

Bayer Environmental Science

Merit[®] 2F

INSECTICIDE

* For foliar and systemic insect control in turfgrass (including sod farms), landscape ornamentals, fruit and nut trees and interior plantscapes.

BACKED by BAYER™

ACTIVE INGREDIENT:

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

OTHER INGREDIENTS: 78.6%

Total: 100.0%

*Protected by U.S. Patent No. 4,742,060

Contains 2 pounds of imidacloprid per gallon.

SHAKE WELL BEFORE USING

EPA Reg. No. 432-1312

EPA Est. No. indicated by 2nd and 3rd digits of the batch number on this package.

(19) = 3125-MO-1 (65) = 432-TX-1 (66) = 264-MO-02

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 or understand English, do not use this product until the label has been fully explained to you.)

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.

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 personal protective equipment, 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.

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.

FIRST AID

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 a 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 to 20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	<ul style="list-style-type: none"> • 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. • Call a poison control center or doctor for treatment advice.

In case of emergency call toll free the Bayer Environmental Science Emergency Response Telephone No. 800-334-7577. Have a product container or label with you when calling a poison control center or doctor, or going for treatment.

Note to Physician: No specific antidote is available. Treat the patient symptomatically.

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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.

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

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.

Exception: If the product is applied by drenching, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area 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

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Keep children and pets off treated area until dry.

APPLICATION TO TURFGRASS

MERIT[®] 2F Insecticide can be used for the control of soil inhabiting pests of turfgrass, such as Northern & 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, *Sphenophorus* spp.; Annual bluegrass weevil, *Listronotus* spp.; Black turfgrass ateniens, *Ataenius spretulus* and *Aphodius* spp.; European crane fly, *Tipula paludosa*; and mole crickets, *Scapteriscus* spp.. MERIT[®] 2F Insecticide can also be used for suppression of cutworms and chinch bugs. MERIT[®] 2F Insecticide can be used as directed on turfgrass in sites such as home lawns, business and office complexes, shopping complexes, multi-family residential complexes, golf courses, airports, cemeteries, parks, playgrounds, athletic fields and sod farms.

The active ingredient in MERIT[®] 2F 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 turfgrass 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 turf area must be in such a condition that the rainfall or irrigation will penetrate vertically in the soil profile. Applications cannot exceed a total of 1.6 pints (0.4 lb of active ingredient) per acre per year.

APPLICATION EQUIPMENT FOR USE ON TURFGRASS

Apply MERIT[®] 2F Insecticide in sufficient water to provide adequate distribution in the treated area. The use of accurately calibrated equipment normally used for

the application of turfgrass 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.

APPLICATION TO ORNAMENTALS

MERIT® 2F Insecticide is for use on ornamentals in commercial and residential landscapes and interior plantscapes. MERIT® 2F Insecticide is a systemic product and will be translocated upward into the plant system from root uptake. 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, and broadcast sprays. Foliar applications offer locally systemic activity against insect pests.

When making soil applications to plants with woody stems, systemic activity will be delayed until the active ingredient is translocated throughout the plant. In some cases, this translocation delay could take 60 days or longer. 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.

RECOMMENDED APPLICATIONS

CROP	PEST	DOSAGE MERIT® 2F	REMARKS
Turf Grasses	Larvae of: Annual bluegrass weevil Asiatic garden beetle Billbugs Black turfgrass atenius Cutworms (suppression) European chafer European crane fly Green June beetle Japanese beetle Northern masked chafer Oriental beetle <i>Phyllophaga</i> spp. Southern masked chafer	1.25 to 1.6 pt per acre or 0.46 to 0.6 fl oz (14 to 17 mL) per 1000 sq ft	For optimum control of grubs, billbugs and annual bluegrass weevil, and European crane fly make application prior to egg hatch of the target pest. Be sure to read "APPLICATION EQUIPMENT" Section of this label.
	Chinchbugs (suppression) Mole crickets	1.6 pt per acre or 0.6 fl oz (17 mL) per 1000 sq ft	For suppression of chinchbugs, make application prior to or during 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® 2F 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 Specialists 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 turf or lawn area until after sufficient irrigation or rainfall has occurred so that uniformity of application will not be affected.

RECOMMENDED APPLICATIONS

For use only in and around industrial and commercial buildings and residential areas.

CROP	PEST	DOSAGE MERIT® 2F	REMARKS
Trees Shrubs Evergreens Flowers Foliage Plants Groundcovers Interior Plantscapes	Adelgids Aphids Japanese beetles Lace bugs Leaf beetles (including elm and viburnum leaf beetles) Leafhoppers (including glassy-winged sharpshooter) Mealybugs Psyllids Sawfly larvae Thrips (suppression) Whiteflies	1.5 fl oz (45 mL) per 100 gal of water	Foliar Applications: Start treatments prior to establishment of high pest populations and reapply on as needed basis.
	White grub larvae (such as Japanese beetle larvae, Chafers, <i>Phyllophaga</i> spp. Asiatic garden beetle, Oriental beetle)	0.46 to 0.6 fl oz (14 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® 2F Insecticide into the upper soil profile. Refer to use direction specific for FLOWERS and GROUND COVERS concerning additional use directions.

Ant Management Programs

Use MERIT® 2F to control aphids, scale insects, mealybugs and other sucking pests on ornamentals to limit the honeydew available as a food source for ant populations. MERIT® 2F applications can then be supplemented with residual sprays, bait placements or other ant control tactics to further reduce the pest population.

NOTE: Not for use in commercial greenhouses, nurseries, or on grasses grown for seed, or on commercial fruit and nut trees.

APPLICATION EQUIPMENT FOR FOLIAR APPLICATIONS

MERIT® 2F 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® 2F Insecticide has been found to be compatible with commonly used fungicides, miticides, liquid fertilizers, and other commonly used insecticides. Check physical compatibility using the correct proportion of products in a small jar test if local experience is unavailable.

Do not apply through any irrigation system.

RECOMMENDED APPLICATIONS—TREES, SHRUBS, FLOWERS AND GROUNDCOVERS

For use only in and around industrial and commercial buildings and residential areas, and state, national, and private wooded and forested areas for the insect pests listed below.

CROP	PEST	DOSAGE MERIT® 2F	REMARKS
Trees	Adelgids Aphids Armored scales (suppression) Black vine weevil larvae Emerald ash borer Eucalyptus longhorned borer Flatheaded borers (including bronze birch and alder borer) Japanese beetles Lace bugs Leaf beetles (including elm and viburnum leaf beetles) Leafhoppers (including glassy-winged sharpshooter) Leafminers Mealybugs Pine tip moth larvae Psyllids Royal palm bugs Sawfly larvae Soft scales Thrips (suppression) White grub larvae Whiteflies	0.1 to 0.2 fl oz (3 to 6 mL) per inch of trunk diameter (D.B.H.)	Soil Injection: GRID SYSTEM: Holes should be spaced on 2.5 foot centers, in a grid pattern, extending to the drip line of the tree. CIRCLE SYSTEM: 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. BASAL SYSTEM: Space injection holes evenly around the base of the tree trunk no more than 6 to 12 inches out from the base. 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. No Soil Injection Applications Allowed in Nassau or Suffolk Counties of New York. Soil Drench: 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. For Control of Specified Borers: Application to trees already heavily infested may not prevent the eventual loss of the trees due to existing pest damage and tree stress.
Shrubs		0.1 to 0.2 fl oz (3 to 6 mL) per foot of shrub height	Soil Injection: Apply to individual plants using dosage indicated. 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. No Soil Injection Applications Allowed in Nassau or Suffolk Counties of New York. Soil Drench: 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.
Flowers and Groundcovers		0.46 to 0.6 fl oz (14 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.

RECOMMENDED APPLICATIONS

For use only in and around residential areas.

CROP	PEST	RATE PER APPLICATION	
Pome Fruits Apple Crabapple Loquat Mayhew Pear Pear (oriental) Quince	Aphids (except Woolly apple aphid) Leafhoppers (including glassy-winged sharpshooter) Leafminer Mealybugs* San Jose scale*	1.5 fl oz (45 mL) per 100 gal of water	6.0 fl oz/A ¹

Apply specified dosage as foliar spray as needed after petal-fall is complete.

For control of rosy apple aphid, apply prior to leafrolling caused by the pest.

For first generation leafminer control, make first application as soon as petal-fall is complete. Greatest leafminer control will result from the earliest possible application. For second and succeeding generations of leafminer, optimal control is obtained from applications made early in the adult flight against egg and early instar larvae. A second application may be required 10 days later if severe pressure continues or if generations are overlapping. A single application may result in suppression only. MERIT® 2F will not control late stage larvae.

For San Jose Scale, time applications to the crawler stage. Treat each generation.

For late season (preharvest) control of leafhopper species, apply MERIT® 2F while most leafhoppers are in the nymphal stage.

For optimal control of mealybug, insure good spray coverage of the trunk and scaffolding limbs or other resting sites of the mealybug.

Do not apply more than 6.0 fluid ounces per acre in a single application. Do not make more than 5 applications.

Allow 10 or more days between applications. Allow at least 7 days between last application and harvest.

* Not for use in California for control on pears.

CROP	PEST	RATE PER APPLICATION	
Pecans*	Yellow pecan aphid Black margined aphid Pecan leaf phylloxera Pecan spittlebug Pecan stem phylloxera	1.5 fl oz (45 mL) per 100 gal of water	6.0 fl oz/A ¹
<p>Make foliar applications as pests begin to build before populations become extreme. Two applications at a 10 to 14 day interval may be required to achieve control. Scout and retreat if needed.</p> <p>Thorough uniform coverage of foliage is necessary for optimal control. Addition of an organosilicone-based spray adjuvant at a rate not to exceed the adjuvant manufacturer's recommended use rate may improve coverage.</p> <p>Do not apply more than a total of 18.0 fluid ounces of MERIT® 2F per acre per year. Do not make more than 3 applications.</p> <p>Allow 10 or more days between applications.</p> <p>¹The amount of MERIT® 2F required per acre will depend on tree size and volume of foliage present. The rate per acre is based on a standard of 400 gallons of dilute spray solution per acre for large trees.</p> <p>* Use on pecans not permitted in California unless directed by specific supplemental labeling.</p>			

RECOMMENDED APPLICATIONS

For use only in and around industrial and commercial buildings and residential areas.

CROP	PEST	RATE PER APPLICATION		
Grapes	Leafhoppers (including glassy-winged sharpshooter)	Mealybugs	1.5 fl oz (45 mL) per 100 gal of water	3.0 fl oz/A (90 mL/A)
<p>Apply specified dosage as a foliar spray using 200 gallons of water per acre. Do not apply more than a total of 6.0 ounces of MERIT® 2F per acre per year. Allow at least 14 days between applications. Applications may be applied up to and including day of harvest.</p>				

RESTRICTIONS

Do not graze treated areas or use clippings from treated areas for feed or forage. Avoid runoff or puddling of irrigation water following application. Keep children and pets off treated area until dry. Avoid application of MERIT® 2F Insecticide to areas which are water logged or saturated, which will not allow penetration into the root zone of the plant. Do not apply more than 1.6 pt (0.4 lb of active ingredient) per acre per year.

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 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 smoke.

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 or material spilled for any reason or cause, carefully sweep material into a pile. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Dispose of pesticide as directed below. In spill or leak incidents, keep unauthorized people away. You may contact the Bayer Emergency Response Team for decontamination procedures or any other assistance that may be necessary. The Bayer Environmental Science Emergency Response Telephone No. is 800-334-7577 or contact Chemtrec at 800-424-9300.

IMPORTANT: READ BEFORE USE

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product.

If terms are not acceptable, return the unopened product container at once. By using this product, user or buyer accepts the following conditions, disclaimer of warranties and limitations of liability.

CONDITIONS: The directions for use of this product are believed to be adequate and should be followed carefully. However, because of manner of use and other factors beyond Bayer Environmental Science's control it is impossible for Bayer Environmental Science to eliminate all risks associated with the use of this product. As a result, crop injury or ineffectiveness is always possible. All such risks shall be assumed by the user or buyer.

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