

432-1369

12/5/2013

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460



OFFICE OF  
CHEMICAL SAFETY AND  
POLLUTION PREVENTION

Bayer Environmental Science  
2 T. W. Alexander Drive  
Research Triangle Park, NC 27709

DEC 05 2013

Subject: Amended label adding pollinator protection language  
Product Name: Merit 2 Greenhouse and Nursery Insecticide  
EPA Reg. No. 432-1369  
EPA Decision No. 485404  
Submission dated September 27, 2013

Dear Dr. Pangilinan:

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act is acceptable. A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one (1) copy of the final printed labeling before you release the product for shipment with the new labeling. See 40 CFR 156.10(a)(6).

Under 40 CFR 152.130(d), EPA may establish dates by which all product distributed or sold by the registrant must bear revised labeling. The following paragraphs set forth the schedule for ensuring that that your product bears revised labeling within a reasonable time period.

- Any product released for shipment after 2/28/14 must bear the new label.

If these conditions are not complied with, EPA will take appropriate action against this registration. If you have any questions please contact Dr. Jennifer Urbanski at 703-347-0156 or [urbanski.jennifer@epa.gov](mailto:urbanski.jennifer@epa.gov).

Regards,

A handwritten signature in black ink that reads "Venus Eagle".

Venus Eagle, Product Manager (01)  
Insecticide-Rodenticide Branch  
Registration Division (7505P)

ACCEPTED  
DEC 05 2013

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Under the Federal Insecticide, Fungicide,  
and Rodenticide Act, as amended, for the  
pesticide registered under:

GROUP	4A	INSECTICIDE
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EPA Reg. No. 432-1369

# Merit® 2 Greenhouse and Nursery Insecticide

For foliar and systemic insect control on ornamentals, non-bearing fruit and nut trees, and vegetable transplants in greenhouses and in nurseries.

### ACTIVE INGREDIENT:

Imidacloprid, 1-[(6-Chloro-3-pyridinyl)methyl]-N-nitro-2-imidazolidinimine ..... 21.4%

OTHER INGREDIENTS: ..... 78.6%

TOTAL: ..... 100.0%

Contains 2 pounds of imidacloprid per gallon

SHAKE WELL BEFORE USING

EPA Reg. No. 432-1369

EPA Est. No. \_\_\_\_\_

## STOP - READ THE LABEL BEFORE USE

KEEP OUT OF REACH OF CHILDREN

### CAUTION

PRECAUCION AL USUARIO: Si usted no puede leer o entender inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.  
(TO THE USER: If you cannot read English, do not use this product until the label has been fully explained to you.)

For MEDICAL and TRANSPORTATION Emergencies ONLY Call 24 Hours A Day 1-800-334-7577  
For PRODUCT USE Information Call 1-800-331-2867

### FIRST AID

<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</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 - 20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes:</b>	<p>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.</p> <ul style="list-style-type: none"> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
In case of emergency call toll free the Bayer Environmental Science Emergency Response Telephone No. 1-800-334-7577. Have a product container or label with you when calling a poison control center or doctor, or going for treatment.	
<b>NOTE TO PHYSICIAN:</b> No specific antidote is available. Treat the patient symptomatically.	

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

#### CAUTION

Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling. Keep children or pets off treated area until spray is dry.

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## PERSONAL PROTECTIVE EQUIPMENT:

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinylchloride (PVC) or viton
- Shoes plus socks

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.

## ENGINEERING CONTROLS STATEMENTS

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.

Important: When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "Applicators and Other Handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment breakdown.

## USER SAFETY RECOMMENDATIONS

User should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## ENVIRONMENTAL HAZARDS

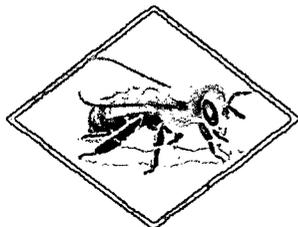
This product is highly toxic to aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash waters.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops/plants or weeds. Do not apply this product or allow it to drift to blooming crops/plants or weeds if bees are foraging the treatment area.

This chemical demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

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## PROTECTION OF POLLINATORS



**APPLICATION RESTRICTIONS** EXIST FOR THIS PRODUCT BECAUSE OF RISK TO BEES AND OTHER INSECT POLLINATORS. FOLLOW APPLICATION RESTRICTIONS FOUND IN THE DIRECTIONS FOR USE TO PROTECT POLLINATORS.



Look for the bee hazard icon in the Directions for Use for each application site for specific use restrictions and instructions to protect bees and other insect pollinators.

**This product can kill bees and other insect pollinators.**

Bees and other insect pollinators will forage on plants when they flower, shed pollen, or produce nectar.

Bees and other insect pollinators can be exposed to this pesticide from:

- Direct contact during foliar applications, or contact with residues on plant surfaces after foliar applications
- Ingestion of residues in nectar and pollen when the pesticide is applied as a seed treatment, soil, tree injection, as well as foliar applications.

When Using This Product Take Steps To:

- Minimize exposure of this product to bees and other insect pollinators when they are foraging on pollinator attractive plants around the application site.
- Minimize drift of this product on to beehives or to off-site pollinator attractive habitat. Drift of this product onto beehives or off-site to pollinator attractive habitat can result in bee kills.

Information on protecting bees and other insect pollinators may be found at the Pesticide Environmental Stewardship website at: <http://pesticidestewardship.org/PollinatorProtection/Pages/default.aspx>.

Pesticide incidents (for example, bee kills) should immediately be reported to the state/tribal lead agency. For contact information for your state, go to: [www.aapco.org/officials.html](http://www.aapco.org/officials.html). Pesticide incidents should also be reported to the National Pesticide Information Center at: [www.npic.orst.edu](http://www.npic.orst.edu) or directly to EPA at: [beekill@epa.gov](mailto:beekill@epa.gov)

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## 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.

**SEE INDIVIDUAL CROPS FOR SPECIFIC POLLINATOR PROTECTION APPLICATION RESTRICTIONS. IF NONE EXIST UNDER THE SPECIFIC CROP, FOR OUTDOOR FOLIAR APPLICATIONS, FOLLOW THESE APPLICATION DIRECTIONS FOR FOOD CROPS AND COMMERCIALY GROWN ORNAMENTALS THAT ARE ATTRACTIVE TO POLLINATORS.**



**FOR FOOD CROPS AND COMMERCIALY GROWN ORNAMENTALS NOT UNDER CONTRACT FOR POLLINATION SERVICES BUT ARE ATTRACTIVE TO POLLINATORS.**

Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen unless one of the following conditions is met:

- The application is made to the target site after sunset
- The application is made to the target site when temperatures are below 55°F
- The application is made in accordance with a government-initiated public health response
- The application is made in accordance with an active state-administered apiary registry program where beekeepers are notified no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying
- The application is made due to an imminent threat of significant crop loss, and a documented determination consistent with an IPM plan or predetermined economic threshold is met. Every effort should be made to notify beekeepers no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying.

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### AGRICULTURAL USE REQUIREMENTS

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

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

**Exception:** If the product is drenched, soil-injected or soil-incorporated, workers may enter the treated area at any time if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinylchloride (PVC) or viton
- Shoes plus socks

### APPLICATION TO ORNAMENTALS AND VEGETABLE TRANSPLANTS

Merit® 2 Greenhouse and Nursery Insecticide is for insect control on ornamental and vegetable plants intended for resale(transplants) in nurseries and greenhouses. Merit 2 Greenhouse and Nursery Insecticide is a systemic product and will be translocated upward into the plant system. To assure optimum effectiveness, the product must be placed where the growing portion of the target plant can absorb the active ingredient. The addition of a nitrogen containing fertilizer, where applicable, into the solution may enhance the uptake of the active ingredient. Application can be made by foliar application or soil applications; including soil injection, drenches, chemigation, and broadcast sprays.

When making soil applications to plants with woody stems, systemic activity will be delayed until the active ingredient is translocated throughout the plant. For this reason, make application prior to anticipated pest infestation to achieve optimum levels of control.

For outdoor uses, do not apply more than 1.6 pt (0.4 lb of active ingredient) per acre per year.

**Bark Media:** Media with 30% or more bark content may confer a shorter period of protection when treated with MERIT 2 Greenhouse and Nursery Insecticide.

**RESISTANCE:** Some insects are known to develop resistance to insecticides after repeated use. As with any insecticide, conform use of this product to resistance management strategies established for the use area.

Merit 2 Greenhouse and Nursery Insecticide contains a Group 4A insecticide. Insect biotypes with acquired or inherent resistance to Group 4A insecticides may eventually dominate the insect population if Group 4A insecticides are used repeatedly as the predominant method of control for targeted species.

The active ingredient in Merit 2 Greenhouse and Nursery Insecticide is a member of the neonicotinoid chemical class. Insect pests resistant to other chemical classes have not shown cross-resistance to Merit 2 Greenhouse and Nursery Insecticide.

Contact your Cooperative extension specialist, certified crop advisor and/or product manufacturer for additional insect resistance management recommendations. Also, for more information on Insect Resistance Management (IRM), visit the Insecticide Resistance Action Committee (IRAC) on the web at <http://www.irac-online.org/>.

For resistance management purposes, do not make a foliar application with any chloronicotinyl insecticide following a Merit 2 Greenhouse and Nursery Insecticide soil application in the same crop.

### APPLICATION EQUIPMENT FOR ORNAMENTALS AND VEGETABLE TRANSPLANTS

Merit 2 Greenhouse and Nursery Insecticide mixes readily with water and may be used in many types of application equipment. Mix product with the required amount of water and apply as desired dependent upon the selected use pattern.

When making foliar applications on hard to wet foliage such as holly, pine, or ivy, the addition of a spreader/ sticker is recommended. If concentrate or mist type spray equipment is used, use an equivalent amount of product on the area sprayed, as would be used in a dilute application.

Merit 2 Greenhouse and Nursery Insecticide has been found to be compatible with commonly used fungicides, miticides, liquid fertilizers, and compatibility using the correct proportion of products in a small jar test if local experience is unavailable.

### APPLICATION THROUGH IRRIGATION SYSTEMS

Apply MERIT 2 Greenhouse and Nursery Insecticide at the rate specified on the label either alone or in tank mixtures with other pesticides and chemicals registered for application through irrigation systems. The normal dilution ratio is 1:100 to 1:200, depending on the system. Always meter the product into the irrigation water during the first part of the irrigation cycle. The product may be mixed separately prior to injection. Agitation may be necessary if the mixture is allowed to stand more than 24 hours.

Remove scale, pesticide residue and other foreign matter from the tank and entire irrigation system.

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Apply Merit 2 Greenhouse and Nursery Insecticide only through micro irrigation (individual spaghetti tubes), drip irrigation, overhead irrigation, ebb and flood, or hand-held or motorized calibrated irrigation equipment.

Do not apply this product through any other type of irrigation system. Crop injury or lack of effectiveness can result from non uniform distribution of treated water.

If you have any questions about calibration, contact your State Extension Service specialist, equipment manufacturers or other experts in this area.

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 a person who is under the supervision of the responsible person, shall shut the system down and make necessary adjustments when the need arises.

**SAFETY DEVICES FOR IRRIGATION SYSTEMS CONNECTED TO PUBLIC WATER SUPPLIES:**

If the source of water for your irrigation system is a public water supply, follow the instructions below:

1. 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 out of the year.
2. 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, water from the public water system 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.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. 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 pesticide distribution is adversely affected.
6. 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.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

**SAFETY DEVICES FOR IRRIGATION SYSTEMS NOT CONNECTED TO A PUBLIC WATER SUPPLY:**

1. 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.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. 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.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where the pesticide distribution is adversely affected.
6. Systems must use a metering pump such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of material that is compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

**APPLICATION TO GRASSY AREAS IN NURSERIES**

MERIT 2 Greenhouse and Nursery Insecticide can be used for the control of soil-inhabiting pests of grassy areas of nurseries, such as Northern and Southern masked chafers, *Cyclocephala borealis*, *C. immaculata*, and/or *C. lurida*; Asiatic garden beetle, *Maladera castanea*; European chafer, *Rhizotrogus majalis*; Green June beetle, *Cotinis nitida*; May or June beetle, *Phyllophaga* spp.; Japanese beetle, *Popillia japonica*; Oriental beetle, *Anomala orientalis*; Billbugs, *Spherophorus* spp.; Annual bluegrass weevil, *Hyperodes* spp.; Black turfgrass ataenius, *Ataenius spretulus* and *Aphodius* spp. and mole crickets, *Scapteriscus* spp. MERIT 2 Greenhouse and Nursery Insecticide can also be used for suppression of cutworms and chinchbugs. MERIT 2 Greenhouse and Nursery Insecticide can be used as directed on nursery grass under or around field or container grown plants, on roadways or other grassy areas in or around nurseries. MERIT 2 Greenhouse and Nursery Insecticide cannot be used on commercial sod farms.

The active ingredient in MERIT 2 Greenhouse and Nursery Insecticide has sufficient residual activity so that applications can be made preceding the egg laying activity of the target pests. High levels of control can be achieved when applications are made preceding or during the egg laying period. The need for an application can be based on historical monitoring of the site, previous records or experiences, current season adult trapping or other methods. Optimum control will be achieved when applications are made prior to egg hatch of the target pests, followed by sufficient irrigation or rainfall to move the active ingredient through the thatch.

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Do not apply Merit 2 Greenhouse and Nursery Insecticide to soils which are water logged or saturated with water.-Adequate distribution of the active ingredient cannot be achieved when these conditions exist. The treated grassy area must be in such a condition that the rainfall or irrigation will penetrate vertically in the soil profile. Do not apply more than 1.6 pt (0.4 lb of active ingredient) per acre per year.

**APPLICATION EQUIPMENT FOR USE ON GRASSY AREAS IN NURSERIES**

Apply MERIT 2 Greenhouse and Nursery Insecticide in sufficient water to provide adequate distribution in the treated area. The use of accurately calibrated equipment normally used for the application of soil insecticides is required. Use equipment which will produce a uniform, coarse droplet spray, using a low pressure setting to eliminate off target drift. Check calibration periodically to ensure that equipment is working properly.

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**DIRECTIONS FOR FOLIAR APPLICATION TO GRASSY AREAS OF NURSERIES**

SITE	PEST		DOSAGE
Grassy areas of Field & Forest Nurseries	<b>Larvae of:</b> Annual bluegrass weevil Asiatic garden beetle Billbugs Black turfgrass ataenius Cutworms (suppression) European chafer	Green June beetle Japanese beetle Northern masked chafer Oriental beetle <i>Phyllophaga</i> spp. Southern masked chafer	19.2 to 25.6 fl oz per acre or 0.45 to 0.6 fl oz (13 to 17 mL) per 1,000 sq ft
	Chinchbugs (suppression)	Mole crickets	25.6 fl oz /A or (17 mL) per 1,000 sq ft
<p>For optimum control of grubs, billbugs and annual bluegrass-weevil, make application prior to egg hatch of the target pest. Be sure to read "APPLICATION EQUIPMENT" Section of this label.</p>			
<p>For suppression of chinch bugs, make application prior to the hatching of the first instar nymphs. For control of mole crickets make application prior to or during the peak egg hatch period. When adults or large nymphs are present and actively tunneling, Merit 2 Greenhouse and Nursery Insecticide application should be accompanied by a curative insecticide. Follow label instructions for other insecticides when tank-mixing.</p>			
<p>Consult your local turf, state Agricultural Experiment Station, or State Extension Service Specialist for more specific information regarding timing of application.</p>			
<p>For optimum control, irrigate if rainfall does not occur within 24 hours after application to move the active ingredient through the thatch. Mow grass area only after sufficient irrigation or rainfall has occurred so that uniformity of application will not be affected.</p>			
<p><b>RESTRICTIONS:</b></p> <ul style="list-style-type: none"> <li>• Do not apply more than 1.6 pt (0.4 lb of active ingredient) per acre per year.</li> <li>• Do not allow this product to contact plants in bloom while bees are foraging the treatment area.</li> <li>• Do not graze treated areas or use clippings for treated areas for feed or forage.</li> <li>• Avoid runoff or puddling of irrigation water following application.</li> <li>• Do not apply Merit 2 Greenhouse and Nursery Insecticide to soils which are water logged or saturated, which will not allow penetration into the root zone of the plants.</li> </ul>			

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DIRECTIONS FOR APPLICATIONS TO ORNAMENTALS AND VEGETABLE TRANSPLANTS		
For foliar and systemic insect control in and around field grown nurseries, outdoor containerized ornamentals, ornamentals grown in greenhouses and ornamentals grown in flats, benches or beds, for vegetable transplants and resale.		
CROP	PEST	DOSAGE
Trees Non-bearing Fruit and Nut trees* Shrubs Evergreens Flowers Foliage plants Ground covers Vegetable transplants**	Adelgids Aphids Japanese beetles (adults) Lacebugs Leaf beetles (including elm and viburnum leaf beetles) Leafhoppers (including glassy-winged sharpshooter)	Leafminers Mealybugs Sawfly larvae Thrips (suppression) Whiteflies
		1.7 fl. oz. (50mL) per 100 gal of water
	<p><b>Foliar Applications:</b> Start treatments prior to establishment of high pest populations and reapply on an as needed basis.</p> <p>For resistance management purposes, do not make a foliar application with Merit 2 Greenhouse and Nursery Insecticide following a Merit 2 Greenhouse and Nursery Insecticide soil application in the same crop.</p>	
	White grub larvae (such as Japanese beetle larvae, Chafers, <i>Phyllophaga</i> spp. Asiatic garden beetle, Oriental beetle)	0.45 to 0.6 fl oz (13 to 17 mL) per 1,000 sq ft
	<p><b>Broadcast Applications:</b> Mix required amount of product in sufficient water to uniformly and accurately cover the area being treated. Do not use less than 2 gallons of water per 1,000 sq ft For optimum control, irrigate thoroughly to incorporate MERIT 2 Insecticide into the upper soil profile.</p> <p>* Non-bearing fruit and nut trees are those trees that will not bear fruit or nuts for one year after application.</p> <p>**Only for use on vegetable plants intended for resale including: Broccoli, Chinese Broccoli, Broccoli Raab, Brussels Sprouts, Cabbage, Chinese Cabbage, Cauliflower, Collards, Eggplant, Ground Cherry, Kale, Kohlrabi, Lettuce, Mustard Greens, Pepinos, Peppers, Potatoes, Rape Greens, Sorghum, Sugarbeets, Tomatillo, and Tomato.</p>	
<b>RESTRICTIONS FOR OUTDOOR USE:</b>		
<ul style="list-style-type: none"> <li>Follow application restrictions FOR COMMERCIALY GROWN ORNAMENTALS NOT UNDER CONTRACT FOR POLLINATION SERVICES BUT ARE ATTRACTIVE TO POLLINATORS indicated on page [x] to protect bees and other insect pollinators.</li> <li>Do not apply more than 1.6 pt (0.4 lb of active ingredient) per acre per year.</li> <li>Do not apply this product, by any application method, to linden, basswood, or other Tilia species.</li> </ul>		

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DIRECTIONS FOR SOIL DRENCH AND SOIL INJECTION FOR TREES AND SHRUBS GROWN IN NURSERY AND GREENHOUSE				
Adelgids	Eucalyptus longhorned borers	Leaf beetles (including elm and viburnum leaf beetles)	Pine Tip moth larvae	Soft scales
Aphids	Flatheaded borers (including bronze birch and alder borers)	Leafhoppers (including glassy-winged sharpshooter)	Psyllids	Thrips (suppression)
Armored scales (suppression)	Japanese beetles (adults)	Leafminers	Royal palm bugs	White grub larvae
Black vine weevil larvae	Lacebugs	Mealybugs	Sawfly larvae	Whiteflies
<b>Trees</b>	0.1 to 0.2 fl. oz. (3 to 6 mL) per inch of trunk diameter (D.B.H.)			
<p><b>Soil Injection: GRID SYSTEM:</b> Space holes on 2.5 foot centers, in a grid pattern, extending to the drip line of the tree. <b>CIRCLE SYSTEM:</b> Apply in holes evenly spaced in circles, (use more than one circle dependent upon the size of the tree) beneath the drip line of the tree extending in from that line. <b>BASAL SYSTEM:</b> Space injection holes evenly around the base of the tree trunk no more than 6 to 12 inches out from the base.</p> <p>Mix required dosage in sufficient water to inject an equal amount of solution in each hole. Maintain a low pressure and use sufficient solution for distribution of the liquid into the treatment zone. For optimum control, keep the treated area moist for 7 to 10 days. Do not use less than 4 holes per tree.</p> <p><b>No Soil Injection Application Allowed in Nassau or Suffolk Counties of New York.</b></p> <p><b>Soil Drench:</b> Uniformly apply the dosage in no less than 10 gallons of water per 1,000 square feet as a drench around the base of the tree, directed to the root zone. Remove plastic or any other barrier that will stop solution from reaching the root zone.</p> <p><b>For Control of Specified Borers:</b> Application to trees already heavily infested may not prevent the eventual loss of the trees due to existing pest damage and tree stress.</p>				
<b>Shrubs</b>	0.1 to 0.2 fl. oz. (3 to 6 mL) per foot of shrub height			
<p><b>Soil Injection:</b> Apply to individual plants using dosage indicated.</p> <p>Mix required dosage in sufficient water to inject an equal amount of solution in each hole. Maintain a low pressure and use sufficient solution for distribution of the liquid into the treatment zone. Keep the treated area moist for 7 to 10 days. Do not use less than 4 holes per shrub.</p> <p><b>No Soil Injection Application Allowed in Nassau or Suffolk Counties of New York.</b></p> <p><b>Soil Drench:</b> Uniformly apply the dosage in no less than 10 gallons of water per 1,000 square feet as a drench around the base of the tree, directed to the root zone. Remove plastic or any other barrier that will stop solution from reaching the root zone.</p>				
<b>Ground treatment pre-planting for flowers and groundcovers</b>	0.45 to 0.6 fl oz (13 to 17 mL) per 1,000 sq ft			
Apply as a broadcast treatment and incorporate into the soil before planting.				
<p><b>RESTRICTIONS:</b></p> <ul style="list-style-type: none"> <li>• For outdoor ornamentals, do not apply more than 1.6 pt (0.4 lb of active ingredient) per acre per year.</li> <li>• Do not apply Merit 2 Greenhouse and Nursery Insecticide to soils which are water logged or saturated, which will not allow penetration into the root zone of the plants.</li> <li>• For use only on non-bearing fruit and nut trees. Non-bearing fruit and nut trees are those trees that will not bear fruit or nuts for one year after application.</li> <li>• Do not apply this product, by any application method, to linden, basswood, or other Tilia species.</li> </ul>				

### Merit 2 Greenhouse and Nursery Insecticide - Ebb & Flood Application

Merit 2 Greenhouse and Nursery Insecticide may be applied through Ebb and Flood applications. To assure accurate uptake it is recommended that prior to treatment, a minimum of 10 plants be brought up to a known field capacity and allowed to dry out for one or two days. Re-wet these plants to determine how much water on average each plant will absorb to bring it back at field capacity. Use the volume absorbed per plant (keeping pot sizes uniform) multiplied by the number of pots being treated. Add to this volume a required minimum to flood your smallest treatment area. Do not allow leachate run out for first 10 days after application, in order to retain the product and facilitate full plant uptake of the active ingredient. This will minimize the return back to the storage tank. Re-use the returned volume with subsequent irrigation or nutrients on the same plants.

DIRECTIONS FOR EBB AND FLOOD APPLICATIONS IN GREENHOUSE AND NURSERIES				
Adelgids	Lacebugs	Leafminers	Root Weevil Complex: (such as Apopka Weevil, Black Vine Weevil, Citrus Root Weevil <sup>3</sup> )	Whiteflies
Aphids	Leaf beetles (including elm and viburnum leaf beetles)	Mealybugs	Soft Scales	White Grub larvae (such as Japanese Beetle, Masked Chafers, European Chafer, Oriental Beetle, Asiatic Garden Beetle)
Armored scales (suppression)	Leafhoppers (including glassy-winged sharpshooter)	Psyllids	Thrips (suppression) <sup>4</sup>	
Fungus Gnats (larvae only) <sup>1</sup>		Root mealybugs <sup>2</sup>		
Japanese Beetles (adults)				
Pot sizes (inches)	Herbaceous species including vegetable transplants <sup>5</sup> (one or two plants per pot)		Woody perennials, Herbaceous species including vegetable transplants <sup>5</sup> (3 or more per pot)	
	ML per 100 Plants		ML per 100 Plants	
2	1.6 mL		2.5 mL	
3	2.5 mL		3.7 mL	
4	3.3 mL		5 mL	
5	4.2 mL		6.3 mL	
6	5 mL		7.7 mL	
7	5.9 mL		9.1 mL	
8	6.6 mL		10 mL	
9	7.4 mL		11.1 mL	
10	8.3 mL		12.5 mL	
11	9 mL		14.3 mL	
12	10 mL		16.7 mL	
<p><sup>1</sup> Fungus gnat larvae in the soil will be controlled by drench or incorporation. <b>No adult Fungus Gnat control.</b> Other foliar insect control is achieved by the uptake of Merit 2 Greenhouse and Nursery Insecticide from a healthy root system translocating the active ingredient up into the plant.</p> <p><sup>2</sup> Root Mealybug control will require a thorough drenching of containerized media. Coverage is essential for control while minimizing the amount of leachate. Rate: 1.7 fl oz (50 mL) in 150 gallons of water.</p> <p><sup>3</sup> Citrus Root Weevil: For use on non-bearing citrus nursery stock.</p> <p><sup>4</sup> Thrips suppression on foliage only. Thrips in buds and flowers will not be suppressed.</p> <p><sup>5</sup> Note: For use on vegetable transplants (intended for resale only) including: Broccoli, Chinese Cabbage, Broccoli Raab, Brussels Sprouts, Cabbage, Chinese Cabbage, Cauliflower, Collards, Eggplant, Ground Cherry, Kale, Kohlrabi, Lettuce, Mustard Greens, Pepinos, Peppers, Potatoes, Rape Greens, Sorghum, Sugarbeets, Tomatillo, and Tomato.</p> <p>Do not allow leachate run out for first 10 days after application, in order to retain the product and facilitate full plant uptake of the active ingredient.</p>				
<p><b>RESTRICTIONS FOR OUTDOOR USE:</b></p> <ul style="list-style-type: none"> <li>Follow application restrictions FOR COMMERCIALY GROWN ORNAMENTALS NOT UNDER CONTRACT FOR POLLINATION SERVICES BUT ARE ATTRACTIVE TO POLLINATORS indicated on page [x] to protect bees and other insect pollinators.</li> <li>Do not apply more than 1.6 pt (0.4 lb of active ingredient) per acre per year.</li> <li>Do not apply Merit 2 Greenhouse and Nursery Insecticide to soils which are water logged or saturated, which will not allow penetration into the root zone of the plants.</li> </ul>				

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**DIRECTIONS FOR DRENCH AND IRRIGATION APPLICATIONS**

For use only in greenhouse and on nursery ornamentals and vegetable transplants using soil drenches, micro-irrigation, drip irrigation, overhead irrigation, ebb and flood irrigation, or hand-held or motorized calibrated irrigation equipment.

Pest	USE PATTERN		Dosage		Instructions
Adelgids Aphids Fungus Gnats <sup>1</sup> (larvae only) Japanese Beetles (adults) Lacebugs Leaf beetles (including elm and viburnum leaf beetles) Leafhoppers (including glassy-winged sharpshooter) Leafminers Mealybugs Psyllids Root mealybugs <sup>2</sup> Root Weevil Complex (Such as Apopka Weevil, Black Vine Weevil, Citrus Root Weevil <sup>3</sup> ) Soft Scale Thrips (suppression) <sup>4</sup> Whiteflies White Grub larvae (such as Japanese Beetle, Masked Chafers, European Chafer, Oriental Beetle, Asiatic Garden Beetle)	Plants in Containers	Herbaceous Species – including vegetable transplants <sup>5</sup> (one or two plants per pot)	Container size (inches) 2 3 4 5 6 7 8 9 10 11 12	No. pots treated with 1.7 fl oz (50 mL) 3,000 2,000 1,500 1,200 1,000 850 750 675 600 550 500	Use 1.7 fl oz (50 mL) of product in an appropriate amount of water to avoid leaching to treat the number of pots based on pot size in the table below. Use sufficient volume to wet most of the potting medium without loss of liquid from the bottom of the container. Apply according to label directions. Follow application with moderate irrigation. Irrigate carefully during the next 10 days in order to avoid loss of active ingredient due to leaching.
		Woody Perennials	2 3 4 5 6 7 8 9 10 11 12	2,000 1,350 1,000 800 650 550 500 450 400 350 300	
		Herbaceous Species including vegetable transplants <sup>5</sup> (three or more plants per pot)	Use the above woody perennial rates		
	Ornamental and vegetable transplants <sup>5</sup> grown in flats, benches, or beds	1.7 fl oz (50 mL) per 3,000 square feet		Mix required amount in sufficient water to uniformly cover the area being treated. Do not use less than 2 gallons of mixture per 1,000 sq ft Apply as a broadcast treatment and incorporate into the medium before planting or apply after plants are established. If application is made to established plants, optimum control will be attained if areas are lightly irrigated after application. Allow no leaching or runoff for 10 days after application	

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**RESTRICTIONS FOR OUTDOOR USE:**

- Follow application restrictions FOR COMMERCIALLY GROWN ORNAMENTALS NOT UNDER CONTRACT FOR POLLINATION SERVICES BUT ARE ATTRACTIVE TO POLLINATORS indicated on page [x] to protect bees and other insect pollinators.
- Do not apply more than 1.6 pt (0.4 lb of active ingredient) per acre per year.
- Do not apply Merit 2 Greenhouse and Nursery Insecticide to soils which are water logged or saturated, which will not allow penetration into the root zone of the plants.

- <sup>1</sup> **Fungus gnat larvae** in the soil will be controlled by drench or incorporation. **No adult Fungus Gnat control.** Other foliar insect control is achieved by the uptake of Merit 2 Greenhouse and Nursery Insecticide from a healthy root system translocating the active ingredient up into the plant.
- <sup>2</sup> **Root Mealybug** control will require a thorough drenching of containerized media. Coverage is essential for control while minimizing the amount of leachate. Rate: 1.7 fl oz (50 mL) in 150 gallons of water.
- <sup>3</sup> **Citrus Root Weevil:** For use on non-bearing citrus nursery stock.
- <sup>4</sup> **Thrips** suppression on foliage only. Thrips in buds and flowers will not be suppressed.
- <sup>5</sup> **Note:** For use on vegetable transplants intended for resale only including: Broccoli, Chinese Broccoli, Broccoli Raab, Brussels Sprouts, Cabbage, Chinese Cabbage, Cauliflower, Collards, Eggplant, Ground Cherry, Kale, Kohlrabi, Lettuce, Mustard Greens, Pepinos, Peppers, Potatoes, Rape Greens, Sorghum, Sugarbeets, Tomatillo, and Tomato.

**DIRECTIONS FOR DRENCH AND IRRIGATION APPLICATIONS FOR LARGE CONTAINERIZED PLANTS**

For use only in greenhouse and nursery ornamentals and vegetable transplants using soil drenches, micro-irrigation, drip irrigation, overhead irrigation, ebb and flood irrigation, or hand-held or motorized calibrated irrigation equipment.

PEST	Use Patterns	DOSAGE		Instructions
		Container Size	No. pots treated with 1.7 fl oz (50 mL)	
Adelgids	Containerized plants			Use 1.7 fl oz (50 mL) of product in an appropriate amount of water to avoid leaching to treat the number of pots based on pot size in the table below.  Apply in sufficient water to wet the potting medium. For optimum control, make applications prior to egg hatch of the target pest. Irrigate moderately after application to move the active ingredient into the root zone.  Do not allow leachate run out for the first 10 days after application, in order to retain the product and facilitate full plant uptake of the active ingredient.
Aphids				
Fungus Gnats Larvae <sup>1</sup>				
Japanese Beetle (adult)		1 gallon		
Lacebugs		2 gallon	340 to 244	
Leaf beetles (including elm and viburnum leaf beetles)		3 gallon	280 to 210	
Leafhoppers (including glassy-winged sharpshooter)		5 gallon	220 to 165	
Leafminers		7 gallon	160 to 110	
Mealybugs		10 gallon	100 to 75	
Psyllids		15 gallon	60 to 45	
Root Mealybugs <sup>2</sup>		20 gallon	40 to 30	
Root Weevil Complex (such as: Apopka Weevil, Black Vine Weevil, Citrus Root Weevil <sup>3</sup> )			20 to 15	
Soft Scale				
Thrips (suppression) <sup>4</sup>				
Whiteflies				
White Grub larvae (such as: Japanese Beetle, Masked				

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Chafers, European Chafer, Oriental Beetle, Asiatic Garden Beetle)				
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**RESTRICTIONS FOR OUTDOOR USE:**

- Follow application restrictions FOR COMMERCIALLY GROWN ORNAMENTALS NOT UNDER CONTRACT FOR POLLINATION SERVICES BUT ARE ATTRACTIVE TO POLLINATORS indicated on page [x] to protect bees and other insect pollinators.
- Do not apply more than 1.6 pt (0.4 lb of active ingredient) per acre per year.

- <sup>1</sup> **Fungus gnat larvae** in the soil will be controlled by drench or incorporation. **No adult Fungus Gnat control.** Other foliar insect control is achieved by the uptake of Merit 2 Greenhouse and Nursery Insecticide from a healthy root system translocating the active ingredient up into the plant.
- <sup>2</sup> **Root Mealybug** control will require a thorough drenching of containerized media. Coverage is essential for control while minimizing the amount of leachate. Rate: 1.7 fl oz (50 mL) in 150 gallons of water.
- <sup>3</sup> **Citrus Root Weevil:** For use on non-bearing citrus nursery stock.
- <sup>4</sup> **Thrips** suppression on foliage only. Thrips in buds and flowers will not be suppressed.

**DIRECTIONS FOR SOIL APPLICATION TO FIELD GROWN NURSERY STOCK**

Pests	Use Pattern	Dosage	Instruction
<b>White grub larvae</b> (such as Japanese Beetle, Masked Chafers, European Chafer, Oriental Beetle, Asiatic Garden Beetle)	Field and Forest Nurseries	Apply as a uniform band to the ground on either side of the row using a band width six (6) inches wider than the actual root ball diameter to be dug. Do not allow bands in adjacent rows to overlap. Use 1.7 fl oz (50 mL) per 1,000 ft of row or 3,000 sq ft	Apply May through July. For optimum control, treatment must be followed by rainfall or irrigation. Do not use less than 2 gallons of spray volume per 1,000 square feet.

**RESTRICTIONS:**

- Do not apply more than 1.6 pt (0.4 lb of active ingredient) per acre per year.
- Do not apply Merit 2 Greenhouse and Nursery Insecticide to soils which are water logged or saturated, which will not allow penetration into the root zone of the plants.

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### STORAGE AND DISPOSAL

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

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

Handle and open container in a manner as to prevent spillage. If the container is leaking, invert to prevent leakage. If container is leaking or material spilled for any reason or cause, carefully dam up spilled material to prevent runoff. Refer to Precautionary Statement on label for hazards associated with the handling of this material. Do not walk through spilled material. Absorb spilled material with absorbing type compounds and dispose of as directed for pesticides below. In spill or leak incidents, keep unauthorized people away. You may contact the Bayer Environmental Science Emergency Response Team for decontamination procedures or any other assistance that may be necessary. The Bayer Environmental Science Emergency Response Telephone No. is 1-800-334-7577, or contact Chemtrec at 1-800-424-9300.

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

**Container Handling:** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Offer for recycling, if available or puncture and dispose of in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of the smoke.

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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.

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