STATE OF HAWAII
Department of Agriculture

ACCEPTED

LICENSE NO. 8218.12

Bifen I/T

INSECTICIDE / TERMITICIDE

For prevention and control of termites, carpenter ants and other pests of structures. To control pests in and around such areas as homes, commercial and industrial buildings, recreational areas, athletic fields, lawns and ornamentals. Controls pests in livestock and poultry houses.

For Use as a Termiticide: May only be used by individuals/firms 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.

Active Ingredient:

Bifenthrin*	7.9%
Inert Ingredients:	92.1%
Total:	100.0%

Bifen I/T contains 2/3 pound active ingredient per gallon.
*Cis isomers 97% minimum, trans isomers 3% maximum.

EPA Reg. No. 53883-118 EPA Est. No. 53883-TX-002

KEEP OUT OF REACH OF CHILDREN

CAUTION

See attached booklet for additional precautionary statements

NET CONTENTS: 4 OZ.

Control Solutions, Inc.
5903 Genoa-Red Bluff • Pasadena, TX 77507-1041

EPA 100908/NOTIF 120208/REV A

Bifen I/T

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NET CONTENTS:
1 PINT (16 OZ.)

0 72693 04430 2

CSI

CONTROL SOLUTIONS incorporated

5903 Genoa-Red Bluff
Pasadena, TX 77507-1041

EPA 100908/NOTIF 120208/REV A

Bifen I/T

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EPA Reg. No. 53883-118 **EPA Est. No. 53883-TX-002**

KEEP OUT OF REACH OF CHILDREN

CAUTION

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NET CONTENTS: 1 QUART

0 72693 04431 9

CSI

CONTROL SOLUTIONS incorporated

5903 Genoa-Red Bluff
Pasadena, TX 77507-1041

EPA 100908/NOTIF 120208/REV A

Bifen I/T

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EPA Reg. No. 53883-118 **EPA Est. No. 53883-TX-002**

NET CONTENTS:
3/4 GALLON

0 72693 04432 6

KEEP OUT OF REACH OF CHILDREN

CAUTION

See attached booklet for additional precautionary statements

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Bifen I/T

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EPA Reg. No. 53883-118 **EPA Est. No. 53883-TX-002**

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CAUTION

See attached booklet for additional precautionary statements

NET CONTENTS: 1 GALLON

0 72693 04435 7

EPA 100908/NOTIF 120208/REV A

CSI
CONTROL SOLUTIONS incorporated
5903 Genoa-Red Bluff
Pasadena, TX 77507-1041

0 72693 44290 0 0412

Bifen I/T

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KEEP OUT OF REACH OF CHILDREN

CAUTION

Refer to attached booklet for Full Precautionary statements and Directions for Use

CSI
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EPA 100908/NOTIF 120208/REV A

NET CONTENTS: 4 OZ.

NO TEXT AREA

BIFEN I/T

INSECTICIDE/TERMITICIDE

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FIRST AID	
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	• Hold eye open and rinse slowly and gently with water 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact the Poison Control Center 800-222-1222.	
Note to Physician - 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.	

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, using tobacco or using the toilet. 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, 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[1] 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.

[1]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 pre-filter.

Environmental Hazards

This pesticide is extremely toxic to fish and aquatic invertebrates. To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run off to water bodies or drainage systems. 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 Bifen I/T to electrical conduits, motor housings, junction boxes, switch boxes or other electrical equipment because of possible 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 a broadcast application to interior surfaces of homes.

Do not apply by air.

Do not apply in greenhouses, 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.

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 surface below with plastic sheeting or similar material except for soil surfaces in crawlspaces.

Do not allow spray to contact food, foodstuffs, food-contacting surfaces or 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 runoff to occur.

Do not allow contact with treated surfaces by people or pets before spray has dried.

Bifen I/T will not discolor or otherwise harm surfaces that water alone will not discolor or otherwise harm.

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

Do not apply Bifen I/T in classrooms, libraries, sports venues, or other institutional facilities when they are occupied.

Bifen I/T may be applied with low-volume application equipment, including Actisol® and Micro-Injector®, for general surface, spot, crack and crevice, and deep harborage treatments.

Not for 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 only for aesthetic purposes or climactic modifications and being grown in interior plantscapes, ornamental gardens or parks, or lawns and grounds.

Application is prohibited directly into sewers or drains, or to any area like a gutter where drainage to sewers, storm drains, water bodies, or aquatic habitat can occur. Do not allow the product to enter any drain during or after application.

Additional Application Restrictions for Residential Outdoor Surface and Space Sprays:

All outdoor applications must be limited to spot or crack and crevice treatments only, except for the following permitted uses:

(1) Treatment to soil or vegetation around structures;

(2) Applications to lawns, turf, and other vegetation;

(3) Applications to building foundations, up to a maximum height of 3 feet.

Other than applications to building foundations, all outdoor applications to impervious surfaces such as sidewalks, driveways, patios, porches and structural surfaces (such as windows, doors, and eaves) are limited to spot and crack and crevice applications, only.

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 applications 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.

Distributors Should Sell in Original Packages Only.

STORAGE AND DISPOSAL

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

Storage and Spill Procedures: Store upright at room temperature. Avoid exposure to extreme temperatures. In case of spillage or leakages, soak up with an absorbent material such as sand, sawdust, earth, Fuller's earth, etc. Dispose of with chemical waste.

Pesticide Disposal: Pesticide, spray mixture or rinse water that cannot be used according to label instructions must be disposed of at or by an approved waste disposal facility.

Container Disposal:
For Containers equal to or less than 5 Gallons: Nonrefillable container. Do Not reuse or refill this container. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

(continued)

STORAGE AND DISPOSAL (continued)

Offer for recycling if available. If recycling is not available, puncture or dispose of in a sanitary landfill or incineration or if allowed by state and local authorities by burning. If burned stay out of smoke.

For Containers greater than 5 Gallons*:* Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Offer for recycling if available. If recycling is not available, puncture or dispose of in a sanitary landfill or incineration or if allowed by state and local authorities by burning. If burned stay out of smoke.

For Bulk containers: (Refillable Container) Refill this container with pesticides only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the re-filler. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or re-circulate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this procedure two more times.

APPLICATION DIRECTIONS

Not for 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 only for aesthetic purposes or climatic modifications and being grown in interior plantscapes, ornamental gardens or parks, or lawn and grounds. Only use this product on plants being grown for aesthetic or climatic purposes and in interior and exterior sites, such as, gardens, parks, lawns, and grounds, and other ornamental sites. Do not use on vegetation intended for sale or other commercial uses. Do not use on plants grown for seed production or research purposes.

Using this product 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 emulsion 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.

To use this product effectively, it is important that the service technician be familiar with current control practices including trenching, rodding, subslab 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.

General Applications Instructions

Bifen I/T controls a wide range of listed pests on flowers, foliage plants, non-bearing fruit and nut trees, shrubs, and ornamental trees, in interior and exterior plantscapes, such as those in hotels, office buildings, shopping malls, etc., and around athletic fields, homes, institutional buildings, parks, and recreational areas. Non-bearing fruit and nut trees are those that will not produce a harvestable crop during the season of application.

Bifen I/T can be tank-mixed with insect growth regulators and other pesticides. Observe all precautions and Directions for Use for each product. Physical compatibility may vary with different combinations of products, so prepare a small scale (pint or quart jar) test sample for any combination not tested previously. Use proper proportions in the small scale test to achieve the correct result.

Unless otherwise noted in the label instructions, use the procedure below for preparation of a new tank mix:

1. Add wettable powders to tank water.
2. Mix well
3. Add liquids and flowables
4. Mix well
5. Add emulsifiable concentrates
6. Mix well

Try reversing the order of addition or increasing the amount of water if the combination is not compatible using the above order. **NOTE:** After increasing the amount of water, if the mixture is found to be compatible, it is necessary to recalibrate the sprayer for a higher volume application. Do not allow mixture to stand overnight.

Formula for Determining the Active Ingredient Content of the Finished Emulsion

$$\frac{(7.9)(\text{Fl. Oz. of Bifen I/T added to tank})}{(\text{Gallons of finished spray mix})(128)} = \%\ \text{Active Ingredient in emulsion}$$

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 emulsion 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 emulsion, 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 in Wood" 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% emulsion 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 Bifen I/T. Add remaining amount of water. Let pump run and allow recirculation through the hose for 2 to 3 minutes.

Bifen I/T 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 emulsion, ready to use, dilute 3 quarts of Bifen I/T with 99.25 gallons of water.

Mixing: Using the chart below, determine the volume of Bifen I/T and water required to produce the desired volume of finished emulsion.

Amount of Bifen I/T (Gallons except where noted)			
Emulsion Concentrate	**Amount of Bifen I/T**	**Amount of Water**	**Desired Gallons of Finished Emulsion**
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
	3 qt.	99.25	100
	4.5 qt.	148.8	150
	6 qt.	198.5	200
0.12%*	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
	9 qt.	147.7	150
	3	197	200

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 emulsion 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% emulsion 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 (% emulsion)	**0.06%**	**0.12%**
Volume allowed		
• Horizontal (gallons emulsion/10 ft^2)	1.0 Gallons	0.5 gallons
• Vertical (gallons emulsion/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.

Foam Applications

Bifen I/T 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 I/T 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 (4 ounces of Bifen I/T concentrate) per 10 linear feet must be applied for a vertical barrier, or at least 1 gallon of 0.06% dilution (1 ounce of Bifen I/T concentrate) per 10 square feet must be applied for a horizontal barrier. For a foam only application, apply Bifen I/T concentrate in sufficient concentration and volume to equal 4 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 I/T , 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 I/T 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.

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% emulsion of Bifen I/T. 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 1 fluid ounce of Bifen I/T 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 4 fluid ounces of Bifen I/T 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.

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

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 I/T. Do not puncture or inject Bifen I/T into such structures.

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 emulsion 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 emulsion 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 emulsion 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 TeeJet® 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 emulsion 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.

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 unvented goggles and a respirator when applying Bifen I/T in a confined area.

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.

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 emulsion 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.

Bifen I/T may not be used in voids insulated with rigid foam insulation.

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-rodding 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 stated above for basements for foundations that are deeper than 1 foot.
d. A 0.06% dilution may be used to treat soil that is exposed and wood in bath traps.

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

Food Handling Establishments

If used as a general spot, surface, or crack and crevice treatment, Bifen I/T may be applied in both food/feed and nonfood areas of food/feed handling establishments.

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

Nonfood areas in which applications are allowed include entries and vestibules, floor drains (to sewers), garages, garbage rooms, lavatories, locker rooms, machine rooms, mop closets, offices, and storage (after canning or bottling).

Listed below are some of the use sites that are allowed:

-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
-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. During treatment, remove or cover all food processing and/or handling

equipment and do not apply directly to food products. All equipment, benches, shelving and other surfaces in food processing plants, bakeries, cafeterias and other facilities, which food will contact must be washed after treatment. Clean food handling equipment or processing equipment and rinse completely with fresh, clean water.

Spot, Crack and Crevice Application: These types of treatments can be done when the facility is operating, but food should be covered or removed from the treatment area. Do not apply directly to food.

Foam Applications: Converting Bifen I/T to foam will allow it to be used to treat structural voids. To produce a 0.02% to 0.06% foam concentration, dilute 0.33 to 1.0 fl. oz. of Bifen I/T per gallon of water and add the manufacturer's recommended amount of foaming agent. Before application, make sure that the foaming agent is compatible with Bifen I/T.

Indoor Uses

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

Bifen I/T may be used to control ants, bees, beetles, boxelder bugs, carpet beetles, centipedes, clothes moths, cockroaches, crickets, earwigs, firebrats, flies, gnats, midges, millipedes, pillbugs, scorpions, silverfish, sow bugs, spiders, stink bugs, ticks, and wasps.

In structures and buildings and on modes of transportation, use a 0.02% to 0.06% suspension (0.33

to 1 fl. oz. per gallon of water) using a crack and crevice, pinstream, spot, coarse, low-pressure spray (25 p.s.i. or less) or with a paint brush.

Indoor Treatments: Apply where pests hide**.** These areas include, but are not limited to**,** 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, and drawers. Treat with a low pressure, coarse, crack and crevice or spot spray. Pay close attention to cracks and crevices. Not for use as a space spray.

Mixing Directions: See mixing directions in "Pest Control on Outside Surfaces and Around Buildings" section.
To make a dilution for brush or spray treatments:
-Dilute Bifen I/T with water.
-Fill sprayer with the required amount of water.
-Add Bifen I/T.
-To ensure proper mixing, close sprayer and shake before use.
-Only mix the amount of solution that is necessary for treatment.

In order to achieve and/or maintain control in times of high pest pressure, retreatment may be needed.

Repeat application should only take place if there are signs of renewed insect activity and must not exceed one application per 7 days.

Ants: Apply to any ant trails, around doors and windows and other places that ants frequent.

Bees and Wasps: Apply to nests in late evening when these pests are at rest. Spray nests, entrances to nests and surrounding areas thoroughly. Contact as many insects as possible. Retreat if signs of renewed activity exist.

Boxelder Bugs, Centipedes, Earwigs, Beetles, Millipedes, Pillbugs, Sowbugs, and Stink Bugs: Treat near doors and windows, storage areas, baseboards and other sites where these pests may be found.

Cockroaches, Crickets, Firebrats, Scorpions, Silverfish, Spiders, and Ticks: Use a coarse low-pressure, crack and crevice or spot spray, paying close attention to cracks and crevices. Treat where pests hide. These areas include attics and eaves, baseboards, closets, corners, storage areas, around water pipes, doors and windows, behind and under cabinets, furnaces, refrigerators, sinks, stoves, and the underside of shelves and drawers.

Livestock and Poultry Housing Structures

Controls pests of poultry and livestock facilities, including biting flies, filth-breeding flies, fleas, litter beetles, hide beetles, bed bugs, mites and ticks. Apply as a general surface (including directed spray) and/or crack and crevice treatment. Control is enhanced when interior and exterior perimeter applications are made in and around the livestock or poultry housing structures. Normal cleaning practices of the structure also must be followed along with applications of Bifen I/T to effectively control crawling and flying insect pests.

For occupied areas of poultry and livestock facilities, apply to indoor cracks and crevices only. Exterior applications to walls and foundation perimeters can help prevent interior infestations of flying and crawling insect pests. Apply Bifen I/T at a rate equivalent to 0.33 to 1 fl. oz per 1,000 sq. feet.

For unoccupied areas of poultry and livestock facilities, apply to floors, vertical and overhead surfaces where crawling or flying insect pests may be present. Feeders, waterers and feed carts must be covered before application to prevent contamination. Do not apply to milk rooms. Pay attention to animal areas including stanchions, pipes, windows, doors and areas where insect pests hide or congregate. Exterior applications to walls and foundation perimeters can help prevent interior infestations of flying and crawling insect pests. Apply Bifen I/T at a rate equivalent to 0.33 to 1 fl. oz per 1,000 sq. feet.

To control bed bugs, mites and ticks in animal facilities, treat cracks/crevices, walls, posts, nest boxes and mobile side curtains. Do not apply Bifen I/T directly to animals.

For adult fly control in and around animal facilities, spray application should target areas where flies will rest, such as the ceiling, rafters and trusses. Also treat windows, interior and exterior walls and supports, fences and vegetation. Bifen I/T suspension may be sprayed on manure in areas where fly larvae are abundant and the area cannot be cleaned.

For poultry houses, apply to floor area (birds grown on litter) or to walls, posts and cage framing (birds grown in cages). Application should also be made into cracks and crevices around insulation. Reapply after each growout or de-caking and sanitization procedure, but not more frequently than every 8 weeks. Indoor control can be enhanced by making perimeter treatments around the outside of building foundations to prevent immigrating adult beetles. Apply in a uniform band 2 to 3 feet up and 6 to 10 feet out from the structure. Maintaining a year-round treatment program will prevent background populations from reaching problem levels.

To control beetles in houses containing birds grown on litter apply Bifen I/T at a rate equivalent to 0.33 to 1 fl. oz per 1,000 sq. feet to litter after birds are removed and during tilling. If litter is removed and replaced with fresh litter, apply Bifen I/T at a rate equivalent to 0.33 to 1 fl. oz per 1, 000 sq. feet to bare soil or concrete, and treat new litter after it is spread. Apply spray to inside walls, posts and exterior perimeter. Reapply between each flock.

To control beetles in broiler-breeder houses, apply as directed above for litter and soil/floor treatment.

To control beetles in caged-layer houses, do not treat accumulated manure as it will likely disrupt natural enemies that control fly breeding. Instead, treat the perimeter of the manure at a rate equivalent to 0.33 to 1 fl. oz of Bifen I/T per 1,000 sq. feet. Pit walls, posts and

exterior of structure should also be sprayed. Reapply between each flock.

Allow Bifen I/T treatment to dry before applying disinfectants.

Insecticide Class Rotations: In order to avoid problems with developed resistance to insecticides it is important to rotate to an insecticide of a different class each 2-3 flocks. It is best to attempt to use 3 different classes of insecticides during a calendar year.

DO NOT apply Bifen I/T as a general surface spray when animals are present in the facility. Allow applications to dry before restocking the facility. Treatment may be made to cracks and crevices when animals are present.

DO NOT apply Bifen I/T to any animal feed, water or watering equipment.

DO NOT contaminate any animal feed, food or water in and around livestock or poultry housing when making applications.

Lawns

Use Bifen I/T 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.

To ensure control of sub-surface pests including Mole Crickets using low volume treatments, (i.e. less than 2 gallons per 1000 square feet), immediately follow the treatment with irrigation of the treated area with at least 0.25 inches of water.

Lawn Application Rates

Under typical conditions, the application rates shown in the table below will provide control of the listed pests. Bifen I/T may, however, be applied at up to 1 fl. oz. per 1000 square feet at the discretion of the applicator. Maximum residual control requires the higher treatment rates.

Pest	Application Rate Bifen I/T
Armyworms[1] Cutworms[1] Sod Webworm[1]	0.18 - 0.25 fluid oz. per 1000 sq. ft.
Annual Bluegrass Weevil (Hyperodes)(Adult)[2] Banks Grass Mite[6] Billbugs (Adult)[3] Black Turfgrass Ataenius Adult[4] Centipedes Chinch Bugs[5] Crickets Earwigs Fleas (Adult) Grasshoppers Leafhoppers Mealybugs Millipedes Mites[6] Pillbugs Sowbugs	0.25 - 0.5 fluid oz. per 1000 sq. ft.
Crane Flies [12]	0.5 fl oz. per 1000 sq. ft.
Ants Fleas (Larvae)[7] Imported Fire Ants[8] Japanese Beetle (Adult) Mole Cricket (Adult)[9] Mole Cricket (Nymph)[10] Stink Bugs Ticks[11]	0.5 - 1.0 fluid oz. per 1000 sq. ft.

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 Bifen I/T if there are signs of renewed insect activity, but not sooner than two weeks after the first application.

Notes

[1]**Armyworms, Cutworms, and Sod Webworms:** Postpone irrigation or mowing for 24 hours after application to obtain the best possible control. Higher treatment rates (up to 1 fluid oz. per 1000 square feet) may be necessary if high pest pressure exists and if the grass is maintained taller than 1 inch.

[2]**Annual Bluegrass Weevil (Hyperodes) adults:** Treatment of this species should be timed as they travel into grass areas and away from their overwintering sites. Travel usually begins when *Forsythia* is in full bloom and ends when *Cornus florida* (flowering dogwood) is in full bloom. For additional detailed information regarding treatment timing, check with your State Cooperative Extension Service.

[3]**Billbug adults**: Treatment of adult billbugs should be made when they are first noticed in April and May. To optimize treatment timing, degree day models have been developed. For detailed information particular to your region, check with your State Cooperative Extension Service. Spring treatments for billbug adults will also offer control of over-wintered chinch bugs in temperate climates.

[4]**Black Turfgrass Ataenius adults:** In order to control the 1st and 2nd generation of black turfgrass ataenuis adults, respectively, treatments should take place in May and July. Time the May treatment to match with the full bloom stage of Vanhoutte spiraea *(Spiraea vanhoutte)* and horse chestnut *(Aesculus hippocastanum).* Time the July treatment to match with the blooming Rose of Sharon *(Hibiscus syriacus)*.

[5]**Chinch Bugs:** Mostly found in the thatch layer, chinch bugs infest the base of grass plants. In order to optimize the penetration of the insecticide to location of the chinch bugs, irrigation of the grass prior to

treatment may be necessary. If grass is being kept at a long mowing height or if the thatch layer is excessive, use higher volume treatments. It may be necessary to use higher application rates (up to 1 fluid oz. per 1000 square feet) to control populations made up of both adults and nymphs in mid-summer.

[6]**Mites:** Apply Bifen I/T in combination with a labeled rate of a surfactant to achieve optimal control of eriophyid mites. A second application may be needed 5 to 7 days after the first to ensure optimal control.

[7]**Flea larvae:** Immature fleas mature in shaded areas accessible to pets or other animals. When treating these areas use a higher volume treatment so that the insecticide penetrates into the soil. NOTE: If adult fleas on lawn areas are being controlled by applying Bifen I/T at a rate of 0.25 fl. oz. per 1000 square feet, then the rate of larval application can be accomplished by two- to four-fold increase in spray volume.

[8]**Imported Fire Ants:** The best control will be achieved by using broadcast treatments in combination with mound drenches. This will control present colonies along with foraging workers and newly mated fly-in queens. It is critical either to use high volume treatments or to irrigate prior to application if the soil is dry. Apply 1 fl. oz. per 1,000 square feet when using broadcast treatments. For mound drenches, dilute 1 teaspoon of Bifen I/T per gallon of water and use 1 to 2 gallons of finished dilution using sufficient force to penetrate the top and allow dilution to flood ant channels. Treat a four-foot diameter around each ant mound. Application should be made in late evening or early morning when it is cooler (65° - 80° when insects are most active. NOTE: A spray rig calibrated to apply 1 fluid oz. per 1,000 square feet of **Bifen I/T** in 5 gallons per 1,000 square feet contains the equivalent dilution (1 teaspoon per gallon) required for fire ant mound drenches in the spray tank.

[9]**Mole Cricket adults:** Since the preferred grass areas are subject to constant invasion in early spring by the active adult stage, it is can be difficult maintain control of adult mole crickets. It is ideal to treat the areas as late in the day as possible and water immediately after application with up to 0.5 inches of water. To ensure maximum contact when soil is dry, it is necessary to irrigate prior to treatment to bring the adult mole crickets closer to the soil surface. To obtain optimal control of potential nymphal populations, the grass areas preferred by adult mole crickets should be treated at immediately prior to peak hatch stage. (See note 10 below).

[10]**Mole Cricket nymphs:** Treat grass areas that are preferred by adult mole crickets in the spring just before peak egg hatch. Young nymphs are more vulnerable to insecticidal treatment at this stage because they are close to the soil surface where the insecticide is most concentrated and thereby providing the most efficient control. For larger more damaging nymphal stages later in the year, it may be necessary to use higher application rates more frequent. It is ideal to treat the areas as late in the day as possible and water immediately after application with up to 0.5 inches of water. To ensure maximum contact when soil is dry, it is necessary to irrigate prior to treatment to bring the adult mole crickets closer to the soil surface.

[11]**Ticks (including ticks that may transmit Lyme Disease and Rocky Mountain Spotted Fever):** Make application to the entire area where contact with ticks may occur. Do not make spot treatments. When applying to areas with heavy leaf litter or dense ground cover use higher spray volumes. To attain and/or sustain control in times of high pest pressure, retreatments may be necessary; retreat only if signs of continued or renewed tick activity are present. Repeat treatments must not be made more often than once per 7 days. **Deer ticks *(ixodes sp.)*** have a four-stage life cycle spanning 2 years. Treat in late fall and/or early spring to both larval and nymphal stages present in leaf

litter and the soil, and adults living in the grass and low-lying vegetation above ground. **American dog ticks** invade suburban settings in areas where residences and dwellings are constructed on former fields or wooded areas. These pests normally gather by paths or roadways where they are likely to find a host. To control tick larvae, nymphs and adults, treatments should take place, as needed, from mid spring to early fall.

[12]**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.

Bifen I/T Lawn Dilution Chart

Application Volume:	Application Rate:	Fluid Ounces* of Bifen I/T Diluted to these Volumes of Finished Spray			
Gallons Per 1,000 Sq. Ft.	Fluid Ounces per 1,000 Sq. Ft.	1 gallon	5 gallons	10 gallons	100 gallons
1.0	0.18	0.18	0.90	1.8	18.0
1.0	0.25	0.25	1.25	2.5	25.0
1.0	0.5	0.5	2.5	5.0	50.0
1.0	1.0	1.0	5.0	10.0	100.0
2.0	0.18	-	0.45	0.90	9.0
2.0	0.25	0.13	0.63	1.25	12.5
2.0	0.5	0.25	1.25	2.5	25.0
2.0	1.0	0.5	2.5	5.0	50.0
3.0	0.18	-	0.30	0.60	6.0
3.0	0.25	-	0.42	0.83	8.3
3.0	0.5	0.17	0.83	1.67	16.7
3.0	1.0	0.33	1.67	3.33	33.3

Application Volume:	Application Rate:	Fluid Ounces* of Bifen I/T Diluted to these Volumes of Finished Spray			
Gallons Per 1,000 Sq. Ft.	Fluid Ounces per 1,000 Sq. Ft.	1 gallon	5 gallons	10 gallons	100 gallons
4.0	0.18	-	0.23	0.45	4.5
4.0	0.25	-	0.31	0.63	6.3
4.0	0.5	0.13	0.63	1.25	12.5
4.0	1.0	0.25	1.25	2.5	25.0
5.0	0.18	-	0.18	0.36	3.6
5.0	0.25	-	0.25	0.5	5.0
5.0	0.5	0.1	0.5	1.0	10.0
5.0	1.0	0.2	1.0	2.0	20.0
10.0	0.18	-	-	0.18	1.8
10.0	0.25	-	0.13	0.25	2.5
10.0	0.5	-	0.25	0.5	5.0
10.0	1.0	0.1	0.5	1.0	10.0

*To convert to millimeters, multiply by 29.57
1 fluid ounce = 29.57 ml = 2 tablespoons = 6 teaspoons
Do not use household utensils to measure Bifen I/T.

Ornamentals and Trees

Treat with 0.125 to 1.0 fl. oz. of Bifen I/T per 1,000 square feet or 5.4 to 43.5 fl. oz. per 100 gallons for ornamental applications. As long as the highest label rate (1.0 fl. oz. per 1000 square feet or 43.5 fl. oz. per 100 gallons) is not exceeded, Bifen I/T can be diluted and used in different volumes of water. If diluted with water or other carriers, low volume equipment can be used for application as long as the highest label rate (1.0 fl. oz. per 1000 square feet or 43.5 fl. oz. per 100 gallons) is not exceeded.

Treat as a full coverage foliar spray using the stated application rate. If pest pressure and density of foliage increases, repeat treatments using higher rates may be needed to reach the desired control. Repeat treatments must not be made more often than once per 7 days.

Before application to entire planting, test treat a small number of plants and watch for signs of sensitivity. Some plant species may be sensitive to the final spray solution.

To avoid or delay pest resistance, it is recommended to use an alternate class of pesticide in any application program.

Bifen I/T Ornamental Dilution Chart

Application Volume: Gallons Per		Application Rate: Fl. Oz. per	Fluid Ounces* of Bifen I/T Diluted to these Volumes of Finished Spray			
1,000 sq. ft.	Acre	1,000 sq. ft.	1 gallons	5 gallons	10 gallons	100 gallons
2.3	100	0.125	-	0.27	0.54	5.4
2.3	100	0.25	0.11	0.54	1.08	10.8
2.3	100	0.5	0.22	1.09	2.17	21.7
2.3	100	1.0	0.44	2.17	4.35	43.5
4.6	200	0.125	-	0.14	0.27	2.7
4.6	200	0.25	-	0.27	0.54	5.4
4.6	200	0.5	0.11	0.54	1.09	10.9
4.6	200	1.0	0.22	1.09	2.17	21.7
6.9	300	0.125	-	-	0.18	1.8
6.9	300	0.25	-	0.18	0.36	3.6
6.9	300	0.5	-	0.36	0.72	7.2
6.9	300	1.0	0.15	0.72	1.45	14.5

*To convert to millimeters, multiply by 29.57

300 gallons per acre is a typical application volume for landscape ornamental applications.

1 fluid ounce = 29.57 ml = 2 tablespoons = 6 teaspoons

Do not use household utensils to measure Bifen I/T.

Calculating Dilution Rates using the Ornamental Application Rates Table and the Bifen I/T Ornamental Dilution Chart: To determine the proper dilution of Bifen I/T that is required to control specific pests, follow the steps below:

1. Determine the target pest that is the least susceptible (i.e., the pest that requires the highest application rate for effective control).
2. Choose a treatment rate in terms of fl. oz. of Bifen I/T.
3. Determine the dilution volume necessary for the treatment.
4. Use the proper amount of Bifen I/T that must be mixed in your preferred volume of water as shown in the Ornamental Dilution Chart.

As an example, if you were treating for Cutworms, the Ornamental Application Rates table shows that 0.125 – 0.25 fluid ounces of Bifen I/T should be applied per 1,000 square feet. Select the application rate of 0.25 fluid oz. per 1,000 square feet due to evidence of high pest pressure. The application volume is determined to be 300 gallons per acre, which is equivalent to 6.9 gallons per 1,000 square feet. The corresponding value in the Ornamental Dilution Chart shows that 0.36 fluid oz. of Bifen I/T must be mixed with 10 gallons of water.

Ornamental Application Rates

Under typical conditions, the application rates in the table below will offer optimal control of the listed pests, but Bifen I/T can be used at up to 1 fl. oz. per 1000 square feet (43.5 fl. oz. per 100 gallons) at the discretion of the applicator. When maximum residual control is preferred, higher treatment rates are necessary.

Pest	Application Rate Bifen I/T	
	Fluid Ounces per 1,000 square ft.	Fluid Ounces per 100 gallons
Bagworms[1] Cutworms Elm Leaf Beetles Fall Webworms Gypsy Moth Caterpillars Lace Bugs Leaf Feeding Caterpillars Tent Caterpillars	0.125 - 0.25	5.4 - 10.8
Adelgids[†] Ants Aphids Bees Beet Armyworm Beetles [2,†] Black Vine Weevil (Adults) Brown Soft Scales	0.25 - 0.5	10.8 - 21.7

Pest	Application Rate Bifen I/T	
	Fluid Ounces per 1,000 square ft.	Fluid Ounces per 100 gallons
Broad Mites Budworms California Red Scale (Crawlers)[13] Centipedes Cicadas† Citrus Thrips Clover Mites Crickets Diaprepes (Adults) Earwigs European Red Mite Flea Beetles Fungus Gnats (Adults) Grasshoppers Japanese Beetle (Adult)† Leafhoppers	0.25 - 0.5	10.8 - 21.7

Pest	Application Rate Bifen I/T	
	Fluid Ounces per 1,000 square ft.	Fluid Ounces per 100 gallons
Leafrollers Mealybugs Millipedes Mites Mosquitoes Orchid Weevil Pillbugs Pine Needle Scales (Crawlers)[2] Plant Bugs (Including *Lygus spp.)* Psyllids[†] San Jose Scales (Crawlers)[2] Scorpions Sowbugs Spider Mites[3] Spiders Spittlebugs[†]	0.25 - 0.5	10.8 - 21.7

Pest	Application Rate Bifen I/T	
	Fluid Ounces per 1,000 square ft.	Fluid Ounces per 100 gallons
Thrips Tip Moths Treehoppers[†] Twig Borers[2] Wasps Weevils[2] Whiteflies	0.25 - 0.5	10.8 - 21.7
Imported Fire Ants[**] Leafminers Pecan Leaf Scorch Mite Pine Shoot Beetle (Adults) Spider Mites[14] Stink Bugs	0.5 - 1.0	21.7 - 43.5

[1]**Bagworms:** For optimum control treat when larvae have started to hatch and are young, directing spray to contact as many larvae as possible.

[2]**Beetles, Scale Crawlers, Twig Borers, and Weevils:** Apply to plant foliage; also treat trunks, stems, and twigs.

[3]**Spider Mites:** Apply during spring and mid-summer for most effective control of twospotted spider mites. During mid- to late-summer it may be necessary to make more frequent treatments, possibly at higher rates suitable control. Control may be enhanced by adding a surfactant or horticultural oil or by combining Bifen I/T with other products registered to control mites. Applications of Bifen I/T may be alternated with chemicals offering other modes of action delay or prevent control resistance by twospotted spider mites. For recommendations on resistance management in your region check with your local Cooperative Extension Service.

**For foraging ants.

†Not for use in California.

Pest Control on Outside Surfaces and Around Buildings

Follow Additional Application Restrictions for Residential Outdoor Surface and Space Sprays under DIRECTIONS FOR USE.

Applications to vertical exterior surfaces (e.g., foundations) are permitted to a maximum height of 3 feet from ground level. Sections of vertical exterior surfaces that abut non-porous horizontal surfaces can only be treated if either 1) these sections are protected from rainfall and spray from sprinklers or 2) they do not drain into a sewer, storm drain, or curbside gutter (e.g., not to sections that abut driveways or sidewalks that drain into streets.)

Bifen I/T may be used to control Ants, including Carpenter Ants and Fire Ants, Armyworms, Bees, Beetles†, Biting Flies, Boxelder Bugs, Centipedes, Chiggers, Chinch Bugs, Clover Mites, Crickets, Cutworms, Dichondra Flea Beetles, Earwigs, Elm Leaf Beetles, Firebrats, Fleas, Flies, Gnats, Grasshoppers, Hornets, Japanese Beetles†,

Midges, Millipedes, Mosquitoes, Moths, Roaches (including Cockroaches), Scorpions, Silverfish, Sod Webworms, Sowbugs (Pillbugs), Spider Mites, Spiders (including Black Widow Spiders), Springtails, Ticks (including Brown Dog Ticks), and Wasps.

†Not for use in California.

Use a 0.02 to 0.06% dilution to spray the outside surfaces of buildings such as private homes, duplexes, townhouses, condominiums, house trailers, apartment complexes, carports, garages, fence lines, storage sheds, barns, and other residential and non-commercial structures. Sites of treatment include, but are not limited to, exterior siding, foundations, porches, window frames, eaves, patios, garages, garbage areas, lawn areas, trunks of trees and shrubs and other areas where pests my be found. Use a spray volume of up to 10 gallons of emulsion per 1,000 square feet. Use higher dilution volumes if vegetation or landscape materials are dense.

Mixing Directions

Suspension	Bifen I/T per gallon of water	Remarks
0.02%	0.33 fl. oz.	-Do not use household utensils to measure Bifen I/T. -Use higher treatment rates for quicker knockdown or longer residual control. -High pest pressure may require subsequent applications. -Repeat application only if there is evidence of renewed insect activity and not more than once per 7 days.
0.06%	1.0 fl. oz.	

Perimeter Treatment: Treat a band of soil and vegetation 6 to 10 feet wide around and next to the structure and the foundation of the structure to a height of 2 to 3 feet. Use 0.33 to 1.0 fluid oz. of Bifen I/T per 1,000 square feet in enough water to provide sufficient coverage (refer to Perimeter Application Dilution Chart).

For sections of foundation that abut non-porous horizontal surfaces, the treated areas must be protected from rainfall and spray from sprinklers or they do not drain into a sewer, storm drain, or curbside gutter (e.g. not to sections that abut driveways or sidewalks that drain into streets.)

Bifen I/T Perimeter Application Dilution Chart

Application Volume: Gallons Per	Application Rate: Fluid Ounces Per	Fluid Ounces* of Bifen I/T Diluted to these Volumes of Finished Spray			
1000 sq. ft.	1000 sq. ft.	1 gallon	5 gallons	10 gallons	100 gallons
1	0.33	0.33	1.67	3.33	33.3
1	0.5	0.5	2.5	5.0	50.0
1	0.67	0.67	3.33	6.67	66.7
1	0.75	0.75	3.75	7.5	75.0
1	1.0	1.0	5.0	10.0	100.0
2	0.33	0.17	0.83	1.65	16.5
2	0.5	0.25	1.25	2.5	25.0
2	0.67	0.33	1.67	3.35	33.5
2	0.75	0.38	1.88	3.75	37.5
2	1.0	0.5	2.5	5.0	50.0

Application Volume: Gallons Per	Application Rate: Fluid Ounces Per	Fluid Ounces* of Bifen I/T Diluted to these Volumes of Finished Spray			
1000 sq. ft.	1000 sq. ft.	1 gallon	5 gallons	10 gallons	100 gallons
3	0.33	0.11	0.55	1.10	11.0
3	0.5	0.17	0.83	1.67	16.7
3	0.67	0.22	1.11	2.23	22.3
3	0.75	0.25	1.25	2.5	25.0
3	1.0	0.33	1.67	3.33	33.3
4	0.33	-	0.41	0.83	8.3
4	0.5	0.13	0.63	1.25	12.5
4	0.67	0.17	0.84	1.67	16.7
4	0.75	0.19	0.94	1.88	18.8
4	1.0	0.25	1.25	2.5	25.0
5	0.33	-	0.33	0.67	6.7
5	0.5	0.1	0.5	1.0	10.0
5	0.67	0.13	0.67	1.33	13.3
5	0.75	0.15	0.75	1.5	15.0
5	1.0	0.2	1.0	2.0	20.0

Application Volume: Gallons Per	Application Rate: Fluid Ounces Per	Fluid Ounces* of Bifen I/T Diluted to these Volumes of Finished Spray			
1000 sq. ft.	1000 sq. ft.	1 gallon	5 gallons	10 gallons	100 gallons
10	0.33	-	0.17	0.33	3.3
10	0.5	-	0.25	0.5	5.0
10	0.67	-	0.33	0.67	6.7
10	0.75	-	0.38	0.75	7.5
10	1.0	0.1	0.5	1.0	10.0

*To convert to milliliters, multiply by 29.57

1 fluid oz. = 29.57 ml = 2 tablespoons = 6 teaspoons

Do not use household utensils to measure Bifen I/T.

Ant and Fire Ant Mound Drench Using 0.06% Dilution: Use 1-2 gallons of dilution for each mound area. Sprinkle the mound until wet and apply to a 4 ft. diameter circle around the mound. For mounds larger than 12 inches, use a larger volume. Application should be made in late evening or early morning when it is cooler (65° - 80°) when insects are most active.

Mosquito Control: To control mosquitoes around buildings, landscapes, and lawns, dilute 0.33 to 1.0 fl. oz. per gallon of water and use one gallon of dilution per 1000 square feet as a general spray. Bifen I/T can be mixed at lower concentrations and applied at higher volumes to ensure application of the proper amount of product to a given area (refer to the Ornamental or Perimeter Application Charts).

Other Pest Control Applications

Controlling Ants Indoors and Outdoors

Pest Ants Indoors: Apply to ant nests for best results. Apply a dilution of 0.5 to 1.0 fl. oz. of Bifen I/T per gallon of water at the rate of one gallon of dilution per 1000 square feet to places where ants have been seen or are believed to forage as a general surface, spot or crack and crevice treatment. Some of these areas include baseboards, cracks and crevices, in and behind cabinets, under and behind dishwashers, furnaces, refrigerators, sinks and stoves, around pipes, and in corners. Pay close attention when treating entry points into the home or around windows and doors. When combining liquid Bifen I/T treatments with bait treatments, use Bifen I/T as instructed above and apply baits in those areas where Bifen I/T has not been applied.

Pest Ants Outdoors: Apply to ant nests for best results. Treat ant trails, around windows and doors, and other places where ants have been seen or are likely to forage. As stated in the "Pest Control on Outside Surfaces and Around Buildings" section, treat using a low or high volume perimeter treatment depending on density of vegetation and landscaping materials. When treating concrete surfaces, more frequent treatments, higher

dilutions and/or application volumes may be needed for ant control. The following procedures must be followed to help achieve maximum control of the pest: Dilute 0.5 to 1.0 fl. oz. of Bifen I/T per gallon of water and applying at a rate of up to 10 gallons of dilution per 1,000 square feet for maximum residual control.

1. Vegetation and porous surfaces should be treated with high volume applications using dilutions that are calculated to deliver 0.5 to 1.0 fluid oz. of Bifen I/T per 1,000 square feet (refer to the Ornamental and Perimeter Application Dilution Charts).
2. Treat non-porous surfaces with low volume applications using 0.5 to 1.0 fluid oz. of Bifen I/T per gallon of water and applying this dilution at the rate of one gallon per 1,000 square feet.

Carpenter Ants Indoors: Treat areas where carpenter ants are seen or are predicted to forage, such as, baseboards, in and behind cabinets, under and behind dishwashers, furnaces, refrigerators, sinks, and stoves, around pipes, cracks and crevices, and in corners by diluting 0.5 to 1.0 fluid oz. of Bifen I/T per gallon of water and applying at the rate of one gallon of dilution per 1,000 square feet as a general surface, crack and crevice, spot and/or foam application. Spray or foam into cracks and crevices or drill holes and spray, mist or foam into voids and galleries where carpenter ants or their nests are present. When combining liquid Bifen I/T treatments with bait treatments, use Bifen I/T as instructed above and apply baits in those areas where Bifen I/T has not been applied.

Carpenter Ants Outdoors: Treat carpenter ant nests for best results. Treat areas where carpenter ants are seen or are believed to forage, such as ant trails, and around doors and windows. As stated in the "Pest Control on Outside Surfaces and Around Buildings" section, treat using a low or high volume perimeter treatment. When treating concrete surfaces, more frequent treatments, higher dilutions and/or application volumes may be needed for carpenter ant control. The following procedures must be followed to help achieve

maximum control of the pest: Dilute 0.5 to 1.0 fl. oz. of Bifen I/T per gallon of water and apply at a rate of up to 10 gallons of dilution per 1,000 square feet to obtain residual control.

1. Vegetation and porous surfaces should be treated with high volume applications using dilutions that are calculated to deliver 0.5 to 1.0 fluid oz. of Bifen I/T per 1,000 square feet (refer to the Ornamental and Perimeter Application Dilution Charts).
2. Treat non-porous surfaces with low volume applications using 0.5 to 1.0 fluid oz. of Bifen I/T per gallon of water and applying this dilution at the rate of one gallon per 1,000 square feet.
3. Use 0.5 to 1.0 fl. oz. of Bifen I/T per gallon of water on tree trunks with carpenter ant trails or evidence of foraging. Apply to the bark, completely wetting it from the bottom of the tree to the highest possible point on the trunk.

To control carpenter ants inside deck materials, fencing, trees, utility poles or other structural elements, drill to find the inside infested cavity and inject or foam a 0.06% dilution (1.0 fl. oz. of Bifen I/T per gallon of water) into the cavity with adequate volume and a proper treatment tool with a splash-back guard. Where there are ants tunneling below the surfaces, dilute 0.5 to 1.0 fl. oz. of Bifen I/T per gallon of water and applying as a drench or foam at intervals of 8 to 12 inches. A uniform barrier should be established where there are ants tunneling below surfaces such as, at the edges of walls, driveways or other hard surfaces.

Use a sprinkling can or a hose-end sprayer to distribute a coarse drenching spray, apply a 0.06% dilution to stored lumber and wood piles. This wood may be used for lumber or may be burned after 30 days. Do not use this method of application in structures.

Diluting 1.0 fluid oz. of Bifen I/T per gallon of water and applying to the soil below where the firewood will be stacked at the rate of one gallon of dilution per 8 square feet will protect the wood from carpenter ants.

DO NOT treat firewood with this product.

Controlling Termites (Above Ground Only)
The treatment methods that are expressed below are intended to kill termite workers or winged reproductives present at the time of application. These methods should supplement, not substitute for, mechanical alteration, soil treatment or foundation treatment.

Controlling winged reproductive termites and exposed workers in localized areas may be accomplished by diluting 1.0 fl. oz. of Bifen I/T per gallon of water and applying the dilution at the rate of one gallon per 1000 square feet to crawl spaces, unfinished basements, attics, and other crawl spaces as a course fan spray. Both swarming termites and the areas where they gather should be treated.

Controlling above-ground termites in localized areas of infested wood may be accomplished by diluting 1.0 fl. oz. of Bifen I/T per gallon of water and applying as a foam or a liquid to voids and galleries in wood that is damaged in addition to spaces between wooden structural members and between the foundation and sill plate where the wood is at risk of to attack. Drilling and then injecting the foam or dilution into damaged wood or wall voids with an appropriate directional injector will help reach those areas that are not easy to access. After treatment is completed, securely plug the holes that are in regularly occupied areas in the construction elements.

Controlling termite carton nests in building voids can be accomplished by diluting 1.0 fl. oz. of Bifen I/T per gallon of water and applying as a foam or a liquid using a pointed projection tool. 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.

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.

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.

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, 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.

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 I/T 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 threat 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 I/T 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.

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 consistent with applicable 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, and to the extent of applicable law, 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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