



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

January 18, 2017

Ms. Melinda Bowman  
MacDermid Agricultural Solutions, Inc.  
245 Freight Street  
Waterbury, CT 06702

Subject: Registration Review Label Mitigation for Triflumizole  
Product Name: Terraguard 50W  
EPA Registration Number: 400-433  
Decision Number: 509805

Dear Ms. Bowman:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all of the information submitted with your application to support the Registration Review of the above referenced product in connection with the Triflumizole Final and/or Interim Decision, and has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

A copy of your label stamped "Accepted" is enclosed. Products shipped after 12 months from the date of this amendment must bear the new revised label. Your release for shipment of the product bearing the amended label constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6.

If you have any questions about this letter, please contact Heather Garvie by phone at 703-308-0034, or via email at [garvie.heather@epa.gov](mailto:garvie.heather@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to be "H. Johnson".

Hope Johnson, Product Manager 21  
Fungicide Branch  
Registration Division (7505P)  
Office of Pesticide Programs

Enclosure: Stamped accepted master label

# Terraguard<sup>®</sup> 50W

ORNAMENTAL FUNGICIDE



## COMPOSITION

Active Ingredient; (% by weight)

Triflumizole

1-[1-[[4-chloro-2-(trifluoromethyl)phenyl]imino]-2-propoxyethyl]-1H-imidazole.....

50%

Other ingredients:.....

50%

Total:.....

100%

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

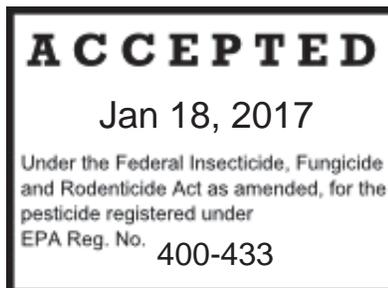
Net Contents:

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 to 20 minutes.</li><li>• Remove contact lens, if present, after the first 5 minutes, then continue rinsing.</li><li>• Call a poison control center or doctor immediately 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 by the poison control center or doctor.</li><li>• Do not give anything to an unconscious person.</li></ul>
<b>IF ON SKIN OR CLOTHING</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15 to 20 minutes.</li><li>• Call a poison control center or doctor immediately for treatment advice.</li></ul>
<b>EMERGENCY ASSISTANCE:</b> Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<b>MEDICAL EMERGENCY</b>	<b>800-292-5898</b>
<b>TRANSPORTATION EMERGENCY (CHEMTREC)</b>	<b>800-424-9300</b>
<b>PRODUCT SAFETY DATA (SDS)</b>	<b>800-423-8569</b>
<b>For PRODUCT USE INFORMATION: Call 800-243-2850</b>	

See inside booklet for additional First Aid, Precautionary Statements, and Directions for Use

Manufactured for :  
MacDermid Agricultural  
Solutions, Inc.  
245 Freight Street  
Waterbury, CT 06702

EPA REG. NO. 400-433  
EPA EST. NO.  
0015/XXXXXX



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

Harmful if swallowed, or absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Do not get in eyes, on skin or on clothing. Avoid breathing dust. Prolonged or frequently repeated skin contact with this product may cause allergic skin reactions in some individuals. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or the toilet.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Some materials that are chemical-resistant to this product are listed below.

**Applicators and Other Handlers Must Wear:** A long-sleeved shirt & long pants; chemical-resistant gloves made of any waterproof material; shoes plus socks.

**USER SAFETY REQUIREMENTS**

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, 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 in to clean clothing.

**ENVIRONMENTAL HAZARDS**

This product is toxic to fish. 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 cleaning equipment or disposing of equipment washwaters or rinsate. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas.

**PHYSICAL OR CHEMICAL HAZARDS**

Do not use or store near heat or open flame.

**DIRECTIONS FOR USE**

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

Read entire label directions before using.

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.

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. PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involved contact with anything that has been treated, such as plants, soil or water is:  
Coveralls; chemical-resistant gloves made of any waterproof material; and shoes plus socks.

**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

**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 areas until sprays have dried.

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store in a cool, dry, secure location.

**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:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

## PRODUCT INFORMATION

TERRAGUARD 50W ornamental fungicide is effective in controlling a variety of diseases on all ornamental plants grown in the following areas:

- Greenhouses and shadehouses
- Nurseries, Christmas tree/conifer plantations
- Interiorscapes

## APPLICATION INSTRUCTIONS

TERRAGUARD 50W is a fungicide effective when applied prior to the onset of disease following specified rates. When not used in preventative programs, TERRAGUARD 50W can also be applied after disease symptoms appear and provide good eradicant activity.

Applications can be made via foliar spray, soil drench, cutting soak and chemigation, using high and low volume hand guns, overhead booms/sprinklers and backpack spray applicators.

### ORNAMENTALS AND NON-BEARING FRUIT TREES/SHRUBS

**FOLIAR SPRAYS:** The specified rate of application is 0.5 to 1 gallon of spray mixture to cover 200 sq ft of area or 100 to 200 gallons per acre. Required spray volumes will vary greatly depending on both the size and spacing of the plant, and should only be enough to ensure thorough coverage of the foliage just prior to the point of drip.

**SOIL DRENCHES:** Apply the specified rate of TERRAGUARD 50W according to the guidelines below. The application should be made to plants which have been well watered one day prior to application. For best results, irrigation with additional water should not be made until 24 hours after application.

In Nassau and Suffolk Counties of New York, soil drench application is limited to container grown ornamentals only. Do not apply TERRAGUARD 50W as a soil drench to field grown or outdoor grown ornamentals in Nassau and Suffolk Counties.

## FOR CONTAINER GROWN PLANTS

Pot Diameter (inches)	Minimum Drench Volume (fl oz/pot)
4	1.5
5	3
6	4
8	7
10	13
12	18

## FOR BED AND BENCH GROWN PLANTS

Soil Depth to be Drenched (inches)	Coverage for TERRAGUARD 50W Drench Mix	
	fl oz/sq ft	sq ft/100 gal
2 or less	16	800
3	24	530
4 or more	32	400

**USE AND RATE OF APPLICATION - ORNAMENTALS**

FOLIAR DISEASES	APPLICATION RATE: OUNCES TERRAGUARD 50W PER 100 GAL (TSP/GAL) (LB AI/A)	APPLICATION INSTRUCTIONS
Aerial Blight (Rhizoctonia solani) Botrytis Blight (Botrytis cinerea) Leaf Spot (Alternaria spp.) (Exserohilum rostratum) (Helminthosporium rostratum) Petiole Rot (Myrothecium roridum)	4 - 8 $\left(\frac{2}{3} - 1\frac{1}{3}\right)$ (0.125 - 0.25 lb ai/A)	For optimum disease control, initial applications should be made prior to, or at very first sign of disease.  Repeat applications can be made no less than 14 day intervals.  Use higher specified rate for initial applications under higher disease pressure. Low rates can be used for subsequent applications and preventative sprays.
Powdery Mildew (Erysiphe cichoracearum) (Erysiphe lagerstromiae) (Oidium spp.) (Podospaera spp.) (Sphaerotheca pannosa)	4 - 8 $\left(\frac{2}{3} - 1\frac{1}{3}\right)$ (0.125 - 0.25 lb ai/A)	
Rust (Puccinia spp.) (Gymnosporangium spp.)	2 - 8 $\left(\frac{1}{3} - 1\frac{1}{3}\right)$ (0.0625 - 0.25 lb ai/A)	
Scab (Venturia spp.)	4 - 8 $\left(\frac{2}{3} - 1\frac{1}{3}\right)$ (0.125 - 0.25 lb ai/A)	
<b>RESTRICTIONS:</b> Do not exceed a spray volume of 200 gallons per acre. Do not exceed 4 applications per crop per year. Do not apply more than 8 oz (0.25 lb ai) per acre per application. Do not apply more than 32 oz per acre per year.		

SOIL BORNE DISEASES	APPLICATION RATE: OUNCES TERRAGUARD 50W PER 100 GAL (TSP/GAL) (LB AI/A)	APPLICATION INSTRUCTIONS
Black Root Rot (Thielaviopsis sp.)	1 - 4 $\left(\frac{1}{6} - \frac{2}{3}\right)$ (0.031 - 0.125 lb ai/A)	Apply soil drenches at 2 to 4 week intervals as needed. Use higher specified rate under heavy disease pressure.
Cylindrocladium Root Rot and Petiole Rot (Cylindrocladium spathiphylli)	4 - 8 $\left(\frac{2}{3} - 1\frac{1}{3}\right)$ (0.125 - 0.25 lb ai/A)	Apply soil drenches at 2 to 4 week intervals as needed. Use higher specified rate under heavier disease pressure which can occur under warmer conditions. <b>NOTE:</b> Applications may be made as a heavy spray over the foliage however, the volume applied should be the same as that required for the soil drench to insure adequate soil penetration.
Cylindrocladium Root Rot; Wilt and Crown Canker (Cylindrocladium scoparium) (Cylindrocladium theae)	12 - 16 $\left(2 - 2\frac{2}{3}\right)$ (0.375 - 0.5 lb ai/A)	<b>FOR PLANTS BEING PROPAGATED:</b> The cutting soak plus soil drench application may be necessary to provide control, therefore treatment should consist of both methods of application. <b>Pre-stick cutting soak:</b> Soak cuttings for 10 minutes. Slight agitation of the mixture is required to maintain proper suspension.
	6 - 8 $\left(1 - 1\frac{1}{3}\right)$ (0.187 - 0.25 lb ai/A)	<b>Soil Drench:</b> The higher specified rate should be used under heavier disease pressure. Apply additional drenches at 2 to 4 week intervals as needed. Normally 2 to 4 applications are sufficient. Do not exceed 4 applications per crop per year. <b>NOTE:</b> Do not exceed 8 oz/600 sq ft of bed or bench area as injury and/or inhibition of rooting may occur.
	6 - 12 $\left(1 - 2\right)$ (0.187 - 0.375 lb ai/A)	<b>FOR PLANTS WITH ESTABLISHED ROOT SYSTEMS:</b> <b>Soil Drench:</b> Use higher specified rate under heavier disease pressure. Lower rates may be used in subsequent applications. Apply additional drenches at 2 to 4 week intervals as needed. Normally 2 to 4

		applications are sufficient. If reinfection occurs at a later date, retreatment may be necessary. Do not exceed 4 applications per crop per year.
Fusarium wilt (Fusarium spp.)	4 – 8 $\left(\frac{2}{3} - 1\frac{1}{3}\right)$ (0.125 – 0.25 lb ai/A)	Apply soil drenches at weekly intervals as needed. Use higher specified rate under heavy disease pressure.
Root Rot (Rhizoctonia solani)	4 – 8 $\left(\frac{2}{3} - 1\frac{1}{3}\right)$ (0.125 – 0.25 lb ai/A)	Apply soil drenches at 2 to 4 week intervals as needed. Use higher specified rate under heavy disease pressure.
<p>RESTRICTIONS:</p> <p>Do not exceed a spray volume of 200 gallons per acre.</p> <p>Do not exceed 4 applications per crop per year.</p> <p>Do not exceed maximum single application rate specified per disease in the table above.</p> <p>Do not apply more than 32 oz per acre per year.</p>		

**PLANT TOLERANCE:**

Some cultivars of impatiens have shown a sensitivity to applications of TERRAGUARD 50W.

**RESTRICTIONS:**

When used on bedding plant plugs, do not exceed 2 oz/100 gal water.

DO NOT USE ON IMPATIENS PLUGS.

ON IMPATIENS TRANSPLANTS, DO NOT EXCEED 2 OZ/100 GAL

Neither the manufacturer nor the seller has determined whether or not TERRAGUARD 50W can be used safely on all ornamental plants. Prior to any large scale application, the user should determine the safety of TERRAGUARD 50W by testing a small number of the type of plants to be treated at the recommended rates. Observe the treated plants for symptoms of phytotoxicity which may occur as stunting, foliage burn or, for plants being propagated, as an inhibition of rooting. This may take up to two months for species that do not root readily.

**USE DIRECTIONS FOR CHEMIGATION:**

In addition to the above use rates the following restrictions must be observed when using this product in any type of irrigation system:

Apply this product only through the following systems:

1) Overhead sprinklers such as impact or micro-sprinklers, 2) Micro-irrigation such as spaghetti-tube or individual tube irrigation, 3) Mist-type irrigation such as fog systems, 4) Hand-held calibrated irrigation equipment such as the hand-held wand with injector.

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

Crop injury or lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have any questions about calibration, you should contact the State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system, (including greenhouse systems), used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decrease to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment.

**SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS**

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days of the year.

Chemigation systems connected to public water systems must contain a functional, reduced pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water systems should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. The pesticide injection pipeline must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where the pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment.

**IMPORTANT NOTICE**

The directions and specified use rates on this label are derived from research to ensure correct product usage. Insufficient control may result from extremes in weather conditions, or lack of following label instruction. The use of this product is beyond the control of MacDermid Agricultural Solutions and the seller. Buyer is responsible for proper use as per directions and acceptance of product performance under extraordinary or unusual weather conditions.

To the extent consistent with applicable law, MacDermid Agricultural Solutions is not responsible for losses or damage resulting from using TERRAGUARD 50W in any manner not specified.

Seller warrants that this product conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with the directions and instructions specified on the label under normal conditions of use, but neither this warranty of merchantability nor any other warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of this product, contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to seller, the buyer assumes the risk of any such use.

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