



U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Registration Division (H7505C)  
1200 Pennsylvania Avenue, N.W.  
Washington, D.C. 20460

EPA Reg. Number:  
279-3311

Date of Issuance:  
JUL 20 2006

Term of Issuance:  
Conditional

Name of Pesticide Product:  
Bifenthrin 5% ME  
Termiticide/Insecticide

NOTICE OF PESTICIDE:

- Registration
- Reregistration

(Under FIFRA as amended)

Name and Address of Registrant (include ZIP Code):

FMC Corporation  
1735 Market Street  
Philadelphia, PA 19103

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is **conditionally** registered in accordance with FIFRA sec. 3(c)(7)(A), since you agreed in your letter dated October 27, 2004 that:

1. You will submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.
2. You will make the following label changes before you release the product for shipment:
  - a) Revise the EPA Registration Number to read "EPA Reg. No. 279-3311 ."
  - b) The acute toxicity profile for this product is as follows:

Acute oral toxicity	III
Acute dermal toxicity	IV
Acute inhalation toxicity	IV
Primary eye irritation	III
Primary skin irritation	IV
Dermal sensitization	Neg.

Base on the acute toxicity for acute dermal and inhalation (Toxicity Category IV), you

Signature of Approving Official:

*George T. LaRocca*  
George T. LaRocca, Product Manager (13), RD/IB (7505C)

Date:

JUL 20 2006

Are not required to have If on skin or clothing nor If inhaled first aid statements. Please delete these first aid statements.

- c) Revise Precautionary Statements to read as follows:  
  
"Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco".
- d) Replace "Inert Ingredients" with "Other Ingredients" in the ingredients statement.
- e) Under Ant and Carpenter Ants indoors revise the application rates to read as follows: "Dilute 0.5 to 7 fluid oz. of Bifenthrin 8% ME per gallon of water and apply as a crack and crevice or spot treatment to areas where ants (carpenter ants) have been observed or expected to forage. These areas include ..... etc".
- f) Under Mosquito Control delete, "Use of this product for control of urban mosquitoes that may potentially transmit malaria, dog heartworm, and arboviruses such as, but not limited to West Nile fever, dengue fever, Eastern equine encephalitis, and St. Louis encephalitis."
- g) On page 5 move the paragraph for control of stored product pests under the Food/Feed Handling Establishment section. Delete the paragraph "Warehouses and Grocery/Pet Stores" since these sites are already included under Food Feed Handling Establishment. Also the proposed directions are in conflict with the directions under Food/Feed Handling establishments.
- h) On page six delete the statement beginning "Where the probability of termite attach is low .... Etc"., since this statement is in conflict with the direction for controlling subterranean termites. Also delete the statement beginning "Where the establishment of a continuous treated zone is desired ..... etc", since the statement is correctly listed under Application Volume.
- i) On page 8 first paragraph revise "... Establishment of vertical and/or horizontal insecticidal barriers ... " to "vertical and horizontal insecticidal barriers ....." Also revise the first sentence under hollow blocks to read, "Treat hollow block voids at a rate of 2 gallons .... Etc"
- j) On front panel add "(non-food)" in parenthesis following the site greenhouses. Also add same revision following Greenhouses on page 10.
- k) Remove the following claims not present on the reference label:

- a. Bifenthrin 8% ME will provide up to 1 month residual control of house flies. Length of residual control is dependant upon rate and surface treated.
- b. Bifenthrin 8% ME will kill fleas for up to 3 months.
- c. Modify the heading "Termite Control (above Ground Only)" to read "Termites (Above Ground Only)" and modify the text in that section by removing all reference to control and replacing with kill, including:
  - i. To control kill exposed workers ...
  - ii. To control kill above-ground termites ...
  - iii. To control kill termites in carton nests ....
- d. Under "Subterranean Termite Control" reorganize the section so that the advisory language beginning "The use of this product prevents and controls Termite infestations in and around ... state cooperative extension and regulatory agencies" Is located immediately ahead of the directions for the application rate.

Refer to the enclosed efficacy review for comments regarding the data submitted. Note that data under MRID Number 46725509 Sections VI, VII and IX are not acceptable as bridging data in support of this application for registration.

- 3. Submit the results of one year storage stability (830.6317) and corrosion characteristics (830.6320) to the Agency on completion. It is recommended that the observations must be made at 0, 3, 6, 9 & 12 months intervals.
- 4. Please submit three (3) copies of your final printed labeling before releasing the product for shipment. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product bearing amended labeling constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records.

If you have any questions regarding this action, please contact BeWanda Alexander of my team at (703) 305-7460

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# Bifenthrin 8% ME

## TERMITICIDE/INSECTICIDE

To control pests indoors and outdoors on residential, institutional, public, commercial, and industrial buildings, greenhouses, food handling establishments, and lawns, ornamentals, parks, recreational areas and athletic fields.

When used as a termiticide, individuals/firms must be licensed by the state to apply termiticide products. States may have more restrictive requirements regarding qualifications of persons using this product. Consult the pest control regulatory agency of your state prior to use of this product.

- T&O [icon]
- Perimeter [icon]
- Indoor [icon]
- Outdoor [icon]
- Food Areas [icon]
- Greenhouse [icon]
- Ticks [icon]
- Flies [icon]
- Spiders [icon]
- Cockroaches [icon]
- Termite [icon]
- Mosquitoes [icon]
- Bed bug [icon]
- Fire Ants/Ant [icon]
- Fleas [icon]

EPA Reg. No. 279-xxxx      EPA Est. 279-

<b>Active Ingredient:</b>	<b>By Wt.</b>
Bifenthrin* .....	8.0%
<b>Inert Ingredients:</b> .....	92.0%
	100.0%

Bifenthrin 8% ME contains 2/3 pound active ingredient per gallon.

\*Cis isomers 97% minimum, trans isomers 3% maximum.  
U.S. Patent No. 4,238,505

**KEEP OUT OF REACH OF CHILDREN**  
**CAUTION**

**ACCEPTED**  
**with COMMENTS**  
**In EPA Letter Dated**  
**JUL 20 2006**  
**Under the Federal Insecticide,**  
**Fungicide, and Rodenticide Act,**  
**as amended, for the pesticide**  
**registered under EPA Reg. No.**  
**279-3311**

FMC Corporation  
Agricultural Products Group  
Philadelphia PA 19103

**Net Contents**  
6-14-06

<b>FIRST AID</b>	
If swallowed	<ul style="list-style-type: none"> <li>• Call poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
If inhaled	<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 by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice</li> </ul>
If on skin or clothing	<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>
If in eyes	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• 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>
<b>HOTLINE NUMBER</b>	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-(800)-331-3148 for Emergency Assistance.	
<b>NOTE TO PHYSICIAN</b>	
This product is a pyrethroid. If large amounts have been ingested, the stomach and intestine should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided.	
For Information Regarding the Use of this Product Call 1-800-321-1FMC (1362).	

### PRECAUTIONARY STATEMENTS

#### Hazards to Humans (and Domestic Animals) CAUTION

Harmful if swallowed, inhaled or absorbed through skin. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove contaminated clothing and wash before reuse.

All pesticide handlers (mixers, loaders and applicators) must wear long-sleeved shirt and long pants, socks, shoes and chemical-resistant gloves. After the product is diluted in accordance with label directions for use, and/or when mixing and loading using a closed spray tank transfer system (such as U-Turn®), or an in-line injector system, shirt, pants, socks, shoes and waterproof gloves are sufficient. In addition, all pesticide handlers must wear a respiratory protection device when working in a non-ventilated space. All

pesticide handlers must wear protective eyewear when working in non-ventilated space

Use one of the following NIOSH approved respirator with any R, P or HE filter or a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any R, P or HE prefilter

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

<b>User Safety Recommendations</b>	
Users 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 outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing	

**Environmental Hazards**

This pesticide is extremely toxic to fish and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and run-off from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters. Care should be used when spraying to avoid fish and reptile pets in/around ornamental ponds. 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 to drift to blooming crops if bees are visiting the treatment area.

**Physical and Chemical Hazards**

Do not apply water-based dilutions of Bifenthrin 8% ME to electrical conduits, motor housings, junction boxes, switch boxes or other electrical equipment because of possible shock hazard.

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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 a broadcast application to interior surfaces of homes.

Do not apply by air.

Do not apply in nurseries.

Do not apply this product through any kind of irrigation system.

Not for use on sod farm turf, golf course turf, or grass grown for seed.

**AGRICULTURE 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 intervals. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

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

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

- Coveralls
- Chemical-resistant gloves, such as barrier laminate or butyl rubber or nitrile rubber or neoprene rubber or polyvinyl chloride or viton.
- Shoes plus socks

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 requirement specific to your State or Tribe, consult the State/Tribal agency responsible for pesticide regulation.

\* These requirements apply only to the greenhouse uses on this label

**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 Standards for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries and greenhouses.

Do not allow people or pets on treated surfaces until the spray has dried.

\*\* These requirements apply to all other non-greenhouse uses on this label

**Use Directions for Premeasured water-soluble bags**

1. Fill tank 1/4 to 1/3 full of water.
2. Remove the appropriate number of bags needed to prepare the final tank solution from their outer container and add the bags to the water in tank. Do not open the individual water soluble bags.
3. Fill the tank with the remaining water as needed.

For example, Add 5-1oz water soluble bags to 4.9 gallons water to make 5 gallons of 0.06% solution.

**Use Directions for Tip-N-Measure® Container**

1. Remove the measuring chamber cap and induction seal. Replace the cap and securely tighten. Tip container until liquid fills measuring chamber.

6 8 15

- 2 Return container to level position. No adjustment is needed.
- 3 Remove measuring chamber cap and dispense into proper application equipment

For multiple dose measuring. Remove fill chamber cap and dispense according to markings on side of bottle

Use Directions for Squeeze-N-Measure Container

- 1 Remove the measuring chamber cap and induction seal
- 2 Replace cap loosely on measuring chamber to allow venting.
- 3 Squeeze container gently until liquid fills measuring chamber
- 4 Remove measuring chamber cap and dispense into proper application equipment
- 5 Replace cap onto measuring chamber and Securely Tighten.

## STORAGE AND DISPOSAL

**Prohibitions:** Do not contaminate water, food or feed by storage or disposal.  
**Pesticide Storage:** Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry place and avoid excess heat. For water soluble bags do not allow inner bags to become wet during storage. Do not handle inner bag with wet hands or wet gloves. Carefully open containers. After partial use replace lids and close tightly. Do not put concentrate or dilute material into food or drink container

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. Call FMC: (800) 331-3148.

**To Confine Spill:** If liquid, dike surrounding area or absorb with sand, cat litter or commercial clay. If dry material, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

**Pesticide Disposal:** Pesticide wastes are toxic. Do not contaminate water, food or feed by storage or disposal. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. Dispose of excess or waste pesticide by use according to label directions, or contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**Container Disposal:**

**Plastic Container:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Returnable/Refillable Sealed Container:** Do not rinse container. Do not empty remaining formulated product. Do not break seals. Return intact to point of purchase

For water soluble bags when all bags are used, the outer package should be clean and may be disposed of in a sanitary landfill, by incineration or if allowed by state and local authorities, by burning. If burned, stay out of smoke. If the outer container contacts formulated product in any way, it must be triple rinsed with clean water. Add rinsate to the spray tank and dispose of the outer package as described above.

## General Information on the Use of this Product

Bifenthrin 8% ME controls a wide spectrum of insects and mites on trees, shrubs, foliage plants, non-bearing fruit and nut trees, and flowers in greenhouses, interiorscapes including hotels, shopping malls, office buildings, etc., and outdoor plantscapes, such as around residential dwellings, parks, institutional buildings, recreational areas, athletic fields and home lawns.

Non-bearing crops are perennial crops that will not produce a harvestable raw agricultural commodity during the season of application. Bifenthrin 8% ME may also be used in feed and food handling establishments, and in/around/under structures.

**Resistance:** Some insects are known to develop resistance to products used repeatedly for control. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. Consult your local or state pest management authorities for details.

If resistance to this product develops in your area, this product, or other products with a similar mode of action, may not provide adequate control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present. If you experience difficulty with control and suspect that resistance is a reasonable cause, immediately consult your local company representative or pest management advisor for the best alternative method of control for your area.

## Bifenthrin 8% ME Dilution Chart

Applic. Volume:		Applic. Rate:	Fluid Ounces (ml) of Bifenthrin 8% ME Diluted to these Volumes of Finished Spray			
			1 Gallon	5 Gallons	10 Gallons	100 Gallons
% a.i.	Gal/1000 sq. ft.	Fl. oz./1000 sq. ft.	fl. oz.	fl. oz.	fl. oz.	fl. oz.
0.008	1.0	0.125	0.125	0.63	1.25	12.5
0.011	1.0	0.18	0.18	0.90	1.8	18.0
0.015	1.0	0.25	0.25	1.25	2.5	25.0
0.020	1.0	0.33	0.33	1.67	3.33	33.3
0.031	1.0	0.5	0.5	2.5	5.0	50.0
0.041	1.0	0.67	0.67	3.33	6.67	66.7
0.046	1.0	0.75	0.75	3.75	7.5	75.0
0.062	1.0	1.0	1.0	5.0	10.0	100.0
0.004	2.0	0.125	-	0.31	0.63	6.3
0.006	2.0	0.18	-	0.45	0.90	9.0
0.008	2.0	0.25	0.13	0.63	1.25	12.5
0.010	2.0	0.33	0.17	0.83	1.65	16.5
0.015	2.0	0.5	0.25	1.25	2.5	25.0
0.021	2.0	0.67	0.33	1.67	3.35	33.5
0.023	2.0	0.75	0.38	1.88	3.75	37.5
0.031	2.0	1.0	0.5	2.5	5.0	50.0
0.003	3.0	0.125	-	0.21	0.42	4.2
0.004	3.0	0.18	-	0.30	0.60	6.0
0.005	3.0	0.25	-	0.42	0.83	8.3
0.007	3.0	0.33	0.11	0.55	1.10	11.0
0.010	3.0	0.5	0.17	0.83	1.67	16.7
0.014	3.0	0.67	0.22	1.11	2.23	22.3
0.015	3.0	0.75	0.25	1.25	2.5	25.0
0.021	3.0	1.0	0.33	1.67	3.33	33.3
0.002	4.0	0.125	-	0.16	0.31	3.1
0.003	4.0	0.18	-	0.23	0.45	4.5
0.004	4.0	0.25	-	0.31	0.63	6.3
0.005	4.0	0.33	-	0.41	0.83	8.3
0.008	4.0	0.5	0.13	0.63	1.25	12.5
0.010	4.0	0.67	0.17	0.84	1.67	16.7
0.012	4.0	0.75	0.19	0.94	1.88	18.8
0.015	4.0	1.0	0.25	1.25	2.5	25.0
0.002	5.0	0.125	-	0.13	0.25	2.5
0.002	5.0	0.18	-	0.18	0.36	3.6
0.003	5.0	0.25	-	0.25	0.5	5.0
0.004	5.0	0.33	-	0.33	0.67	6.7
0.006	5.0	0.5	0.1	0.5	1.0	10.0
0.008	5.0	0.67	0.13	0.67	1.33	13.3
0.009	5.0	0.75	0.15	0.75	1.5	15.0
0.012	5.0	1.0	0.2	1.0	2.0	20.0
0.001	10.0	0.125	-	-	0.13	1.3
0.001	10.0	0.18	-	-	0.18	1.8
0.002	10.0	0.25	-	0.13	0.25	2.5
0.002	10.0	0.33	-	0.17	0.33	3.3
0.003	10.0	0.5	-	0.25	0.5	5.0
0.004	10.0	0.67	-	0.33	0.67	6.7
0.005	10.0	0.75	-	0.38	0.75	7.5
0.006	10.0	1.0	0.1	0.5	1.0	10.0

1 fluid oz. = 29.57 ml 2 tablespoons = 6 teaspoons  
 Do not use household utensils to measure Bifenthrin 8% ME.

## General Application Instructions

Bifenthrin 8% ME formulation mixes readily with water and other aqueous carriers.  
 Bifenthrin 8% ME may be tank-mixed with adjuvants, and with other pesticides, including insect growth regulators. When tank mixing Bifenthrin 8% ME with other pesticides, observe all precautions and limitations on each separate product label. The physical compatibility of Bifenthrin 8% ME may vary with different sources of pesticide products, and local cultural practices. Any tank mixture which has not been previously tested should be prepared on a small scale (pint or quart jar), using the proper proportions of pesticides and water to ensure the physical compatibility of the mixture.

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The following procedure is recommended for preparation of a new tank mix, unless specified otherwise in label directions: (1) Add wettable powders to tank water, (2) Agitate, (3) Add liquids and flowables, (4) Agitate, (5) Add emulsifiable concentrates, and (6) Agitate. If a mixture is found to be incompatible following this order of addition, try reversing the order of addition, or increase the volume of water. Note: If the tank-mixture is found to be compatible after increasing the amount of water, then the sprayer will need to be recalibrated for a higher volume application. Do not allow tank mix to stand overnight.

**Formula for Determining the Active Ingredient Content of the Finished Spray Mixture:** The following formula may be used to determine the percent active ingredient that is in the spray tank after mixing Bifenthrin 8% ME

$$(7.9)(\text{Fl Oz. of Bifenthrin 8\% ME added to tank}) / (\text{Gallons of finished spray mix})(128) = \text{Percent Active Ingredient of spray mix}$$

## APPLICATION RECOMMENDATIONS

### ANT CONTROL

**Nuisance Ants Indoors:** For best results, locate and treat ant nests. Dilute 0.5 to 1.0 fluid oz. of Bifenthrin 8% ME per gallon of water and apply at the rate of one gallon of dilution per 1,000 square feet as a general surface, crack and crevice or spot treatment to areas where ants have been observed or are expected to forage. These areas include, but are not limited to, baseboards, in and behind cabinets, under and behind dishwashers, furnaces, refrigerators, sinks and stoves, around pipes, cracks and crevices and in corners. Particular attention should be given to treating entry points into the home or premises such as around doors and windows. When using Bifenthrin 8% ME in combination with baits, apply Bifenthrin 8% ME as instructed above, and use baits in other areas that have not been treated with Bifenthrin 8% ME.

**Nuisance Ants Outdoors:** For best results, locate and treat ant nests. Apply Bifenthrin 8% ME to ant trails around doors and windows and other places where ants have been observed or are expected to forage. Apply a perimeter treatment using either low or high volume applications described in the "Pest Control on Outside Surfaces and Around Buildings" section of this label. The higher dilutions and/or application volumes, as well as more frequent applications, may be necessary when treating concrete surfaces for ant control. Maximum control is generally achieved using the following procedure:

- 1) Treat non-porous surfaces with low volume applications using 0.5 to 1.0 fluid oz. of Bifenthrin 8% ME per gallon of water and applying this dilution at the rate of one gallon per 1,000 square feet.
- 2) Treat porous surfaces and vegetation with high volume applications using dilutions that are calculated to deliver 0.5 to 1.0 fluid oz. of Bifenthrin 8% ME per 1,000 square feet (refer to the Bifenthrin 8% ME Dilution Chart)
- 3) For maximum residual control, dilute 0.5 to 1.0 fluid oz. of Bifenthrin 8% ME per gallon of water and apply at a rate of up to 10 gallons of dilution per 1,000 square feet

**Carpenter Ants Indoors:** Dilute 0.5 to 1.0 fluid oz. of Bifenthrin 8% ME per gallon of water and apply at the rate of one gallon of dilution per 1,000 square feet as a general surface, crack and crevice or spot treatment to areas where carpenter ants have been observed or are expected to forage. These areas include, but are not limited to, baseboards, in and behind cabinets, under and behind dishwashers, furnaces, refrigerators, sinks, and stoves, around pipes, cracks and crevices and in corners. Particular attention should be given to treating entry points into the home or premises such as around doors and windows. Spray or foam into cracks and crevices or drill holes and spray, mist or foam into voids where carpenter ants or their nests are present. When using Bifenthrin 8% ME in combination with baits, apply Bifenthrin 8% ME as instructed above, and use baits in other areas that have not been treated with Bifenthrin 8% ME.

**Carpenter Ants Outdoors:** Apply Bifenthrin 8% ME to carpenter ant trails around doors and windows and other places where carpenter ants have been observed or are expected to forage. For best results, locate and treat carpenter ant nests. Apply a perimeter treatment using either low or high volume applications described in the "Pest Control on Outside Surfaces and Around Buildings" section of this label. The higher dilutions and/or application volumes, as well as more frequent applications, may be necessary when treating concrete surfaces for carpenter ant control. Maximum control is generally achieved using the following procedure:

- 1) Treat non-porous surfaces with low volume applications using 0.5 to 1.0 fluid oz. of Bifenthrin 8% ME per gallon of water and applying this dilution at the rate of one gallon per 1,000 square feet
- 2) Treat the trunks of trees that have carpenter ant trails, or upon which carpenter ants are foraging, using 0.5 to 1.0 fluid oz. of Bifenthrin 8% ME per gallon of water and applying this dilution to thoroughly wet the bark from the base of the tree to as high as possible on the trunk

3) Treat porous surfaces and vegetation with high volume applications using dilutions that are calculated to deliver 0.5 to 1.0 fluid oz. of Bifenthrin 8% ME per 1,000 square feet (refer to the Bifenthrin 8% ME Dilution Chart)

4) For maximum residual control, dilute 0.5 to 1.0 fluid oz. of Bifenthrin 8% ME per gallon of water and apply at a rate of up to 10 gallons of dilution per 1,000 square feet

• To control carpenter ants inside trees, utility poles, fencing or deck materials and similar structural members, drill to locate the interior infested cavity and inject or foam a 0.06% dilution (1.0 fluid oz. of Bifenthrin 8% ME per gallon of water) into the cavity using a sufficient volume and an appropriate treatment tool with a splashback guard.

• To control carpenter ants that are tunneling in the soil, dilute 0.5 to 1.0 fluid ounces of Bifenthrin 8% ME per gallon of water and apply as a drench or inject the dilution or foam at intervals of 8 to 12 inches. Establish a uniform vertical barrier at the edges of walls, driveways or other hard surfaces where ants are tunneling beneath the surfaces.

• To protect firewood from carpenter ants (and termites), dilute 1.0 fluid oz. of Bifenthrin 8% ME per gallon of water and apply to the soil beneath where the firewood will be stacked at the rate of one gallon of dilution per 8 square feet.

For wood piles and stored lumber apply a 0.06% suspension. Use a hose-end sprayer or sprinkling can to deliver a coarse drenching spray. Treated wood can be burned as firewood or used for lumber one month after treatment. Do not use in structures

For Ant and Fire Ant Mounds use Bifenthrin 8% ME 0.06% suspension as Drench Method: Apply 1-2 gallons of suspension to each mound area by sprinkling the mound until it is wet and treat a 4 foot diameter circle around the mound. Use the higher volume for mounds larger than 12". For best results, apply in cool weather, such as in early morning or late evening hours, but not in the heat of the day.

### PEST CONTROL ON OUTSIDE SURFACES AND AROUND BUILDINGS

Bifenthrin 8% ME will provide up to 1 month residual control of house flies. Length of residual control is dependant upon rate and surface treated.

For control of Ants, Carpenter Ants, Fire Ants, Armyworms, Lady Beetles, Bees, Beetles†, Biting Flies, Boxelder Bugs, Centipedes, Chiggers, Chinch Bugs, Cicadas, Clover Mites, Crickets, Cutworms, Dichondra Flea Beetles, Earwigs, Elm Leaf Beetles, Firebrats, Fleas, Flies, Gnats, Grasshoppers, Hornets, Japanese Beetle†, Midge, Millipedes, Mosquitoes, Moths, Roaches (including Cockroaches), Scorpions, Silverfish, Sod Webworms, Sowbugs (Pillbugs), Spider Mites, Spiders (including Black Widow, Brown Recluse and Hobo Spiders), Springtails, Ticks (including Brown Dog Ticks), and Wasps.

†Not for use in California.

Apply Bifenthrin 8% ME using a 0.02 to 0.06% suspension as a residual spray to outside surfaces of buildings including, but not limited to, exterior siding, foundations, porches, window frames, caves, patios, garages, refuse dumps, lawns such as grass areas adjacent or around private homes, duplexes, townhouses, condominiums, house trailers, apartment complexes, carports, garages, fence lines, storage sheds, barns, and other residential and non-commercial structures, soil, trunks of woody ornamentals and other areas where pests congregate or have been seen. Use a spray volume of up to 10 gallons of suspension per 1,000 square feet. Higher application volumes may be used to obtain the desired coverage of dense vegetation or landscaping materials.

Mixing Directions: For 0.02% suspension, mix 0.33 fluid oz. of Bifenthrin 8% ME per gallon of water. For 0.06% suspension, mix 1 fluid oz. of Bifenthrin 8% ME per gallon of water (1 fluid oz. = 2 tablespoons). Do not use household utensils to measure Bifenthrin 8% ME. Use the higher rate for heavy pest infestation, quicker knockdown or longer residual control. Retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Repeat application is necessary only if there are signs of renewed insect activity. Repeat application should be limited to no more than once per seven days.

Perimeter Treatment: Apply to a band of soil and vegetation 6 to 10 feet wide around and adjacent to the structure. Also, treat the foundation of the structure to a height of 2 to 3 feet. Apply 0.33 to 1.0 fluid oz. of Bifenthrin 8% ME per 1,000 square feet in sufficient water to provide adequate coverage (refer to Bifenthrin 8% ME Dilution Chart).

### Broadcast Treatment of Wood for the Control of Wood-infesting Insects and Nuisance Pests Outside of Structures

Apply a 0.06% suspension with a fan spray using a maximum pressure of 25 psi. Treatment should be made to thoroughly and uniformly cover the surface but limit excess runoff.

To control wood-infesting insects active inside trees, utility poles and/or fence posts, drill to find the interior infested cavity and inject a 0.06% suspension.

To control Bees, Wasps, Hornets, and Yellow Jackets, apply in late evening when insects are at rest. Aim spray at nest openings in ground, bushes and in cracks and crevices which may harbor nests, saturating nest openings and contacting as many insects as possible.

**Pests Under Slabs**

Infestations of Arthropods, such as Ants, Cockroaches and Scorpions inhabiting under slab area may be controlled by drilling and injecting or horizontal rodding and then injecting 1 gallon of a 0.06% to 0.12% suspension per 10 square feet or 2 gallons of suspension per 10 linear feet

**MOSQUITO CONTROL**

To control adult mosquitoes outdoors on residential, institutional, public, commercial and industrial buildings, and lawns, ornamentals, parks, recreational areas and athletic fields

Apply Bifenthrin 8% ME for mosquito control at an application rate of 0.33 to 1.0 fluid oz. Bifenthrin 8% ME per gallon of water (0.07 to 0.22 lbs bifenthrin/acre), and apply at the rate of one gallon of dilution per 1,000 square feet as a general spray (refer to the Bifenthrin 8% ME Dilution Chart) Use the high rate for residual control of mosquitoes Use this product for control of urban mosquitoes that may potentially transmit malaria, dog heartworm, and arboviruses such as, but not limited to, West Nile fever, dengue fever, Eastern equine encephalitis, and St. Louis encephalitis

Apply as a residual spray to outside surfaces of buildings including but not limited to, exterior siding, foundations, porches, window frames, eaves, patios, garages, refuse dumps, lawns such as grass areas adjacent to or around private homes, duplexes, townhouses, condominiums, house trailers, apartment complexes, carports, fence lines, storage sheds, barns, and other commercial, residential and non commercial structures, soil, trunk of woody ornamentals, trees, shrubs, ground cover, bedding plants, foliage plants, flowers, non-bearing fruit and nut trees urban areas, parks, campsites, athletic fields, playgrounds, recreational and overgrown waste areas, roadsides and other areas where mosquitoes are found. May also be applied to non-bearing crops or perennial crops that will not produce harvestable raw agricultural commodities during the season of application

Use the high rate for heavy pest infestation, quicker knockdown, or longer residual control. Retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure, or if there are signs of renewed insect activity For the lower use rates, repeat application should be limited to no more than once per seven days For the high use rate of 1.0 fluid oz. Bifenthrin 8% ME per gallon of water, do not apply more than once per four weeks

Apply with hand-held and back pack sprayers or mist blowers, ground sprayers, power sprayers, truck mounted hydraulic sprayers or mist blowers Do not apply by air or with hand held or truck mounted cold aerosol ULV sprayers and thermal fogging devices For best results apply when the mosquitoes are most active Application during the cooler hours of the night or early mornings is recommended.

Do not apply more than 1.0 fluid oz. of Bifenthrin 8% ME per 1,000 square feet (equivalent to 0.22 lbs. bifenthrin/acre) per application

Do not apply when wind speed exceeds 10 MPH.

**INDOOR USE**

In the home, all food processing surfaces and utensils should be covered during treatment or thoroughly washed before use Exposed food should be covered or removed.

Use a 0.02% to 0.06% suspension (0.33 to 1 fluid oz. per gallon of water) for residual pest control in buildings and structures and on modes of transport. Apply either as a crack and crevice, pmstream, spot, coarse, low pressure spray (25 psi or less) or with a paint brush

Apply as a coarse, low pressure, crack and crevice or spot spray to areas where pests hide, such as baseboards, corners, storage areas, closets, around water pipes, doors and windows, attics and eaves, behind and under refrigerators, cabinets, sinks, furnaces, stoves, the underside of shelves, drawers and similar areas Do not use as a space spray Pay particular attention to cracks and crevices

Mixing Directions: See mixing directions in "Pest Control on Outside Surfaces and Around Buildings" section

Bifenthrin 8% ME is to be diluted with water for spray or brush application. Fill sprayer with the desired volume of water and add Bifenthrin 8% ME. Close and shake before use in order to insure proper mixing. Mix only the amount of solution needed for the application. Retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Repeat application is necessary only if there are signs of renewed insect activity Repeat application should be limited to no more than once per seven days

Bifenthrin 8% ME may be converted to a foam and used to treat void spaces, floor drains (to sewers) or as a spot spray on vertical or horizontal surfaces where visual marking of application is desired Use of a foaming agent like Upgrade™ amplifying foam increases a 1 surface contact time on challenging surfaces and provides visual marking of the application.

Bedbugs: To Aid in Control - Thorough application should be made to crack and crevices where evidence of bed bugs occurs. This includes bed frames, box springs, inside empty dressers and clothes closets and carpet edges, high and low wall moldings and wallpaper edges Do not use this product on bed linens, pillows, mattresses or clothes. Remove all clothes and other articles from dressers or clothes closets before application. Allow all treated areas to thoroughly dry before use Not recommended for use as sole protection against bedbugs If evidence of bedbugs is found in/on mattresses, use products approved for this use

Use a 0.02% to 0.06% suspension (0.33 to 1 fluid oz. per gallon of water) for residual pest control in buildings and structures and on modes of transport. Apply either as a crack and crevice, pmstream, spot, coarse, low pressure spray (25 psi or less) or with a paint brush.

Cockroaches, Crickets, Firebrats, House Flies, Scorpions, Silverfish, Spiders, and Ticks:

Bifenthrin 8% ME will provide up to 1 month residual control of house flies. Length of residual control is dependant upon rate and surface treated

Apply as a coarse, low pressure spray to areas where these pests hide, such as baseboards, corners, storage areas, closets, around water pipes, doors and windows, attics and eaves, behind and under refrigerators, cabinets, sinks, furnaces, and stoves, the underside of shelves, drawers and similar areas. Pay particular attention to cracks and crevices.

Ants: Apply to any trails, around doors and windows and other places where ants may be found.

Fleas:

Bifenthrin 8% ME will kill fleas for up to 3 months

Apply as a coarse, low pressure spot or crack and crevice treatment to areas frequented by pets, such as under bedding, rugs, next to furniture. Do not apply Bifenthrin 8% ME suspension directly to pets. Treatment should be dry before pet re-entry Vacuum prior to treatment

Boxelder Bugs, Centipedes, Earwigs, Beetles, Millipedes, Pillbugs, and Sowbugs: Apply around doors and windows and other places where these pests may be found or where they may enter premises. Spray baseboards, storage areas and other locations

Bees and Wasps: To control Bees, Wasps, Hornets, and Yellow Jackets apply a 0.06% -suspension. Application should be made in the late evening when insects are at rest Thoroughly spray nest and entrance and surrounding areas where insects alight Spray liberally into hiding and breeding places, especially under attic rafters, contacting as many insects as possible. Retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Repeat application is necessary only if there are signs of renewed insect activity

Important: Do not apply suspension until location of heat pipes, ducts, water and sewer lines and electrical conduits are known and identified. Caution must be taken to avoid puncturing and injection into these structural elements Do not apply into electrical fixtures, switches, or sockets

In the home, all food processing surfaces and utensils in the treatment area should be covered during treatment or thoroughly washed before re-use.

Remove pets, birds, and cover aquariums before spraying. Do not permit humans or pets to contact treated surfaces until the spray has dried

During any overhead applications to overhead interior areas of structures, cover surfaces below with plastic sheeting or similar materials

Wear protective clothing, unvented goggles, gloves and respirator, when applying to overhead areas or in poorly ventilated areas. Avoid touching sprayed surfaces until spray has completely dried

**FOR CONTROL OF STORED PRODUCTS PESTS**

(Including Indian Meal Moths, Rice Moths, Tobacco Moths, Flour Beetles, Lesser Grain Borers, Merchant Grain Beetles, Sawtoothed Grain Beetles, Grain Weevils, Warehouse Beetles, Cigarette Beetles, and Dermestid Beetles, Psocids, and other similar pests)

WAREHOUSES and GROCERY/PET STORES: TalstarOne suspension may be applied as a general surface, spot or crack and crevice treatment in food and nonfood storage warehouses and stores. Apply to all areas that may harbor pests, including under and between pallets, bins, and shelves. Do not apply directly to food, grain bins (interior), or animals.

### FOOD/FEED HANDLING ESTABLISHMENT APPLICATIONS

Applications of this product are permitted in both food/feed and non-food areas of food/feed handling establishments as a general surface, spot, or crack and crevice treatment

Food/feed handling establishments are defined as places other than private residences in which exposed food/feed is held, processed, prepared or served. Included also are areas for receiving, storing, packing (canning, bottling, wrapping, boxing), preparing, edible waste storage and enclosed processing systems (mills, dairies, edible oils, syrups) of food. Serving areas where food is exposed and the facility is in operation are also considered food areas

Permitted non-food areas of use include, garbage rooms, lavatories, floor drains (to sewers), entries and vestibules, offices, locker rooms, machine rooms, garages, mop closets and storage (after canning or bottling).

Permitted use sites include, but are not limited to: Aircraft (Do not use in aircraft cabins), apartment buildings, bakeries, bottling facilities, breweries, buses, cafeterias, candy plants, canneries, dairy product processing plants, food manufacturing plants, food processing plants, food service establishments, granaries, grain mills, hospitals, hotels, industrial buildings, laboratories, meat/poultry/egg processing plants, mobile/motor homes, nursing homes offices, railcars, restaurants, schools, ships, trailers, trucks, vessels, warehouses and wineries.

**General Surface Application:** Do not use this application method in food/feed handling establishments when the facility is in operation or foods/feeds are exposed. Do not apply directly to food products. Cover or remove all food processing and/or handling equipment during application. After application in food processing plants, bakeries, cafeterias and similar facilities, wash all equipment, benches, shelving and other surfaces which food will contact. Clean food handling or processing equipment and thoroughly rinse with clean, fresh water.

**Spot, Crack and Crevice Application:** Spot or crack and crevice applications may be made while the facility is in operation, however, food should be covered or removed from area being treated. Do not apply directly to food

**Foam Applications:** Bifenthrin 8% ME may be converted to a foam and used to treat void spaces, floor drains (to sewers) or as a spot spray on vertical or horizontal surfaces where visual marking of application is desired. Use of a foaming agent like Upgrade™ amplifying foam increases a i. surface contact time on challenging surfaces and provides visual marking of the application. Ensure that the foaming agent is approved for food surface/area contact use.

### Specific Pest Control Applications

**Underground Services** such as wires, cables, utility lines, pipes, conduits, etc. Services may be within structures or located outside structures, in right-of-ways or to protect long range (miles) of installations of services.

Soil treatment may be made using 0.06 to 0.12% Bifenthrin 8% ME suspension to prevent attack by Termites and Ants.

Apply 2 gallons of suspension per 10 linear feet to the bottom of the trench and allow to soak into the soil. Lay services on the treated soil and cover with approximately 2 inches of fill soil. Apply another 2 gallons per 10 linear feet over the soil surface to complete the treatment barrier. In wide trenches, only treat the soil in the area near the services. It is important to establish a continuous barrier of treated soil surrounding the services.

Where soil will not accept the above labeled volume, 1 gallon of 0.12% Bifenthrin 8% ME may be used per 10 linear feet of trench both to the bottom of the trench and over the soil on top of the services

Finish filling the trench with treated fill soil. The soil where each service protrudes from the ground may be treated by trenching/rodding of no more than 1 to 2 gallons of suspension into the soil

**Precautions:** Do not treat electrically active underground services.

**Posts, Poles, and Other Constructions:** Create an insecticidal barrier in the soil around wooden constructions such as signs, fences and landscape ornamentation by applying a 0.06% suspension

Previously installed poles and posts may be treated by sub-surface injection or treated by gravity-flow through holes made from the bottom of a trench around the pole or post. Treat on all sides to create a continuous insecticidal barrier around the pole. Use 1 gallon of suspension per foot of depth for poles and posts less than six inches in diameter. For larger poles, use 1.5 gallons of suspension per foot of depth. Apply to a depth of 6 inches below the bottom of the wood. For larger constructions, use 4 gallons per 10 linear feet per foot of depth.

**Treatment of Wood-in-Place for Control of Wood-Infesting Insects:** (Localized Areas in Structure) For the control of insects such as Termites, Ants, Carpenter Ants, and wood-infesting beetles such as Old House Borer and Powder Post in localized areas of infested wood in and around structures, apply a 0.06% suspension to voids and galleries in damaged wood and in spaces between wooden members of a structure and between wood and

foundations where wood is vulnerable. Paint on or tan spray applications may also be used. Plastic sheeting must be placed immediately below overhead areas that are spot treated except for soil surfaces in crawl spaces. Application may be made to inaccessible areas by drilling, and then injecting suspension with a crack and crevice injector into the damaged wood or void spaces. This type of application is not intended to be a substitute for soil treatment, mechanical alteration or fumigation to control extensive infestation of wood-infesting insects

Termite carton nests in trees or building voids may be injected with 0.06% suspension. Multiple injection points to varying depths may be necessary. It is desirable to physically remove carton nest material from building voids when such nests are found.

**Pest Control in Crawlspace and Voids:** Broadcast Bifenthrin 8% ME at 0.02% to 0.06% to all surfaces in crawlspace and/or void to control ants, fleas, roaches, scorpions, or other arthropods. This treatment is not intended as a substitute for termite control. Treatment should be made to thoroughly and uniformly cover the surface but limit excess runoff. Keep children and pets off surface until dry

### SUBTERRANEAN TERMITE CONTROL

#### Directions For Use

All pesticide handlers (mixers, loaders and applicators) must wear long-sleeved shirt and long pants, socks, shoes and chemical-resistant gloves. After the product is diluted in accordance with label directions for use, and/or when mixing and loading using a closed spray tank transfer system (such as U-Turn®), or an in-line injector system, shirt, pants, socks, shoes and waterproof gloves are sufficient. In addition, all pesticide handlers must wear a respiratory protection device<sup>1</sup> when working in a non-ventilated space. All pesticide handlers must wear protective eyewear when working in non-ventilated space or when applying termiticide by rodding or sub-slab injection

<sup>1</sup>Use one of the following NIOSH approved respirator with any R, P or HE filter or a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any R, P or HE prefilter.

When treating adjacent to an existing structure, the applicator must check the area to be treated, and immediately adjacent areas of the structure, for visible and accessible cracks and holes to prevent any leaks or significant exposures to persons occupying the structure. People present or residing in the structure during application must be advised to remove their pets and themselves from the structure if they see any signs of leakage. After application, the applicator is required to check for leaks. All leaks resulting in the deposition of termiticide in locations other than those prescribed on this label must be cleaned up prior to leaving the application site. Do not allow people or pets to contact contaminated areas or to reoccupy contaminated areas of the structure until the clean-up is completed

The use of this product prevents and controls Termite infestations in and around structures and constructions.

The dilute insecticidal suspension must be adequately dispersed in the soil to establish a barrier between the wood and the Termites in the soil. As a good practice, 1) all non-essential wood and cellulose containing materials, should be removed from around foundation walls, crawl spaces, and porches; 2) eliminate termite access to moisture by repairing faulty plumbing and/or construction grade. Soil around untreated structural wood in contact with soil should be treated as described below

Large numbers of termites may be killed by the treatment of infested termite monitor stations, tree roots, stumps, fence posts, wooden barrels, planters, trellises, mailbox posts, mulch and other infested articles. These treatments should not be considered as a replacement for a structural protection treatment but as an augmentation to it

Where the probability of termite attack is low, certain elements of a structure may not need to be treated such as the drilling and treatment of basement slabs in northern states

Where the establishment of a continuous treated zone is desired, large reductions of application volume reduce the ability to obtain a continuous treated zone.

To establish an effective insecticidal barrier with this product the service technician must be familiar with current Termite control practices such as: trenching, rodding, sub-slab injection, coarse fan spraying of soil surfaces, crack and crevice (void) injection, excavated soil treatment, and brush or spray applications to infested or susceptible wood. These techniques must be correctly employed to prevent or control infestations by subterranean Termites such as: Coptotermes, Heterotermes, Reticulitermes and Zootermopsis. The biology and behavior of the species involved should be considered by the

10 8 15

service technician in determining which control practices to use to eliminate or prevent the termite infestation.

Choice of appropriate procedures should include consideration of such variable factors as the design of the structure, location of heating, ventilation, and air conditioning (HVAC) systems, water table, soil type, soil compaction, grade conditions, and location and type of domestic water supplies and utilities.

For advice concerning current control practices with relation to specific local conditions, consult resources in structural pest control and state cooperative extension and regulatory agencies.

**Important:** Contamination of public and private water supplies must be avoided by following these precautions: Use anti-backflow equipment or procedures to prevent siphonage of insecticide into water supplies. Do not contaminate cisterns or wells. Do not treat soil that is water saturated or frozen or in any conditions where runoff or movement from the treatment area (site) is likely to occur. Consult state and local specifications for recommended distances of wells from treated areas, or if such regulations do not exist, refer to Federal Housing Administration Specifications (H.U.D.) for guidance.

**Note:** Crawl spaces are to be considered inside of the structure.  
**Critical Areas:** Critical areas include areas where the foundation is penetrated by utility services, cracks and expansion joints, bath traps and areas where cement constructions have been poured adjacent to the foundation such as stairs, patios and slab additions.

**Structures with Wells/Cisterns Inside Foundations:** Structures that contain wells or cisterns within the foundation of a structure can only be treated using the following techniques.

1. Do not treat soil while it is beneath or within the foundation or along the exterior perimeter of a structure that contains a well or cistern. The treated backfill method must be used if soil is removed and treated outside/away from the foundation. The treated backfill technique is described as follows.

- a. Trench and remove soil to be treated onto heavy plastic sheeting or similar material or into a wheelbarrow.
- b. Treat the soil at the rate of 4 gallons of dilute suspension per 10 linear feet per foot of depth of the trench, or 1 gallon per 10 cubic feet of soil. See "Mixing Directions" section of the label. Mix thoroughly into the soil taking care to contain the liquid and prevent runoff or spillage.
- c. After the treated soil has absorbed the diluted suspension, replace the soil into the trench.

2. Treat infested and/or damaged wood in place using an injection technique such as described in the "Control of Wood Infesting Insects" section of this label.

**Structures with Adjacent Wells/Cisterns and/or Other Water Bodies:** Applicators must inspect all structures with nearby water sources such as wells, cisterns, surface ponds, streams, and other bodies of water and evaluate, at a minimum, the treatment recommendations listed below prior to making an application.

1. Prior to treatment, if feasible, expose the water pipe(s) coming from the well to the structure, if the pipe(s) enter the structure within 3 feet of grade.
2. Prior to treatment, applicators are advised to take precautions to limit the risk of applying the termiticide into subsurface drains that could empty into any bodies of water. These precautions include evaluating whether application of the termiticide to the top of the footer may result in contamination of the subsurface drain. Factors such as depth to the drain system and soil type and degree of compaction should be taken into account in determining the depth of treatment.

1. When appropriate (i.e., on the water side of the structure), the treated backfill technique (described above) can also be used to minimize off-site movement of termiticide.

Prior to using this technique near wells or cisterns, consult state, local or federal agencies for information regarding approved treatment practices in your area.

**Application Rate:** Use a 0.06% suspension for subterranean Termites. For other pests on the label use specific listed rates.

**Mixing Directions:** Mix the termiticide use dilution in the following manner: Fill tank 1/4 to 1/3 full. Start pump to begin by-pass agitation and place end of treating tool in tank to allow circulation through hose. Add appropriate amount of Bifenthrin 8% ME. Add remaining amount of water. Let pump run and allow recirculation through the hose for 2 to 3 minutes.

Bifenthrin 8% ME may also be mixed into full tanks of water, but requires substantial agitation to insure uniformity of the suspension.

To prepare a 0.06% water suspension, ready to use, dilute 3 quarts of Bifenthrin 8% ME with 99.25 gallons of water.

**Mixing:**

For the desired application rate, use the chart below to determine the amount of Bifenthrin 8% ME for a given volume of finished suspension.

Amount of Bifenthrin 8% ME (Gallons except where noted)			
Suspension Concentration	Amount of Bifenthrin 8% ME	Amount of Water	Desired Gallons of Finished Suspension
0.06%	1 oz	127 oz	1
	5 oz	4.9	5
	10 oz	9.9	10
	25 oz	24.8	25
	1.5 qt	49.6	50
	2.25 qt	74.4	75
0.12%*	3 qt	99.25	100
	2 oz	126 oz	1
	10 oz	4.9	5
	19.5 oz	9.8	10
	1.5 qt	24.6	25
	3 qt	49.2	50
	4.5 qt	73.8	75
	6 qt	98.5	100

Common units of measure

1 pint = 16 fluid ounces (oz.)

1 quart = 2 pints = 4 cups = 32 fluid ounces (oz.)

\*For Termite applications, only use this rate in conjunction with the application volume adjustments as listed in the section below or in the foam or underground service application sections.

**Application Volume:** To provide maximum control and protection against termite infestation apply the specified volume of the finished water suspension and active ingredient as set forth in the directions for use section of this label. If soil will not accept the labeled application volume, the volume may be reduced provided there is a corresponding increase in concentration so that the amount of active ingredient applied to the soil remains the same.  
**Note:** Large reductions of application volume reduce the ability to obtain a continuous barrier. Variance is allowed when volume and concentration are consistent with label directed rates and a continuous barrier can still be achieved.

Where desirable for pre and post construction treatments, the volume of the 0.12% suspension may be reduced by 1/2 the labeled volume. See Volume Adjustment Chart below.

**Note:** When volume is reduced, the hole spacing for subslab injection and soil rodding may require similar adjustment to account for lower volume dispersal of the termiticide in the soil.

Volume Adjustment Chart		
Rate (%Suspension)	0.06%	0.12%
Volume allowed		
Horizontal (gallons suspension /10 ft <sup>2</sup> )	1.0 gallons	0.5 gallons
Vertical (gallons suspension /10 lin ft)	4.0 gallons	2.0 gallons

**After Treatment:** All holes in commonly occupied areas into which Bifenthrin 8% ME has been applied must be plugged. Plugs must be of a non-cellulose material or covered by an impervious, non-cellulose material.

### Pre-Construction Subterranean Termite Treatment

**Pre-Construction Treatment:** Do not apply at a lower dosage and/or concentration than specified on this label for applications prior to the installation of the finished grade.

When treating foundations deeper than 4 feet, apply the termiticide as the backfill is being replaced, or if the construction contractor fails to notify the applicator to permit this, treat the foundation to a minimum depth of 4 feet after the backfill has been installed. The applicator must trench and rod into the trench or trench along the foundation walls and around pillars and other foundation elements, at the rate prescribed from grade to a minimum depth of 4 feet. When the top of the footing is exposed, the applicator must treat the soil adjacent to the footing to a depth not to exceed the bottom of the footing. However, in no case should a structure be treated below the footing.

Effective pre-construction subterranean termite control is achieved by the establishment of vertical and/or horizontal insecticidal barriers using 0.06% suspension of Bifenthrin 8% ME. To meet termite proofing requirements, follow the procedures in the latest edition of the Housing and Urban Development Minimum Property Standards.

**Horizontal Barriers:** Create a horizontal barrier wherever treated soil will be covered by a slab, such as footing trenches, slab floors, carports, and the soil beneath stairs and crawl spaces.

For a 0.06% rate apply 1 gallon of dilution per 10 square feet, or use 1 fluid ounce of Bifenthrin 8% ME per 10 square feet in sufficient water (no less than 1/2 gallon or more than 2 gallons) to provide thorough and continuous coverage of the area being treated.

If the fill is washed gravel or other coarse material, it is important that a sufficient amount of dilution be used to reach the soil substrate beneath the coarse fill.

Applications shall be made by a low pressure spray (less than 50 p.s.i.) using a coarse spray nozzle. If slab will not be poured the same day as treatment, cover treated soil with a water-proof barrier such as polyethylene sheeting. This is not necessary if foundation walls have been installed around the treated soil.

**Vertical Barriers:** Vertical barriers must be established in areas such as around the base of foundations, plumbing, utility entrances, back-filled soil against foundation walls and other critical areas.

For a 0.06% rate, apply 4 gallons of dilution per 10 linear feet per foot of depth or 4 fluid ounces of Bifenthrin 8% ME 10 linear feet per foot of depth from grade to top of footing in sufficient water (not less than 2 gallons or more than 8 gallons) to ensure complete coverage.

- a. When trenching and rodding into the trench, or trenching, it is important that emulsion suspension reaches the top of the footing. Rod holes must be spaced so as to achieve a continuous termiticide barrier, but in no case more than 12 inches apart.
- b. Care should be taken to avoid soil wash-out around the footing.
- c. Trenches need not be wider than 6 inches. Suspension should be mixed with the soil as it is being replaced in the trench.
- d. For a monolithic slab, an inside vertical barrier may not be required.

Hollow block voids may be treated at a rate of 2 gallons of suspension per 10 linear feet so that the suspension will reach the top of the footing.

*Prior to each application, applicators must notify the general contractor, construction superintendent, or similar responsible party, of the intended termiticide application and intended sites of application and instruct the responsible person to notify construction workers and other individuals to leave the area to be treated during application and until the termiticide is absorbed into the soil.*

### Post Construction Subterranean Termite Treatment

Use a 0.06% suspension for post-construction treatment. Post-construction soil applications shall be made by injection, trenching and rodding into the trench or trenching, or coarse fan spray with pressures not exceeding 25 p.s.i. at the nozzle. Care should be taken to avoid soil wash-out around the footing. Do not apply suspension until location of wells, radiant heat pipes, water and sewer lines and electrical conduits are known and identified. Caution must be taken to avoid puncturing and injection into these elements.

**Foundations:** For applications made after the final grade is installed, the applicator must trench and rod into the trench or trench along the foundation walls and around pillars and other foundation elements, at the rate prescribed from grade to the top of the footing. When the footing is more than four (4) feet below grade, the applicator must trench and rod into the trench or trench along the foundation walls at the rate prescribed to a minimum depth of four feet. The actual depth of treatment will vary depending on soil type, degree of compaction and location of termite activity. When the top of the footing is exposed, the applicator must treat the soil adjacent to the footing to a depth not to exceed the bottom of the footing. However, in no case should a structure be treated below the footing.

**Slabs:** Vertical barriers may be established by sub-slab injection within the structure and trenching and rodding into the trench or trenching outside at the rate of 4 gallons of suspension per 10 linear feet per foot of depth. Special care must be taken to distribute the treatment evenly. Treatment should not extend below the bottom of the footing.

Treat along the outside of the foundation and where necessary beneath the slab on the inside of foundation walls. Treatment may also be required beneath the slab along both sides of interior footing-supported walls, one side of interior partitions and along all cracks and expansion joints. Horizontal barriers may be established where necessary by long-rodding or by grid pattern injection vertically through the slab.

- a. Drill holes in the slab and/or foundation to allow for the application of a continuous insecticidal barrier.
- b. For shallow foundations (1 foot or less) dig a narrow trench approximately 6 inches wide along the outside of the foundation walls. Do not dig below the bottom of the footing. The suspension should be applied to the trench and soil at 4 gallons of suspension per 10 linear feet per foot of depth as the soil is replaced in the trench.
- c. For foundations deeper than 1 foot follow rates for basement.
- d. Exposed soil and wood in bath traps may be treated with a 0.06% suspension.

**Basements:** Where the footing is greater than 1 foot of depth from grade to the bottom of the foundation, application must be made by trenching and rodding into the trench, or trenching at the rate of 4 gallons of suspension per 10 linear feet per foot of depth. When the footer is more than four feet below grade, the applicator may trench and rod into the trench, or trench along foundation walls at the rate prescribed for four feet of depth. Rod holes must be spaced to provide a continuous insecticidal barrier, but in no case more than 12 inches apart. The actual depth of treatment will vary depending on soil type, degree of compaction, and location of termite activity. However, in no case should a structure be treated below the footer. Sub-slab injection may be necessary along the inside of foundation walls, along cracks and partition walls, around pipes, conduits, piers, and along both sides of interior footing-supported walls.

**Accessible Crawl Spaces:** For crawl spaces, apply vertical termiticide barriers at the rate of 4 gallons of suspension per 10 linear feet per foot of depth from grade to the top of the footing, or if the footing is more than 4 feet below grade, to a minimum depth of 4 feet. Apply by trenching and rodding into the trench, or trenching. Treat both sides of foundation and around all piers and pipes. Where physical obstructions such as concrete walkways adjacent to foundation elements prevent trenching, treatment may be made by rodding alone. When soil type and/or conditions make trenching prohibitive, rodding may be used. When the top of the footing is exposed, the applicator must treat the soil adjacent to the footing to a depth not to exceed the bottom of the footing. Read and follow the mixing and use direction section of the label if situations are encountered where the soil will not accept the full application volume.

- 1. Rod holes and trenches must not extend below the bottom of the footing.
- 2. Rod holes must be spaced so as to achieve a continuous termiticide barrier but in no case more than 12 inches apart.
- 3. Trenches must be a minimum of 6 inches deep or to the bottom of the footing, whichever is less, and need not be wider than 6 inches. When trenching in sloping (tiered) soil, the trench must be stepped to ensure adequate distribution and to prevent termiticide from running off. The suspension must be mixed with the soil as it is replaced in the trench.
- 4. When treating plenums or crawl spaces, turn off the air circulation system of the structure until application has been completed and all termiticide has been absorbed by the soil.

**Inaccessible Crawl Spaces:** For inaccessible interior areas, such as areas where there is insufficient clearance between floor joists and ground surfaces to allow operator access, excavate if possible, and treat according to the instructions for accessible crawl spaces. Otherwise, apply one or a combination of the following two methods.

- 1. To establish a horizontal barrier, apply to the soil surface, 1 gallon of suspension per 10 square feet overall using a nozzle pressure of less than 25 p.s.i. and a coarse application nozzle (e.g., Delavan Type RD Raindrop, RD-7 or larger, or Spraying Systems Co. 8010LP TecJet or comparable nozzle). For an area that cannot be reached with the application wand, use one or more extension rods to make the application to the soil. Do not broadcast or powerspray with higher pressures.
- 2. To establish a horizontal barrier, drill through the foundation wall or through the floor above and treat the soil perimeter at a rate of 1 gallon of suspension per 10 square feet. Drill spacing must be at intervals not to exceed 16 inches. Many States have smaller intervals, so check State regulations which may apply.

When treating plenums and crawl spaces, turn off the air circulation system of the structure until application has been completed and all termiticide has been absorbed by the soil.

**Masonry Voids:** Drill and treat voids in multiple masonry elements of the structure extending from the structure to the soil in order to create a continuous treatment barrier in the area to be treated. Apply at the rate of 2 gallons of suspension per 10 linear feet of footing, using a nozzle pressure of less than 25 p.s.i. When using this treatment, access holes must be drilled below the sill plate and should be as close as possible to the footing as is practical. Treatment of voids in block or rubble foundation walls must be closely examined. Applicators must inspect areas of possible runoff as a

precaution against application leakage in the treated areas. Some areas may not be treatable or may require mechanical alteration prior to treatment. All leaks resulting in the deposition of termiticide in locations other than those prescribed on this label must be cleaned up prior to leaving the application site. Do not allow people or pets to contact contaminated areas or to reoccupy the contaminated areas of the structure until the clean-up is completed.

**Note:** When treating behind veneer care should be taken not to drill beyond the veneer. If concrete blocks are behind the veneer, both the blocks and the veneer may be drilled and treated at the same time.

Not for use in voids insulated with rigid foam insulation.

**Excavation Technique:** If treatment must be made in difficult situations, along fieldstone or rubble walls, along faulty foundation walls, and around pipes and utility lines which lead downward from the structure to a well or pond, application may be made in the following manner:

- a. Trench and remove soil to be treated onto heavy plastic sheeting or similar material.
- b. Treat the soil at the rate of 4 gallons of suspension per 10 linear feet per foot of depth of the trench. Mix the suspension thoroughly into the soil taking care to prevent liquid from running off the liner.
- c. After the treated soil has absorbed the liquid suspension, replace the soil in the trench.

**Attention:** When applying Bifenthrin 8% ME in a confined area, the user should wear unvented goggles and a respirator approved by NIOSH during application.

**Foam Applications**

Bifenthrin 8% ME suspension, from 0.06 to 0.12 % may be converted to a foam with expansion characteristics from 2 to 40 times.

**Localized Application:** The suspension may be converted to a foam and the foam used to control or prevent termite infestations.

Depending on the circumstances, foam applications may be used alone or in combination with liquid suspension applications. Applications may be made behind veneers, piers, chimney bases, into rubble foundations, into block voids or structural voids, under slabs, stoops, porches, or to the soil in crawlspace, and other similar voids.

Foam and liquid application must be consistent with volume and active ingredient instructions in order to insure proper application has been made.

The volume and amount of active ingredient are essential to an effective treatment. At least 75% of the labeled liquid suspension volume of product must be applied, with the remaining percent delivered to appropriate areas using foam application. Refer to label and use recommendations of the foam manufacturer and the foaming equipment manufacturer.

Foam applications are generally a good supplement to liquid treatments in difficult areas, but may be used alone in difficult spots.

**Application Under Slabs or to Soil in Crawlspace to Prevent or Control Termites**

Application may be made using Bifenthrin 8% ME foam alone or in combination with liquid suspension. The equivalent of at least 4 gallons (4 ounces of Bifenthrin 8% ME concentrate) of 0.06% suspension per 10 linear feet (vertical barrier), or at least 1 gallon (1 ounce of Bifenthrin 8% ME concentrate) of 0.06% suspension per 10 square feet (horizontal barrier) must be applied either as suspension, foam, or a combination of both. For a foam only application, apply Bifenthrin 8% ME concentrate in sufficient foam concentration and foam volume to deposit 4 ounces of concentrate per 10 linear feet or 1 ounce of concentrate per 10 square feet. For example, 2 gallons of 0.12% suspension generated as foam to cover 10 linear feet is equal to the application of 4 gallons of 0.06% suspension per 10 linear feet.

**Sand Barrier Installation and Treatment**

Termites can build mud tubes over treated surfaces as long as they have access to untreated soil and do not have to move Bifenthrin 8% ME treated soil. Fill in cracks and spaces with builder's or play box sand and treat the sand with Bifenthrin 8% ME. The sand should be treated as soil following the termiticide rate listed on the Bifenthrin 8% ME label.

Retreatment for subterranean termites can only be performed if there is clear evidence of reinfestation or disruption of the barrier due to construction, excavation, or landscaping and/or evidence of the breakdown of the termiticide barrier in the soil. These vulnerable or reinfested areas may be retreated in accordance with application techniques described in this product's labeling. The timing and type of these retreatments will vary depending on factors such as termite pressure, soil types, soil conditions and other factors which may reduce the effectiveness of the barrier.

Annual retreatment of the structure is prohibited unless there is clear evidence that reinfestation or barrier disruption has occurred.

**APPLICATION IN CONJUNCTION WITH THE USE OF TERMITE BAITS**

As part of the integrated pest management (IPM) program for termite control, Bifenthrin 8% ME may be applied to critical areas of the structure including

plumbing and utility entry sites, bath traps, expansion joints, foundation cracks and areas with known or suspected infestations at a rate of 0.06% as a spot treatment or complete barrier treatment. Applications may be made as described in the Postconstruction treatment section of this label.

**TERMITE CONTROL (ABOVE GROUND ONLY)**

The purpose of the applications described below are to kill termite workers or winged reproductives that may be present at the time of treatment. These applications are intended as supplements to, and not substitutes for, mechanical alteration, soil treatment or foundation treatment.

To control exposed workers and winged reproductive termites in localized areas, dilute 1.0 fluid oz. of Bifenthrin 8% ME per gallon of water and apply as a course fan spray at the rate of one gallon per 1,000 square feet to attics, crawl spaces, unfinished basements and other void areas. Treat swarming termites as well as the areas in which they congregate.

To control above-ground termites in localized areas of infested wood, dilute 1.0 fluid oz. of Bifenthrin 8% ME per gallon of water and apply as a liquid or foam to voids and galleries in damaged wood as well as to spaces between wooden structural members and between the sill plate and foundation where wood is vulnerable to attack. Applications may be made to inaccessible areas by drilling and then injecting the dilution or foam, with a suitable directional injector, into damaged wood or wall voids. All treatment holes drilled in construction elements in commonly occupied areas of structures should be securely plugged after treatment.

To control termite carton nests in building voids, dilute 1.0 fluid oz. of Bifenthrin 8% ME per gallon of water and apply as a liquid or foam using a pointed injection tool. Multiple injection points and varying depths of injection may be necessary to achieve control. When possible, the carton nest material should be removed from the building void after treatment.

**LAWNS**

Apply Bifenthrin 8% ME as a broadcast treatment. Use application volumes of up to 10 gallons per 1000 square feet to get uniform coverage when treating dense grass foliage.

For low volume applications, less than 2 gallons/1000 square feet, immediate irrigation of treated area with at least 0.25 inches of water following application to ensure efficacy of sub-surface pests such as, but not limited to, Mole Crickets, is recommended.

**Lawn Application Rates**

The application rates listed in the following table will provide excellent control of the respective pests under typical conditions. However, at the discretion of the applicator, Bifenthrin 8% ME may be applied at up to 1 fl. oz. per 1000 square feet to control each of the pests listed in this Table. The higher application rates should be used when maximum residual control is desired or heavy pest populations occur.

Pest	Application Rate Bifenthrin 8% ME
Armyworms <sup>1</sup>	0.18 - 0.25 fluid oz. per 1000 sq. ft.
Cutworms <sup>1</sup>	
Sod Webworm <sup>1</sup>	
Annual Bluegrass Weevil (Hyperodes) (Adult) <sup>2</sup>	0.25 - 0.5 fluid oz. per 1000 sq. ft.
Banks Grass Mite <sup>6</sup>	
Billbugs (Adult) <sup>3</sup>	
Black Turfgrass Atacnius (Adult) <sup>4</sup>	
Centipedes	
Crickets	
Earwigs	
Fleas (Adult)	
Grasshoppers	
Leafhoppers	
Mealybugs	
Millipedes	
Mites <sup>6</sup>	
Pillbugs	
Sawbugs	
Crane Flies <sup>12</sup>	0.5 fl. oz. per 1000 sq. ft.
Ants	
Chinch Bugs <sup>5</sup>	
Fleas (Larvae) <sup>7</sup>	
Imported Fire Ants <sup>8</sup>	
Japanese Beetle (Adult)	
Mole Cricket (Adult) <sup>9</sup>	
Mole Cricket (Nymph) <sup>10</sup>	
Ticks <sup>11</sup>	

In New York State, this product may NOT be applied to any grass or turf area within 100 feet of a water body (lake, pond, river, stream, wetland, or drainage ditch).

In New York State, do make a single repeat application of Bifenthrin 8% ME if there are signs of renewed insect activity, but not sooner than two weeks after the first application.

Comments

<sup>1</sup>Armyworms, Cutworms and Sod Webworms: To ensure optimum control, delay watering (irrigation) or mowing for 24 hours after application. If the grass area is being maintained at a mowing height of greater than 1 inch, then higher application rates (Up to 1 fluid oz. per 1000 square feet) may be required during periods of high pest pressure.

<sup>2</sup>Annual Bluegrass Weevil (Hyperodes) adults: Applications should be timed to control adult weevils as they leave their overwintering sites and move into grass areas. This movement generally begins when Forsythia is in full bloom and concludes when flowering dogwood (Cornus florida) is in full bloom. Consult your State Cooperative Extension Service for more specific information regarding application timing.

<sup>3</sup>Billbug adults: Applications should be made when adult billbugs are first observed during April and May. Degree day models have been developed to optimize application timing. Consult your State Cooperative Extension Service for information specific to your region. In temperate regions, spring applications targeting billbug adults will also provide control of over-wintered chinch bugs.

<sup>4</sup>Black Turfgrass Ataenius adults: Applications should be made during May and July to control the first and second generation of black turfgrass ataenius adults, respectively. The May application should be timed to coincide with the full bloom stage of Vanhoutte spiraea (Spiraea vanhouttei) and horse chestnut (Aesculus hippocastanum). The July application should be timed to coincide with the blooming of Rose of Sharon (Hibiscus syriacus).

<sup>5</sup>Chinch Bugs: Chinch Bugs infest the base of grass plants and are often found in the thatch layer. Irrigation of the grass area before treatment will optimize the penetration of the insecticide to the area where the chinch bugs are located. Use higher volume applications if the thatch layer is excessive or if a relatively long mowing height is being maintained. Chinch Bugs can be one of the most difficult pests to control in grasses and the higher application rates (Up to 1 fluid oz. per 1000 square feet) may be required to control populations that contain both nymphs and adults during the middle of the summer.

<sup>6</sup>Mites: To ensure optimal control of eriophyid mites, apply in combination with the labeled application rate of a surfactant. A second application, five to seven days after the first, may be necessary to achieve acceptable control.

<sup>7</sup>Flea larvae: Flea larvae develop in the soil of shaded areas that are accessible to pets or other animals. Use a higher volume application when treating these areas to ensure penetration of the insecticide into the soil. Note: if the lawn area is being treated with Bifenthrin 8% ME at 0.25 fluid oz. per 1000 square feet for adult flea control, then the larval application rate may be achieved by increasing the application volume two- to four-fold.

<sup>8</sup>Imported Fire Ants: Control will be optimized by combining broadcast applications that will control foraging workers and newly mated fly-in queens with mound drenches that will eliminate existing colonies. If the soil is not moist, then it is important to irrigate before application or use a high volume application. Broadcast treatments should apply 1 fluid oz. per 1,000 square feet. Mounds should be treated by diluting 1 teaspoon of Bifenthrin 8% ME per gallon of water and applying 1 to 2 gallons of finished spray per mound. The mounds should be treated with sufficient force to break their apex and allow the insecticide solution to flow into the ant tunnels. A four foot diameter circle around the mound should also be treated. For best results, apply in cool weather (65 - 80°F) or in early morning or late evening hours. Note: a spraying that is calibrated to apply 1 fluid oz. per 1,000 square feet of Bifenthrin 8% ME in 5 gallons per 1,000 square feet contains the approximate dilution (1 teaspoon per gallon) that is required for fire ant mound drenches in the spray tank.

<sup>9</sup>Mole Cricket adults: Achieving acceptable control of adult mole crickets is difficult because preferred grass areas are subject to continuous invasion during the early spring by this extremely active stage. Applications should be made as late in the day as possible and should be watered in with up to 0.5 inches of water immediately after treatment. If the soil is not moist, then it is important to irrigate before application to bring the mole crickets closer to the soil surface where contact with the insecticide will be maximized. Grass areas that receive pressure from adult mole crickets should be treated at peak egg hatch to ensure optimum control of subsequent nymph populations (see below).

<sup>10</sup>Mole Cricket nymphs: Grass areas that received intense adult mole cricket pressure in the spring should be treated immediately prior to peak egg hatch. Optimal control is achieved at this time because young nymphs are more susceptible to insecticides and they are located near the soil surface where the insecticide is most concentrated. Control of larger, more damaging, nymphs later in the year may require both higher application rates and more frequent applications to maintain acceptable control. Applications should be made as late in the day as possible and should be watered in with up to 0.5 inches of water immediately after treatment. If the soil is not moist, then it is important to irrigate before application to bring the mole crickets closer to the soil surface where contact with the insecticide will be maximized.

<sup>11</sup>Ticks (Including ticks that may transmit Lyme disease and Rocky Mountain Spotted fever): Do not make spot applications. Treat the entire area where exposure to ticks may occur. Use higher spray volumes when treating areas with dense ground cover or heavy leaf litter. Ticks may be reintroduced from surrounding areas on host animals. Retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Repeat application is necessary only if there are signs of renewed activity. Repeat application should be limited to no more than once per seven days.

Deer ticks (Ixodes sp.) have a complicated life cycle that ranges over a two year period and involves four life stages. Applications should be made in the late fall and/or early spring to control adult ticks that are usually located on brush or grass above the soil surface and in mid to late spring to control larvae and nymphs that reside in the soil and leaf litter.

American dog ticks may be a considerable nuisance in suburban settings, particularly where homes are built on land that was previously field or forest. These ticks commonly congregate along paths or roadways where humans are likely to be encountered. Applications should be made as necessary from mid-spring to early fall to control American dog tick larvae, nymphs and adults.

<sup>12</sup>Crane Flies: Treatments can be made to control early to mid-season larvae (approximately August - February) as they feed on plant crowns. Treatments made to late-season larvae (approximately March, April) may only provide suppression.

ORNAMENTALS AND TREES

For ornamental applications (including but not limited to trees, shrubs, ground covers, bedding plants, and foliage plants) apply 0.125 to 1.0 fluid oz. of Bifenthrin 8% ME per 1,000 square feet or 5.4 to 43.5 fl. oz. per 100 gallons. Bifenthrin 8% ME may be diluted and applied in various volumes of water providing that the maximum label rate (1.0 fluid oz. per 1,000 square feet or 43.5 fl. oz. per 100 gallons) is not exceeded. Bifenthrin 8% ME may be applied through low volume application equipment by dilution with water or other carriers and providing that the maximum label rate (1.0 fluid oz. per 1,000 square feet or 43.5 fl. oz. per 100 gallons) is not exceeded. Apply the specified application rate as a full coverage foliar spray. Repeat treatment as necessary to achieve control using higher application rates as pest pressure & foliage area increases. Repeat application should be limited to no more than once per seven days.

Certain cultivars may be sensitive to the final spray solution. A small number of plants should be treated and observed for one week prior to application to the entire planting.

Use of an alternate class of chemistry in a treatment program is recommended to prevent or delay pest resistance.

GREENHOUSES AND INTERIORSCAPES

Use Bifenthrin 8% ME, either alone or tank mixed with other products, including insect growth regulators, to control a wide spectrum of insects and mites on trees, shrubs, foliage plants, non-bearing fruit and nut trees, and flowers in greenhouses and interiorscapes including hotels, shopping malls, office buildings, etc.

Calculating Dilution Rates using the Ornamental and Greenhouse Application Rates Table and the Bifenthrin 8% ME Dilution Chart (page #): The following steps should be taken to determine the appropriate dilution of Bifenthrin 8% ME that is required to control specific pests:

- 1) Identify the least susceptible target pest (the pest requiring the highest application rate for control)
- 2) Select an application rate in terms of fluid oz. of Bifenthrin 8% ME.
- 3) Identify your application volume and how much spray mix you want to prepare.
- 4) Use the Dilution Chart to determine the appropriate volume of Bifenthrin 8% ME that must be mixed in your desired volume of water.

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**Ornamental and Greenhouse Application Rates**

The application rates listed in the following table will provide excellent control of the respective pests under typical conditions. However, at the discretion of the applicator, Bifenthrin 8% ME may be applied at up to 1 fluid oz per 1,000 square feet (43.5 fl. oz per 100 gallons) to control each of the pest listed in this Table. The higher application rates should be used when maximum residual control is desired

Apply the specified rate as a full coverage foliar spray. Repeat as necessary to achieve control using higher rates as pest pressure and foliage increases.

Certain cultivars may be sensitive to the final spray solution. A small number of plants should be tested prior to application of the entire planting.

Use an alternate class of chemistry in the treatment program is recommended to prevent or delay resistance.

horticultural oil may increase the effectiveness of Bifenthrin 8% ME. Combinations of Bifenthrin 8% ME with other registered miticides have also proven effective. Alternately, Bifenthrin 8% ME applications may be rotated with those of other products that have different modes of action in control programs that are designed to manage resistance by twospotted spider mites. Consult your local Cooperative Extension Service for resistance management recommendations in your region

\*\*For foraging ants

†Not for use in California.

Pest	Application Rate Bifenthrin 8% ME	
	Fluid Ounces per 1 000 square feet	Fluid Ounces per 100 gallons
Bagworms <sup>12</sup> Cuckoo's Flat Leaf Beetles Fall Webworms Gypsy Moth Caterpillars Leaf Bugs Leaf Feeding Caterpillars Lent Caterpillars	0.125 - 0.25	5.4 - 10.8
Adelgids <sup>1</sup> Aphids Bees Beet Armyworm Beetles <sup>11</sup> Black Vine Weevil (Adults) Brown Soft Scales Broad Mites Budworms California Red Scale (Crawlers) <sup>13</sup> Centipedes Cicadas Citrus Thrips Clover Mites Crickets Diaprepes (Adults) Earwigs European Red Mite Flea Beetles Fungus Gnats (Adults) Grasshoppers Japanese Beetle (Adult) <sup>1</sup> Leafhoppers Lentrollers Mealybugs Millipedes Mites Orchid Weevil Pillbugs Plant Bugs (Including Lygus spp.) Psyllids <sup>1</sup> Scale crawlers, such as California scale, San Jose scale, etc. Scorpions Sow bugs Spider Mites <sup>14</sup> Spiders Springtails <sup>1</sup> Thrips Turf Moths Treehoppers <sup>1</sup> Twig Beetles <sup>1</sup> Wasps Weevils <sup>11</sup> Whiteflies	0.25 - 0.5	10.8 - 21.7
Ants Imported Fire Ants** Leafminers Pecan Leaf Scorch Mite Pine Shoot Beetle (Adults) Spider Mites <sup>14</sup> Mosquitoes	0.5 - 1.0	21.7 - 44.5
Mosquitoes	See Mosquito Control directions for residual control rates and information on page #	

**For California**

**Greenhouse Applicators must wear:**

• Full body chemical-resistant protective suit (such as barrier laminate, butyl rubber, nitrile rubber, polyvinyl chloride, or equivalent).

**Reapplication Interval:** Reapplications to greenhouses must be at intervals of 30 days or longer.

**Greenhouse Harvesters must wear:**

• Regular length gloves plus a long sleeved shirt or elbow-length (gauntlet type) gloves during the 30 days following application

**Attention**

Do not apply a broadcast application to interior surfaces of homes.

Do not apply to pets, food crops, or sources of electricity.

Firewood is not to be burned for one month after treatment.

Use only in well ventilated areas.

Do not use on edible crops.

During any application to overhead areas of structure, cover surfaces below with plastic sheeting or similar material, except for soil surfaces in crawlspaces

Do not allow spray to contact food, foodstuffs, food contacting surfaces, food utensils or water supplies

Thoroughly wash dishes and food handling utensils with soap and water if they become contaminated by application of this product

Do not treat areas where food is exposed.

During indoor surface applications do not allow dripping or run-off to occur.

Do not allow people or pets on treated surfaces until spray has dried.

Let surfaces dry before allowing people and pets to contact surfaces.

Prior to applying Bifenthrin 8% ME to wood siding, especially rough wood siding, be sure to thoroughly agitate the tank mixture. Prior to treating wood siding, test a small area and allow it to dry to be sure no deposits will form. Follow the same procedure when applying to wood surfaces in direct sunlight or the heat of the day.

Do not apply this product in patient rooms or in any rooms while occupied by the elderly or infirm

Do not apply in classrooms when in use

Do not apply when occupants are present in the immediate area in institutions such as libraries, sports facilities, etc.

Do not apply this pesticide in livestock buildings (barns).

Application equipment that delivers low volume treatments, such as the Micro-Injector® or Actisol® applicators, may also be used to make crack and crevice, deep harborage, spot and general surface treatments of Bifenthrin 8% ME.

**Conditions of Sale and Limitation of Warranty and Liability:**

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions beyond the control of FMC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold FMC and Seller harmless for any claims relating to such factors.

Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the Directions for Use when used in accordance with the directions under normal conditions of use. FMC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, NOR ANY OTHER EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE SELECTION, PURCHASE, OR USE OF THIS PRODUCT. Any warranties, express or implied, having been made are inapplicable if this product has been used contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to (or beyond the control of) seller or FMC, and buyer assumes the risk of any such use.

<sup>12</sup> Bagworms: Apply when larvae begin to hatch and spray larvae directly. Applications when larvae are young will be most effective.

Beetles, Scale Crawlers, Twig Borers, and Weevils: Treat trunks, stems and twigs in addition to plant foliage.

Spider Mites: Bifenthrin 8% ME provides optimal twospotted spider mite control when applied during spring to mid-summer. Higher application rates and/or more frequent treatments may be required for acceptable twospotted spider mite control during mid- to late-summer. The addition of a surfactant or

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