



# Xonerate<sup>®</sup> 2SC

## Herbicide

For Selective Control of Weeds in Turf on Golf Courses, Sod Farms, Residential and Commercial Turf Sites, Park and Recreation Areas, Athletic Fields, School Grounds and other Turf Areas and Conifers in Nurseries and Field Plantings (including Christmas Trees)

EPA Reg. No. 279-3621 EPA Est. No. 86088-PA-001

Active Ingredient:	By Wt.
<b>Amicarbazono:</b>	
4-amino-N-(1,1-dimethylethyl)-4,5-dihydro-3-(1-methylethyl)-5-oxo-1H-1,2,4-triazole	
-1-carboxamide.....	23.25%
<b>Other Ingredients:</b> .....	76.75%
<b>Total</b>	<b>100.00%</b>

XONERATE 2SC HERBICIDE contains 2.0 lb. Amicarbazono per gallon.

**Read the label before use**  
**KEEP OUT OF REACH OF CHILDREN**

### CAUTION/PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

[See back panel for additional precautionary statements]

**Sold By**



FMC Corporation  
2929 Walnut Street  
Philadelphia PA 19104

**Net Contents: 12 fl oz**

<b>FIRST AID</b>	
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Call poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person..</li> </ul>
<b>If on skin:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15 to 20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with warm water for 15 to 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>
<p><b>Note to Physician:</b> No specific antidote is available. Treat the patient symptomatically. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>	
<p><b>FOR 24-HOUR MEDICAL EMERGENCY ASSISTANCE CALL PROPHARMA: 1-866-303-6952</b></p>	
<p><b>FOR 24-HOUR CHEMICAL EMERGENCY CALL CHEMTREC: Spill, Leak, Fire or Exposure 1-800-424-9300</b></p>	
<p><b>For Product Information Call: 1-800-321-1FMC(1362)</b></p>	

**PRECAUTIONARY STATEMENTS**  
**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**  
**CAUTION**

Harmful if swallowed. Harmful if absorbed through skin. Avoid contact with skin, eyes or clothing. Causes moderate eye irritation. 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)**  
**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves (barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, natural rubber (includes natural rubber blends and laminates) ≥ 14 mils, polyethylene, polyvinylchloride (PVC) ≥ 14 mils, or viton ≥ 14 mils)
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

**ENGINEERING CONTROL STATEMENT**

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.

**PHYSICAL CHEMICAL HAZARDS**

Do not mix or allow this product to come into contact with oxidizing agents. Hazardous chemical reaction may occur.

## ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from areas treated. Do not contaminate water when disposing of equipment washwaters or rinseate. Do not use the same spray equipment for other purposes unless thoroughly cleaned.

Do not allow sprays to drift onto adjacent desirable plants. Drift or runoff may adversely affect non-target plants.

Xonerate 2SC Herbicide has properties which may result in ground water contamination. Use of Xonerate 2SC Herbicide in areas where soils are permeable and groundwater is near the surface should be avoided.

To prevent damage to crops and other desirable plants, read and follow all directions and precautions on this label before using.

### GROUND WATER ADVISORY

This chemical 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.

Amicarbazone and its major degradates are known to leach through soil into ground water under certain conditions as a result of label use.

### SURFACE WATER ADVISORY

This product may contaminate surface water via runoff of rain water or drift of spray in wind. This product is classified as having a high potential for reaching surface water via runoff 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 loading of Amicarbazone and its degradates from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce this product's potential to reach aquatic sediment via runoff.

This product may not be mixed or loaded within 50 feet of any wells (including abandoned wells and drainage wells), sink holes, perennial or intermittent streams and rivers and natural or impounded lakes and reservoirs. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or properly diked mixing/loading areas.

Operations that involve mixing, loading, rinsing or washing of this product into or from pesticide handling or application equipment or containers within 50 feet of any well are prohibited unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or washwater and rainwater that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above specific minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site. States or local tribes may have in effect additional requirements regarding well-head setbacks and operational containment. State, Local, or Tribal regulations may be more restrictive than those listed on this product label. The most restrictive requirements must be followed.

This product must be used in a manner which will prevent back siphoning in wells, spills or improper disposal of excess pesticide, spray mixtures or rinsates.

## 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 (PPE) 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 12 hours following application.

Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required 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, chemical resistant gloves (made of barrier laminate, butyl rubber  $\geq$  14 mils, nitrile rubber  $\geq$  14 mils, neoprene rubber  $\geq$  14 mils, natural rubber (includes natural rubber blends and laminates)  $\geq$  14 mils, polyethylene, polyvinylchloride (PVC)  $\geq$  14 mils, or viton  $\geq$  14 mils), and shoes 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.

Do not enter or allow people (or pets) to enter the treated area until sprays have dried.

Read these entire **DIRECTIONS FOR USE** and **WARRANTY AND DISCLAIMER STATEMENT** before using this product.

## PRODUCT INFORMATION

Xonerate 2SC Herbicide is a selective, postemergence herbicide that may be used for the control of certain weeds in established turfgrasses.

Xonerate 2SC Herbicide is formulated as a 23.25% suspension concentrate (SC) herbicide.

Apply Xonerate 2SC Herbicide either alone, in tank mix combinations with, or sequentially prior to or after additional herbicides. When tank mixing, always observe all precautionary statements and limitations on labeling of all products.

Water is the recommended liquid carrier for Xonerate 2SC Herbicide.

## RESISTANCE MANAGEMENT

For resistance management, Xonerate 2SC Herbicide is an Herbicide Resistance Action Committee (HRAC) Group C1 Herbicide, a photosynthesis II inhibitor (Weed Science Society of America (WSSA) Group 5). Any weed population may contain or develop plants naturally resistant to an herbicidal mode of action. Resistant biotypes can eventually dominate the weed population if herbicides with an identical mode of action are used repeatedly on the same site. If this happens, control of resistant biotypes will not occur unless an herbicide with a different mode of action is utilized. Whenever possible, tank mix or rotate the use of Xonerate 2SC Herbicide with herbicides that have a different mode of action.

Xonerate 2SC Herbicide will not control triazine-resistant (atrazine, simazine, metribuzin) and diuron-resistant weeds.

Other resistance mechanisms that are not linked to site of action, but specific to individual chemicals, such as enhanced metabolism, may also exist. The use of Xonerate 2SC Herbicide should conform to resistance management strategies established for the use area. Consult with your chemical dealer, consultant, extension turfgrass specialist or agricultural advisor for resistance management strategies for your area.

**Read the entire DIRECTIONS FOR USE before using Xonerate 2SC Herbicide.**

## USE RESTRICTIONS

- Do not apply this product using aerial application equipment.
- Do not apply this product if the soil pH is greater than 7.4.
- Do not mix, load or clean spray equipment within 50 feet of any wells or aquatic systems, including marshes, ponds, ditches, streams, lakes, etc.
- Do not apply within 50 feet of well-heads or the above mentioned aquatic systems.
- Do not apply more than 29.0 fl oz/A (fluid ounces per acre) of Xonerate 2SC Herbicide per season.
- Do not apply more than 29.0 fl oz/A of Xonerate 2SC Herbicide per single application.

- Do not allow this chemical to drift onto other crops or non-target plants.
- Do not apply this product through any type of irrigation system.
- Do not apply to turf under moisture stress. If necessary irrigate before application to eliminate moisture stress.
- To minimize turf injury, irrigate after application with 0.1 to 0.2 inches water. See specific recommendations for turf species for timing of irrigation.

## USE PRECAUTIONS

### IN ORDER TO AVOID DAMAGING TURFGRASSES:

- Do not apply Xonerate 2SC Herbicide where annual bluegrass is maintained as a desirable turf.
- Use on turfgrass species other than those listed in the **Cool-Season Turfgrasses and Warm-season Turfgrasses** tables may result in unacceptable injury.
- Do not apply Xonerate 2SC Herbicide to newly established (within six months) turfgrasses, unless otherwise directed on this label.
- Do not apply Xonerate 2SC Herbicide less than four weeks before cutting or lifting sod.
- Do not replant any crop to treated areas other than turfgrasses for a period of 12 months after the last application.
- Do not apply when turfgrasses are under stress.
- Allow at least 1 week between last application and overseeding with winter grasses.
- Apply to actively-growing weed populations.

## LATERAL MOVEMENT

Under certain conditions, Xonerate 2SC may have the potential to move laterally onto sensitive grasses. If high amounts of rainfall are predicted prior to application, it is advised to leave at least a 5 ft barrier between the sensitive species and edge of treated area to ensure an adequate buffer is established if lateral movement occurs.

## SPRAY DRIFT MANAGEMENT

Spray equipment and weather affect spray drift. Consider all factors when making application decisions. Where states or tribes have more stringent regulations, they must be observed. Avoiding spray drift is the responsibility of the applicator or grower. To reduce the potential for drift, the application equipment must be set to apply medium to course droplets (i.e., ASAE Standard 572) with corresponding spray pressure. Use high flow rate nozzles to apply the highest practical spray volume. With most nozzle types, narrow spray angles produce larger droplets. Follow the nozzle manufacturer's directions on pressure, orientation, spray volume, etc., in order to minimize drift and optimize coverage and control.

### Wind

Avoid making applications when spray particles may be carried by air currents to nontarget areas. Do not spray if wind is gusty, below 2 mph, or in excess of 10 mph and moving in the direction of adjacent sensitive areas. Local terrain may influence wind patterns; the applicator must be familiar with local conditions and understand how they may impact spray drift.

### Sensitive Areas

Sensitive areas to this product are defined as bodies of water (ponds, lakes, rivers, streams, and wetlands), known habitats of threatened or endangered species and non-labeled agricultural crop areas. Application must take all precautions necessary to keep spray drift from reaching sensitive areas.

### Temperature Inversions

A surface temperature inversion (i.e., increasing temperature with increasing altitude) greatly increases the potential for drift. Presence of ground fog is a good indicator of a surface temperature inversion. Do not apply during temperature inversions. Always make applications when there is some air movement to determine the direction and distance of possible spray drift.

### Equipment

All ground equipment must be properly maintained and calibrated using appropriate carriers or surrogates. Do not apply with a nozzle height greater than 4 ft above the ground surface.

### Sprayer Cleanup

To avoid injury or exposure to non-target crops, thoroughly clean all mixing and spray equipment, including pumps, nozzles, lines and screens with a good quality tank cleaner, on an approved rinse pad or on a field site where an approved crop is grown.

### Recommended Turfgrass Sites

Xonerate 2SC Herbicide may be applied to tolerant turf species on golf courses, seed and sod production fields, residential sites (including home lawns), schools, playgrounds, parks, recreational areas, sports fields, common areas and grass roadsides maintained as a lawn. Do not apply Xonerate 2SC Herbicide where annual bluegrass is maintained as a desirable turf.

### Turfgrass Tolerance

Apply to turfgrasses established for six months unless otherwise directed on this label. With the exception of Kentucky Bluegrass, cool season turfgrasses established in the fall months can be treated the following

spring. Kentucky Bluegrass should be established for twelve months before application of Xonerate 2SC Herbicide. The use of Xonerate 2SC Herbicide on turf that is not well-established, or that has been weakened by weather, pests, diseases, chemicals, mechanical injury or other related stress factors may result in adverse turf injury.

This product should only be applied to sites that are composed of the following turfgrass species unless trial use has indicated that the turf species not listed here is tolerant to Xonerate 2SC Herbicide.

<b>Cool-Season Turfgrasses<sup>1</sup></b>	
<b>Bentgrass, Creeping</b>	<i>Agrostis stolonifera</i>
<b>Bluegrass, Kentucky</b>	<i>Poa pratensis</i>
<b>Fescue, Fine</b>	<i>Festuca spp.</i>
<b>Fescue, Tall</b>	<i>Festuca arundinacea</i>
<b>Ryegrass, Perennial</b>	<i>Lolium perenne</i>
<b>Warm-Season Turfgrasses<sup>1</sup></b>	
<b>Bahiagrass</b>	<i>Paspalum notatum</i>
<b>Bermudagrass</b>	<i>Cynodon dactylon</i>
<b>Buffalograss</b>	<i>Buchloe dactyloides</i>
<b>Centipedegrass</b>	<i>Eremochloa ophiuroides</i>
<b>Kikuyugrass</b>	<i>Pennisetum clandestinum</i>
<b>Seashore Paspalum</b>	<i>Paspalum vaginatum</i>
<b>St. Augustinegrass</b>	<i>Stenotaphrum secundatum</i>
<b>Zoysiagrass</b>	<i>Zoysia japonica</i>

<sup>1</sup>Cool- and warm-season turfgrasses have demonstrated acceptable tolerance to Xonerate 2SC Herbicide. However, not all cultivars have been evaluated.

When applied as directed under the conditions described, established turfgrasses are tolerant to this product. Temporary yellowing of the turf may occur after application. This effect is temporary and the turf will recover in 14 to 21 days.

Applications to cool-season turfgrasses when the daily high air temperature exceeds 85°F may result in unacceptable injury. Xonerate 2SC Herbicide may be applied postemergence to tolerant turfgrasses at rates of 3.0 to 29.0 fl oz/A. See additional information for specific turfgrass species in section titled Timing and Rates of Application.

### Mixing Instructions – Liquid Carriers

Xonerate 2SC Herbicide is a suspension concentrate formulation that must be mixed in water before application. The proper mixing sequence for Xonerate 2SC Herbicide and recommended tank mixtures with the appropriate liquid carrier is as follows:

- 1 Fill the spray tank or nurse tank 1/4 full with the appropriate liquid carrier or water.
- 2 Start the recirculation and agitation system and continue throughout mixing and application.
- 3 If the compatibility test indicates the need for a compatibility agent, add the recommended amount to the spray tank.
- 4 Add the appropriate quantity of Xonerate 2SC Herbicide to the spray tank.
- 5 If tank mixing with wettable powders, dry flowables or water dispersible granule products in water as the carrier, these may be added now.
- 6 If tank mixing with suspension concentrates, add the products to the spray tank.
- 7 If tank mixing with emulsifiable concentrates or soluble products, add the products to the spray tank.
- 8 If mixing any additional spray adjuvants in the mixture, add them after all other products have been mixed.
- 9 Xonerate 2SC Herbicide and all registered mixtures should be kept agitated once mixed and then sprayed out.
- 10 Do not allow mixtures to stand for prolonged periods of time.



**Compatibility**

Xonerate 2SC Herbicide can be tank-mixed with other herbicides, pesticides and liquid fertilizers not shown on this label however compatibility needs to be determined before mixing. A compatibility test can be conducted with the following method:

- 1 In a small container (jar with lid), add 0.5 to 1.0 qt of the spray carrier.
- 2 Add all ingredients of the tank mix in the same ratio as the anticipated use into spray carrier.
- 3 Vigorously shake the mixture and allow to stand for 5 to 10 minutes.
- 4 Rapid precipitation, settling, changes in color, etc. and/or failure to re-suspend indicates that the mixture is physically incompatible and should not be applied.
- 5 If the mixture is physically compatible, the tank mix should be tested to determine safety (no adverse turfgrass injury) before treating large areas. Observe treated areas for 2 to 3 weeks after application. If injury is not considered adverse, then the remaining turf area may be treated.

**Sprayer Equipment Clean-out**

After applying Xonerate 2SC Herbicide the sprayer must be thoroughly cleaned with the following procedure:

- 1 Drain the tank completely, then wash out tank, boom and hoses with clean water.
- 2 Drain the tank again.
- 3 Fill the tank half-full with water and add ammonia at a dilution rate of 1.0% v/v (i.e. one gallon household ammonia per 100 gal of rinse). Completely fill tank with water. Operate the sprayer for 10 minutes to flush hoses, boom and nozzles.
- 4 Drain the sprayer system. Rinse the tank with clean water and flush the hoses, boom and nozzles. Remove and clean spray tips and screens separately.
- 5 Properly dispose of all cleaning solution and rinsate in accordance with Federal, State and local guidelines.

Do not drain or flush sprayer on or near desirable plants. Do not contaminate any body of water.

**SPRAY APPLICATION**

**Broadcast Treatment**

Accurately calibrate the sprayer prior to mixing the herbicide treatments. Apply Xonerate 2SC Herbicide and the labeled tank mix partners in a minimum of 20 gal of total spray volume/A using broadcast boom equipment. Power sprayers equipped with a spray wand/gun may also be used for broadcast or spot application. Application must be made at a sufficient spray pressure and volume to provide accurate and uniform application of spray particles to a given area without causing spray drift to non-target areas. If mixed with other labeled herbicides, the spray volume may be no less than the minimum volume recommended by any tank mix product used or 20 gal, whichever is greater. Use appropriately sized mesh screens and in-line strainers. Agitate thoroughly before and during application with either bypass or mechanical agitation. Rinse the sprayer thoroughly with clean water immediately after each use.

**Improper spray pattern overlaps produce areas of over-application and may increase the potential for turf damage.**

**Spot Treatment**

Backpack and compression sprayers may be used for small turfgrass areas and spot treatments. Wands fitted with a flat fan nozzle tip should be held stationary at the proper height during application. A side-to-side or swinging arm motion may result in uneven spray coverage. Spray target weed to ensure even coverage. Spraying to wet may increase risk of unwanted turf injury.

For Spot Applications: Use the Following		
Gallons	Ounces of Xonerate 2SC	Milliliters of Xonerate 2SC
1	0.07 fl. oz.	2.0 mL
2	0.14 fl. oz.	4.0 mL
4	0.28 fl. oz.	8.0 mL
Note: These rates are equivalent to 3.0 fl. oz./a		

**APPLICATION METHODS AND TIMINGS**

Apply Xonerate 2SC Herbicide postemergence to actively-growing broadleaf and grass weeds. Do not apply when environmental conditions favoring drift.

Xonerate 2SC Herbicide may be tank mixed with herbicides registered for use on turfgrass sites. See tank mix instructions listed under specific turfgrass species for more information.

**WEEDS CONTROLLED OR SUPPRESSED**

Depending on the use rate, Xonerate 2SC Herbicide will control or suppress the following broadleaf and grass weeds in turf.

WEEDS CONTROLLED OR SUPPRESSED by XONERATE 2SC HERBICIDE	
Alexandergrass	Lovegrass, Indian (suppression)
Betony, Florida (suppression)	Morningglory spp
Bittercress, hairy	Mustard, wild
Bluegrass, annual (annual biotypes)	Nightshade, eastern black (suppression)
Bluegrass, annual (perennial biotypes)(suppression)	Panicum, fall
Bluegrass, roughstalk ( <i>Poa trivialis</i> )	Parsely-piert
Burweed, lawn (spurweed)	Pennycress, field
Carpetweed	Pepperweed, Virginia
Cheat (suppression)	Pigweed spp.
Chickweed, common	Prickly sida (suppression)
Chickweed, sticky	Purslane, common
Clover, hop (suppression)	Radish, wild
Cocklebur, common (suppression)	Ragweed, common
Crabgrass spp. (suppression)(does not control India crabgrass ( <i>Digitaria longiflora</i> ))	Ragweed, giant (suppression)
Creeping beggarweed (suppression)	Shepherd's-purse
Cudweed spp.	Sida, prickly (suppression)
Diamond-flower, old world (suppression)	Smartweed, Pennsylvania
Foxtail sp. (suppression)	Speedwell spp.
Dichondria	Spurge spotted
Drymary, heartleaf	Tropical Signalgrass*
Hemp sesbania (suppression)	Toadflax, oldfield
Henbit	Velvetleaf
Horsenettle (suppression)	Waterhemp, tall
Jimsonweed	Waterhemp, common
Kochia (suppression)	Whitehead broom (suppression)
Lambsquarters, common	Woodsorrel, yellow
*For effective tropical signalgrass control make two applications with a tank mix herbicide, such as Dismiss® South	

Established Cool Season Turf			
Site and Turfgrass Species	Pest	Rate	Application Intervals
Creeping Bentgrass ( <i>Agrostis stolonifera</i> ) Tees and Greens Surrounds	Annual Bluegrass ( <i>Poa annua</i> )	3.0 fl. oz./a Four Applications	Make appli- cations at 14 day inter- vals
Creeping Bentgrass ( <i>Agrostis stolonifera</i> ) Fairways		3.0 fl oz./a Four Applications OR 6.0 fl. oz./a Two Applications	Make appli- cations at 14 day inter- vals
Kentucky Bluegrass ( <i>Poa pratensis</i> )		3.0 fl oz./a Four Applications OR 6.0 fl. oz./a Two Applications	Make appli- cations at 14 day inter- vals
Tall Fescue ( <i>Festuca arundinacea</i> ) Fine Fescue ( <i>Festuca spp.</i> ) Perennial Ryegrass ( <i>Lolium perenne</i> )		6.0 fl. oz./a Two Applications	Make appli- cations at 14-21 day intervals

#### Cool-Season Turfgrasses

Annual bluegrass weed control in established creeping bentgrass, Kentucky bluegrass, fine fescues, tall fescue and perennial ryegrass.

#### Creeping Bentgrass-Tees

Creeping bentgrass ('A1', 'A4', 'G6', 'L93', 'Pennway', 'Penncross', and 'Seaside') maintained at tee clipping heights has demonstrated acceptable tolerance to Xonerate 2SC Herbicide. Other creeping bentgrass cultivars may be tolerant; however, the end user is advised to do a tolerance test on a small area before spraying all the intended turfgrass areas.

For annual bluegrass control, apply Xonerate 2SC Herbicide in the spring months, two to four weeks after the resumption of active bentgrass growth, at 3.0 fl oz Xonerate 2SC Herbicide/A. Repeat the application at 14 day intervals for a maximum of up to 4 applications. **Repeat applications should be made in an alternate direction to the previous application.**

- Apply Xonerate 2SC Herbicide at air temperatures ranging from 55 to 80 °F.
- Do not apply Xonerate 2SC Herbicide to creeping bentgrass tees exhibiting stress from adverse weather, pests, disease, chemicals, mechanical injury or other related stress factors or when the daytime air temperature is expected to exceed 80°F.
- Do not apply Xonerate 2SC Herbicide to creeping bentgrass tees in the summer or early fall months.
- **Do not apply to bentgrass under moisture stress. If necessary, irrigate before application to eliminate moisture stress.**
- **To minimize bentgrass injury, irrigate with 0.1 to 0.2 inches water within 2 to 4 hours after application.**
- **Do not apply Xonerate 2SC Herbicide to creeping bentgrass that has received an application of products that contain mefludide within the previous 3 months.**

Improper spray pattern overlaps produce areas of over-application and may increase the potential for turf damage. Additionally, all potential tank mixtures with fungicides, insecticides, other herbicides have not been evaluated and should be tested on a small scale basis before widespread use.

**Xonerate 2SC Herbicide is effective in controlling *Poa annua* and is recommended only for creeping bentgrass with a 10% or less population density of *Poa annua*.** Applications to creeping bentgrass with high populations (>10%) of *Poa annua* can result in a decrease of overall turf quality due to the rapid elimination of *Poa annua*.

**Results from controlling *Poa annua* infestations may be mistaken as temporary injury to creeping bentgrass or by thinning of the turf.** Creeping bentgrass will gradually fill in the resultant bare areas. The implementation of cultural practices to hasten the growth of creeping bentgrass will aid in the healing process. Treated areas may be reseeded at 7 or more days after the last application of Xonerate 2SC Herbicide.

#### Creeping Bentgrass- Fairways and Roughs

Creeping bentgrass ('A1', 'A4', 'G6', 'L93', 'Pennway', 'Penncross' and 'Seaside') has demonstrated acceptable tolerance to Xonerate 2SC Herbicide. Other creeping bentgrass cultivars may be tolerant; however, the end user is advised to do a tolerance test on a small area before spraying all the intended turfgrass areas.

For annual bluegrass control, apply Xonerate 2SC Herbicide in the spring months, two to four weeks after the resumption of active bentgrass growth, at 3.0 fl oz Xonerate 2SC Herbicide/A. Repeat the application at 14 day intervals for a maximum of up to 4 applications. Repeat applications should be made in an alternate direction to the previous application. Improper spray pattern overlaps produce areas of over-application and may increase the potential for turf damage. Additionally, all potential tank mixtures with fungicides, insecticides, and other herbicides should be tested on a small scale basis before widespread use. Alternatively, apply Xonerate 2SC Herbicide in the spring months, two to four weeks after the resumption of active bentgrass growth, at 6.0 fl oz Xonerate 2SC Herbicide/A for annual bluegrass control. Repeat the application at 14 day intervals for a maximum of 2 applications.

- **Apply Xonerate 2SC Herbicide at air temperatures ranging from 55 to 80°F.**
- Do not apply Xonerate 2SC Herbicide to creeping bentgrass fairways exhibiting stress from adverse weather, pests, disease, chemicals, mechanical injury or other related stress factors or when the daytime air temperature is expected to exceed 80°F.
- Do not apply Xonerate 2SC Herbicide to creeping bentgrass in the summer or early fall months.
- **Xonerate 2SC Herbicide is effective in controlling *Poa annua* and is recommended only for creeping bentgrass with a 10% or less population/density of *Poa annua*.** Applications to creeping bentgrass with high populations (>10%) of *Poa annua* can result in a decrease of overall turf quality due to the rapid elimination of *Poa annua*.
- **Results from controlling *Poa annua* infestations may be mistaken as temporary injury to creeping bentgrass or by thinning of the turf.** Creeping bentgrass will gradually fill in the resultant bare areas. Treated areas may be reseeded at 7 or more days after the last application of Xonerate 2SC Herbicide.
- **Do not apply to bentgrass under moisture stress. If necessary, irrigate before application to eliminate moisture stress.**
- **To minimize bentgrass injury, irrigate with 0.1 to 0.2 inches water within 2 to 4 hours after application.**
- **Do not apply Xonerate 2SC Herbicide to creeping bentgrass that has received an application of products that contain mefludide within the previous 3 months.**

Xonerate 2SC Herbicide may be tank mixed with labeled herbicides such as 2,4-D, MCPP, dicamba or two and three-way herbicides that contain mixtures of 2,4-D, MCPP, clopyralid, dicamba, fluroxypyr, carfentrazone, or triclopyr to enhance control of emerged broadleaf weeds.

Xonerate 2SC Herbicide may also be tank mixed with preemergence herbicides for residual control of crabgrass species and other summer annual weeds.

#### Fine Fescues, and Tall Fescue, Perennial Ryegrass

For annual bluegrass control, Xonerate 2SC Herbicide may be applied twice at 6.0 fl oz Xonerate 2SC Herbicide/A at 14 to 21 day intervals.

- Do not apply Xonerate 2SC Herbicide to cool season turfgrasses exhibiting stress from adverse weather, pests, diseases, chemicals, mechanical injury or other related stress factors, or when the daytime air temperature is expected to exceed 85 °F.
- **To minimize the potential for injury to fine fescues, tall fescue and perennial ryegrass, irrigate within 24 hours of application with 0.1 to 0.2 inches of water.**
- Perennial ryegrass and tall fescue may be seeded at 7 or more days after the last application of Xonerate 2SC Herbicide.
- Xonerate 2SC Herbicide may also be tank mixed with preemergence herbicides for residual control of crabgrass species and other summer annual weeds.
- **Do not apply Xonerate 2SC Herbicide to perennial ryegrass, tall fescue, or fine fescue that has received an application of products that contain mefludide within the previous 3 months.**

Xonerate 2SC Herbicide may be tank mixed with various recommended herbicides such as 2,4-D, MCPP, dicamba or two and three-way herbicides that contain mixtures of 2,4-D, MCPP, clopyralid, dicamba, fluroxypyr, carfentrazone, or triclopyr to enhance control of emerged broadleaf weeds.

#### Kentucky Bluegrass

For annual bluegrass control, Xonerate 2SC Herbicide may be applied twice at 6.0 fl oz/A at 14 day intervals in the spring months. Alternatively, apply Xonerate 2SC Herbicide in the spring months at 3.0 fl oz Xonerate 2SC Herbicide/A. Repeat the application at 14 day intervals for a maximum of up to 4 applications. **Repeat applications should be made in an alternate direction to the previous application.**

- Do not apply Xonerate 2SC Herbicide to Kentucky bluegrass exhibiting stress from adverse weather, pests, diseases, chemicals, mechanical injury or other related stress factors, or when the daytime air temperature is expected to exceed 85 °F.
- **Kentucky Bluegrass should be established for twelve months before application of Xonerate 2SC Herbicide.**
- **Do not apply to Kentucky bluegrass under moisture stress. If necessary, irrigate before application to eliminate moisture stress.**
- **To minimize the potential for injury to Kentucky Bluegrass, irrigate within 24 hours of application with 0.1 to 0.2 inches of**

water.

- Do not apply Xonerate 2SC Herbicide to Kentucky bluegrass that has received an application of products that contain mefluidide within the previous 3 months.

Xonerate 2SC Herbicide may be tank mixed with various recommended herbicides such as 2,4-D, MCPP, dicamba or two and three-way herbicides that contain mixtures of 2,4-D, MCPP, clopyralid, dicamba, fluroxypyr, carfentrazone, or triclopyr to enhance control of emerged broadleaf weeds.

Xonerate 2SC Herbicide may also be tank mixed with preemergence herbicides for residual control of crabgrass species and other summer annual weeds.

Established Warm Season Turf			
Turfgrass Species	Pest	Rate	Application Intervals
<b>Bahiagrass</b> ( <i>Paspalum notatum</i> ) <b>Bermudagrass</b> ( <i>Cynodon dactylon</i> ) <b>Buffalograss</b> ( <i>Bouteloua dactyloides</i> ) <b>Centipedegrass</b> ( <i>Eremochloa ophiuroides</i> ) <b>Kikuyugrass</b> ( <i>Pennisetum clandestinum</i> ) <b>Seashore Paspalum</b> ( <i>Paspalum vaginatum</i> ) <b>St. Augustinegrass</b> ( <i>Stenotaphrum secundatum</i> ) <b>Zoysiagrass</b> ( <i>Zoysia spp.</i> )	Annual Bluegrass and annual broadleaf weeds	9.0 - 14.0 fl. oz./a	Make additional applications at 14-21 day intervals
<b>Bermudagrass overseeded with Perennial Ryegrass or <i>Poa trivialis</i></b>	Annual Bluegrass	6.0 - 11.0 fl. oz./a 2 - 3 Applications	14 day intervals 2 applications for the high rate 3 applications for the low rate
<b>Bermudagrass overseeded with Perennial Ryegrass or <i>Poa trivialis</i></b>	Annual Bluegrass and Per. Ryegrass or <i>Poa trivialis</i> Transition	14.0 - 29.0 fl. oz./a	This application will control annual bluegrass and aid in the transition from perennial ryegrass to bermudagrass. Applications with mefluidide containing products or to turf under mefluidide regulation will severely damage or kill perennial ryegrass

### Warm Season Turfgrasses

**Annual bluegrass and broadleaf weed control in established bahiagrass, bermudagrass, buffalograss, centipedegrass, kikuyugrass, seashore paspalum, St. Augustinegrass, tropical signalgrass and zoysiagrass.**

#### Annual bluegrass and annual broadleaf weed control.

Xonerate 2SC Herbicide may be applied postemergence to tolerant warm-season turf at rates of 9.0 to 29.0 fl oz/A. Xonerate 2SC Herbicide may be applied to warm-season turfgrasses that are dormant, partially dormant or actively-growing. When using low rates (9.0 to 14.0 fl oz/A), repeat applications are recommended but the maximum rate per season must not exceed 29.0 fl oz Xonerate 2SC Herbicide/A. Repeat applications should be made 2 to 3 weeks after the initial application.

- Do not apply to turf under moisture stress. If necessary, irrigate before application to eliminate moisture stress.
- To minimize the potential for injury to these grasses, irrigate in the early morning the day after application with 0.1 to 0.2 inches water.
- Do not use Xonerate 2SC Herbicide on St. Augustinegrass in the summer months when air temperatures are greater than 90°F.

Xonerate 2SC Herbicide can be tank mixed with labeled herbicides that contain metsulfuron, 2,4-D, dicamba or mixtures of 2,4-D, MCPP, clopyralid, dicamba, fluroxypyr, carfentrazone, or triclopyr to enhance control of emerged broadleaf weeds. If sedge species are present on the site, Xonerate 2SC Herbicide can be tank mixed with herbicides labeled for control of sedges. Consult the tank mix partner label for turfgrass species tolerance, weeds controlled and maximum weed sizes

at applications. This product can be tank mixed with Dismiss Turf Herbicide for the control of sedges. Follow the most restrictive labeled timing between Xonerate 2SC Herbicide and any tank mix partner. Xonerate 2SC Herbicide may also be tank mixed with preemergence herbicides for residual control of crabgrass species and other summer annual weeds.

#### **Bermudagrass Tees and Fairways Overseeded in the Fall with Perennial Ryegrass or *Poa trivialis* (Roughstalk Bluegrass)**

Xonerate 2SC Herbicide may be applied at 14.0 to 29.0 fl oz/A one or more weeks before overseeding bermudagrass with either perennial ryegrass or *Poa trivialis* for control of emerged annual bluegrass.

#### **XONERATE 2SC HERBICIDE APPLIED TO SEEDLING POA TRIVIALIS WILL RESULT IN SEVERE TURF INJURY.**

In early- to mid-spring months Xonerate 2SC Herbicide at 6.0 to 11.0 fl oz/A may be used to control annual bluegrass and certain winter annual broadleaf weeds in bermudagrass overseeded the previous fall with perennial ryegrass. Make a second application 14 to 21 days after the first application. Delay the spring applications until perennial ryegrass is actively-growing and has recovered from winter-induced stress but no sooner than six months after seeding. Perennial ryegrass clipped at 0.5 to 0.75 inch has shown good tolerance to Xonerate 2SC Herbicide at rates up to 6.0 fl oz/A. Temporary injury to perennial ryegrass may occur for 1 to 2 weeks after application.

- Do not apply Xonerate 2SC Herbicide to perennial ryegrass exhibiting stress from adverse weather, pests, diseases, chemicals, mechanical injury or other related stress factors, or when the daytime air temperature is expected to exceed 80 °F.
- To minimize the potential for injury to perennial ryegrass, irrigate in the early morning the day after application with 0.1 to 0.2 inches water.
- Do not apply Xonerate 2SC Herbicide to perennial ryegrass that has received an application of products that contain mefluidide within the previous 3 months unless severe injury and/or removal is acceptable.

As there are numerous cultivars of perennial ryegrass as well as a wide range of clipping heights, end users are advised to determine perennial ryegrass tolerance on a small trial area on their site. Observe trial areas for two to three weeks after application. If injury is not considered adverse, then the remaining turf area may be treated. Do not apply Xonerate 2SC Herbicide to emerged *Poa trivialis* unless the objective is suppress or remove *Poa trivialis*.

Xonerate 2SC Herbicide may be tank mixed with various recommended herbicides such as 2,4-D, MCPP, dicamba, sulfentrazone or two and three-way herbicides that contain mixtures of 2,4-D, MCPP, clopyralid, dicamba, fluroxypyr, carfentrazone, or triclopyr to enhance control of emerged broadleaf weeds.

Xonerate 2SC Herbicide may also be tank mixed with preemergence herbicides for residual control of crabgrass species and other summer annual weeds.

#### **Tropical Signal Grass Control**

##### Spring Applications

For effective tropical signalgrass control make two applications at 14 day intervals of 14.5 fl oz/A of Xonerate 2SC as a tank mix with Dismiss® South (7.2 fl oz/A). Other tank-mix options for effective tropical signalgrass control would be Tribute™ Total (3.2 oz/A), Revolver® (26 fl oz/A) or Celsius® (3.7 oz/A).

##### Fall Applications

Fall is the best application time to maximize tropical signalgrass control. Initial applications typically are applied in September or October, depending on geographic location. Make two applications at 14 day intervals of 14.5 fl oz/A Xonerate 2SC as a tank mix with Dismiss® South (7.2 fl oz/A). Other tank-mix options for effective tropical signalgrass control would be Tribute™ Total (3.2 oz/A), Revolver® (26 fl oz/A) or Celsius® (3.7 oz/A).

#### **Crabgrass Species Control in St. Augustinegrass**

Xonerate 2SC Herbicide may be used in a tank-mixture for postemergence applications to reduce populations of blanket crabgrass and other crabgrass species (with the exception of India crabgrass) in established St. Augustinegrass. Apply 8.4 fl oz/A tank-mixed with 3.7 oz/A Celsius® WG Herbicide on a 3 week interval for up to two applications. St. Augustinegrass may become slightly discolored by this application, but is transient. Complete recovery will occur within two weeks after the last application, depending upon growing conditions.

#### **Weed Control in Conifers in Nurseries and Field Plantings (including Christmas trees)**

Xonerate 2SC Herbicide can be used over-the-top or as a directed spray under the canopy in conifer nurseries and field plantings (including Christmas trees). Apply Xonerate 2SC Herbicide at 11.0 to 29.0 fl oz/A to actively growing weeds listed above. Repeat applications may be made but do not exceed 29.0 fl oz/A per year.

**RESTRICTION:** Do not use a mechanically pressurized handgun for application to Christmas trees.



## STORAGE AND DISPOSAL

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

### PESTICIDE STORAGE

Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of reach of children, preferably in a locked storage area.

Handle and open container in a manner as to prevent spillage. If the container is leaking or material spilled for any reason or cause, carefully sweep material into a pile. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Dispose of pesticide as directed below. In spill or leak incidents, keep unauthorized people away. For help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC (800) 424-9300.

### PESTICIDE DISPOSAL:

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

### CONTAINER HANDLING:

**Rigid, nonrefillable in containers small enough to shake (5 gallons or 50 pounds or less) Nonrefillable container.**

Do not reuse or refill this container. Triple 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 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. Offer for recycling if available or dispose of in a sanitary landfill or by incineration.

**Rigid, nonrefillable in containers too large to shake (greater than 5 gallons or 50 pounds) Nonrefillable container.**

Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple Rinse as follows: Empty 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. Offer for recycling if available or dispose of in a sanitary landfill.

## CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions beyond the control of FMC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold FMC and Seller harmless for any claims relating to such factors.

**Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the Directions for Use when used in accordance with the directions under normal conditions of use. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, FMC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, NOR ANY OTHER EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE SELECTION, PURCHASE, OR USE OF THIS PRODUCT. Any warranties, express or implied, having been made are inapplicable if this product has been used contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to (or beyond the control of) seller or FMC, and buyer assumes the risk of any such use.**

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