

**Bifen XTS**  
**Insecticide/Termiticide**

For use by individuals/firms licensed or registered by the State to apply termiticide products. States may have more restrictive requirements regarding qualifications of persons using this product. Consult the structural pest control regulatory agency of your State prior to use of this product.

EPA Reg. No. 53883-189

EPA Est. No. 53883-TX-002

<b>Active Ingredient:</b>	<b>By Wt.</b>
Bifenthrin* . . . . .	25.1%
<b>Inert Ingredients**</b> . . . . .	<u>74.9%</u>
<b>TOTAL</b>	100.0%

\*Cis isomers 97% minimum, trans isomers 3% maximum.

\*\* Contains xylene range aromatic solvents.

**Bifen XTS** contains 2 pounds active ingredient per gallon.

**KEEP OUT OF REACH OF CHILDREN**  
**WARNING**

<b>FIRST AID</b>	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Immediately call a Poison Control Center or doctor.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give any liquid to the person</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If on skin or clothing:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes:</b>	<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> </ul>
<b>Note to Physician:</b> This product is a pyrethroid. This product also contains aromatic hydrocarbons. Because of the risk of hydrocarbon pneumonitis if even tiny amounts are aspirated into the lung during emesis, consideration should be given to gastric lavage with endotracheal tube in place. Treatment is symptomatic and supportive. Animal and vegetable fats, milk, cream and alcohol may increase absorption and should not be administered.	
<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 SafetyCall® (866) 897-8050 for emergency medical treatment information</b>	

See other panels for additional precautionary information.

**PRECAUTIONARY STATEMENTS**  
**Hazards to Humans (And Domestic Animals)**

**Warning/Aviso**

Si usted no entiende la etiqueta, busque a alguien para que la explique a usted en detalle. ( If you do not understand the label, find someone to explain it to you in detail.)

May be fatal if swallowed. Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Harmful if inhaled, or absorbed through skin. Avoid breathing vapor or spray mist and contact with skin. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Remove and wash contaminated clothing before reuse.

All pesticide handlers (mixers, loaders, and applicators) must wear long-sleeved coveralls worn over a minimum of short-sleeved shirt and short pants, socks, chemical-resistant footwear, chemical-resistant gloves and protective eyewear. 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, or an in-line injector system, shirts, pants, socks, shoes, and waterproof gloves are sufficient. In addition, all pesticide handlers must wear a respiratory protection device (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 handling the concentrate or when working in a non-ventilated space. All pesticide handlers must wear protective eyewear when working in non-ventilated space or applying termiticide by rodding or sub-slab injection.

Net Contents: 1Qt.—55Gal.

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.

#### Environmental Hazards

This pesticide is extremely toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters. Do not apply when weather conditions favor drift from treated areas. Care should be used when spraying to avoid fish and reptile pets in/around ornamental ponds.

This pesticide is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply Bifen XTS. or allow it to drift to crops or weeds on which Bees are actively foraging. Additional information may be obtained from your Cooperative Extension Service.

#### Physical/Chemical Hazards

Combustible. Do not use or store near heat or open flame.

**Do not apply** this product in or on electrical equipment due to the possibility of shock hazard.

#### DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Do not apply by air.

Do not use in greenhouses or nurseries.

#### GENERAL INFORMATION

Do not use on plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes. For use on plants intended for aesthetic purposes or climatic modifications and being grown in ornamental parks and gardens, interior landscapes, or lawns and grounds.

**Bifen XTS** prevents and controls termite infestations in and around structures and constructions.

**Bifen XTS** used in and around structures and building construction will prevent and control termite infestations.

To institute a barrier between the wood and the termites in the soil, the chemical dilution must be effectively dispersed in the soil. It is important to remove unnecessary materials that contain cellulose and wood from around foundation walls, crawl spaces (inside of structure), and porches, and fix damaged plumbing and construction grade in order to deny termite access to moisture. Treat the soil around untreated structural wood in contact with soil as stated below.

To use Bifen XTS effectively, it is important that the service technician be familiar with current control practices including trenching, rodding, sub-slab injection, low-pressure spray applications, coarse fan spraying of soil surfaces, crack and crevice (void) injection, excavated soil treatment and brush and spray applications to infested or susceptible wood. Using these techniques correctly is essential to prevent or control infestations by subterranean termite species of genera *Reticulitermes*, *Zootermopsis*, *Coptotermes* and *Heterotermes*. When determining what procedures to follow, the service technician should consider certain variables. Some of the variables to consider are species biology and behavior, structure design, heating, ventilation, and air conditioning (HVAC) systems, water table, soil type and compaction, grade conditions, and the location and type of domestic water supplies and utilities.

For information concerning the most up to date control practices in a given region or locale, consult the local resources for structural pest control, state cooperative extensions or regulatory agencies.

#### Subterranean Termite Control – General Directions

**Important:** Observe the following precautions to avoid contamination of public and private water supplies:

- Use anti-backflow equipment and procedures to prevent insecticide from being siphoned into water supplies.
- Do not contaminate cisterns, wells, or other water tanks by treating the soil beneath these structures.
- Do not treat soil where runoff may occur.
- Do not treat soil water-saturated or frozen soil.
- Consult local and state specifications for recommended treatment practices in your area.
- If local or state specifications do not exist, consult the Federal Housing Administration (H.U.D.) guidance documents.

**Note:** For the purposes of this label, crawl spaces are defined as being inside of the structure.

**Critical Areas:** Points at which the foundation is penetrated or abuts another structure are critical areas. These include bath traps, cracks and expansion joints, utility entry points, and adjacent structures such as patios, slab additions, and stairs.

**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 dilution per 10 linear feet per foot of depth of the trench, or 1 gallon per 1.0 cubic feet of soil. See "Mixing Directions" section of this 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 dilution, 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 the treatment.
3. 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.

Before these techniques are used close to cisterns, wells, or other bodies of water, seek advice from local, state, or federal agencies for information on treatment practices that are accepted in your area.

**Application Rate:** Use a 0.06% dilution 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 ¼ to ½ 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 Bifen XTS. Add remaining amount of water. Let pump run and allow recirculation through the hose for 2 to 3 minutes.

**Bifen XTS** may also be combined into full tanks of water. If combined into full tanks of water, allow sufficient time for agitation and/or recirculation to ensure consistency of the dilution.

To prepare a 0.06% water dilution, ready to use, dilute 1 quart of Bifen XTS with 99.75 gallons of water.

**Mixing:** Using the chart below, determine the volume of Bifen XTS and water required to produce the desired volume of finished dilution

<b>Amount of Bifen XTS</b> (Gallons except where noted)			
Dilution Concentrate	Amount of Bifen XTS	Amount of Water	Desired Gallons of Finished Dilution
0.06%	0.32 oz	127.68 oz.	1
	1.6 oz.	4.99	5
	3.2 oz.	9.975	10
	8 oz.	24.94	25
	0.5 qt.	49.875	50
	0.75 qt.	74.8125	75
	1 qt.	99.75	100
	1.5 qt.	149.62	150
	2 qt.	199.5	200
	0.12%	0.64 oz.	127.36 oz.
3.2 oz.		4.975	5
6.4 oz.		9.95	10
0.5 qt.		24.875	25
1 qt.		49.75	50
1.5 qt.		74.625	75
2 qt.		99.5	100

	3 qt. 1	149.25 199	150 200
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Units of measure:

1 pint = 16 fluid ounces (oz.)

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

\* When treating for termites, use this rate only in conjunction with volume adjustments, foam applications or underground services applications.

**Application Volume:** To provide maximum control and protection against termite infestation apply the specified volume of the finished water dilution 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 the label directed rates and a continuous barrier can still be achieved.

The volume of the 0.12% dilution may be reduced by ½ the labeled volume where desirable for pre- and post-construction applications. When the volume is reduced, the hole spacing for subslab injection and soil rodding may also need to be adjusted to account for lower volume dispersal of the termiticide in the soil. Consult the following Volume Adjustment Chart for details.

VOLUME ADJUSTMENT CHART		
Rate (% dilution)	0.06%	0.12%
Volume allowed		
<ul style="list-style-type: none"> <li>• Horizontal (gallons dilution/10 ft<sup>2</sup>)</li> <li>• Vertical (gallons dilution/10 linear ft.)</li> </ul>	1.0 Gallons  4.0 gallons	0.5 gallons  2.0 gallons

**After treatment:** All holes in commonly occupied areas into which material 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

**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.

To produce effective pre-construction subterranean termite control, create vertical and/or horizontal chemically treated zones of protection using 0.06% dilution of Bifen XTS. Follow the current edition of the Housing and Urban Development Minimum Property Standards to assure that F.H.A. termite-proofing requirements are met.

#### Horizontal Barriers

Establish a horizontal chemical barrier wherever treated soil will be covered by a slab, such as basement floors, carports, entrance platforms, footing trenches, and slab floors.

Apply 1 gallon of 0.06% dilution per 10 square feet, or use 0.32 fluid ounce of Bifen XTS per 10 square feet in sufficient water (no less than ½ gallon or more than 2 gallons) to provide a uniform treated barrier for the area being treated.

If the fill is coarse aggregate, such as washed gravel, a sufficient volume of dilution must be applied to allow it to reach the soil beneath the coarse fill.

Make applications with a low-pressure spray (less than 50 p.s.i.), using a coarse spray nozzle. If foundation walls have not been installed around the treated soil and the slab will not be poured the same day as treatment, the treated soil must be covered with a water-proof barrier. Polyethylene sheeting may be used for this purpose.

**Vertical Barriers**

Establish vertical barriers in Critical Areas, such as along the inside of foundation walls, plumbing, bath traps, utility services and other features that will penetrate the slab.

Using a 0.06% dilution, apply 4 gallons of dilution per 10 linear feet per foot of depth or 1.28 fluid ounces of Bifen XTS per 10 linear feet per foot of depth from grade level to the top of the footing in sufficient water to provide a uniform treated barrier. Use not less than 2 gallons to not more than 8 gallons of water per 10 linear feet.

When trenching and rodding into the trench, or trenching, take care to ensure that the dilution reaches the top of the footing. Space the rod holes so that a continuous treated barrier is created, but not exceeding 12 inches apart. Avoid washing-out the soil around the footing. Trenches should be about 6 inches wide and 6 inches deep. Mix the chemical dilution with the soil as it is being replaced in the trench. Inside vertical barriers may not be required for monolithic slabs. When treating hollow block voids, use 2 gallons of dilution per 10 linear feet to assure that the dilution reaches the top of the footing.

Hollow block voids may be treated at the rate of 2 gallons of emulsion per 10 linear feet so that the emulsion reaches 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**

**Application Volume:** To provide maximum control and protection against termite infestation apply the specified volume of the finished water dilution 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 the label directed rates and a continuous barrier can still be achieved.

The volume of the 0.12% dilution may be reduced by 1/2 the labeled volume where desirable for pre- and post-construction applications. When the volume is reduced, the hole spacing for subslab injection and soil rodding may also need to be adjusted to account for lower volume dispersal of the termiticide in the soil. Consult the following Volume Adjustment Chart for details.

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

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

For post-construction treatment, use a 0.06% dilution. Post-construction treatments shall be made by subslab injection, trenching and rodding into the trench or trenching using low-pressure spray not exceeding 25 p.s.i. at the nozzle. Proper precautions should be taken to avoid soil wash-out around the footing.

Locate, identify, and mark wells, electrical conduits, water and sewer lines, and radiant heat pipes prior to application of Bifen XTS. Do not puncture or inject Bifen XTS into such structures.

**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**

Create vertical barriers by trenching and rodding into the trench or trenching outside at a rate of 4 gallons of dilution per 10 linear feet per foot of depth and by sub-slab injection within the structure. Ensure an even distribution of chemical. Applications must not be made below the bottom of the footing.

Apply beside the outside of the foundation and under the slab on the inside of foundation walls, where needed. Treatment of slabs may also be necessary under and beside both sides of any interior footing-supported walls, in all cracks and

expansion joints, and beside one side of interior partitions. By long-rodging or grid pattern injection vertically through the slab, horizontal barriers may be created where necessary.

- a. To permit the creation of an uninterrupted insecticidal barrier, drill holes in the foundation and/or slab.
- b. For foundations that are less than or equal to 1 foot, dig a narrow trench about 6 inches wide beside the outside of the foundation walls. Do not dig beneath the bottom of the footing. As the soil is placed back into the trench, apply 4 gallons of 0.06% dilution per 10 linear feet per foot of depth to the trench and soil.
- c. Follow the rates for Basements (below) for foundations that are deeper than 1 foot.
- d. A 0.06% dilution may be used to treat exposed soil and wood in bath traps.

#### **Basements**

Treatment must be made by trenching and rodding into the trench, or trenching at the rate of 4 gallons of dilution per 10 linear feet per foot of depth wherever the footing, from grade to the bottom of the foundation, is greater than 1 foot of depth. When the footer is greater than four feet below grade, the applicator may trench and rod into the trench, or trench beside foundation walls at the rate designated for four feet of depth. Space rod holes to create a continuous insecticidal barrier, but in no case more than 12 inches apart. Depending on the type of soil, degree of compaction, and location of termite activity, the actual depth of treatment will differ. However, a structure should never be treated below the footer. Sub-slab injection may be needed beside the inside of foundation walls, around conduits, piers, and pipes, beside both sides of interior footing-supported walls, and beside cracks and partition walls.

#### **Crawl Spaces - Accessible**

For crawl spaces, apply vertical termiticide barriers at the rate of 4 gallons of dilution 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 to be wider than 6 inches. When trenching in sloping (tiered) soil, the trench must be stepped to ensure adequate distribution and prevent termiticide from running off. The dilution 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.

#### **Crawl Spaces - Inaccessible**

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 instruction 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 dilution 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 TeJet® 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 dilution 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 systems 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 a rate of 2 gallons of dilution 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 structures (walls, etc.) take proper care to not drill beyond the veneer. If concrete blocks exist behind the veneer, both can be drilled and treated simultaneously.  
Not for use in voids insulated with rigid foam insulation.

**Excavation Technique:** When treating in troublesome areas (e.g., beside fieldstone or rubble walls, beside faulty foundation walls, and around pipes and utility lines leading downward from the structure to a well or pond) apply using the following technique:

- a. Prepare a trench, placing the removed soil onto heavy-weight plastic sheeting or similar, water-impermeable material.
- b. Treat the soil with 4 gallons of 0.06% dilution per 10 linear feet per foot of depth of the trench. Completely mix the dilution into the soil, exercising care to avoid liquid running off the sheeting.
- c. Place the treated soil back into the trench after it has absorbed the dilution.

**Attention:** Wear NIOSH approved respirator and unvented goggles when applying Bifen XTS in a confined area.

#### **Foam Applications**

Bifen XTS dilution, from 0.06 to 0.12% may be converted to foam with 2X - 40X expansion characteristics and used to control or prevent termite infestations.

Depending on the circumstances, foam applications may be used alone or in combination with liquid emulsion 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 crawlspaces, 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 emulsion 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 Crawlspaces to Prevent or Control Termites**

When making applications, Bifen XTS foam can be used alone or in combination with liquid dilution. Whether applied as a dilution, foam, or some of both, the equivalent of at least 4 gallons of 0.06% dilution (1.28 fluid ounces of Bifen XTS concentrate) per 10 linear feet must be applied for a vertical barrier, or at least 1 gallon of 0.06% dilution (0.32 fluid ounce of Bifen XTS concentrate) per 10 square feet must be applied for a horizontal barrier. For a foam only application, apply Bifen XTS concentrate in sufficient concentration and volume to equal 1.28 fluid ounces of concentrate per 10 linear feet or 1 ounce of concentrate per 10 square feet. For example, 2 gallons of 0.12% dilution converted to foam and used to cover 10 linear feet is the equivalent of 4 gallons of 0.06% dilution per 10 linear feet.

#### **Sand Barrier Installation and Treatment**

As long as termites have access to soil that has not been treated and can avoid soil that has been treated with Bifen XTS, they can build mud tubes over surfaces that have been treated. Cracks and spaces should be filled with play box or builder's sand and then treated in the same manner as soil. Follow the rates listed on the Bifen XTS 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 re-infested areas may be retreated in accordance with application techniques described in Bifen XTS'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 re-treatment of the structure is prohibited unless there is clear evidence that reinfestation or barrier disruption has occurred.

#### **APPLICATION IN CONJUNCTION WITH THE USE OF ABOVE-GROUND TERMITE BAITS**

As part of an integrated pest management (IPM) program for termite control, Bifen XTS 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 post-construction treatment section of this label.

#### **Specific Pest Control Applications**

**Underground Services** (e.g. cables, conduits, pipes, utility lines, wires, etc.) may be in right-of-ways, inside of structures or to guard long range (miles) of installations of services.

Treat the soil using a 0.06 to 0.12% Bifen XTS dilution to prevent and control termite and ant infestations.

Treat the bottom of the trench with 2 gallons of dilution per 10 linear feet and let it soak into the soil. Place the services on the treated soil and cover with about 2 inches of fill soil. Apply another 2 gallons per 10 linear feet over the fill soil to

complete the chemical barrier. Only treat the soil in the area near the services in wide trenches, but ensure a continuous barrier of treated soil surrounding the services.

In the event that the soil will not accept the volume stated above, 1 gallon of 0.12% Bifen XTS may be applied per 10 linear feet of trench over the soil that covers the services and to the base of the trench.

Fill the remainder of the trench with the treated fill soil. Where each service sticks out of the ground, the soil may be treated by trenching/rodding no more than 1 to 2 gallons of dilution into the soil.

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

**Posts, Poles, and Other Constructions**

Around wooden constructions (signs, fences, and landscape ornamentation) an insecticidal barrier can be established by treating with a 0.06% dilution. Sub-surface injection and gravity-flow through holes in the bottom of the trench, are two treatment methods that can be used on poles and posts that have already been installed. Establishing a complete chemical zone around the pole can be accomplished by treating on all sides. For poles and posts that are fewer than 6 inches in diameter use 1 gallon of dilution per foot of depth and 1.5 gallons for larger poles, applying under the wood to a depth of 6 inches. 4 gallons per 10 linear feet per foot of depth should be used for larger constructions.

**Control of Wood-Infesting Insects in Wood (Localized Areas in Structures)**

Insects	Application Rate	Remarks
Termites Ants Carpenter Ants Wood-infesting beetles (including but not limited to Old House Borer & Powder Post)	Apply a 0.06% dilution to voids and galleries in damaged wood and in spaces between wooden members of a structure and between wood and foundations where wood is at risk.	-Can be applied as a paint or fan spray. -Place plastic sheeting under overhead areas that are spot treated except for soil surfaces in crawl spaces. -Areas to which access is difficult can be treated by drilling, and then injecting dilution with a crack and crevice injector into the damaged wood or void spaces. (Not intended as a replacement for soil treatment, mechanical alteration or fumigation to control widespread infestation of wood-infesting insects.

Controlling termite carton nests in building voids can be accomplished by injecting with a 0.06% dilution. To obtain control, various depths of injection and numerous injection points may be needed. After treatment is complete and when feasible, remove the carton nest material from the building void.

To control Bees, Wasps, Hornets, and Yellow-Jackets, apply a 0.06% dilution late in the evening or when insects are at rest. Direct the spray at nest openings in the ground, bushes, and in cracks and crevices, where the insects may nest. Saturate the openings and contact as many insects as possible.

**Important:** Locate, identify, and mark wells, electrical conduits, water and sewer lines, and radiant heat pipes prior to application of Bifen XTS. Do not puncture or inject Bifen XTS into such structures. 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 (except where exempt).

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.

Do not use in food/feed areas of food/feed handling establishments, restaurants or other areas where food/feed is commercially prepared or processed. Do not use in serving areas while food is exposed or facility is in operation. Serving areas are areas where prepared foods are served such as dining rooms but excluding areas where food may be prepared or held.

In the home, cover all food handling surfaces and cover or remove all food and cooking utensils, or wash thoroughly after treatment. Non-food/feed areas of food/feed areas are areas such as garbage rooms, lavatories, floor drains (to sewers) entries and vestibules, offices, locker rooms, machine rooms, boiler rooms, garages, mop closers, and storage (after bottling or canning).



Not for use in *Federally Inspected* Meat and Poultry Plants.

**Control of Wood-Infesting Insects and Nuisance Pests (Outside of Structures)**

In order to control wood-infesting insects active inside trees, utility poles and/or fences, a 0.06% dilution should be injected into the infested cavity, which can be found by drilling into the wood. If treating nuisance pests on the exterior of the structure, use a fan spray at a maximum pressure of 25 p.s.i. and apply up to the point of runoff. To control Bees, Wasps, Hornets, and Yellow-Jackets, apply late in the evening. Direct the spray at nest openings in the ground, bushes, and in cracks and crevices, where the insects may nest. Saturate the openings and contact as many insects as possible.

**Pests Under Slabs**

To control infestations of Arthropods (e.g., ants, cockroaches, and scorpions) that live beneath the slab area, drill or horizontally rod and inject 1 gallon of a 0.06% to 0.12% dilution per 10 square feet or 2 gallons of dilution per 10 linear feet

**Attention**

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

Firewood is not to be treated.

Use only in well ventilated areas.

During any application to overhead areas of structure, cover surfaces below with plastic sheeting or similar material (except where exempt).

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.

**General Applications Instructions**

Bifen XTS formulation mixes readily with water and other aqueous carriers, and controls a wide spectrum of insects and mites on trees, shrubs, foliage plants, non-bearing fruit and nut trees, and flowers in interiorscapes including hotels, shopping malls, office buildings, etc. and, outdoor plantscapes, such as around residential dwellings, parks, institutional, recreational, 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.

Bifen XTS may be tank-mixed with other products, including insect growth regulators. When tank mixing Bifen XTS with other products, observe all precautions and limitations on each separate product label. The addition of spreader stickers is not necessary. The physical compatibility of Bifen XTS 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 chemicals and water to ensure the physical compatibility of the mixture.

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.

**APPLICATION RECOMMENDATIONS**  
**Lawns**

Bifen XTS may be used as a broadcast treatment. To accomplish uniform control when applying to dense grass foliage, use volumes of up to 10 gallons per 1000 square feet.

For low water volume usage, less than 2 gallons/1000 square feet, addition of a non-ionic or silicone based surfactant (0.25% v/v) is recommended, as is 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.

Pest	Bifen XTS	Comments
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Ants Armyworms Billbugs Chinch Bugs Crane Flies Crickets Cutworms Earwigs Fall Webworms Fleas (adults, larvae) Grasshoppers Mites Mole Crickets* Sod Webworms Spittlebugs Ticks	0.07-0.15 fl. ozs. per 1000 square feet	*Use a lower rate in the early Spring to control overwintered Mole Crickets. Use the higher rate in late-Summer or early Fall to control adult Mole Crickets.  To increase control of later Summer or Fall Adult Mole Crickets, apply a non-ionic surfactant or a silicone based surfactant (0.25% v/v) as a tank-mix. To maximize efficacy against sub-surface pests, apply Bifen XTS with a non-ionic or silicone based surfactant (0.25% v/v) in enough water to ensure the spray penetrates to soil-thatch matrix. Water treated areas with 0.25 to 0.5 inches of water immediately following application taking special care to prevent run-off or puddling.  To ensure that the best control of Armyworms, Cutworms, and Sod Webworms is achieved, postpone watering or mowing for 24 hours following application.
Imported Fire Ants** Japanese Beetles (adult)	0.07-0.30 fl. ozs. per 1000 square feet	

**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 this product if there are signs of renewed insect activity, but not sooner than two weeks after the first application.**

Do not apply when wind conditions favor downwind drift to nearby water bodies.

Do not apply when wind velocity exceeds 10 miles per hour.

Avoid application when wind gust approach 10 mph.

Apply using nozzles that provide the largest droplet size compatible with adequate coverage.

**Ornamentals and Trees:** Dilute 0.26 to 1.28 fl. oz. of Bifen XTS per 10 gallons of water and apply at the rate of 10 gallons per 4,356 square feet. One gallon of finish spray will treat 435 sq. ft. If a higher volume application is needed to sufficiently cover the plant canopy, Bifen XTS can be diluted in large volumes of water and applied through low volume equipment as long as the maximum label rate (1.28 fluid ounces per 4,356 square feet) is not exceeded.

**ORNAMENTAL APPLICATION RATES**

Pests	Rate		Comments
	Lb./ ai 10 Gallons	Fl. Oz./ 10 Gallons	

Ants Aphids Bagworms Black Vine Weevil (Adults) Brown Soft Scales Broad Mites Budworms California Red Scale (crawlers) Centipedes Clover Mites Crickets Cutworms Earwigs Elm Leaf Beetles Fall Webworms Flea Beetles Fungus Gnats (adults) Grasshoppers Lace Bugs Leafhoppers Leaf feeding Caterpillars Mealybugs Millipedes Mole Crickets* Orchid Weevils Pillbugs Pine Needle Scales (crawlers) Plant Bugs (incl. Lygus spp) San Jose Scales (crawlers) Sowbugs Spiders Spittlebugs Tent Caterpillars Tip Moths Weevils Whiteflies	0.004 to 0.02	0.26 to 1.28	Apply the specified rate as a full coverage foliar spray. As foliage and pest pressure increases, repeat application as needed using higher rates.  Bagworm Control: Treat when larvae start to hatch. Spray larvae directly. Applications will be most successful if they are made when the larvae are young.  Scale Crawler and Twig Borer Control: Treat trunks, stems, and twigs along with plant foliage.  Before treating an entire planting, treat a small amount of plants and observe for one week since certain cultivars may be sensitive to the final spray solution.  To prevent or postpone pest resistance to Bifen XTS, it is recommended to use an alternate class of chemistry.  To achieve complete coverage, make sure enough water is used. Normal use rates are 10 gallons of spray per 4,356 sq. ft.  Black Vine Weevil and Fungus Gnat Larvae Control: Apply as a drench at the rate of approximately 8 oz. of finished spray per 6 inch pot.
Citrus Thrips Beet Armyworm Diaprepes (larvae, adult) European Red Mite Leafrollers Spider Mites Thrips Twig Borers	0.006 to 0.02	0.38 to 1.28	*Overwintered Mole Cricket Control: Early Spring-use the lower rate Late-Summer or early Fall-use the higher rate.
Japanese Beetles (adult) Leafminers Pecan Leaf Scorch Mite Black Vine Weevil (larvae) Fungus Gnats (larvae)	0.01 to 0.02	0.64 to 1.28	

#### Pest Control on Outside Surfaces and Around Buildings

Use Sites	Pests	Rate	Comments
Including, but not limited to: Outdoor siding Foundations Porches Window frames Overhang and eaves Patios Garages Garbage sites Soil Trunks of woody ornamentals	Ants (Carpenter Ants and Fire Ants) Armyworms Bees Centipedes Chiggers Chinch Bugs Clover Mites Crickets Cutworms Dichondra Flea Beetles Earwigs European Crane Flies Grasshoppers	For a 0.03% dilution mix 1/6 fl. oz. / 1 gal. water (1 fluid oz. = 2 tablespoons)  For a 0.06% dilution mix 1/3 fl. oz. / 1 gal. water (1 fluid oz. = 2 tablespoons)	Apply Bifen XTS as a residual spray using a 0.03 to 0.06% dilution.  Do not use household utensils to measure Bifen XTS  For heavy pest infestation, quicker knockdown or longer residual control, use the higher rate.  To sustain effectiveness,
Lawns next to: Private houses			

Duplexes Townhomes Condos Trailers Apartments Carports Garages Fence rows Utility sheds Barns  Residential and non-commercial structures Areas where pests gather or have been seen	Hornets Millipedes Mosquitoes Moths Roaches (Cockroaches) Scorpions Sod Webworms Sowbugs (Pillbugs) Spiders (Black Widow Spiders) Springtails Ticks (Brown Dog Ticks) Wasps		repeat treatment as needed.
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**Perimeter Treatment:** Apply to a 10 foot wide band of soil and vegetation around and next to the structure, and treat the foundation of the structure to a height of 2 to 3 feet. Use a spray volume of 2 to 10 gals. of dilution per 1000 sq. ft. If foliage is thick or there is mulch or leaf litter nearby, higher volumes of water may be necessary. If certain pests such as Gypsy Moth adults and caterpillars, Boxelder Bugs, Elm Leaf Beetles, Earwigs or Silverfish are nearby, apply to house siding.

**For Optimal Control of Ant and Fire Ant Mounds use Bifen XTS 0.06% dilution as Drench Method:** Sprinkle the mound, using 1-2 gallons of dilution, until it is wet and apply to a 4 foot diameter circle around the mound. When treating mounds larger than 12", use the higher volume. Do not treat in the heat of the day and for optimum results, apply in cool weather, such as in early morning or late evening hours.

**Application to Home Lawns:** Apply Bifen XTS as a broadcast treatment in 2 to 10 gallons of carrier per 1000 sq. ft. When treating thick grass foliage, use higher volumes to get complete, uniform coverage.

**Attention:** Keep children and pets off treated areas following application until the spray has dried.

#### TRUNK SPRAYS TO ORNAMENTAL TREES

**To control *Dendroctonus* bark beetles such as Black turpentine beetle, mountain pine beetle, western pine tip beetle, southern pine tip beetle, and engraver beetles (*ips* spp.)**

**Preventative Control:** In the spring, or when trees nearby have become infested posing a threat, treat the trunk of the tree with a hydraulic sprayer using a mixture that contains 1.0 to 2.0 pints of Bifen XTS per 100 gallons (0.25 to 0.5 lbs. ai/100 gallons) of water. Treat the main trunk from the base of the tree to at least halfway into the live crown spraying the tree directly and until the bark is completely wet (usually 1 to 4 gallons of spray per tree). Do not apply more than 0.2 lbs. ai (12.8 fl. oz.) of Bifen XTS to trees per acre. If reinfestation is probable it may be necessary to repeat treatment. Depending on certain local variables and target pests, application rates and timing will differ. Check with your local State Extension specialist or other qualified expert for specific recommendations.

**Treatment of Infested Trees:** To control emerging brood, treat trees that still have beetles in the bark by using a spray mixture containing 2.0 pints of Bifen XTS per 100 gallons of water. Treat the main trunk from the base of the tree to at least halfway into the live crown spraying the tree directly and until the bark is completely wet (usually 1 to 4 gallons of spray per tree). Do not apply more than 0.2 lbs. ai (12.8 fl. oz.) of Bifen XTS to trees per acre. Trees that have needles that have all turned brown normally have been vacated and should not be treated unless infestation is evident. Scrape off the outer bark to determine whether or not the tree is infested. If trunks are currently infested, fell the infested trees and cut into sections. Spray the trunk and large limbs of the sections thoroughly to treat the entire surface area. Do not apply more than 0.2 lbs. ai (12.8 fl. oz.) of Bifen XTS per acre.

**To control other beetles such as Ambrosia beetles, elm bark beetles and Emerald Ash borer**

**Preventative Control:** In the early spring or before adult beetle flight and tree infestation, treat the trunk, scaffolding and limbs of the tree with a hydraulic sprayer using a spray mixture containing 1.0 to 2.0 pints of the product per 100 gallons (0.25 to 0.5 lbs. ai/100 gallons) of water. Spray the tree until the bark is completely wet (usually 6 to 12 gallons of spray per tree). Do not apply more than 0.2 lbs. ai to trees per acre. If reinfestation is probable it may be necessary to repeat treatment. Depending on certain local variables and target pests, application rates and timing will differ. Check with your local State Extension specialist or other qualified expert for specific recommendations.

#### OTHER BORERS ON ORNAMENTAL TREES

To control other boring insects see the table below. Depending on geographic location and environmental conditions, application rate and timing will differ. Spray the tree until the bark is completely wet (usually 1 to 4 gallons of spray per tree). Do not apply more than 100 gallons of diluted spray mixture to trees on a treated acre. Check with your local State Extension specialist or other qualified expert for specific recommendations.

<b>Pest</b>	<b>Rate</b>	<b>Comments</b>
Clearwing Moth borers Ash borer, banded ash clearwing, Dogwood borer, Lesser peachtree Borer, Lilac borer, Oak borer	6.4 to 12.8 fl. oz. per 100 gallons	Treat trunks and lower branches before adult emergence.
Coleopteran borers Bronze birch borer, Flatheaded Appletree borer	6.4 to 12.8 fl. oz. per 100 gallons	
For maximum residual control of the above listed pests.	12.8 fl. oz. per 100 gallons	

#### **STORAGE AND DISPOSAL**

##### **Pesticide Storage**

Do not freeze. Do not store below 40°F. If crystals are observed, warm material to above 60°F by placing container in warm location. Shake or roll container periodically to redissolve solids. Do not use external source of heat for warming container.

Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry, place and avoid excess heat. Carefully open containers. After partial use, replace lids and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills.

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

##### **Pesticide Disposal**

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

##### **Container Disposal**

Metal or Plastic Container: Triple rinse (or equivalent) then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Do not cut or weld metal containers.

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

#### **Distributors Should See in Original Packages Only.**

**Terms of Sale or Use:** On purchase of Bifen XTS buyer and user agree to the following conditions:

#### **WARRANTY STATEMENT**

Control Solutions, Inc. warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Control Solutions, Inc. To the extent allowed by law, Control Solutions, Inc. shall in no event be liable for consequential, special, or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the Buyer. In addition to the foregoing, no purchaser of this product (other than an end user) shall be entitled to any reimbursement for any loss suffered as a result of any suspension or cancellation of the registration for this product by the U.S. Environmental Protection Agency. Except, as expressly provided herein, Control Solutions, Inc. makes no warranties, guarantees, or representations of any kind, either expressed or implied, or by usage of trade, statutory or otherwise, with regard to the product sold, including, but not limited to merchantability, fitness for a particular purpose, use or eligibility of the product for any particular trade usage. The exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damage resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall be damages not exceeding the purchase price paid for this product or, at Control Solutions, Inc. election, the replacement of this product.

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