

432-1369

12/4/2003

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# Merit<sup>®</sup> 2

## Greenhouse and Nursery Insecticide

For foliar and systemic insect control on ornamentals, fruit and nut trees, and vegetable plants in greenhouses, nurseries, and interior plantscapes.

**ACTIVE INGREDIENT:**

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

**OTHER INGREDIENTS:** ..... 78.6%

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

#### 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.

**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.

**ACCEPTED**  
 DEC 4 2003  
 Under the Federal Insecticide,  
 Fungicide, and Rodenticide Act,  
 as amended, for the pesticide  
 Registered under  
 EPA Reg. No. 432-1369

<b>FIRST AID</b>	
<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 to 20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<p>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.</p>	
<p><b>Note To Physician:</b> No specific antidote is available. Treat the patient symptomatically.</p>	

### 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 washwaters.

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

### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### AGRICULTURAL USE REQUIREMENTS

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

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

Do not formulate this product into other end-use products.

### APPLICATION TO ORNAMENTALS AND VEGETABLE PLANTS

MERIT 2 Insecticide is for insect control on ornamental and vegetable plants in nurseries and greenhouses and interior plantscapes.

MERIT 2 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

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, applications should be made prior to anticipated pest infestation to achieve optimum levels of control.

For outdoor ornamentals, broadcast-applications cannot exceed a total of 1.6 pints (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.

**RESISTANCE:** Some insects are known to develop resistance to insecticides after repeated use. As with any insecticide, the use of this product should conform to resistance management strategies established for the use area. Consult your Cooperative Extension Service for resistance management strategies and recommended pest management practices for your area.

**Application Equipment For Ornamentals And Vegetable Plants**

MERIT 2 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, an equivalent amount of product should be used on the area sprayed, as would be used in a dilute application.

MERIT 2 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**

MERIT 2 may be applied at rates recommended 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.

Apply MERIT 2 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 should the need arise.

**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 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 Insecticide can also be used for suppression of cutworms and chinchbugs. MERIT 2 Insecticide can be used as directed on nursery grass in sites such as under or around field or container grown plants, on roadways or other grassy areas in or around nurseries. MERIT 2 Insecticide cannot be used on commercial sod farms.

The active ingredient in MERIT 2 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.

Applications should not be made when grassy areas are waterlogged or the soil is 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. Application cannot exceed a total of 1.6 pints (0.4 lb of active ingredient) per acre per year.

**Application Equipment for Use on Grassy Areas in Nurseries**

Apply MERIT 2 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.

RECOMMENDED APPLICATIONS		
CROP	PEST	DOSAGE
Grassy areas of Field & Forest Nurseries	Larvae of: 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
	Chinchbugs (suppression)	Mole crickets
		19.2 to 25.6 oz per acre or 0.45 to 0.6 fl oz (13 to 17 mL) per 1000 sq. ft.
		25.6 oz /A or (17 mL) per 1000 sq. ft.
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. For suppression of chinchbugs, 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 application should be accompanied by a curative insecticide. Follow label instructions for other insecticides when tank-mixing.		
Consult your local turf, state Agricultural Experiment Station, or State Extension Service Specialist for more specific information regarding timing of application. NOTE: For optimum control, irrigation or rainfall should occur within 24 hours after application to move the active ingredient through the thatch. Do not apply more than 1.6 pt (0.4 lb of active ingredient) per acre per year. Avoid mowing grass area until after sufficient irrigation or rainfall has occurred so that uniformity of application will not be affected.		

RECOMMENDED APPLICATIONS FOR USE ON OR IN ORNAMENTALS		
For foliar and systemic insect control in and around field-grown nursery and containers stock, indoor and outdoor ornamentals (including both greenhouse and interior plantscapes) and ornamentals grown in flats benches or beds.		
CROP	PEST	DOSAGE
Trees (including non-bearing fruit and nut)	Adelgids	1.7 fl. oz. (50mL) per 100 gal of water
	Leafminers	
Shrubs	Aphids	1.7 fl. oz. (50mL) per 100 gal of water
	Mealybugs	
Evergreens	Japanese beetles (adults)	1.7 fl. oz. (50mL) per 100 gal of water
	Sawfly larvae	
Flowers	Lacebugs	1.7 fl. oz. (50mL) per 100 gal of water
	Thrips (suppression)	
Foliage plants	Leaf beetles (including elm and viburnum leaf beetles)	1.7 fl. oz. (50mL) per 100 gal of water
	Whiteflies	
Ground covers	Leafhoppers (including glassy-winged sharpshooter)	1.7 fl. oz. (50mL) per 100 gal of water
Interior plantscapes	Foliar Applications: Start treatments prior to establishment of high pest populations and reapply on an as needed basis. For resistance management purposes, a MERIT foliar application following a soil application in the same crop is not recommended.	
Vegetable plants*	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 1000 sq. ft.
	Broadcast Applications: 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 1000 sq. ft. For optimum control, irrigate thoroughly to incorporate MERIT 2 Insecticide into the upper soil profile. Refer to REMARKS section for use directions specific for "Flowers and Ground Covers" concerning additional-use directions. * 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.	

RECOMMENDED APPLICATIONS FOR NURSERY, GREENHOUSE AND INTERIORESCAPE PLANTS				
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
Trees	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> Holes should be spaced 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 1000 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>				
Shrubs	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 1000 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>				
Flowers and Ground Covers	0.45 to 0.6 fl oz (13 to 17 mL) per 1000 sq. ft.			
Apply as a broadcast treatment and incorporate into the soil before planting or apply after plants are established. If application is made to established plants, optimum control will be attained if area is irrigated thoroughly after application				

**MERIT 2 Insecticide - Ebb & Flood Application**

MERIT 2 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 plant 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. This should minimize the return back to the storage tank. Re-use the returned volume with subsequent irrigation or nutrients on the same plants.

MERIT 2 INSECTICIDE EBB & FLOOD APPLICATIONS				
Adelgids	Lacebugs	Leafminers	Root Weevil Complex:	Whiteflies
Aphids	Leaf beetles (including elm and viburnum leaf beetles)	Mealybugs	(such as Apopka Weevil, Black Vine Weevil, Citrus Root Weevil <sup>3</sup> )	White Grub larvae (such as Japanese Beetle, Masked Chafer, European Chafer, Oriental Beetle, Asiatic Garden Beetle)
Armored scales (suppression)	Leafhoppers (including glassy-winged sharpshooter)	Psyllids	Soft Scales	
Fungus Gnats (larvae only) <sup>1</sup>		Root mealybugs <sup>2</sup>	Thrips (suppression) <sup>4</sup>	
Japanese Beetles (adults)				
		<b>Herbaceous species including vegetable plants<sup>5</sup> (one or two plants per pot)</b>	<b>Woody perennials, Herbaceous species including vegetable plants<sup>5</sup> (3 or more per pot)</b>	
<b>Pot sizes (inches)</b>		<b>ML per 100 Plants</b>	<b>ML per 100 Plants</b>	
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	
<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 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 plants 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, Papinos, Peppers, Potatoes, Rape Greens, Sorghum, Sugarbeets, Tomatillo, and Tomato.				

**RECOMMENDED DRENCH AND IRRIGATION APPLICATIONS**

For use only on greenhouse and, nursery ornamentals, vegetable plants, and interiorscape plants 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 MERIT 2		Remarks
	Plants in Containers	Herbaceous Species – including vegetable plants <sup>5</sup> (one or two plants per pot)	Container size (inches)	No. pots treated with 1.7 fl oz (50 mL)	
Adelgids	Plants in Containers	Herbaceous Species – including vegetable plants <sup>5</sup> (one or two plants per pot)	2	3000	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.
Aphids			3	2000	
Fungus Gnats <sup>1</sup> (larvae only)			4	1500	
Japanese Beetles (adults)			5	1200	
Lacebugs			6	1000	
Leaf beetles (including elm and viburnum leaf beetles)			7	850	
			8	750	
			9	675	
Leafhoppers (including glassy-winged sharpshooter)			10	600	
			11	550	
			12	500	
Leafminers			Plants in Containers	Woody Perennials	
Mealybugs	3	1350			
Psyllids	4	1000			
Root mealybugs <sup>2</sup>	5	8000			
Root Weevil Complex (Such as Apopka Weevil, Black Vine Weevil, Citrus Root Weevil <sup>3</sup> )	6	650			
	7	550			
	8	500			
	9	450			
Soft Scale	10	400			
Thrips (suppression) <sup>4</sup>	11	350			
Whiteflies	12	300			
White Grub larvae (such as Japanese Beetle, Masked Chafers, European Chafer, Oriental Beetle, Asiatic Garden Beetle)	Plants in Containers	Herbaceous Species including vegetable plants <sup>5</sup> (three or more plants per pot)			Use the above woody perennial rates
	Ornamental and vegetable plants <sup>5</sup> grown in flats, benches, or beds		1.7 fl oz (50 mL) per 3000 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 1000 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

<sup>1</sup> Fungus gnat larvae in the soil will be controlled by drench or incorporation. No adult Fungus Gnat control. Other foliage insect control is achieved by the uptake of MERIT 2 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 plants 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.

**RECOMMENDED DRENCH AND IRRIGATION APPLICATIONS**

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

**APPLICATION INSTRUCTIONS:** 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.

PEST	USE PATTERN	DOSAGE-MERIT 2		REMARKS
		Container Size	No. pots treated with 1.7 fl oz (50 mL)	
Adelgids Aphids Fungus Gnats Larvae <sup>1</sup> Japanese Beetle (adult) 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)	Containerized plants	1 gallon 2 gallon 3 gallon 5 gallon 7 gallon 10 gallon 15 gallon 20 gallon	340 to 244 280 to 210 220 to 165 160 to 110 100 to 75 60 to 45 40 to 30 20 to 15	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.
White grub larvae (such as: Japanese Beetle, Masked Chafers, European Chafer, Oriental Beetle, Asiatic Garden Beetle)	Field and Forest Nurseries	Apply as a uniform band 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 1000 ft of row or 3,000 sq. ft.  For grub control in areas of turf, apply as a broadcast application using 1.35 to 1.7 fl oz (40 to 50 mL) per 3000 sq. ft.	Vegetation in the area to be treated should be mowed to a height of 3 inches or less prior to application. Mowing to the lowest possible height will insure greater consistency of control.  Apply May through July. For optimum control, treatment should be followed by rainfall or irrigation. Do not use less than 2 gallons of spray volume per 1000 square feet.	

<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 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.

## RESTRICTIONS

Do not graze treated areas or use clippings for treated areas for feed or forage. Avoid runoff or puddling of irrigation water following application.

Do not apply MERIT 2 Insecticide to soils which are water logged or saturated, which will not allow penetration into the root zone of the plants.

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.

For outdoor ornamentals grown in beds or turf, applications of MERIT 2 cannot exceed a total of 1.6 pt (0.4 lb of active ingredient) per acre per year.

**Food Crops:** Treated areas may be replanted with any crop specified on an imidacloprid label, or with any crop for which a tolerance exists for the active ingredient.

For crops not listed on an imidacloprid label, or for crops for which no tolerances for the active ingredient have been established, a 12 month plant-back interval should be observed.

## 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 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 Disposal:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, 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.

## 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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Bayer Environmental Science  
A Business Group of Bayer CropScience LP  
95 Chestnut Ridge Road  
Montvale, NJ 07645