



U.S. ENVIRONMENTAL PROTECTION AGENCY
 Office of Pesticide Programs
 Registration Division (7505P)
 1200 Pennsylvania Ave., N.W.
 Washington, D.C. 20460

EPA Reg. Number:

86064-4

Date of Issuance:

11/5/2019

NOTICE OF PESTICIDE:

Registration

Reregistration

(under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

Armor Tech PPZ 143 MC

Name and Address of Registrant (include ZIP Code):

United Turf Alliance, LLC
 c/o Pyxis Regulatory Consulting, Inc.
 4110 136th Street Ct. NW
 Gig Harbor, WA 98332

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/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended. 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 her/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.

EPA received a label amendment request submitted by email on 09/26/2019. EPA grants this request under the authority of section 3(c)(5) of FIFRA, as amended. With this accepted labeling, all requirements set forth in the Reregistration Eligibility Decision for Propiconazole have been satisfied. Therefore, EPA reregisters the product listed above. This action is taken under the authority of section 4(g)(2)(c) of FIFRA, as amended. Reregistration under this section does not eliminate the need for continual reassessment of pesticides. EPA may require submission of data at any time to maintain the registration of your product.

Submit one (1) copy of final printed labeling. Amended labeling will supersede all previously accepted labels. A copy of your label stamped "Accepted" is enclosed for your records. Products shipped after 12 months from the date of this Notice or the next printing of your label, whichever occurs first, must bear the new revised label.

Signature of Approving Official:

Shaja B. Joyner
 Shaja B. Joyner, Product Manager 20
 Fungicide-Herbicide Branch
 Registration Division 7505P

Date:

11/5/2019

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records.

Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 05/29/2012
- Alternate CSF 1- dated 07/19/2012
- Alternate CSF 2- dates 10/17/2013

If you have any questions, please contact Shaja Joyner by phone at 703-308-3194, or via email at joyner.shaja@epa.gov.

Enclosure

{Note to reviewer: [Text] in brackets denotes optional text.}

{Note to reviewer: {Text} in braces denotes where in the final label text will appear.}

PROPICONAZOLE GROUP 3 FUNGICIDE

ARMORTECH[®] PPZ 143 MC

(Fungicide)

Broad Spectrum and Systemic Disease Control for Turf and Ornamentals.
A Flare Root-Injected Systemic Fungicide for Control of Selected Diseases in Trees
[*Flare Root-Injected uses are not registered for use in CA & NY]

ACTIVE INGREDIENT:	% by Wt.
Propiconazole	14.3%
OTHER INGREDIENTS:	85.7%
TOTAL:	100.0%

Contains 1.3 lbs. active ingredient per gallon.

KEEP OUT OF REACH OF CHILDREN WARNING AVISO

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).

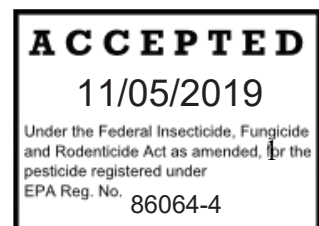
FIRST AID	
If in eyes:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If swallowed:	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If on skin or clothing:	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled:	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-222-1222 for emergency medical treatment information.	
NOTE TO PHYSICIAN	
If ingested, induce emesis or lavage stomach. Treat symptomatically.	

EPA Reg. No. 86064-4

EPA Est. No.

Manufactured for:
United Turf Alliance, LLC
8014 Cumming Highway, Suite 403-282, Canton, GA 30115

Net Contents:



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

Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Harmful if swallowed. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. 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)

All handlers must wear:

- Protective eyewear such as goggles or face shield
- Long-sleeved shirt and long pants,
- Shoes and socks, and
- Chemical resistant gloves.

In addition, all handlers (mixers, loaders, and applicators, or individuals performing one or more of these tasks) who are applying this pesticide using hand-held equipment must wear:

- Protective eyewear such as goggles or face shield
- Long-sleeved shirt and long pants,
- Shoes and socks, and
- Chemical resistant gloves

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. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

ENGINEERING CONTROLS 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:

- 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.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and shrimp. 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 washwater or rinsate.

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. 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.

RESTRICTIONS:

- **Do not** apply more than 7.2 lb ai/A (equivalent to 5.5 gallons of product/A or 16 fl oz/1000 sq ft) per calendar year.

- **Do not** use fruit treated trees for food and feed purposes.
- **Do not** apply this product through any type of irrigation system.

Turfgrass and Dichondra Disease Control:

- **Do not** apply more than 1.79 lb a.i./A (equivalent to 1.4 gallons of product/A or 4 fl oz/1,000 sq ft) per calendar application.
- **Do not** apply more than 7.2 lb a.i./A (equivalent to 5.5 gallons of product/A or 16 fl oz/1,000 sq ft) per calendar year.
- **Do not** graze animals on treated areas.
- **Do not** feed clippings from treated areas to livestock or poultry.
- Bermudagrass can be sensitive to ARMORTECH PPZ 143 MC. **Do not** exceed 4 fl. oz. product (0.04 lb a.i.)/1,000 sq. ft. every 30 days on any variety of bermudagrass.
- In Florida, **do not** apply ARMORTECH PPZ 143 MC to bermudagrass golf course greens when temperatures exceed 90°F.

Nurseries (Field) and Landscape Plantings:

- For outdoor uses, **do not** apply more than 7.2 lb a.i./A (equivalent to 5.5 gallons of product/A or 16 fl oz/1,000 sq ft) per calendar year.
- **Do not** apply ARMORTECH PPZ 143 MC to African violets, begonias, Boston fern, or geraniums.
- To avoid possible illegal residues, **do not** apply to apple, cherry, citrus, nectarine, peach, pear, pecan, plum or walnut trees that will bear harvestable fruit within 12 months.
- **Do not** apply to maple trees that will be used for maple syrup production within one year.

Flare Root-Injection:

- For root injection use on trees, **do not** apply more than 20 ml of ARMORTECH PPZ 143 MC (0.0069 lb a.i.) per DBH.
- **Do not** make more than one root injection application per year.
- For crabapples, **do not** use fruit from treated trees for food or feed purposes.

Failure to follow the directions for use and precautions on this label may result in plant injury or poor disease control.

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), notification to workers, 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.

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 soil or water, is:

- Protective eyewear, such as goggles or face shield
- Coveralls,
- Shoes and socks, and
- Chemical resistant gloves made of any waterproof material

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 treated areas without protective clothing until sprays have dried.

PRODUCT INFORMATION

ARMORTECH PPZ 143 MC is a systemic fungicide for use on turfgrasses for the control of:

Anthrachnose (<i>Colletotrichum graminicola</i>)	Red thread (<i>Laetisaria fuciformis</i>)
Brown patch (<i>Rhizoctonia solani</i>)	Rust (<i>Puccinia graminis</i>)
Dollar spot (<i>Sclerotinia homoeocarpa</i>)	Spring dead spot (<i>Leptosphaeria korrae</i> , <i>Leptosphaeria narmari</i> , <i>Ophiosphaerella herpotricha</i> , <i>Gaeumannomyces graminis</i>)
Fusarium patch (<i>Fusarium nivale</i>)	Stripe smut (<i>Ustilago striiformis</i> and <i>Urocystis agropyri</i>)
Gray leafspot (<i>Pyricularia grisea</i>)	Summer patch (<i>Magnaporthe poae</i>)
Gray snowmold (<i>Typhula spp.</i>)	Take-all patch (<i>Gaeumannomyces graminis</i>)
Leafspot (<i>Bipolaris spp.</i> , <i>Drechslera spp.</i>)	Yellow patch (<i>Rhizoctonia cerealis</i>)
Necrotic ring spot (<i>Leptosphaeria korrae</i>)	Zoysia patch (<i>Rhizoctonia solani</i>)
Pink patch (<i>Limonomyces roseipellis</i>)	
Pink snowmold (<i>Microdochium nivale</i>)	
Powdery mildew (<i>Erysiphe graminis</i>)	

ARMORTECH PPZ 143 MC also controls numerous diseases on ornamentals and other landscape and nursery plantings such as powdery mildews, rusts, leafspots, scabs, and blights. Refer to the appropriate section of this label for specified diseases and plants.

TANK MIXES

ARMORTECH PPZ 143 MC can be tank mixed with other fungicides for broader spectrum control. ARMORTECH PPZ 143 MC is also compatible with numerous herbicides and insecticides. Check compatibility before tank mixing. Add Unite[®] (3 pts./100 gals.) to tank mixes which are incompatible. Follow the directions under "Mixing Instructions" for tank mixes.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. Tank mixtures or other applications of products referenced on this label are permitted only in those states in which the referenced products are registered.

MIXING INSTRUCTIONS

Fill the spray tank $\frac{1}{2}$ - $\frac{3}{4}$ full with water. Add the proper amount of ARMORTECH PPZ 143 MC, then add the remaining water. Provide sufficient agitation during mixing and application to maintain a uniform emulsion.

If ARMORTECH PPZ 143 MC is tank mixed with other products, use the following sequence:

1. Always check the compatibility of the tank mix using a jar test with proportionate amounts of ARMORTECH PPZ 143 MC, other chemicals to be used, and the water, before mixing in the spray tank.
2. Provide sufficient jet or mechanical agitation during filling and application to keep the tank mix uniformly suspended.
3. Fill tank at least $\frac{1}{2}$ full of clean water.
4. Add wettable powders to the tank first, allowing them to completely suspend in the tank before proceeding. Premixing the product in water before adding to the tank will hasten the process.
5. Add flowables or suspensions next.
6. Add the proper amount of ARMORTECH PPZ 143 MC.
7. Add emulsifiable concentrates last.
8. Do not leave tank mix combinations in the spray tank for prolonged periods without agitation. Mix and apply them the same day.

SPRAY DRIFT MANAGEMENT

A variety of factors such as weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and method of application can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

Wind Speed

Do not apply at wind speeds greater than 15 mph.

Droplet Size

Apply as a medium or coarser spray (ASAE Standard 572).

Temperature Inversions

If applying at wind speeds less than 3 mph, the applicator must determine if a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

Other State and Local Requirements

Applicators must follow all state and local pesticide drift requirements regarding application of propiconazole. Where states have more stringent regulations, they must be observed.

Equipment

All application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

Additional Requirements for Aerial Application

1. The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.
2. Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety.
3. When applications are made with a crosswind, the swath must be displaced downwind. The applicator must compensate for this displacement at the up and downwind edge of the application area by adjusting the path of the aircraft upwind.

Additional Requirement for Groundboom Application:

1. Do not apply with a nozzle height greater than 4 feet above the crop canopy.

TURFGRASS AND DICHONDRA DISEASE CONTROL

1. Use ARMORTECH PPZ 143 MC in a preventative disease control program.
2. Apply after mowing OR allow sprayed area to completely dry before mowing.
3. For control of soil-borne diseases, ARMORTECH PPZ 143 MC can be watered in after application.
4. For control of foliar diseases, allow sprayed area to completely dry before irrigation.
5. For optimum turf quality and disease control, use ARMORTECH PPZ 143 MC in conjunction with turf management practices that promote good plant health and optimum disease control.
6. Proper diagnosis of the organism causing the disease is important prior to using any fungicide. Use of diagnostic kits or other means of identification of the disease organism is essential to determine the best control measures.
7. Apply in sufficient water to ensure thorough coverage.
8. Under conditions optimum for high disease pressure, use the higher rate and the shorter interval.

Evaluate spray additives prior to use. Label directions are based on data obtained with no additives.

TURFGRASS – SPECIFIC DISEASES, RATES, AND APPLICATION TIMING

Disease	Fl. Oz. per 1,000 sq. ft.	Fl. Oz. per Acre	Application Interval/Timing	Application Instructions
Dollar Spot <i>(Sclerotinia homoeocarpa)</i>	0.5	22	14 days	Apply when conditions are favorable for disease development.
	0.5	22	14 days	Tank mix with low label rate of one of the following fungicides: Chlorothalonil based products
	1	44	21-28 days	Tank mix with low label rate of one of the following fungicides: Chlorothalonil based products Iprodione based products
	1-2	44-88	14-28 days	If using the 1-2 fl. oz./1,000 sq. ft. rate without tank mixing, make no more than 3 consecutive applications for dollar spot control before rotating to an alternate EPA-registered fungicide having a different mode of action.
Anthracnose <i>(Colletotrichum graminicola)</i>	1-2	44-88	14-28 days	Apply when conditions are favorable for disease development. Use higher rates of ARMORTECH PPZ 143 MC and shorter intervals when disease pressure is high. For broad-spectrum control, tank mix with a registered contact fungicide at the label rate. If disease is present, mix 2 fl. oz. of ARMORTECH PPZ 143 MC per 1,000 sq. ft. with the label rate of the above mentioned contact fungicides.
Brown Patch <i>(Rhizoctonia solani)</i>	1-2	44-88	14-21 days	Tank mix with a registered contact fungicide labeled for brown patch control at the label rate. Begin applications in May or June before the disease is present. Use the higher rates of ARMORTECH PPZ 143 MC and shorter intervals under conditions of high temperatures and high humidity.
Powdery Mildew <i>(Erysiphe graminis)</i> Rust <i>(Puccinia graminis)</i>	1-2	44-88	14-28 days	Make applications when conditions are favorable for disease development. If disease is present, use 2 fl. oz. of ARMORTECH PPZ 143 MC per 1,000 sq. ft.
Pink Patch <i>(Limonomyces roseipellis)</i> Red Thread <i>(Laetisaria fuciformis)</i>	2	88	14-21 days	Apply when conditions are favorable for disease development.
Stripe Smut <i>(Ustilago striiformis)</i> <i>(Urocystis agropyri)</i>	1-2	44-88	Fall or Spring	Apply once in the fall after grass becomes dormant or in the early spring before grass starts to grow.

Disease	Fl. Oz. per 1,000 sq. ft.	Fl. Oz. per Acre	Application Interval/Timing	Application Instructions
Gray Leafspot (<i>Pyricularia grisea</i>)	1-2	44-88	14 days	Make applications when conditions are favorable for disease development. If using the 1 fl. oz./1,000 sq. ft. rate, tank mix with a registered contact fungicide at the label rate.
Melting Out, Leaf Spot (<i>Bipolaris spp.</i>) (<i>Drechslera spp.</i>)	1-4	44-176	14 days	Under light to moderate pressure, apply ARMORTECH PPZ 143 MC to reduce the severity of leaf spot and melting out caused by Helminthosporium-type pathogens. For broad spectrum disease control, tank mix the 1 fl. oz. ARMORTECH PPZ 143 MC rate with a registered contact fungicide at the label rate. Tank mix the 1-4 fl. oz./1,000 sq. ft. ARMORTECH PPZ 143 MC rate with a registered contact fungicide at the labeled rate.
Summer Patch, Poa Patch (<i>Magnaporthe poae</i>)	2 4	88 176	14 days 28 days	Apply ARMORTECH PPZ 143 MC beginning in April. Use the 2 fl. oz./1,000 sq. ft. rate on a 14 day schedule and the 4 fl. oz./1,000 sq. ft. rate on a 28 day schedule.
Take-All Patch (<i>Gaeumannomyces graminis</i>)	2-4	88-176	Spring and Fall	ARMORTECH PPZ 143 MC can be applied to reduce the severity of take-all patch. Make 1-2 fall applications in September and October or when night temperatures drop to 55°F, and 1-2 spring applications in April and May, depending on local recommendations.
Spring Dead Spot (<i>Leptosphaeria korrae</i> , <i>Leptosphaeria narmari</i> , <i>Ophiosphaerella herpotricha</i> , <i>Gaeumannomyces graminis</i>)	4	176	30 days	Make 1-3 applications of ARMORTECH PPZ 143 MC. For one application, apply in September or October. For multiple applications, begin sprays in August.
Necrotic Ring Spot (<i>Leptosphaeria korrae</i>)	4	176	Fall or Spring	Apply in the fall and/or the early spring depending on local recommendations
Gray Snowmold (<i>Typhula spp.</i>) Pink Snowmold (<i>Microdochium nivale</i>)	2-4	88-176	Late Fall	Make one application of ARMORTECH PPZ 143 MC in the late fall before snow cover. Do not apply on top of snow. For optimum disease control, the 2 and 3 fl. oz. ARMORTECH PPZ 143 MC rates should be tank mixed with either PCNB or chlorothalonil at label rates.

Disease	Fl. Oz. per 1,000 sq. ft.	Fl. Oz. per Acre	Application Interval/Timing	Application Instructions
Fusarium Patch (<i>Fusarium nivale</i>)	2-4	88-176	Fall-Early Spring	Apply when conditions are favorable for disease development.
Yellow Patch (<i>Rhizoctonia cerealis</i>)	3-4	130-176	Late Fall	Make one application of ARMORTECH PPZ 143 MC in the late fall before snow cover. Do not apply on top of snow. If using a 3 fl. oz./1,000 sq. ft. rate, tank mix with a registered contact fungicide at the label rate.
Zoysia Patch , large patch of zoysia (<i>Rhizoctonia solani</i>)	3-4	130-176	Early Fall	Make one application in the early fall (mid-September to mid-October) prior to development of disease symptoms. Consult local turfgrass extension experts to determine the optimum application timing for your area.

DICHONDRA – SPECIFIC DISEASE, RATE, AND APPLICATION TIMING

Disease	Fl. Oz. per 1,000 sq. ft.	Fl. Oz. per Acre	Application Interval/Timing	Instructions
Dichondra Rust (<i>Puccinia dichondrae</i>)	2	88	14-21 days	Apply when conditions are favorable for disease development.

ESTABLISHMENT OF COOL SEASON TURFGRASS

The primary use of ARMORTECH PPZ 143 MC is as a fungicide for use against the diseases listed on this label. As an additional benefit, ARMORTECH PPZ 143 MC will improve the establishment rate when it is applied to cool season grass seedlings or sod.

New Seedlings: Apply 1 fl. oz./1,000 sq. ft. at the 2 to 3-leaf stage of growth for faster root development and top growth.

Sod: Apply 1 fl. oz./1,000 sq. ft. 2-6 weeks before cutting for increased sod knitting and faster establishment after laying.

DISEASE CONTROL IN NURSERIES (FIELD) AND LANDSCAPE PLANTINGS

1. Use ARMORTECH PPZ 143 MC in a preventative disease control program. To determine the use directions for controlling a disease on an ornamental plant species, select the plant species in Table 1. The number in parenthesis following the plant species refers you to the disease(s) controlled in Table 2. Find the disease in Table 2. The number in brackets following the disease refers you to the application regime in Table 3.
2. Allow spray to dry before overhead irrigation is applied.
3. Optimum benefit of ARMORTECH PPZ 143 MC is obtained when used in conjunction with sound disease management practices.

PRODUCT INFORMATION

ARMORTECH PPZ 143 MC may be used at rates of 2-24 fl. oz./100 gallons of water for control of diseases of ornamental plant species (Refer to Tables 1, 2, and 3).

For disease control in landscapes, apply 6-8 fl. oz./100 gallons of water every 21 days. For best control, begin ARMORTECH PPZ 143 MC applications before disease development.

Note: Plant tolerances to ARMORTECH PPZ 143 MC have been found to be acceptable for the specific genera and species of plants listed under the Directions for Use section of this label. Other plant species may be sensitive to ARMORTECH PPZ 143 MC and diseases other than those listed may not be controlled. Before using ARMORTECH PPZ 143 MC on plants or for diseases, test ARMORTECH PPZ 143 MC on a small scale basis first. Apply the specified rates for a particular type of disease, i.e., rust, powdery mildew, etc., and evaluate for phytotoxicity and disease control prior to widespread use.

Table 1. Ornamentals – Plant Species

Numbers in parenthesis refer to diseases controlled. See Table 2

Herbaceous Ornamental	Woody Ornamental	Nonbearing Fruits and Nuts (Nurseries and Landscape Plantings)
Calendula (4a) Carnation (5f) Chrysanthemum (2a) Delphinium (4a) English Ivy (3e) Gomphrena (3a) Impatiens (3a, 3b, 4a) Iris (5d) Marigold (3a) Monarda (4c) Phlox (4c) Snapdragon (5d) Sweet William (<i>Dianthus barbatus</i>) (3k) Zinnia (4c)	Amelanchier (4d) Ash (4c) Azalea (2c, 4b) Bayberry (3n) Camellia (3e) Cotoneaster (3i) Crabapple (3c, 3q, 4c, 5a) Crape myrtle (4a) Dogwood (3h, 4c) Douglas fir (5b) Elm (4c) Euonymus (3e, 4c) Hawthorn (5a) Holly (3r) Juniper (1a) Lilac (4c) Linden (3e, 3b, 4b) Magnolia (3e, 4b) Maple (3e, 4f) Oaks (3p) Pines (1b, 1c) Poplars (5b) Pyracantha (3o) Red Tip Photinia (3i) Rhamnus (3e, 3i) Rhododendron (2c, 3n) Roses (3g, 4e, 5c) (Outdoor use only) Shasta fir (5e) Sweetgum (3b, 3c, 3n) Sycamore (3e) Tulip tree (3e, 4a) Wax myrtle (3n)	Apple (3g, 4d, 5a) Bartlett pear (3q, 4c, 5a) Cherry (2b, 3d) Citrus (3m) Nectarine (2b) Peach (2b) Pecan (3b, 3c, 3f, 3l, 3n, 4e) Plum (2b) Walnut (3j)

Table 2. Diseases

Numbers in brackets refer to application regimes. Refer to Table 3.

1. Conifer Blights
 - a. *Phomopsis juniperovora* (Phomopsis Blight) [2]
 - b. *Sirococcus strobolimus* (Tip Blight) [4]
 - c. *Sphaeropsis sapinea* (Diplodia Tip Blight) [2]
2. Flower Blight
 - a. *Ascochyta chrysanthemi* (Ray Blight) [3]

- b. *Monilinia spp.* [1]
 - c. *Ovulinia spp.* [2]
3. Leaf Blights/Spots
- a. *Alternaria spp.* [2]
 - b. *Cercospora spp.* (Brown Leaf Spot) [3]
 - c. *Cladosporium spp.* (Scab) [3]
 - d. *Coccomyces hiemalis* [1]
 - e. *Colletotrichum spp.* [2]
 - f. *Cristulariella spp.* (Zonate leafspot) [3]
 - g. *Diplocarpon rosae* (Blackspot) [2]
 - h. *Discula spp.* (Anthracnose) [1]
 - i. *Fabraea maculate* (syn. *Entomosporium maculate*) [2]
 - j. *Gnomonia leptostyla* (Anthracnose) [3]
 - k. *Heterosporium echinulatum* [2]
 - l. *Mycosphaerella caryigena* (Downy Spot) [3]
 - m. *Mycosphaerella fructicola* (Greasy Spot) [5]
 - n. *Septoria spp.* (Leaf Scorch) [3]
 - o. *Spilocaea pyracanthae* [2]
 - p. *Tubakia dryina* [4]
 - q. *Venturia inaequalis* (Scab) [1]
 - r. *Rhizoctonia web blight*[*] [2]
4. Powdery Mildew
- a. *Erysiphe spp.* [2]
 - b. *Microsphaera spp.* [3]
 - c. *Oidium spp.* [2]
 - d. *Podosphaera spp.* [2]
 - e. *Sphaerotheca pannosa* [2]
 - f. *Phyllactinia spp.*[*] [2]
5. Rust
- a. *Gymnosporangium juniperi-virginianae* [1]
 - b. *Melampsora occidentalis* [4]
 - c. *Phragmidium spp.* [2]
 - d. *Puccinia spp.* [2]
 - e. *Pucciniastrum goeppertianum* [4]
 - f. *Uromyces dianthi* [2]

[*Not registered for this use in CA]

Table 3. Application Regimes

- [1] Mix 2-4 fl. oz. of ARMORTECH PPZ 143 MC in 100 gallons of water and apply as a full coverage spray to the point of drip. Apply every 14-21 days during the period of primary infection. If disease is present, tank mix with an EPA-registered contact fungicide. For flower blight, apply ARMORTECH PPZ 143 MC when there is 5-10% bloom and again at 70-100% bloom. For dogwoods, apply the 2-4 fl. oz. rate every 14 days or apply 8 fl. oz. of ARMORTECH PPZ 143 MC every 28 days.
- [2] Mix 5-8 fl. oz. of ARMORTECH PPZ 143 MC in 100 gallons of water and apply as a full coverage spray to the point of drip. Begin applying when conditions are favorable for disease development and apply as necessary. For blackspot, apply with a registered contact fungicide labeled for blackspot. For Calendula, apply every 30 days. For diplodia tip blight, make 3 applications every 14 days prior to major period of infection. For juniper phomopsis blight, make the first application as soon as junipers start to grow, and repeat the applications every 14-21 days during periods of active growth.

- [3] Mix 8-12 fl. oz. of ARMORTECH PPZ 143 MC in 100 gallons of water and apply as a full coverage spray to the point of drip. Apply every 30 days, beginning when conditions are favorable for the disease development. For pecans, apply the 12 fl. oz. rate beginning at bud break. Apply 3 times at 14-day intervals. For walnuts, apply 8.5 fl. oz. at 14 to 21 day intervals. For ray blight, apply 12 fl. oz. at 7 day intervals or 20 fl. oz. at 14 day intervals. For impatiens, bayberry, linden, magnolia, sweetgum and wax myrtle, the maximum use rate is 8 fl. oz.
- [4] Mix 16 fl. oz. of ARMORTECH PPZ 143 MC in 100 gallons of water and apply as a full coverage spray to the point of drip. Apply every 14-28 days, beginning when conditions are favorable for disease development. For Douglas fir needle rust, apply once in May. For tip blight, start applications in mid-late winter and apply 3 times at 2-month intervals.
- [5] Mix 20-24 fl. oz. of ARMORTECH PPZ 143 MC in 100 gallons of water and apply as a full coverage spray to the point of drip. Apply during June to August time period.

A FLARE ROOT-INJECTED SYSTEMIC FUNGICIDE FOR CONTROL OF SELECTED DISEASES IN TREES
[(Not Registered for use in CA & NY)]

Product Information

ARMORTECH PPZ 143 MC is a systemic fungicide for use as a flare root injection for prevention and treatment of (1) oak wilt (*Ceratocystis fagacearum*) of oaks (*Quercus* spp.), (2) Dutch elm disease (*Ophiostroma ulmi*) of elms (*Ulmus* spp.), (3) sycamore anthracnose (*Apiognomonia veneta*), and (4) leaf diseases (i.e., *Venturia inaequalis*, *Gymnosporangium juniperi-virginianae*, *Pucciniastrum goeppertianum*, etc.) of crabapple (*Malus* spp.). It is advised that ARMORTECH PPZ 143 MC be administered by trained arborists or others trained in injection techniques and in the identification of tree diseases.

Notes: The active ingredient in ARMORTECH PPZ 143 MC has been shown to be safe on a wide range of plant species. Before using ARMORTECH PPZ 143 MC on plants or for diseases, test ARMORTECH PPZ 143 MC on a small-scale basis and evaluate for phytotoxicity and disease control prior to widespread use.

Correct Location for Injector Placement

The flare root area is the transitional zone between the trunk and the root system. Uptake and distribution of ARMORTECH PPZ 143 MC is more effective when injections are made into the flare roots. In addition, wounds created in the flare root area close more rapidly in comparison to wounds above the flare root area.

Tree Preparation

1. Heavy, thick, or loose outer bark may be carefully shaved to form a smoother injection point and to ensure the operator that the drill hole penetrates through the bark to the xylem.
2. If the flare roots are not clearly exposed, carefully remove 2 to 4 inches of soil from the base of the tree to uncover the top of the flare roots. Brush away loose soil.
3. Drill holes through the bark, into sapwood using a clean sharp drill bit. Drill hole diameter should be adequate to allow insertion of injection tees and formation of airtight contact between active xylem and the delivery point of the injection tees. Drill a hole diameter of 7/32 – 5/16 inch for elms, sycamores, and crabapples, and 5/16 inch for oaks. Follow manufacturer’s instructions for the particular injection device used in the treatment. Drill hole depth should be adequate to deliver the product into active xylem tissue. ¾ inch depth is appropriate, but trees with thick bark may require increased drill hole depth to reach the active xylem layer. Space injectors 3-6 inches apart around the base of the tree. Do not drill in the valleys between the flare roots or into cankered areas. Drill above these areas into the trunk, and then continue again into sound sapwood on the flares.
4. Disinfect the drill bit between trees with household bleach (20% solution), ethanol, or other disinfectant. Rinse bit with clean water after disinfecting.
5. Insert into the drilled holes the injection ports (“tees”), which are connected to plastic tubing. The tubing should have inlet and outlet valves.

- Mix the specified amount of ARMORTECH PPZ 143 MC and water thoroughly in the tank before beginning the injection treatment.

Tree Measurement

Measure the diameter of the tree using a tree diameter-tape (D-tape) at 4 ½ feet above the ground. This is the diameter at breast height (DBH). If only a regular tape is available, measure the tree circumference and divide that number by 3.14.

For crabapples, measure the diameter at the point where the tree begins to branch.

Preparation of Injection Solution

Dilute 10 mL of ARMORTECH PPZ 143 MC in up to 1 liter of water per inch DBH. Refer to the following table as an example of the amounts of ARMORTECH PPZ 143 MC and water to use:

DBH inches	Treatment Level (mL)	Water Volume* (liters)
5	50	5
10	100	10
15	150	15
20	200	20
25	250	25
30	300	30
35	350	35
40	400	40

*Use up to the amount indicated.

Injection

For pressurized injections, with the outlet valve open, connect the tank to the inlet valve and begin pumping solution until all air bubbles come out of the outlet valve. Direct the solution into a container and return the solution to the tank. Shut off the outlet valve. Pressurize tank to 20-30 psi. Check for leaks and gently tap in tees if necessary. Maintain continuous pressure on the injection system until the full amount of solution is in the tree.

After injection is complete, remove injection tees and leave drill holes unplugged. A water flush to cleanse the hole will assist with wound closure. Soil should be replaced around the tree. It is not necessary to treat the drill holes with wound paint or other sealing compounds.

Contact your local extension agent for more details on tree injection. The injection system described is meant as an example; please refer to manufacturer’s instructions when using other types of tree injection systems.

Retreatment

At the initial injection of ARMORTECH PPZ 143 MC, take notes on the level of disease in each tree. Reevaluate disease level in trees at 12-month intervals after treatment for the potential need for retreatment with ARMORTECH PPZ 143 MC. Preventive applications should be considered 12-36 months after the initial injection. Trees in high disease risk areas or high value trees should be evaluated for possible retreatment 12 months after each treatment.

Follow application procedures described above for repeat injections; new drill holes will be needed for subsequent treatments.

OAK WILT: OAKS

Preventive and Therapeutic Treatment

Use 10 mL of ARMORTECH PPZ 143 MC in up to 1 liter of water per inch DBH. For very high disease pressure, 20 mL of ARMORTECH PPZ 143 MC per inch DBH may be used.

In the upper Midwest, treat oaks after June 15. Wounds in oaks in the upper Midwest between May 15 and June 15 attract insects that transmit the oak wilt pathogen.

Oak trees exhibiting less than 20% crown loss from oak wilt have the best chance of responding to treatment by ARMORTECH PPZ 143 MC. Preventive application is more effective than therapeutic treatment. Trees in advanced stages of disease development may not respond to treatment.

Uninfected trees will absorb the full amount of ARMORTECH PPZ 143 MC: water solution within 2 hours when injected under pressure. Trees exhibiting specific symptoms or those symptomless trees immediately adjacent to a diseased tree should be considered infected. Symptomless trees separated by a primary plow line from diseased trees may be at less risk of infection. Infected trees will absorb the material more slowly due to the vascular plugging caused by the disease. If the ARMORTECH PPZ 143 MC: water solution is not absorbed within 24 hours, the tree is considered high risk and has a poor chance of survival.

Refer to the **Product Information** section for details on retreatment.

LEAF DISEASE: CRABAPPLES

Preventative Treatment

Use 10 mL of ARMORTECH PPZ 143 MC in up to 1 liter of water per inch trunk diameter. For trees less than 10 inches trunk diameter, use 6 mL of ARMORTECH PPZ 143 MC per inch trunk diameter. Make applications when the trees are in full leaf and actively growing for control of the next season's leaf disease development. Disease symptoms may not be reduced the year of application.

Refer to the **Product Information** section for details on retreatment.

ANTHRACNOSE: SYCAMORE

Preventive Treatment

Use 10 mL of ARMORTECH PPZ 143 MC in up to 1 liter of water per inch DBH. For trees less than 10 inches DBH, use 6 mL of ARMORTECH PPZ 143 MC per inch DBH. Make applications when the trees are in full leaf and actively growing for control of the next season's anthracnose development.

Refer to the **Product Information** section for details on retreatment.

DUTCH ELM DISEASE IN ELMS

Preventive and Therapeutic Treatment

Use 6-10 mL of ARMORTECH PPZ 143 MC in up to 1 liter of water per inch DBH. For very high disease pressure, 20 mL of ARMORTECH PPZ 143 MC per inch DBH may be used.

Notes: (1) Accurate diagnosis of Dutch elm disease is important since ARMORTECH PPZ 143 MC only provides control of Dutch elm disease in elms. (2) ARMORTECH PPZ 143 MC will be most effective when used in conjunction with other cultural practices advised for management of Dutch elm disease (removal of dead elm trees, pruning of diseased tree limbs and branches, control of bark beetles, etc.). (3) Preventive applications can be made at 6-10 mL/inch DBH. The 6 mL rate should provide 24 months control and the 10 mL rate should provide 36 months control. (4) Therapeutic treatment in trees showing disease symptoms should be made at 10-20 mL/inch DBH. Retreatment may be needed every 12-36 months. Trees in advanced stages of disease development may not respond to treatment.

For further information on the proper diagnosis and control of Dutch elm disease, consult your local extension agent.

Refer to the **Product Information** section for details on retreatment.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in original container in a cool area out of the reach of children.

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

CONTAINER HANDLING:

[Nonrefillable Container ≤ 5 gal.: Nonrefillable container. Do not reuse this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as**

follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ 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. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.]

[**Nonrefillable Container > 5 gal.: Nonrefillable container.** Do not reuse this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple Rinse as follows: Empty remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or a mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.]

[**Refillable Container > 5 gal.: Refillable container.** Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved state and local authorities.]

CONDITION 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. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather, presence of other materials or other influencing factors in the use of the product, which are beyond the control of United Turf Alliance, LLC or Seller. To the extent consistent with applicable law, all such risks shall be assumed by Buyer and User, and Buyer and User agree to hold United Turf Alliance, LLC and Seller harmless for any claims relating to such factors.

United Turf Alliance, LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under conditions not reasonably foreseeable to or beyond the control of Seller or United Turf Alliance, LLC, and Buyer and User assume the risk of any such use. UNITED TURF ALLIANCE, LLC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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[EPA Approval Date]