. Maintain continuous agitation during mixing and throughout application. If spraying and agitation must be stopped before the spray tank is empty, the materials may settle to the bottom. Settled materials must be resuspended before spraying is resumed.

**Premixing:** Dry and flowable formulations should be premixed with water in a slurry and added to the spray tank through a 20 to 35 mesh screen. This procedure assures good initial dispersion of these formulation types.

#### Physical Compatibility Test

Before mixing this product with liquid fertilizers and/or other pesticides, test compatibility by mixing all the components in a small jar in proportionate quantities:

#### Compatibility Test Mixing Instructions

Pesticide Formulation	If	Amount of Pesticide added to Spray Carrier (assuming volume is 25 gpa) Add:
	Rate per Acre is:	Level Teaspoons per Pint Jar of Carrier Solution
Dry	1 lb	1 1/2
Liquid	1 qt	1

**This compatibility test is designed for 25 gallons of spray solution per acre (gpa).** The table above gives general guidelines for use rate ratios of pesticides to be tank mixed with this product. Determine the amount of pesticide to tank mix by referring to the pesticide label(s). Then, calculate the amount of pesticide to add to the jar based on use rate ratios in table. For a use rate of 1 lb per acre of dry pesticide, add 1 1/2 teaspoons to the jar. For a use rate of 1 quart per acre of liquid pesticide, add 1 teaspoon to the jar. Dimension 2EW should be added based on use rate ratios for liquid pesticides (for a use rate of 1 quart per acre, add 1 teaspoon to the jar). For changes in spray volume or herbicide rate, make appropriate changes in the ingredients for the test. Shake well after mixing.

If pesticide mix does not form crystals, flakes, sludge, gels, oily films or layers, then the components are compatible. Incompatibility in any of the above-described forms will usually occur within 5 minutes after mixing. If components are incompatible, a compatibility agent should be used. Repeat the above compatibility test with a suitable compatibility agent (1/2 teaspoon per pint jar is equivalent to 2 pints per 100 gallons of spray solution). Do not use mixtures that show incompatible signs such as formation of crystals, flakes, sludge, gels, oil films or layers.

### Grass and Broadleaf Weeds Controlled by Dimension 2EW

Used as directed, Dimension 2EW controls annual grass and broadleaf weeds listed in the table below if applied preemergence. This product will not control emerged broadleaf weeds or grasses (except for crabgrass in early stages of growth).

Common Name	Scientific Name
<b>Grasses</b>	
barley	<i>Hordeum</i> spp.
barnyardgrass	<i>Echinochloa crus-galli</i>
bluegrass, annual	<i>Poa annua</i>
brome	<i>Bromus</i> spp.
crabgrass, large	<i>Digitaria sanguinalis</i>
crabgrass, smooth	<i>Digitaria ischaemum</i>
crabgrass, southern	<i>Digitaria ciliaris</i>
crowfootgrass	<i>Dactyloctenium aegyptium</i>
dallisgrass (seedling)	<i>Paspalum dilatatum</i>
foxtail, giant	<i>Setaria faberi</i>
foxtail, green	<i>Setaria verdi</i>
foxtail, yellow	<i>Setaria pumilia</i>
goosegrass	<i>Eleusine indica</i>
kikuyugrass	<i>Pennisetum clandestinum</i>
Mary's grass	<i>Microstegium vimineum</i> (Trin.)
(Japanese stiltgrass)	<i>A.Camus var. imberbe</i>

### Broadleaf Weeds (Cont.)

oats, wild  
ryegrass (annual & perennial)  
sandbur  
smutgrass  
southwestern cupgrass

*Avena fatua*  
*Lolium* spp.  
*Cenchrus* spp.  
*Sporobolus indicus*  
*Eriochloa gracilis*

### Broadleaf Weeds

bittercress  
carpetweed  
chickweed  
dandelion, common  
geranium, Carolina  
henbit  
knotweed, prostrate  
lespedeza, common  
marestail  
medic, black  
mulberry weed  
mustard  
oxalis, buttercup  
parsley-piert  
pigweed, redroot  
pineappleweed  
purslane, common  
rocket, London  
shepherdspurse  
sowthistle  
speedwell, corn  
spurge, garden  
spurge, prostrate  
spurge, spotted  
willowherb  
woodsorrel, creeping  
woodsorrel, yellow

*Cardamine* spp.  
*Mollugo verticillata*  
*Stellaria* spp.  
*Taraxacum officinale*  
*Geranium carolinianum*  
*Lamium* spp.  
*Polygonum aviculare*  
*Lespedeza striata*  
*Coryza canadensis*  
*Medicago lupulina*  
*Fatoua villosa*  
*Brassica* spp.  
*Oxalis pes-caprae*  
*Alchemilla arvensis*  
*Amaranthus retroflexus*  
*Matricaria matricarioides*  
*Portulaca oleracea*  
*Sisymbrium irio*  
*Capsella bursa-pastoris*  
*Sonchus oleraceus*  
*Veronica arvensis*  
*Euphorbia hirta*  
*Euphorbia humistrata*  
*Euphorbia maculata*  
*Epilobium* spp.  
*Oxalis corniculata*  
*Oxalis stricta*

### Weed Resistance Management

Dithiopyr, the active ingredient in this product, is a Group 3 herbicide based on the mode of action classification system of the Weed Science Society of America. Any weed population may contain or develop plants naturally resistant to this product and other Group 3 herbicides. The resistant weeds may dominate the weed population if these herbicides are used repeatedly in the same field. Such resistant weed plants may not be effectively managed using Group 3 herbicides but may be effectively managed utilizing other herbicides alone or in mixtures from different herbicide Groups that are labeled for control of these weeds and/or by using cultural or mechanical practices. However, a herbicide mode of action classification by itself may not adequately address specific weeds that are resistant to specific herbicides.

To delay herbicide resistance:

- Rotate the use of Dimension 2EW or other Group 3 herbicides in successive seasons with different herbicide groups that control the same weeds in a field.
- Where possible, rotate the use of Dimension 2EW or other herbicides with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group if such use is permitted. Where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g. higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds); biological (weed competitive crops or varieties) and other management practices.
- Monitor treated weed populations for resistance development.
- Prevent movement of resistant weed seeds to other fields by equipment and planting clean seed.
- Contact your local extension specialist or certified advisers for any additional pesticide resistance management and/or integrated weed management requirements for specific weed biotypes.
- Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other

fields by cleaning harvesting and tillage equipment when moving between fields and planting clean seed.

- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.

For further information or to report suspected resistance, contact a Corteva representatives at 1-800-258-3033.

#### Best Management Practices

Proactively implementing diversified weed control strategies to minimize selection for weed populations resistant to one or more herbicides is recommended. A diversified weed management program may include the use of multiple herbicides with different modes of action and overlapping weed spectrum with or without tillage operations and/or other cultural practices. Research has demonstrated that using the labeled rate and directions for use is important to delay the selection for resistant weeds. Scouting after a herbicide application is important because it can facilitate the early identification of weed shifts and/or weed resistance and thus provide direction on future weed management practices. One of the best ways to contain resistant weed populations is to implement measures to avoid allowing weeds to reproduce by seed or to proliferate vegetatively. Cleaning equipment between sites and avoiding movement of plant material between sites will greatly aid in reducing the spread of resistant weed seed.

#### Mandatory Spray Drift Management

##### Boomless Ground Applications:

- Applicators are required to select the nozzle and pressure that deliver a medium or coarser droplet size (ASABE S572).
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

#### Spray Drift Advisories

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

##### Importance Of Droplet Size

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

##### Shielded Sprayers

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

##### Temperature And Humidity

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

##### Temperature Inversions

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

##### Wind

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.

Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

##### Boomless Ground Applications:

- Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

##### Handheld Technology Applications:

- Take precautions to minimize spray drift.

## Uses

### Turfgrass

Use Dimension 2EW on seeded, sodded, or sprigged lawns, ornamental turfgrass and unimproved turfgrass that are well established. Newly established turf must have developed a good root system and a uniform stand, and have received at least two mowings following seeding or sprigging before making the first application of this product. Note precautions below for sodding. Use of this product on turf that is not well-established, or has been weakened by weather, pest, disease, chemical, mechanical, or other related stress, may result in turf injury.

#### Use Precautions:

- Dimension 2EW will prevent the germination of annual bluegrass. Dimension 2EW will not affect established annual bluegrass. If maintenance of annual bluegrass is desired, using this product during the time of annual bluegrass germination is not recommended. In the states of AZ, CA, NV, OR, WA, NM, ID, MT and UT, Dimension 2EW may contribute to the thinning or stand reduction in established stands of annual bluegrass.
- To avoid turfgrass injury, do not apply to newly set sod until the sod has rooted and exposed edges have filled in.
- For best results, cultural practices that disturb the soil, such as verticutting and core-, spike-, or hydro-aerification, should be done before applying this product.

#### Use Restrictions:

- Do not apply this product to golf course putting greens.
- Do not harvest sod until 3 months or longer after application.
- Do not apply this product until the turfgrass has recovered from cultural practices such as verticutting or core-, spike-, or hydro-aerification.
- Do not use clippings from treated turf for mulching around vegetables or fruit trees.
- Do not apply this product through any type of irrigation system.
- Do not apply more than 2 pints (0.5 lb ai/acre) of Dimension 2EW per acre (0.73 fl oz per 1000 sq ft) per application.
- Do not apply more than 6 pints (1.5 lb ai/acre) of Dimension 2EW per acre per year (2.2 fl oz per 1000 sq ft).
- In New York State, do not apply more than 2 pints of Dimension 2EW (0.5 lb active ingredient) per acre per year. In Nassau and Suffolk counties of New York, do not exceed 1 pint per year of this product (equivalent to 0.25 lb of active ingredient per acre).

#### Reseeding, Overseeding, or Sprigging

Reseeding, overseeding or sprigging of treated areas within 3 months after a single application of this product, or within 4 months after a sequential application program totaling more than 2 pints per acre (0.73 oz per 1000 sq ft), may inhibit the establishment of desirable turfgrasses. However, overseeding of bermudagrass with perennial ryegrass 8 weeks after an application or as early as 6 weeks after application if slight injury to perennial ryegrass can be tolerated is a recommended exception.

When reseeding or overseeding, proper cultural practices such as soil cultivation, irrigation and fertilization should be followed. For best results, use mechanical or power seeding equipment (slit seeders) designed to give good seed to soil contact.

#### Tolerant Turfgrass

**Dimension 2EW should only be applied to the following turfgrass species which are tolerant to this product.**

##### Established Cool Season Turfgrasses

Common Name	Scientific Name
bentgrass, creeping†	<i>Agrostis palustris</i>
bluegrass, Kentucky	<i>Poa pratensis</i>
fescue, fine††	<i>Festuca rubra</i>
fescue, tall	<i>Lolium arundinaceum</i>
ryegrass, perennial	<i>Lolium perenne</i>

##### Established Warm Season Turfgrasses

Common Name	Scientific Name
bahiagrass	<i>Paspalum notatum</i>
bermudagrass††††	<i>Cynodon dactylon</i>
buffalograss††††	<i>Buchloe dactyloides</i>
carpetgrass	<i>Axonopus affinis</i>
centipedegrass	<i>Eremochloa ophiuroides</i>
kikuyugrass	<i>Pennisetum clandestinum</i>
seashore paspalum	<i>Paspalum vaginatum</i>
St. Augustinegrass	<i>Stenotaphrum secundatum</i>
zoysiagrass	<i>Zoysia japonica</i>

† Do not use this product on certain varieties of creeping bentgrass, such as cohansey, carmen, seaside, and Washington as undesirable turfgrass injury may result. Not all varieties of creeping bentgrass have been tested. Do not apply this product to colonial bentgrass (*Agrostis tenuis*) varieties.

- †† Do not use this product on certain varieties of fine fescue as undesirable turf injury may result. The following fine fescue varieties have been found to be sensitive to this product: Atlanta, banner, beauty, bilgart, CF-2, enjoy, HF-93, highlight, ivalo, Jamestown, koket, majenta, Mary, pennlawn, Tamara, Tatjana, waldorf, and waldina. Not all varieties of fine fescue have been tested.
- ††† Do not use this product on Tifgreen (328) hybrid bermudagrass as undesirable turfgrass injury may result. Other common and hybrid bermudagrass varieties are tolerant.
- †††† Do not use this product on seedling buffalograss in the spring of the first year of establishment until the turfgrass is fully green and has established new roots.

### Application Directions

Apply Dimension 2EW through conventional liquid application equipment in a minimum of 20 gallons of water per acre (0.5 gallons per 1000 sq. ft.). Apply with equipment that provides a uniform spray distribution. A handheld spray gun may be used. Calibrate application equipment prior to usage. Avoid streaking, skips, or excess overlaps during application. The use of marker dyes or foams aids in making more accurate applications.

### Preemergence Application Rates, Frequency and Timing

For preemergence grass and broadleaf weed control, apply Dimension 2EW as single or sequential application at 1 to 2 pints (0.25 to 0.5 lb active ingredient) per acre. Applicators may choose to make a single application or sequential applications of 1 to 2 pints per acre at 5 to 10 week intervals based on one or more of the factors listed below.

- Length of residual weed control desired
- Height of turf (lower cut turf may require higher use rates)
- History and success of weed control at the application site (higher application rates should be used if herbicide treatment history is unknown or weed control was poor with previous applications)
- Exposure to high temperatures and heavy rainfall or irrigation (this will shorten the residual preemergence performance)
- On turf sites adjacent to hard surfaces such as but not limited to driveways, sidewalks and parking lots where residual activity may be reduced
- Some target weed species (such as but not limited to *Poa annua*, goosegrass and sandbur) will require higher use rates

### Postemergence Crabgrass Control

This product provides both preemergence and postemergence control of crabgrass (including large, smooth, and southern species) in established lawns and ornamental turf. This product provides postemergence control of crabgrass through the 3 to 5 tiller stage of growth dependent upon location. The addition of a nonionic surfactant at a minimum of 0.25% v/v (2 pt per 100 gallons of spray) is recommended to improve postemergence control past the 5 leaf stage of growth. Read and follow the surfactant manufacturer's label directions. Postemergence control of this product can be improved by not mowing turfgrass within two days before or after application.

When applied at 2 pints per acre this product has demonstrated postemergent crabgrass control through the 3 to 5 tiller stage of growth in the western, southern and transition regions where warm-season turfgrasses are the predominate species.

In regions where cool-season turfgrasses are the predominant species, early postemergence crabgrass control is obtained when this product is applied prior to tiller initiation of crabgrass (less than 5 leaves per plant), which generally corresponds to the time when crabgrass seedlings are easily observed in lawn or turf.

For preemergence residual control of crabgrass, apply at least 0.5 inch of water after application; but in order to optimize postemergence control delay irrigation for 6 hours after application.

### *Poa annua* (annual bluegrass) Control

Apply Dimension 2EW for preemergence control of *Poa annua* (annual bluegrass) at a rate of 1.5 to 2 pints (0.38 to 0.5 lbs active ingredient) per acre.

- Apply 6 to 8 weeks before overseeding perennial ryegrass into bermudagrass. This is specific to perennial ryegrass; not recommended for *Poa trivialis* or bentgrass.
- Minimum seeding rate of perennial ryegrass is 400 lbs per acre.
- Use limited to fairways and roughs.
- Perennial varieties of *Poa annua* (var. repens) may not be controlled as well as the true annual variety.

- Do not apply earlier than 16 weeks after over-seeding unless injury to the ryegrass can be tolerated.
- A follow-up treatment 16 weeks after overseeding offers an early season crabgrass treatment and helps suppress some winter annual broadleaf weeds.

### Goosegrass Control

For best results, apply Dimension 2EW at 2 pints (0.5 lbs active ingredient) per acre just prior to goosegrass germination. Base the application timing on local experience or soil temperatures. If targeting both crabgrass and goosegrass, a single application applied at preemergence crabgrass timing may not be adequate. When targeting both crabgrass and goosegrass it is best to make sequential applications. Based on past experience and crabgrass pressure, a lower rate may be used for the first application with the sequential application being made at 2 pints per acre.

### Use Directions for Noncropland and Natural Areas

Apply Dimension 2EW for preemergence control of listed annual grasses and broadleaf weeds in non-crop land (see listing above) and natural areas as a single or sequential application.

Apply Dimension 2EW prior to germination of target weeds or to bare ground. The best weed control is obtained when applications are made preemergence and to soil that is free of clods, weeds, and debris such as leaves. For total vegetation control tank mixing this product with herbicides such as Accord XRT II, Opensight or Milestone is necessary.

To be effective, Dimension 2EW must be activated by 0.5 inch or more of rainfall or irrigation prior to germination of target weeds. Once the treatment is activated, avoid excessive soil disruption such as grading roadsides that may break down the herbicide barrier. Minimal surface disruption such as raking should not break down the herbicide barrier.

#### Use Precautions:

- For ornamentals within non-crop areas, apply only after transplanting when soil around roots has been thoroughly settled by rainfall or irrigation and no cracks are present, and only to plants listed in the Tolerant Ornamental section of this label, or injury may result.

#### Use Restrictions:

- Do not apply when weather conditions favor drift to non-target areas. This product may injure foliage of non-target plants.
- Do not graze livestock or feed forage cut from areas treated with this product.

#### Equivalent Application Rates:

Equivalent Rates of Dimension 2EW			
(pt/acre)	(fl oz/1000 sq ft)	(fl oz/100 sq ft)	(ml/100 sq ft)
2	0.73	0.073	2.2

Make sequential applications at 3 to 4 month intervals for extended preemergence weed control. Do not exceed maximum use rates per year

#### Maximum Use Rates

- **Split or sequential applications:** Do not use more than 0.73 oz of Dimension 2EW per 1000 sq ft (2 pints per acre) per application or more than 2.2 oz of Dimension 2EW per 1000 sq ft (6 pints per acre) per year.

### Use Directions For Ornamentals (Landscape, Field Grown, and Container Grown) and Christmas Trees

Dimension® 2EW specialty herbicide provides preemergence control of listed annual grasses and broadleaf weeds in areas planted with tolerant ornamental plants listed on this label. It is intended for use on plants grown for aesthetic purposes in landscaped areas, in container or field grown production nurseries or in Christmas tree production. When applied as directed, the ornamental plants listed on this label have shown tolerance to applications of Dimension 2EW.

#### Use Precautions:

- Apply Dimension 2EW to established ornamentals only.
- Applications of Dimension 2EW over-the-top of plants with newly forming buds may cause injury. Possible plant injury may be avoided by application as a directed spray to the soil surface beneath ornamental plant foliage.
- Injury may be incurred if Dimension 2EW is applied in the following manner. Grower assumes all risk if Dimension 2EW is applied to:
  - o Unrooted liners or cuttings that have been planted in pots for the first time
  - o Pots less than six inches wide

**Use Restrictions:**

- Do not apply this product to bare roots of ornamental plants as injury may result.
- Do not incorporate this product into the soil. Dilution of active ingredient and possible injury to plant roots may occur.
- Do not apply around ornamental plants that have been weakened or are under stress (due to drought, flooding, excessive fertilizer or soil salts, wind injury, hail, frost damage, winter injury, injury from previously applied pesticides or injury due to insects, heat stress, nematodes, or diseases).
- Do not apply when weather conditions favor drift to non-target areas. This product may injure foliage of non-target plants unless they are listed on this label.
- Do not apply this product directly to plants that are grown for food (e.g., fruit trees or maple trees tapped for syrup).
- Do not apply this product in enclosed structures and greenhouses.
- Do not apply more than 2 pints (0.5 lb/ai/ac) of Dimension 2EW per acre (0.73 fl oz per 1000 sq ft) per application and no more than 6 pints (1.5 lb/ai/ac) of Dimension 2EW per acre (2.2 fl. oz per 1000 sq ft) per year.
- In New York State, do not apply more than 2 pints of Dimension 2EW (0.5 lb active ingredient) per acre per year. In Nassau and Suffolk counties of New York, do not exceed 1 pint per year of this product (equivalent to 0.25 lb of active ingredient per acre).

**Shadehouse Areas**

Dimension 2EW may be applied in open shadehouse-type structures where the natural flow of air is unimpeded. Do not apply within three weeks prior to enclosing greenhouses or poly-type structures.

**Treatment of Ornamental Species Not Listed on the Label for Dimension 2EW:**

It is impossible to evaluate tolerance to this product on all ornamental plant species or varieties or under all possible growing conditions. Users who wish to use Dimension 2EW on ornamental species not currently listed on this label may determine the suitability for use by treating a small number of ornamental plants at a recommended rate. Prior to treatment of larger areas, treated plants should be observed for any symptoms of herbicidal injury, such as foliar damage, reduced vigor or stand reduction, for 30 to 60 days of normal growing conditions to determine if the treatment is acceptable to the grower. The user assumes the responsibility for any plant damage resulting from the use of Dimension 2EW on plant species not currently listed on this label as tolerant.

**Application Directions**

Apply Dimension 2EW as a directed spray or as a broadcast over-the-top spray to established ornamentals (see ornamental plant listing for acceptable application method). Make directed sprays to the soil at the base of the ornamentals.

**Tolerant Ornamentals**

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

Name	Tolerant Cultivars	Acceptable Application Method Noted by a (X)	
		Over the Top	Directed
abelia ( <i>Abelia x grandiflora</i> )	nana grand surprise	x	x
acacia, redolens ( <i>Acacia redolens</i> )		x	x
abyssinian red banana ( <i>Ensete ventricosum</i> )	maureli	x	x
Agave† ( <i>Agave bovicornuta</i> ) ( <i>A. gypsophila</i> ) ( <i>A. victoriae-reginae</i> ) ( <i>A. vilmoriniana</i> )	blue glow Queen Victoria  royal	x x x x x	x x x x x
Ajuga carpet bugle ( <i>Ajuga reptans</i> ) ( <i>Ajuga genevensis</i> )	bronze bronze beauty		x x
almond, flowering ( <i>Prunus gladiolosa</i> )			x
apple† ( <i>Malus pumila</i> )			x
aralia, Japanese ( <i>Fatsia japonica</i> )			x

To reduce injury potential:

- Apply to established ornamentals
- Apply product with calibrated equipment using a minimum of 1 gallon of water per 1000 sq. ft.
- Shortly after application apply overhead irrigation to activate the herbicide and wash Dimension 2EW from plant surface onto soil surface.
- In the spring when buds are rapidly growing and expanding, over the top application of Dimension 2EW may temporarily injure new growth of desirable plants. To reduce the possibility of injury at this time, wait to apply Dimension 2EW over the top of newly emerged vegetation until it has hardened off, unless local experience indicates that the ornamental plant will not be injured by the over the top application.
- Do not apply to plants that are under stress such as heat, drought, or frost damage.

Dimension 2EW is a preemergence herbicide that controls weeds during germination. Dimension 2EW does not control emerged broadleaf or grass weeds except crabgrass up to tiller initiation (up to 5 leaves per plant) in ornamental or bare ground settings. Apply prior to germination of target weeds. Optimum weed control is obtained when applications are made to soil that is free of clods, weeds, and debris such as leaves. Prior to applying, control existing vegetation by cultivation, hand weeding, or use of a postemergence herbicide labeled for use in ornamentals. After applying Dimension 2EW, excessive soil disruption may breakdown the herbicide barrier. Minimal surface disruption such as raking should not break down the herbicide barrier once the product has been activated with moisture. Following transplanting, care must be taken that soil or planting mixes have settled firmly through irrigation, rainfall or packing and that there are no cracks that would allow direct contact of this product to the plant roots or plant injury may occur.

**Application Rates**

Apply Dimension 2EW prior to germination of target weed species. Make sequential applications at 3 to 4 month intervals for extended preemergence weed control. Do not exceed maximum use rates per year.

When treating a small area, apply Dimension 2EW with a calibrated sprayer that assures accurate, uniform spray distribution. In general, Dimension 2EW should be thoroughly mixed with water at 1.5 to 2 pints (0.5 to 0.73 oz of product per 1000 sq ft) per acre per application and applied at 20 to 40 psi in a minimum of 1 gallon of water per 1000 sq ft.

Equivalent Rates of Dimension 2EW			
(pt/acre)	(fl oz/1000 sq ft)	(fl oz/100 sq ft)	(ml/100 sq ft)
2	0.73	0.073	2.2

**Tolerant Ornamentals (Cont.)**

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

Name	Tolerant Cultivars	Acceptable Application Method Noted by a (X)	
		Over the Top	Directed
arborvitae ( <i>Thuja occidentalis</i> )	George Peabody nigra pyramidalis smaragh techny woodwardii	x	x x x x x x
arborvitae, dwarf golden ( <i>Thuja orientalis</i> )	aurea nana	x	x
ash, green ( <i>Fraxinus pennsylvanica</i> )			x
ash, autumn purple ( <i>Fraxinus americana</i> )	autumn purple		x
aster, Chinese ( <i>Callistephus chinensis</i> )	dwarf queen		x
azalea ( <i>Rhododendron</i> spp.)	brilliant buccaneer carror chimes (Belgian) Elsie Lee exbury fashion Girard's crimson hardijzer beauty hershey red higasa hinocrimson high tide Holland (hybrid) Marion Lee northern lights Nuccio's Wild Cherry orange cup orchid lights pink gumbo pride of Mobile snow southern charm	x	x x
azalea, flame ( <i>Rhododendron calendulaceum</i> )			x
azalea, Kurume or kirishima ( <i>Rhododendron obtusum</i> )	coral bells	x	x x
bamboo, heavenly ( <i>Nandina domestica</i> )	compacta nana plum passion	x	x x x
banana shrub ( <i>Michelia figo</i> )		x	x
barberry, Japanese ( <i>Berberis thunbergii</i> )	aurea crimson pygmy dwarf pygmy green kobold pygmy red rose glow	x	x x x x x x x x
barberry, purple ( <i>Berberis thunbergii</i> var <i>atropurpurea</i> )	atropurpurea		x
basket flower ( <i>Gaillardia grandiflora</i> )			x
beach grass ( <i>Ammophila breviligulata</i> )			x
bearberry (common) ( <i>Arctostaphylos uva-ursi</i> )	Massachusetts		x
bee balm ( <i>Monarda didyma</i> )			x
begonia ( <i>Begonia</i> spp.)			x
birch, river ( <i>Betula nigra</i> )	dura heat	x	x
birch, European white ( <i>Betula pendula</i> )			x

## Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

Name	Tolerant Cultivars	Acceptable Application Method Noted by a (X)	
		Over the Top	Directed
blackeyed Susan ( <i>Rudbeckia hirta</i> )	goldstrum		x
blanket flower ( <i>Gaillardia</i> spp.)			x
blood grass ( <i>Imperata cylindrica</i> )	rubra	x	x
blue fescue ( <i>Festuca ovina</i> )			x
bluebeard ( <i>Caryopteris x clandonensis</i> )	dark knight	x	x
blueberry† ( <i>Vaccinium</i> spp.)	bluecrop blue jay Jersey north blue northland		x x x x x
bottlebrush ( <i>Callistemon citrinus</i> )	Little John	x	x
bougainvillea ( <i>Bougainvillea</i> sp.)	James Walker pink dream purple queen rosenka Scarlet O' Hara		x x x x x
bower vine ( <i>Pandorea jasminoides</i> )	rosea	x	x
boxwood, green beauty ( <i>Buxus microphylla japonica</i> )	green beauty	x	x
boxwood, welleri ( <i>Buxus sempervirens</i> )	winter gem common boxwood	x x	x x
broom ( <i>Cytisus scoparius</i> ) ( <i>Genista pilosa</i> )	moonlight Vancouver gold		x x
cactus ( <i>Echinocactus grusonii</i> )	golden barrel	x	x
camellia ( <i>Camellia japonica</i> )  ( <i>Camellia sasanqua</i> )	debutante mathotiana supreme chansonette setsukgekka	x x x	x x x x
candytuft ( <i>Iberis sempervirens</i> )	snow white		x
carex, variegated ( <i>Carex</i> spp.)		x	x
carpet bugle ( <i>Ajuga reptans</i> ) ( <i>Ajuga genevensis</i> )	bronze bronze beauty		x x
cedar, red ( <i>Juniperus virginiana</i> )			x
celosia ( <i>Celosia</i> spp.)			x
centaura ( <i>Centaurea montana</i> )			x
cherry tree† ( <i>Prunus x yedoensis</i> )	yoshino	x	x
Chinese pistache ( <i>Pistacia chinensis</i> )			x
chrysanthemum ( <i>Chrysanthemum</i> sp.)	mandarin time	x	x
clevera ( <i>Cleyera japonica</i> )	Leann	x	x
clivia ( <i>Clivia miniata</i> )		x	x
cockscorn, plumosa ( <i>Celosia cristata</i> )	scarlet plumosa		x
coleus ( <i>Coleus blumei</i> )	red kewpie		x
columbine ( <i>Aquilegia</i> spp.)			x



## Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

Name	Tolerant Cultivars	Acceptable Application Method Noted by a (X)	
		Over the Top	Directed
coneflower, purple ( <i>Echinacea purpurea</i> )	magnus purple	x	x x
copper leaf ( <i>Acalypha wilkesiana</i> )			x
coreopsis ( <i>Coreopsis</i> spp.)	moonbeam		x
corn flower ( <i>Centaurea</i> spp.)			x
cotoneaster ( <i>Cotoneaster apiculatus</i> )			x
coyotebrush ( <i>Baccharis pilularis</i> )			x
cycad ( <i>Cycas revoluta</i> )			x
cypress, bald ( <i>Taxodium distichum</i> )		x	x
cypress, Italian ( <i>Cupressus sempervirens</i> )	glauca tiny tower	x	x x
cypress, hinoki false ( <i>Chamaecyparis obtusa</i> )	gracilis torulosa	x	x x
cypress, leyland ( <i>Cupressocyparis leylandii</i> ) hybrid		x	x
daffodil ( <i>Narcissus</i> spp.)	King Alfred		x
damianita ( <i>Chrisactinia mexicana</i> )			x
daylily ( <i>Hemerocallis</i> spp.)	Aztec gold bright yellow (hybrid) single gold (evergreen) Wilson's yellow		x x x x
dianthus (sweet William) ( <i>Dianthus</i> spp.) ( <i>Dianthus gratianopolitanus</i> )	firewatch	x	x
delphinium ( <i>Delphinium</i> spp.)	magic fountain		x
desert spoon ( <i>Dasilyrion wheeleri</i> )		x	x
dogwood ( <i>Cornus florida</i> )			x
dogwood, American ( <i>Cornus sericea</i> )	flavarimea		x
Douglas fir ( <i>Pseudotsuga menziesii</i> )			x
dracaena ( <i>Cordyline indivisa</i> ) ( <i>Cordyline australis</i> )		x x	x x
dusty miller ( <i>Senecio cineraria</i> )		x	x
elm ( <i>Ulmus parvifolia</i> )	drake		x
escallonia ( <i>Escallonia x exonienis</i> )	fradesi	x	x
eulaliagrass/maiden grass ( <i>Miscanthus sinensis</i> )	gracillimus variegatus morning light	x x x	x x x

## Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

Name	Tolerant Cultivars	Acceptable Application Method Noted by a (X)	
		Over the Top	Directed
euonymus ( <i>Euonymus fortunei</i> )	Argenteo-variegata colorata emerald gaiety emerald n' gold gold edge golden princess tricolor vegetus		X X X X X X X
( <i>Euonymus japonicus</i> )	Aureomarginata microphylla variegata "Moness" silver princess silver king	X X	X X X
( <i>Euonymus kiatschovicus</i> )	Manhattan	X	X
eurypops, green leaved ( <i>Euryops pectinatus</i> )	viridis	X	X
fan palm, European ( <i>Chamaerops humilis</i> )			X
fan palm, Mexican ( <i>Washingtonia robusta</i> )			X
fern (various) ( <i>Asparagus</i> spp.)			X
fescue ( <i>Festuca glauca</i> )			X
fescue, blue ( <i>Festuca cinerea</i> )	Elijah blue		X
fetterbush ( <i>Leucothoe fontanesiana</i> )	rainbow		X
figus ( <i>Ficus retusa</i> )	nitidia		X
fir fraser ( <i>Abies fraseri</i> )			X
fortnight lily ( <i>Moraea bicolor</i> )		X	X
Forsythia ( <i>Forsythia</i> x 'Arnold Dwarf') ( <i>Forsythia viridissima</i> ) ( <i>Forsythia xintermedia</i> ) ( <i>Forsythia</i> x 'Meadowlark') ( <i>Forsythia x intermedia</i> ) ( <i>Forsythia suspensa</i> )	arnold dwarf bronxensis dwarf lynwood gold meadowlark spring glory weeping	X X X X X	X X X X X
fountain grass, purple ( <i>Pennisetum setaceum</i> )	rubrum	X	X
fringe flower, Chinese ( <i>Loropetalum chinense</i> )	ruby purple diamond	X	X
fuchsia ( <i>Fuchsia</i> spp.)			X
galium ( <i>Galium odoratum</i> )			X
gardenia ( <i>Gardenia jasminoides</i> )	August beauty Frost proof mystery radicans veitchii white gem	X X X X X X	X X X X X X
( <i>Gardenia thunbergia</i> )		X	X
Garlic, variegated society† ( <i>Thulbaghia violacea</i> )	variegata	X	X
gayfeather ( <i>Liatris spicata</i> )	floristan violet	X	X
gazania ( <i>Gazania rigens leucolaena</i> )	trailing gazania	X	X
geranium ( <i>Pelargonium x hortorum</i> )			X
globe thistle ( <i>Echinops ritro</i> )		X	X

## Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

Name	Tolerant Cultivars	Acceptable Application Method Noted by a (X)	
		Over the Top	Directed
gum ( <i>Eucalyptus citriodora</i> )			x
hawthorn ( <i>Crataegus spp.</i> )	cockspur white crimson cloud enchantress Jack Evans Washington white		x x x x x
hawthorn, Indian ( <i>Rhaphiolepis indica</i> )	ballerina enchantress	x x	x x
heather, twisted ( <i>Erica cinerea</i> )	Mediterranean pink		x
heliotrope ( <i>Heliotropum arborescens</i> )	Iowa		x
hemlock, Canada ( <i>Tsuga canadensis</i> )			x
hibiscus ( <i>Hibiscus sp.</i> ) ( <i>Hibiscus rosa-sinensis</i> )	blue bird brilliant hula girl Seminole pink		x x x x
holly ( <i>Ilex x 'Nellie R. Stevens'</i> ) ( <i>Ilex x attenuata</i> )	Nellie R. Stevens fosteri Savannah	x	x x x
holly, blue ( <i>Ilex x meserveae</i> )	blue boy blue girl China girl		x x x
holly, cassine ( <i>Ilex cassine</i> )		x	x
holly, Chinese ( <i>Ilex cornuta</i> )	Burfordii Carissa needlepoint	x x x	x x x
holly, Japanese ( <i>Ilex crenata</i> )	compacta hellerie Japanese northern beauty sky pencil steeds	x  x x	x x x x x
holly, yaupon ( <i>Ilex vomitoria</i> )		x	x
honeysuckle ( <i>Lonicera xylosteum</i> ) ( <i>Lonicera japonica</i> ) ( <i>Lonicera tatarica</i> )  ( <i>Lonicera x brownii</i> )	Clavey dwarf halliana Canadian white Zabelli dropmore scarlet	   x	   x x x
hop bush, purple ( <i>Dodonea viscosa</i> )	purpurea	x	x
hosta ( <i>Hosta sieboldii</i> ) ( <i>Hosta lancifolia</i> )	albo marginata		x x
ice plant ( <i>Carpobrotus edulis</i> )		x	x
ice plant, rosea ( <i>Drosanthemum floribundum</i> )		x	x
ice plant, white trailing ( <i>Delosperma alba</i> )		x	x
ice plant, purple ( <i>Lampranthus productus</i> )		x	x
ice plant, red spike ( <i>Cephalophyllum alstonii</i> )		x	x
impatiens ( <i>Impatiens spp.</i> ) ( <i>I. balsamina</i> )		x	x x
iris ( <i>Iris spp.</i> )	dwarf blue wedgewood		x x
ivy, English ( <i>Hedera helix</i> )	Bulgaria thorndale		x x
jasmine, Asiatic ( <i>Trachelospermum asiaticum</i> )		x	x



## Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

Name	Tolerant Cultivars	Acceptable Application Method Noted by a (X)	
		Over the Top	Directed
lilyturf ( <i>Liriope muscari</i> )	blue moon evergreen giant lilac beauty majestic monroe white silvery sunproof variegata	x   x  x	x x x x x x
lilyturf, creeping ( <i>Liriope spicata</i> )			x
magnolia ( <i>Magnolia grandiflora</i> )	D.D. Blanchard	x	x
magnolia, saucer ( <i>Magnolia x soulangeana</i> )		x	x
mandevilla ( <i>Mandevilla splendens</i> ) ( <i>Mandevilla x amabilis</i> )	Red Riding Hood crimson jewel	x x	x x
maple, amur ( <i>Acer ginnala</i> )	emerald elf	x	x
maple, Japanese ( <i>Acer palmatum</i> )		x	x
maple, Norway ( <i>Acer platanoides</i> )			x
maple, red† ( <i>Acer rubrum</i> )	red sunset	x	x
maple, silver ( <i>Acer saccharinum</i> )			x
maple sugar† ( <i>Acer saccharum</i> )			x
marguerite, blue ( <i>Felicia amelloides</i> )		x	x
marigold ( <i>Tagetes patula</i> )	honeycomb variegata wheeleris dwarf		x x x
metrosideros ( <i>Metrosideros collinus</i> )	'springfire'	x	x
mock orange† ( <i>Philadelphus spp</i> )	golden snowflake double white		x x
mondo grass ( <i>Ophiopogon japonicus</i> )		x	x
moss rose ( <i>Portulaca grandiflora</i> )	sunnyside		x
mountainash ( <i>Sorbus aucuparia</i> )			x
myrtle, crape ( <i>Lagerstroemia indica</i> )	Byer's hardy lavender Byer's white faurei langer muskogee peppermint lace standard pink zuni	x x    x x	x x x x x x x x
myrtle, wax ( <i>Myrica californica</i> )			x
myrtle, willow ( <i>Agonis flexuosa</i> )			x
narcissus ( <i>Narcissus spp.</i> )			x
New Zealand flax ( <i>Phormium sp.</i> )  ( <i>Phormium tenax</i> )	rainbow chief rainbow queen Jack Spratt	x x x	x x x
oak, laurel ( <i>Quercus laurifolia</i> )		x	x
oak, pin ( <i>Quercus palustris</i> )			x
oak, red ( <i>Quercus rubra</i> )			x

## Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

Name	Tolerant Cultivars	Acceptable Application Method Noted by a (X)	
		Over the Top	Directed
oak, shumard ( <i>Quercus shumardii</i> )		x	x
oak, southern ( <i>Quercus virginiana</i> )			x
oak, willow ( <i>Quercus phellos</i> )		x	x
oleander ( <i>Nerium oleander</i> )	hardy red Mrs. Roeding petite pink sister agnes	x	x x x x
oleaster hedge ( <i>Elaeagnus X ebbengi</i> )		x	x
orange, jessamine† ( <i>Murraya paniculata</i> )		x	x
osmanthus ( <i>Osmanthus fragrans</i> )		x	x
osmanthus, holly leaf ( <i>Osmanthus heterophyllus</i> )	goshiki	x	x
osteospermum ( <i>Osteospermum fruticosum</i> )	whirligig		x
pachysandra ( <i>Pachysandra terminalis</i> )			x
palm, bangalow ( <i>Archontophoenix cunninghamiana</i> )			x
palm, bismark ( <i>Bismarckia nobilis</i> )			x
palm, California fan ( <i>Washingtonia filifera</i> )		x	x
palm, cardboard ( <i>Zamia furfuracea</i> )		x	x
palm, majesty ( <i>Ravenea rivularis</i> )		x	x
palm, paurotis ( <i>Acoelorrhaphe wrightii</i> )		x	x
palm, pindo 'blue' ( <i>Butia capitata</i> )		x	x
palm, queen ( <i>Syagrus romanzoffianum</i> )		x	x
pampas grass ( <i>Cortaderia selloana</i> )	ivory feathers	x	x x
pansy ( <i>Viola x wittrockiana</i> )			x
paper flower ( <i>Bougainvillea glabra</i> )	Barbara Karst	x	x
peach† ( <i>Prunus persica</i> )			x
pepper tree, California ( <i>Schinus molle</i> )		x	x
periwinkle, dwarf ( <i>Vinca minor</i> )			x
petunia ( <i>Petunia x hybrida</i> )	picoti	x	x
philodendron, tree ( <i>Philodendron selloum</i> )		x	x
photinia, red tip ( <i>Photinia x fraseri</i> )			x
pieris ( <i>Pieris taiwanensis</i> )			x
pieris, Japanese ( <i>Pieris japonica</i> )	mountain fire	x	x
pine, Afghan ( <i>Pinus eldarica</i> )		x	x
pine, aleppo ( <i>Pinus halapensis</i> )		x	x
pine, Austrian black ( <i>Pinus nigra</i> )		x	x

## Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

Name	Tolerant Cultivars	Acceptable Application Method Noted by a (X)	
		Over the Top	Directed
pine, Canary Island ( <i>Pinus canariensis</i> )		x	x
pine, Japanese black ( <i>Pinus thunbergia</i> )		x	x
pine, loblolly ( <i>Pinus taeda</i> )		x	x
pine, longleaf ( <i>Pinus palustris</i> )			x
pine, mugo or Swiss Mt. ( <i>Pinus mugo</i> )			x
pine, Scotch ( <i>Pinus sylvestris</i> )			x
pine, slash ( <i>Pinus elliotii</i> )			x
pine, Virginia ( <i>Pinus virginiana</i> )			x
pine, white ( <i>Pinus strobus</i> )		x	x
pineapple, guava† ( <i>Feijoa sellowiana</i> )			x
pittosporum, ( <i>Pittosporum tobira</i> )	golf ball shimi crème de menthe Wheeler's dwarf	x x x	x x x
plum, purple† ( <i>Prunus cistena</i> )			x
plumbago, cape ( <i>Plumbago auriculata</i> )	royal cape	x	x
plume grass ( <i>Erianthus ravennae</i> )		x	x
Podocarpus ( <i>Podocarpus henkelii</i> )	yellowwood	x	x
potentilla ( <i>Potentilla fruticosa</i> ) ( <i>Potentilla nepalensis</i> )	abbotswood		x x
privet ( <i>Ligustrum x vicaryii</i> ) ( <i>Ligustrum japonicum</i> )	golden vicary regal texanum yellow tipped	x	x x x x
privet, glossy ( <i>Ligustrum lucidum</i> )		x	x
pyracantha or firethorn ( <i>Pyracantha x 'Gnome'</i> ) ( <i>Pyracantha coccinea</i> ) ( <i>Pyracantha koidzumii</i> )	gnome lalandei victory	x	x x x
queen palm ( <i>Arecastrum rammanzoffianum</i> )			x
quince, Japanese† ( <i>Chaenomeles japonica</i> )			x
red hot poker ( <i>Kniphofia uvaria</i> )	flamenco	x	x
redbud, eastern ( <i>Cercis canadensis</i> )			x
redwood, coast ( <i>Sequoia sempervirens</i> )		x	x
rhododendron ( <i>Rhododendron spp</i> )	album Cunningham white PJM purple gem silvery pink		x x x x x
rhododendron, Carolina ( <i>Rhododendron carolinianum</i> )			x
rhododendron, catawba ( <i>Rhododendron catawbiense</i> )			x
rhododendron, rhodie max – rosebay ( <i>Rhododendron maximum</i> )			x
ribbon grass ( <i>Phalaris arundinacea</i> )			x

## Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

Name	Tolerant Cultivars	Acceptable Application Method Noted by a (X)	
		Over the Top	Directed
rockcress ( <i>Arabis caucasica</i> )	snowcap		x
rose† ( <i>Rosa banksiae</i> )	luta		x
rose, groundcover ( <i>Rosa</i> x Noare) ( <i>Rosa</i> x Noaschnee) ( <i>Rosa</i> x Noatrum)	flower carpet red flower carpet white flower carpet pink	x x x	x x x
rose, knockout shrub ( <i>Rosa</i> spp. hybrid)	knockout	x	x
rose, rock ( <i>Cistus purpureus</i> )	'brilliancy'	x	x
rosemary† ( <i>Rosmarinus officinalis</i> )			x
rosemary, bog ( <i>Andromeda polifolia</i> )	nana		x
salvia ( <i>Salvia farinacea</i> )	rhea		x
sedge, leather leaf ( <i>Carex buchananii</i> )		x	x
sedum ( <i>S. spurium</i> )	dragon blood red red carpet yellow		x x x
senecio ( <i>Senecio kleinia</i> )		x	x
silk tree ( <i>Albizia julibrissin</i> )		x	x
smoketree ( <i>Cotinus coggyria obovatus</i> )	Grace	x	x
smoketree, royal purple ( <i>Cotinus coggyria</i> )	royal purple		x
snapdragon ( <i>Antirrhinum</i> spp.)			x
snow-in-summer ( <i>Cerastium tomentosum</i> )		x	x
snowball, common ( <i>Viburnum opulus</i> )	sterile	x	x
sourwood ( <i>Oxydendrum arboreum</i> )			x
spiraea ( <i>Astilbe</i> x <i>arendsii</i> )	fanall		x
spiraea ( <i>Spiraea</i> x <i>vanhouttei</i> )	bridal wreath spiraea	x	x
spiraea ( <i>Spiraea</i> spp.)	Anthony Waterer red dolchica froebeli pink goldenflame red snowmound white		x x x x x
spiraea, garland ( <i>Spiraea</i> x <i>arguta</i> )			x
spruce, Black Hills ( <i>Picea glauca</i> var <i>densata</i> )			x
spruce, Colorado blue ( <i>Picea pungens</i> )	glauca	x	x
spruce, dwarf Alberta ( <i>Picea glauca</i> v. <i>albertiana</i> )	conica	x	x
spruce, Norway ( <i>Picea abies</i> )			x
spruce, white ( <i>Picea glauca</i> )	conica		x
spurge, Japanese ( <i>Pachysandra terminalis</i> )	green sheen	x	x
sweet bay ( <i>Laurus nobilis</i> )			x



## Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

Name	Tolerant Cultivars	Acceptable Application Method Noted by a (X)	
		Over the Top	Directed
sweetflag ( <i>Acorus calamus</i> ) ( <i>A. gramineus</i> )	ogon	x	x x
sweetgum ( <i>Liquidambar styraciflua</i> )			x
sweet olive† ( <i>Osmanthus fragrans</i> )			x
sycamore ( <i>Platanus occidentalis</i> ) ( <i>P.I. racemosa</i> )	American California	x	x x
tea tree, New Zealand ( <i>Leptospermum scoparium</i> )	ruby glow martini	x x	x x
tree fern (tiki fern) ( <i>Asparagus virgatus</i> )			x
trumpet flower or Carolina Jessamine ( <i>Gelsemium sempervirens</i> )			x
tulip ( <i>Tulip spp</i> )	apeldoorn		x
tufted hairgrass ( <i>Deschampsia caespitosa</i> )			x
verbena, shrub ( <i>Lantana sellowiana</i> )			x
Verbena, St. Paul's ( <i>Verbena peruviana.</i> )	St. Paul		x
viburnum ( <i>Viburnum spp.</i> )	American cranberry bush arrowwood European cranberry bush linden Mohican wright		x x x x x x
vinca (periwinkle) ( <i>Vinca minor</i> )			x
weigela ( <i>Weigela florida</i> )	java red	x	x
windmill palm ( <i>Trachycarpus fortunei</i> )			x
wisteria, Japanese ( <i>Wisteria floribunda</i> )	Texas purple	x	x
xylosma ( <i>Xylosma congestum</i> )			x
yarrow ( <i>Achillea spp.</i> )			x
yaupon ( <i>Ilex vomitoria</i> )	dwarf		x
yellow bells ( <i>Tecoma stans</i> )		x	x
yesterday-today-and-tomorrow ( <i>Brunfelsia pauciflora</i> )	floribunda	x	x
yew ( <i>Taxus cuspidata</i> ) ( <i>Taxus x media</i> )	capitata denisiformis	x	x x
yucca, red ( <i>Hesperaloe parvifolia</i> )		x	x

† Ornamental species only. Do not use on plants grown for food or feed.

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## Terms and Conditions of Use

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If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. To the extent permitted by law, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitations of Remedies.

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## Warranty Disclaimer

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Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. To the extent permitted by law, SELLER MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

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## Inherent Risks of Use

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It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Seller. To the extent permitted by law, all such risks shall be assumed by buyer.

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## Limitation of Remedies

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To the extent permitted by law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, tort, strict liability, or other legal theories), shall be limited to, at Seller's election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used

To the extent permitted by law, seller shall not be liable for losses or damages resulting from handling or use of this product unless Seller is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall Seller be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use, and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Seller or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

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**Produced for**  
**Corteva Agriscience LLC**  
**9330 Zionsville Road**  
**Indianapolis, IN 46268**

Label Code: CD02-337-021  
Replaced Label: CD02-337-020  
EPA accepted 7/02/21

## Revisions:

1. Updated the language regarding Resistance Management per PR Notices 2017-1 and 2017-2.
2. Update MOA table
3. Add Environmental Hazards:
  - a. Non-Target Organism Advisory: This product is toxic to plants and may adversely...Drift Management Section of this label."
  - b. Groundwater Advisory: "This chemical has properties...water table is shallow."
  - c. Surface Water Advisory: "This product may impact surface... runoff for several weeks after application."
4. Update the refer to statement on base label to read, "Refer to inside of label booklet for additional information including Directions for Use."
5. Related to change of company name, address, and contact information for company 62719 accepted by EPA January 5, 2021 updated Trademark statement: Updated to "™/®Trademarks of Corteva Agriscience and its affiliated companies and the following
  - a. Updated company name to "Corteva Agriscience LLC
  - b. Terms and Conditions for Use: Updated
  - c. Warranty Disclaimer: Updated
  - d. Inherent Risks of Use: Updated
  - e. Limitation of Remedies: Updated
6. Add Mandatory Spray Drift Management section
7. Add Spray Drift Advisories section.