

432-1266

2-4-2003

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U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Registration Division (7505C)  
401 "M" St., S.W.  
Washington, D.C. 20460

EPA Reg. Number:  
432-1266

Date of Issuance:  
FEB 4 2003

Term of Issuance:  
Conditional

Name of Pesticide Product:  
Revolver Herbicide

NOTICE OF PESTICIDE:  
 Registration  
 Reregistration

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Mr. Richard M. Gorrell  
Manager, Registrations  
Aventis Environmental Science USA, LP  
95 Chestnut Ridge Road  
Montvale, NJ 07645

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

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act.

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

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product.
2. Add the phrase "EPA Registration No. 432-1266".
3. Under the heading Hazards to Humans and Domestic Animals, remove the following text.  
  
Harmful if swallowed
4. Under the heading Environmental Hazards, replace "Do not contaminate water when disposing of equipment washwaters or rinsate." with "Do not contaminate water when **cleaning equipment** or disposing of equipment washwaters.
5. Under the heading Storage and Disposal, replace "Storage" with "Pesticide Storage".
6. Under the Agricultural Use Requirements, add the following:  
Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

Signature of Approving Official:

Date:

2-4-03

Under the heading Precautions for Use, include the following restrictions.

This product **must not** be formulated into manufacturing-use herbicide products or end-use herbicide products for use on residential turf.

**If the product is labeled for reformulation into products bearing labeling for turf applications other than residential turf, the label must contain the following statements:**

Do not use on residential turf  
Do not send clippings to a compost facility.  
Do not collect grass clippings for mulch or compost.  
Applicator must give notice to landowners/property managers not to use grass clippings for composting.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

Submit three (3) copies of your final printed labeling before you release the product for shipment.

Enclosed for your records is a copy of your label stamped "Accepted with Comments".

# Revolver™ Herbicide

**A Herbicide for Use on Golf Courses and Sod Farms for the Control of Annual and Perennial Grasses in Bermudagrass and Zoysiagrass**

ACTIVE INGREDIENTS: Foramsulfuron\* (CAS Number 173159-57-4)..... 2.34%

OTHER INGREDIENTS:..... 97.66%

This product is a suspension concentrate containing 0.19 lbai/gal.

TOTAL:100.00%

\*Protected by U.S. Patent No 5,922,646

EPA Reg No. 432-XXX

E.P.A. Est. No.

## KEEP OUT OF REACH OF CHILDREN CAUTION

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.)

For **MEDICAL** And **TRANSPORTATION** Emergencies **ONLY** Call 24 Hours A Day 1-800-334-7577

For **PRODUCT USE** Information Call 1-888-283-6847

### FIRST AID

|  |  |
|--|--|
| IF SWALLOWED:  | <ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul> |
| IF ON SKIN OR CLOTHING   | <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>  |
| IF IN EYES:  | <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>  |
| <p align="center"><b>For MEDICAL Emergencies Call 24 Hours A Day 1-800-334-7577.</b></p> <p align="center">Have the product container or label with you when calling a poison control center or doctor or going for treatment.</p> |  |

### PRECAUTIONARY STATEMENTS

#### CAUTION

#### HAZARD TO HUMANS AND DOMESTIC ANIMALS

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

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

**Applicators and other handlers must wear:** Long-sleeved shirt and long pants, socks, shoes and chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride. 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.

**ACCEPTED  
with COMMENTS  
In EPA Letter Dated:**

FEB 4 2003

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
as amended, for the pesticide  
registered under EPA Reg. No.  
432-1266

**Engineering control statement:**

When handlers use closed systems, enclosed cabs, or aircraft 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.

**ENVIRONMENTAL HAZARDS**

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate. Do not drain or rinse equipment near desirable vegetation.

Do not apply when conditions favor drift from treated areas.

Non-target plants may be adversely affected if the pesticide is allowed to drift from areas of application. To prevent damage to crops and other desirable plants, read and follow all directions and precautions on this label before using.

**DIRECTIONS FOR USE**

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

**Read entire label before using this product.**

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 same area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticides.

**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 intervals. 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.

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, is coveralls over long-sleeved shirt and long pants, socks and shoes and chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride.

**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 the treated areas until sprays have dried.

**STORAGE AND DISPOSAL**

**STORAGE**

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

**PESTICIDE DISPOSAL**

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

**CONTAINER DISPOSAL**

Empty containers should be triple rinsed (or equivalent), then offered for recycling or reconditioning; or puncture and disposed of in a sanitary landfill, or by incineration; or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

## GENERAL INFORMATION

### USES

REVOLVER Herbicide is a postemergent sulfonylurea herbicide for application as a foliar spray. REVOLVER is intended for professional use on golf courses and sodfarms for control of cool season grasses and other weeds in bermudagrass and zoysiagrass.

### SYMPTOMS

Weed growth ceases within hours after application. Symptoms progress from yellowing to necrosis generally resulting in eventual plant death within 1-4 weeks after application. The speed of symptom development varies with temperature and will be faster at warmer temperatures than cooler temperatures.

### TURF TOLERANCE

REVOLVER Herbicide has been tested and can be used on the following warm season turfgrass cultivars.

**Bermudagrass:** Common, Tifway 419, Tifgreen 328, TifSport, Tifdwarf, Vamont, Champion, Tifeagle, GN-1, Miniverde, MS Supreme

**Zoysiagrass:** Meyer

Other warm season turfgrass and their cultivars may be tolerant to foramsulfuron; however, tolerance testing should be done prior to use

**Cool season turfgrasses, such as Bentgrass, Ryegrass, Fescues, and Kentucky Bluegrass are intolerant to Revolver.**

### MOVEMENT

Revolver must dry on the treated area before irrigation or rainfall occurs. Foramsulfuron does not need to be watered in after application. Do not allow the spray to drift onto the non-tolerant turfgrasses. **Do not use on warm season turfgrass collars surrounding bentgrass greens.**

### Tracking:

Revolver must dry on the treated turf before traffic is allowed through the treated area.

## APPLICATION METHODS, MIXING, AND COMPATIBILITY

Uniform, thorough spray coverage is important to achieve consistent weed control. Select spray nozzles and pressure that deliver **MEDIUM** spray droplets as indicated in nozzle manufacturer's catalogs and in accordance with ASAE Standard S-572. Nozzles that deliver **COARSE** spray droplets may be used to reduce spray drift provided spray volume per acre (GPA) is increased to maintain coverage of weeds.

### Application

#### Broadcast:

REVOLVER Herbicide can be applied as a broadcast treatment in a minimum of 25 gallons of water per acre. For weed control in dense weed populations or under adverse growing conditions, higher spray volumes up to 60 gallons per acre are recommended. Rates are listed in the weed control recommendation table.

#### Hand held sprayer for spot treatment:

For hand held pump type sprayers, mix 0.5 to 1 fluid ounce of Revolver per gallon of water, depending on the weed and stage of growth. Use the higher rate for the more difficult to control or larger weeds. Spray to wet. Do not apply beyond runoff.

#### SPRAY SOLUTION pH

The efficacy of REVOLVER Herbicide may be affected by the pH of the spray solution. A pH near 7 is ideal. If pH is less than 6, add a buffer.

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## Mixing Instructions

REVOLVER Herbicide must be applied with clean and properly calibrated equipment. Prior to adding REVOLVER Herbicide, ensure that the spray tank, filters and nozzles have been thoroughly cleaned.

1. Fill spray-tank with 25% to 50% of the required volume of water, and begin agitation prior to the addition of REVOLVER Herbicide.
2. Continue agitation to ensure full dispersion of REVOLVER Herbicide.
3. If REVOLVER Herbicide is applied in a tank mixture with other pesticides, add REVOLVER Herbicide to the spray tank first and ensure it is thoroughly dispersed before adding other pesticides.
4. Continue to fill the spray tank with water to the desired volume and agitate while adding spray adjuvants and nitrogen fertilizers.

Continue agitation during application to ensure a uniform spray mixture.

### RE-SUSPENDING SUSPENSION CONCENTRATE PRODUCTS IN SPRAY SOLUTION

Like other suspension concentrates, REVOLVER Herbicide will settle if left standing without agitation. If the spray solution is allowed to settle for one hour or more, re-agitate the spray solution.

### COMPATIBILITY

If REVOLVER Herbicide is to be tank mixed with other pesticides not listed specifically on this label, compatibility should be tested prior to mixing. To test for compatibility, use a small container and mix a small amount (0.5 to 1qt) of spray, combining all ingredients in the same ratio as the anticipated use. If any indications of physical incompatibility develop (precipitation, settling, changes in color) do not use this mixture for spraying. Indications of incompatibility usually occur within 5-15 minutes after mixing. Read and follow the label of each tank mix product used for precautionary statements, directions for use, geographic and other restrictions.

## [VAD1]WEED CONTROL AND TRANSITION RECOMMENDATIONS

### RYEGRASS: TRANSITION TO BERMUDAGRASS

REVOLVER Herbicide can be applied to Bermudagrass for removal of ryegrass and *Poa annua* during the spring transition. Treatments should be applied when Bermudagrass has resumed active growth and removal of ryegrass is desired. Rate and temperature will influence the speed of removal. Higher labeled rates and warmer spring temperatures will result in faster removal. The best time for application within the transition period will vary by location. Addition of nitrogen fertilizer in the tank mixture at the time of application may improve turf quality by increasing Bermudagrass growth during the transition. Rates are listed in the weed control recommendation table.

### VOLUNTEER RYEGRASS, TALL FESCUE, AND OTHER COOL SEASON GRASSES

REVOLVER Herbicide can be used to remove clumps of cool season grasses from desired turf. Herbicide rate and temperature will influence the speed of removal. Higher labeled rates and air temperatures will result in quicker removal. Rates are listed in the weed control recommendation table.

### ANNUAL BLUEGRASS (POA ANNUA)

REVOLVER Herbicide may be used to control annual bluegrass.

#### Non Overseeded warm season turfgrass:

Revolver may be used at any time on desired turf that has not been overseeded with a cool season grass. Later germinating annual bluegrass will require additional applications.

#### Overseeded warm season turfgrass:

On overseeded desired grasses, Revolver may be used up to two weeks prior to overseeding. Best results are obtained when the annual bluegrass plants are smaller. Herbicide rate and temperature will influence the speed of removal and influence the timing of applications in non overseeded situations. Higher labeled rates and air temperatures will result in quicker removal.

As Revolver does not have significant preemergent weed control activity, applications can be made in conjunction with a preemergent such as Ronstar® herbicide to obtain pre and post activity. Always follow the most restrictive overseeding interval on the products used. Rates are listed in the weed control recommendation table.

### OVERSEEDED BERMUDAGRASS, GREENS, TEES, COLLARS, AND APPROACHES

REVOLVER Herbicide may be used to remove *Poa trivialis*, *Poa annua*, ryegrass, and bentgrass from Bermudagrass greens, tees, collars and approaches surrounding Bermudagrass greens. Application should be made to Bermudagrass during the spring transition. Higher labeled rates and air temperatures will result in faster removal. Bermudagrass should be actively growing prior to transitional use of REVOLVER to ensure fill in. Rates are listed in the weed control recommendation table. Do not use more than 0.4 fluid ounces per 1000 square feet on these areas per application.

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**GOOSEGRASS**

Make two applications of REVOLVER Herbicide to control goosegrass 7-14 days apart. The lower rate may be used for control of goosegrass at the 1-3 leaf stage while the higher rate should be used on goosegrass with 1-3 tillers. Rates are listed in the weed control recommendation table.

**CENTIPEDEGRASS**

Apply REVOLVER herbicide to control centipede grass. Rates are listed in the weed control recommendation table.

**RATE RECOMENDATION TABLE FOR WEED CONTROL**

REVOLVER Herbicide should be applied at a rate of 0.1 to 0.6 ounces of product per 1000 sq. ft. Because REVOLVER Herbicide provides control of emerged weeds and has limited soil residual, sequential applications or residual tank mixtures may be required to control weeds emerging after application. **Broadcast applications of REVOLVER Herbicide should not exceed a maximum of 1.25 ounces of product per 1000 sq. ft per use season. In situations where multiple applications on the same treated area might approach this limit, do not treat more than 10,000 square feet per acre of turf area.**

| Weed or Turf Species Controlled  | Product Application Rate<br>Ounces/1000 sq. ft. | Product Application Rate<br>Ounces/5000 sq. ft. | Product Application Rate<br>Ounces/Acre |
|--|---|---|---|
| Ryegrass (transition )   | 0.1, 0.2, 0.4                                   | 0.5, 1, 2                                       | 4.4, 8.8, 17.4                          |
| Volunteer ryegrass, tall fescue, and other cool season grasses   | 0.2, 0.4, 0.6                                   | 1, 2, 3   | 8.8, 17.4, 26.2                         |
| Annual bluegrass   | 0.2, 0.4  | 1, 2  | 8.8, 17.4                               |
| <i>Poa trivialis</i> , <i>Poa annua</i> , and bentgrass in overseeded bermudagrass greens, tees, collars, and approaches | 0.1, 0.2, 0.4                                   | 0.5, 1, 2                                       | 4.4, 8.8, 17.4                          |
| Goosegrass   | 0.4, 0.6  | 2, 3  | 17.4, 26.2                              |
| Centipede grass/Bahaigrass/Dallisgrass   | 0.6   | 3   | 26.2                                    |
| Henbit, Doveweed   | 0.4   | 2   | 17.4                                    |

\* Multiple applications may be required to control Goosegrass, large volunteer ryegrass, or where 0.1 oz rate is used

**Weed Resistance**

ALS-resistance exists in some biotypes. These biotypes are **not** controlled by REVOLVER Herbicide. Consider using herbicides with other modes of action to control resistant species.

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## TANK MIX RECOMMENDATIONS FOR REVOLVER HERBICIDE

The following products have been tested for physical compatibility and have shown to be compatible.

When using REVOLVER Herbicide in tank mix combinations, follow the precautions and directions of the most restrictive label. Test compatibility with other unlisted pesticides prior to use.

### Herbicides

|          |              |
|----------|--------------|
| Atrazine |              |
| Illoxan® | Trimec® Plus |
| Manage®  | Image®*      |
| Sencor®* | MSMA*        |
| Dicamba  | Ronstar®     |

\*Note that tank mixtures of REVOLVER Herbicide with Image, Sencor or MSMA may increase temporary discoloration (yellowing) on Bermudagrass.

### Insecticides

Sevin®

#### Soil Insecticide Interaction

Application of REVOLVER Herbicide to turf previously treated with an organophosphate (OP) insecticide in the same growing season may cause injury.

#### Foliar Insecticide Interaction

Foliar applications of an OP insecticide should **not** be made within 7 days of a REVOLVER Herbicide application or injury may result.

### Tank Mixtures with Fungicides

26GT®

## TANK CLEANUP PROCEDURE

1. Drain the tank completely, then wash out tank, boom and hoses with clean water. Drain again.
2. Fill the tank half full with clean water and add ammonia (i.e. 3% domestic ammonia solution) at a dilution rate of 1% (i.e. 1 gallon of domestic ammonia for every 100 gallons of rinsate). Completely fill the tank with water. Agitate/recirculate and flush through boom and hoses. Leave agitation on for 10 minutes. Drain tank completely.
3. Repeat Step 2.
4. Remove nozzles and screens and soak them in a 1% ammonia solution. Inspect nozzles and screens and remove visible residues.
5. Flush tank, boom, and hoses with clean water.
6. Inspect tank for visible residues. If present, repeat Step 2.

## PRECAUTIONS FOR USE

1. REVOLVER Herbicide is rainfast 2 hours after application to most weed species. Rainfall within 2 hours may necessitate retreatment with REVOLVER Herbicide or may result in reduced weed control. Applications should be made to actively growing weeds. Weed control may be reduced if application is made in the presence of heavy dew, fog, and mist/rain or when weeds are under stress due to drought.
2. DO NOT apply when wind causes drift to off-site vegetation as injury may occur. Small amounts of REVOLVER Herbicide delivered via drift or spray tank contamination can damage other plants. Careful management of spray drift and tank cleanout is recommended.
3. DO NOT broadcast more than 1.25 oz/1000 sq. ft. of REVOLVER Herbicide to turf in one growing season.
4. DO NOT apply this product by air or through any type of irrigation system.
5. Apply REVOLVER Herbicide spray mixtures within 24 hours of mixing to avoid product degradation.
6. DO NOT apply REVOLVER Herbicide on turf exhibiting injury from previous applications of other products.
7. Do not apply REVOLVER HERBICIDE within 2 weeks of Bermudagrass sprigging
8. Do not apply REVOLVER HERBICIDE within 2 weeks prior to overseeding Bermudagrass with a cool season grass such as ryegrass, some temporary stunting may occur for up to two weeks.
9. Avoid excessive mechanical disruptions such as aerification and verticutting within 1 week prior to or after application
10. Do not use grass clippings for compost.



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## IMPORTANT: READ BEFORE USE

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

**CONDITIONS:** The directions for use of this product are believed to be adequate and should be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Turf injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Bayer Environmental Science. All such risks shall be assumed by the user or buyer.

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REVOLVER Herbicide (PENDING) Revised Master RMG 1/28/03