

UP-Star® Gold

Insecticide

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

For use to control insect pests and mites indoors, in interiorscapes and outdoors on ornamentals and lawns in landscaped areas around residential, institutional, public, commercial, and industrial buildings, parks, recreational areas and athletic fields.

Active Ingredient:	By Wt.
Bifenthrin*	7.9%
Other Ingredients:	92.1%
TOTAL	100.0%

UP-Star Gold Insecticide contains 2/3 pound active ingredient per gallon.
*Cis isomers 97% minimum, trans isomers 3% maximum

EPA Reg. No. 70506-24 EPA Est. No. 5905-GA-1

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

FIRST AID	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
If swallowed	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If inhaled	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 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.
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.	

For emergency medical treatment, contact the Rocky Mountain Poison Control Center, 1-866-673-6671.

FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300.

SHAKE WELL BEFORE USING

**PRECAUTIONARY STATEMENTS
Hazards to Humans and Domestic Animals**

CAUTION

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

All pesticide handlers (mixers, loaders and applicators) must wear long-sleeved shirt and long pants, socks, shoes and chemical-resistant gloves. After the product is diluted in accordance with label directions for use, and/or when mixing and loading using a closed spray tank transfer system (such as U-Turn®), or an in-line injector system, shirt, pants, socks, shoes and water-proof gloves are sufficient. In addition, all pesticide handlers must wear a respiratory protection device¹ 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.

¹Use one of the following Mine Safety and Health Administration (MSHA)/National Institute for Occupational Safety and Health (NIOSH) air purifying respirator types with approval number prefixes: TC-23C, TC-21C, TC-19C, TC-13F and TC-14G, or a NIOSH approved respirator with any R, P or HE filter or a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any R, P or HE prefilter.

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

ENVIRONMENTAL HAZARDS

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

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

PHYSICAL AND CHEMICAL HAZARDS

Do not apply water-based dilutions of UP-Star Gold Insecticide to electrical conduits, motor housings, junction boxes, switch boxes or other electrical equipment because of possible shock hazard.

Net Contents: 1 Quart

Manufactured for:
UPI United Phosphorus, Inc.
630 Freedom Business Center, Suite 402
King of Prussia, PA 19406
1-800-438-6071

DIRECTIONS FOR USE

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

Aerial application is prohibited.

Application in greenhouses and nurseries is prohibited.

Application through any kind of irrigation system is prohibited.

This product may not be used on sod farm turf, golf course turf, or on grass grown for seed.

This product may not be applied as a broadcast application to interior surfaces of homes.

STORAGE AND DISPOSAL

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

Pesticide Storage: Store in original containers only in a cool, dry place. Avoid excess heat. Do not store concentrate or dilute material in food or drink containers.

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 or commercial clay. Place damaged packaging in a holding container and label.

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

Container Disposal: Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying.

[for containers less than 5 gallons] 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 1/4 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. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

[for containers greater than 5 gallons] 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 back 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 and disposal. Repeat this procedure two more times. Then offer for recycling or reconditioning if available, 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.

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Termiticide Uses

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Ornamentals and Trees

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Indoor Use

Termite Control (Above Ground)

Ant Control

Food Handling Establishments

Impregnation and Application on Dry Bulk Lawn Fertilizers

TERMITICIDE USES

GENERAL INFORMATION

This product works by creating a barrier between the wood and the termites in the soil. In order to work properly, the dilute emulsion must be well dispersed in the soil. As a rule, it is useful to remove all non-essential wood and cellulose containing materials from around the area to be treated. Also repair faulty plumbing and/or construction grade to eliminate termite access to moisture.

The service technician who applies this product must be familiar with current control practices such as: trenching, rodding, sub-slab injection, coarse fan spraying of soil surfaces, crack and crevice (void) injection, excavated soil treatment, and brush or spray applications to infested or susceptible wood. Correct usage of these techniques is essential to control or prevent infestations by subterranean Termites (*Coptotermes*, *Heterotermes*, *Reticulitermes* and *Zootermopsis*). The biology and behavior of the species involved, as well as the suspected location of the colony and the severity of the infestation should be considered by the service technician in determining the appropriate control practices to use.

In order to choose the appropriate procedures the service technician must consider variables including design of the structure, location of heating, ventilation, and air conditioning (HVAC) systems, water table, soil type, soil compaction, grade conditions, and location and type of domestic water supplies and utilities.

For advice concerning current control practices for specific local conditions, consult resources in structural pest control and state regulatory agencies.

Subterranean Termite Control

Use Directions

Important: Avoid contamination of public and private water supplies by following these precautions:

- Prevent siphonage of pesticide back into water supplies by employing anti-backflow equipment or procedures.
- Do not contaminate cisterns or wells.
- Do not treat soil that is water saturated or frozen.

For information on the recommended distances of wells from treated areas, consult state and local specifications. If such regulations do not exist, refer to Federal Housing Administration (H.U.D.) Specifications for guidance.

Note: Crawl spaces are to be considered as part of the interior of the structure.

Critical Areas: Special attention should be paid to areas where the foundation is penetrated by utility services, cracks and expansion joints, bath traps and locations where cement constructions have been poured next to the foundation (for instance, stairs, patios and slab additions).

Structures with Wells/Cisterns Inside Foundations

Structures that contain wells or cisterns within the foundation of a structure can only be treated using the following techniques:

1. Do not treat soil while it is beneath or within the foundation or along the exterior perimeter of a structure that contains a well or cistern. The treated backfill method must be used if soil is removed and treated outside/away from the foundation. The treated backfill technique is described as follows:
 - a. Trench and remove soil to be treated onto heavy plastic sheeting or similar material or into a wheelbarrow.
 - b. Treat the soil at the rate of 4 gallons of dilute 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 the label. Mix thoroughly into the soil taking care to contain the liquid and prevent runoff or spillage.

- c. After the treated soil has absorbed the diluted 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" section of this label.

Structures with Adjacent Wells/Cisterns and/or Other Water Bodies

Applicators must inspect all structures with nearby water sources such as wells, cisterns, surface ponds, streams, and other bodies of water and evaluate, at a minimum, the treatment recommendations listed below prior to making an application.

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

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

Use Rate for Subterranean Termites: 0.06% emulsion. For other labeled pests use 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 UP-Star Gold Insecticide.

Add remaining amount of water.

Let pump run and allow recirculation through the hose for 2 to 3 minutes.

UP-Star Gold Insecticide may be mixed into full tanks of water, but must be thoroughly agitated to insure a uniform emulsion. To prepare a ready to use 0.06% water emulsion, dilute 3 quarts of UP-Star Gold Insecticide with 99.25 gallons of water.

Mixing: Use the use dilution chart below to determine the amount of UP-Star Gold Insecticide for a given volume of finished emulsion:

Use Dilution Instructions			
Emulsion Concentration	Quantity of UP-Star Gold Insecticide	Quantity of Water	Quantity of Finished Emulsion (gallons)
0.06%	1 oz.	127 oz.	1
	5 oz.	4.9 gal.	5
	10 oz.	9.9 gal.	10
	25 oz.	24.8 gal.	25
	1.5 qt.	49.6 gal.	50
	2.25 qt.	74.4 gal.	75
	3 qt.	99.25 gal.	100
	4.5 qt. 6 qt.	148.8 gal. 198.5 gal.	150 200
0.12% For termite applications, use this rate only as specified in the volume adjustments below, or in the sections on foam or underground service application	2 oz.	126 oz.	1
	10 oz.	4.9 gal.	5
	19.5 oz.	9.8 gal.	10
	1.5 qt.	24.6 gal.	25
	3 qt.	49.2 gal.	50
	4.5 qt.	73.8 gal.	75
	6 qt.	98.5 gal.	100
	9 qt. 3 gal.	147.7 gal. 197 gal.	150 200

Units of measure:

16 fluid ounces (oz.) = 2 cups = 1 pint

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

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 label directed rates and a continuous barrier can still be achieved.

For pre and post construction treatments, the volume of the 0.12% emulsion may be reduced by half the labeled volume. See Volume Adjustment Chart below.

Note that when volume is reduced, the hole spacing for subslab injection and soil rodding may also need to be adjusted to account for the lower volume dispersal of UP-Star Gold in the soil.

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 lin. ft.)	4.0 gallons	2.0 gallons

Pre-Construction Subterranean Termite Treatment

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

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

Effective pre-construction subterranean termite control requires the establishment of an unbroken vertical and/or horizontal insecticidal barrier. To meet federal termite proofing requirements, follow the procedures in the most current edition of the Housing and Urban Development (H.U.D.) Minimum Property Standards.

Instructions for Horizontal Barriers

Horizontal barrier may be established wherever treated soil will be covered by a slab, such as footing trenches, slab floors, carports, and the soil below stairs and crawl spaces.

For a 0.06% rate apply 1 gallon dilution per 10 square feet. Alternatively, use 1 fluid ounce of product per 10 square feet in enough water (at least 1/2 gallon but not more than 2 gallons) to give thorough and continuous coverage of the area.

If the fill is washed gravel or other coarse material, ensure that a sufficient amount of dilution is used to reach the soil substrate under the coarse fill.

Applications should be made by a low pressure spray (< 50 p.s.i.) with a coarse spray nozzle. If the slab will not be poured the same day as treatment, a waterproof barrier such as polyethylene sheeting should be placed over the soil. In cases where foundation walls have been installed around treated soil, this step is not necessary.

Instructions for Vertical Barriers

Vertical barriers may be established in areas such as around the base of foundations, back-filled soil against foundation walls and other critical areas.

For a 0.06% rate, apply 4 gallons dilution per 10 linear feet per foot of depth or 4 fluid ounces product per 10 linear feet per foot of depth from grade to top of the footing in enough water (at least 2 gallons but not more than 8 gallons) to ensure complete coverage.

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

Hollow block voids may be treated to make a complete chemical barrier. Apply at a 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

Following Treatment: Plug all holes in commonly occupied areas into which UP-Star Gold Insecticide has been applied. Plugs must be composed of a non-cellulose material, or covered by an impervious, non-cellulose material.

For treatment after construction, use a 0.06% emulsion. Such soil applications shall be made by injection, trenching and rodding into the trench, or trenching or coarse fan spray with pressures not greater than 25 p.s.i. at the nozzle. Avoid soil wash-out around the footing.

Do not apply emulsion until the location of wells, radiant heat pipes, heat or air conditioning ducts, vents, water and sewer lines and electrical conduits are known and identified. Take care to avoid contamination of these elements and airways.

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

Slabs

Vertical barriers can be established by sub-slab injection within the structure and trenching and rodding into the trench, or trenching outside at the rate of 4 gallons of emulsion per 10 linear feet per foot of depth. It is important to distribute the treatment evenly. Do not treat below the bottom of the footings.

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

- Holes should be drilled in the slab and/or foundation to create a continuous insecticidal barrier.
- When foundation is less than 1 foot, dig a narrow trench about 6 inches wide along the outside of the foundation walls. The trench should not extend below the bottom of the footing. Apply the emulsion to the trench and the soil at a rate of 4 gallons of emulsion per 10 linear feet per foot of depth as the soil is put back into the trench.
- If foundation is deeper than 1 foot, follow rates for basements.
- Treat exposed soil and wood in bath traps with a 0.06% emulsion.

Basements

Apply at a rate of 4 gallons of emulsion per 10 linear feet per foot of depth. Where the footing is more than 1 foot of depth from grade to the bottom of the foundation, apply by trenching and rodding into the trench, or trenching. When the footer is more than four feet below grade, the applicator must trench and rod into the trench, or trench along foundation walls at the directed rate for four feet of depth. Rod holes should be spaced no more than 12 inches apart. The depth of treatment must take into account soil type, degree of compaction, and location of termite activity. Treatment should never be lower than the footer. Sub-slab injection may be necessary along the inside of foundation walls, along cracks and partition walls, around pipes, conduits, piers, and along both sides of interior footing-supported walls.

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

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

1. To establish a horizontal barrier, apply to the soil surface, 1 gallon of 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 system of the structure until application has been completed and all termiticide has been absorbed by the soil.

Masonry Voids: Drill and treat voids in multiple masonry elements of the structure extending from the structure to the soil in order to create a continuous treatment barrier in the area to be treated. Apply at the rate of 2 gallons of 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 do not to drill beyond the veneer. If concrete blocks are behind the veneer, both the blocks and the veneer may be drilled and treated at the same time.

Not for use in voids insulated with rigid foam insulation.

Excavation Technique: Follow the procedure below if treatment must be made in difficult situations such as along fieldstone or rubble walls, along faulty foundation walls, and around pipes and utility lines which lead downward from the structure to a well or pond:

1. Trench and remove soil to be treated onto impervious surface such as heavy plastic sheeting or similar material.
2. Treat the soil at the rate of 4 gallons of emulsion per 10 linear feet per foot of depth of the trench. Mix the emulsion thoroughly into the soil and do not allow liquid to run off the liner.
3. After the treated soil has absorbed the liquid emulsion, place the soil back in the trench.

Attention: When application of UP-Star Gold Insecticide is made in a confined area, the user should wear unvented goggles and a MSHA/NIOSH approved respirator during application.

Foam Applications

Rate: use a 0.06 to 0.12% emulsion converted to a foam with expansion characteristics from 2 to 40 times.

Localized Application

Foam Applications: The emulsion may be converted to a foam and the foam used to control or prevent termite infestations.

Depending on the circumstances, foam applications may be used alone or in combination with liquid 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

Application may be made using either UP-Star Gold Insecticide foam alone or in combination with liquid emulsion. Apply the equivalent of at least 4 gallons (4 ounces of UP-Star Gold Insecticide concentrate) of 0.06% emulsion/10 linear feet (vertical barrier), or at least 1 gallon (1 ounce of UP-Star Gold Insecticide concentrate) of 0.06% emulsion/10 square feet (horizontal barrier) either as emulsion, foam, or a combination. For a foam only application, apply UP-Star Gold Insecticide concentrate in sufficient foam concentration and foam volume to deposit 4 ounces of concentrate/10 linear feet or 1 ounce of concentrate per 10 square feet. For example, 2 gallons of 0.12% emulsion generated as foam to cover 10 linear feet is the same as the application of 4 gallons of 0.06% emulsion/10 linear feet.

Sand Barrier Installation and Treatment

Termites are capable of building mud tubes over treated surfaces if they have access to untreated soil and do not have to move treated soil. Cracks and spaces should be filled in with builder's or play box sand and the sand treated with UP-Star Gold Insecticide. The sand should be treated according to the soil instructions, following the termiticide rate.

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.

IMPREGNATION AND APPLICATION OF UP-STAR GOLD INSECTICIDE ON DRY BULK LAWN FERTILIZERS

UP-Star Gold Insecticide may be impregnated on dry bulk fertilizers. When applied as directed, UP-Star Gold Insecticide/dry bulk fertilizer mixtures provide insect control equal to that provided by the same rates of UP-Star Gold Insecticide applied in water.

Impregnation: Apply using a minimum 2.3 pounds of dry bulk fertilizer per 1,000 square ft. with the recommended amount of UP-Star Gold Insecticide per 1,000 square ft. Use a closed rotary-drum mixer or a similar type of closed blender equipped with suitable spray equipment. The spray nozzle(s) should be positioned to provide a uniform, fine spray pattern over the

tumbling fertilizer for thorough coverage. The physical properties of fertilizers vary, particularly in liquid absorptive capacity. When absorptivity is sufficient, simple spray impregnation of the fertilizer with UP-Star Gold Insecticide provides a satisfactory dry mixture. If the absorptive capacity is inadequate, use of a highly absorptive powder is required to provide a dry, flowable mixture. Microcel E (Johns-Manville Products Corporation) is a recommended absorbent powder. Generally less than 2% by weight of Microcel E is required. **DO NOT** impregnate UP-Star Gold Insecticide onto straight coated ammonium nitrate or straight limestone because these materials will not absorb the insecticide. Dry fertilizer blends containing mixtures of ammonium nitrate or limestone may be impregnated with UP-Star Gold Insecticide.

The amount of UP-Star Gold Insecticide actually required in the preparation of individual fertilizer mixtures should be determined carefully for each production operation. This is necessary to ensure that the amount of pesticide actually contained in the mixture applied to the soil represents the correct rate of use. Bulk fertilizer impregnated with UP-Star Gold Insecticide should be applied immediately, not stored.

All individual Federal and State regulations relating to bulk dry fertilizer blending, registration, labeling, and application of the mixtures are the responsibility of the individual and/or company selling the fertilizer and UP-Star Gold Insecticide mixture.

Fertilizer for this use should be Turf fertilizers recommended for specific regions.

INDOOR USE

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

PESTS CONTROLLED	RATE	REMARKS
Ants Bees Beetles Boxelder Bugs Centipedes Cockroaches Crickets Earwigs Firebrats Flies Millipedes Pillbugs Scorpions Silverfish Sowbugs Spiders Ticks Wasps	0.02 – 0.06% suspension (0.33 – 1 fl. oz./gallon water)	For residual control of the listed pests in buildings, structures, and on modes of transport, apply as a crack and crevice, pinstream, spot, coarse, low pressure spray (25 p.s.i. or less), or with a paint brush. Do not use as a space spray, or as a broadcast application to interior surfaces of homes. Apply to areas where pests hide, paying special attention to cracks and crevices. Apply to baseboards, corners, storage areas, closets, around water pipes, doors and windows, in attics and eaves, behind and under refrigerators, cabinets, sinks, furnaces, stoves, under shelves, drawers and similar areas. Cockroaches, Crickets, Firebrats, Scorpions, Silverfish, Spiders, and Ticks: Apply as a coarse, low pressure spray to areas where these pests hide. Ants: Apply to trails, around doors and windows and other places where ants may be found. Bees and Wasps: Apply to nests late in the evening when insects are at rest. Thoroughly spray nest as well as its entrance and surrounding areas where insects alight. Boxelder Bugs, Centipedes, Earwigs, Beetles, Millipedes, Pillbugs, and Sowbugs: Apply around doors and windows and other places where these pests may be found or where they may enter premises. Also spray baseboards and storage areas.

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

Dilute UP-Star Gold Insecticide with water for spray or brush application. First fill the sprayer with the desired volume of water and then add UP-Star Gold Insecticide. Before spraying, close and shake sprayer to insure proper mixing. Prepare only the amount of solution needed for the application. If pest pressure is high, the area may need to be retreated to ensure and/or maintain control. Reapply only if there are signs of renewed insect activity, and do not reapply more than once a week (7 days).

Food/Feed Handling Establishments:

Applications of UP-Star Gold Insecticide are permitted in food/feed and non-food/feed areas of food/feed handling establishments as a general surface, spot treatment, or crack and crevice treatment.

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

Permitted nonfood/feed areas are areas such as garbage rooms, lavatories, floor drains (to sewers), entries and vestibules, offices, locker rooms, machine rooms, garages, mop closets and storage (after canning or bottling). All areas where insects hide or through which insects may enter should be treated.

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

General Surface Application:

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

Spot, Crack and Crevice Application:

Spot or crack and crevice applications may be made while the facility is in operation; however, food must be covered or removed from the area being treated. Do not apply directly to food.

Foam Applications

UP-Star Gold Insecticide may be converted to foam and the foam used to treat structural voids to control or prevent pest infestations. Dilute 0.33 to 1.0 fluid oz. of UP-Star Gold Insecticide per gallon of water and add the manufacturers recommended amount of foaming agent to produce a 0.02 to 0.06% foam concentration. Before treatment, be sure that the foaming agent is compatible with UP-Star Gold Insecticide.

TERMITE CONTROL (ABOVE GROUND ONLY)

The applications below are not intended as substitutes for mechanical alteration, soil treatment or foundation treatment.

To control exposed workers and winged reproductive termites in specific areas of infested wood, dilute 1.0 fluid oz. of UP-Star Gold Insecticide per gallon of water. Apply as a coarse fan spray at the rate of one gallon per 1,000 square feet to attics, crawl spaces, unfinished basements and other void areas where wood is vulnerable. Treat swarming termites as well as the areas in which they congregate.

To control above-ground termites in localized areas of infested wood, dilute 1.0 fluid oz. of UP-Star Gold Insecticide per gallon of water. Apply as a liquid or as a foam to voids and galleries in damaged wood and to spaces between wooden structural members and between the sill plate and foundation where wood is vulnerable. To apply to inaccessible areas, drill then inject the dilution or foam with a suitable directional injector, into damaged wood or wall voids. After treatment all holes which have been drilled in construction elements in occupied areas of structures should be securely plugged.

To control termite carton nests in building voids, dilute 1.0 fluid oz. of UP-Star Gold Insecticide per gallon of water and inject it as a liquid or foam using a pointed injection tool. Multiple injection points and varying depths of injection may be necessary. When possible, remove the carton nest material from the building void following treatment.

ANT CONTROL

PEST LOCATION	RATE	REMARKS
Nuisance Ants Indoors	Dilute 0.5 – 1.0 fl. oz. in one gallon of water	Locate and treat ant nests where possible. Apply as a crack and crevice, pin-stream, spot, coarse, low pressure spray (25 psi or less) or with a paint brush. Do not use as a space spray, or as a broadcast application to interior surfaces of homes. Apply where ants have been seen or would be expected to look for food. Areas to consider include: baseboards, in and behind cabinets, under and behind appliances, around pipes, cracks and crevices and in corners. Be sure to treat entry points such as around doors and windows. When using with baits, apply UP-Star Gold Insecticide as indicated above, and use baits in untreated areas.
Carpenter Ants Indoors	0.5 – 1.0 fl. oz. in one gallon of water	Apply where ants have been seen or would be expected to look for food. Areas to consider include: baseboards, in and behind cabinets, under and behind appliances, around pipes, cracks and crevices and in corners. Be sure to treat entry points such as around doors and windows. Apply as a spray or foam into cracks and crevices, or drill holes and apply as spray, mist, or foam into areas where carpenter ants or their nests are present. Do not use as a space spray, or as a broadcast application to interior surfaces of homes. When using with baits, apply UP-Star Gold Insecticide as indicated above, and use baits in untreated areas.
Nuisance Ants Outdoors Carpenter Ants Outdoors		Locate and treat ant nests where possible. Apply where ants have been seen or would be expected to look for food. Apply to the perimeter using the applications described in the “Pest Control on Outside Surfaces and Around Buildings” instructions. Higher dilutions and/or volumes may be required when treating concrete surfaces.
Non-porous surfaces	0.5 – 1.0 fl. oz. in one gallon of water Apply one gallon per 1,000 square feet	Low volume application.
Porous surfaces and vegetation	0.5 – 1.0 fl. oz. per 1,000 square feet	High volume application. Refer to Ornamental and Perimeter Application Dilution Chart.
Maximum residual control	0.5 – 1.0 fl. oz. in one gallon of water Apply up to 10 gallons per 1,000 square feet	
Tree trunks	0.5 – 1.0 fl. oz. in one gallon of water	Apply this dilution to tree trunks which have carpenter ant trails, or where carpenter ants are looking for food. Be sure to completely wet the bark from the ground to as high as possible on the trunk.
Carpenter Ants in wood	1.0 fl. oz. in one gallon of water	For control of carpenter ants in trees, utility poles, fencing or deck materials, drill to find the infested cavity. Inject or foam the recommended rate into the cavity. Use sufficient volume and a tool with a splash back guard.
Carpenter Ants in soil	0.5 – 1.0 fl. oz. in one gallon of water	For control of carpenter ants tunneling in soil, apply as a drench. The dilution or foam can also be injected every 8 to 12 inches. It is important to create a vertical barrier especially at the edges of walls, driveways, or other surfaces beneath which the ants may be tunneling.
Carpenter Ants in wood piles and stored lumber	0.5 – 1.0 fl. oz. in one gallon of water	Deliver a coarse drenching spray with a hose-end sprayer or sprinkling can. Do not use wood for lumber or burn it until one month after treatment. Do not use wood for structures.
Carpenter Ants in firewood	1.0 fl. oz. in one gallon of water	Apply the dilution to the soil where the firewood will be stacked at the rate of one gallon per 8 square feet. DO NOT treat the firewood directly.

PEST CONTROL SPECIALTY APPLICATIONS

Underground Services (including cables, conduits, pipes, utility lines, wires, etc.) which are found on the outside of structures, in right-of-way areas, or in long range installation of these services. Soil treatments to control Termites and Ants: Apply using a 0.06 to 0.12% UP-Star Gold Insecticide emulsion. Apply 2 gallons of emulsion per 10 linear feet to the bottom of the trench. Allow emulsion to soak into the soil, lay the services on top of the treated soil and then fill the trench with soil. To complete the barrier treatment, make another application of 2 gallons per 10 linear feet over the top of the soil surface. For best control, in wide trenches, only treat the soil around the services.

For non-porous soils, adjust the volume to 1 gallon of 0.12% UP-Star Gold Insecticide per 10 linear feet of trench. Treat both to the bottom of the open trench and the soil placed over the top of the services.

Treat the soil at the point where the service sticks out of the ground by trenching/rodding. Do not use more than 1 to 2 gallons of emulsion.

Precautions: Electrically active underground services must not be treated.

Posts, Poles, and Other Constructions

To control insect damage to wooden constructions such as signs, fences and landscape ornamentation, apply a 0.06% emulsion. Treat on all sides to create an insecticidal barrier in the soil around the wooden construction.

For poles and posts previously installed, use a sub-surface injection or apply the emulsion by gravity-flow to the soil around all sides of the pole or post. If poles and posts are less than a half-foot in diameter, apply 1 gallon of emulsion per foot of depth. If poles are larger than a half-foot in diameter, apply 1.5 gallons of emulsion per foot of depth. Make sure that the emulsion reaches a depth of 6 inches below the bottom of the wood. If treatment of larger constructions is desired, use an application rate of 4 gallons per 10 linear feet per foot of depth.

Wood-in-Place: UP-Star Gold controls the following insects in infested wood in and around structures: Ants, Carpenter Ants, wood-infesting beetles (such as Old House Borer and Powder Post), and Termites. Apply by painting on, spot spraying or fan spraying a 0.06% emulsion of UP-Star Gold to voids and galleries in damaged wood, and in spaces between wooden members of a structure, and between wood and foundations where wood is exposed. Place plastic sheeting immediately below overhead areas that are treated; no sheeting is required when treating the surface of soils in crawl spaces. Areas that are not easily accessed can be treated by drilling, and then injecting the emulsion using a crack and crevice injector into the damaged wood or void spaces. Use this method of application in addition to soil treatment or other methods to control extensive infestation of wood-infesting insects.

Termite carton nests in trees or building voids: Carton nest material in building voids should be removed before treatment. Apply directly to the nests using a pointed injection tool with 0.06% emulsion. It may be necessary to inject the nest at different points and depths for complete control.

Bees, Wasps, Hornets, and Yellow Jackets Indoor Treatment

Apply a 0.06% emulsion of UP-Star Gold. For best results, apply in the late evening when pests are at rest. Ensure that sprays contact the pests and reach areas where pests breed such as under rafters in attics. Make a second application if pest pressure is high or if insects reappear.

Important: Before application of UP-Star Gold, locate all heat pipes, ducts, water and sewer lines and electrical conduits so that they can be avoided during application to prevent damage. Applications must not be made directly into electrical fixtures, sockets, or switches.

Cover all home food processing surfaces and utensils during treatment or wash them thoroughly prior to using again. Do not treat unless all birds and pets are removed prior to treatment. Aquariums must be covered before spraying. Do not permit humans or pets to contact treated surfaces until the spray has dried.

When treating poorly ventilated or overhead areas, wear unvented goggles, gloves and a respirator. 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. Non-food/feed areas of food/feed handling establishments are areas such as garbage rooms, lavatories, floor drains (to sewers) entries and vestibules, offices, locker rooms, machine rooms, boiler rooms, garages, mop closets and storage (after bottling or canning).

Outside of Structures

UP-Star Gold can be used around wood to control wood-infesting insects and other pests. Make applications with a 0.6% emulsion with a fan spray at a maximum of 25 p.s.i. to run-off.

If pests are found inside fence posts, trees or utility poles, locate the area of infestation by drilling. Inject a 0.6% emulsion. For treating bees, hornets, wasps, and yellow jackets, direct contact works best; apply in the late evening when pests are at rest. For best results, apply a saturated spray solution directly into the nest in the ground or in bushes, or in crack and crevice areas.

Pests Under Slabs

To control Ants, Cockroaches and Scorpions which live under slab areas, drill and inject 0.06% to 0.12% emulsion per 10 square feet or 2 gallons of emulsion per 10 linear feet. One gallon of emulsion should be used. Application may also be made by horizontal rodding and then injection of 1 gallon of this emulsion.

How to Calculate the Active Ingredient Content of the Finished Spray Mixture

Use the following equation to calculate the percent active ingredient that is in the spray tank after mixing UP-Star Gold Insecticide:

$$\frac{(7.9) \times (\text{Fl. Oz. of UP-Star Gold Insecticide added to tank})}{(\text{Gallons of finished spray mix}) \times (128)} = \frac{\text{Percent Active Ingredient of spray mix}}{\text{Percent Active Ingredient of spray mix}}$$

LAWN AND ORNAMENTALS

GENERAL APPLICATION INSTRUCTIONS

UP-Star Gold Insecticide may be applied in the following areas to control a wide spectrum of insects and mites:

Interiorscapes (such as hotels, shopping malls, office buildings)
Outdoor landscapes (such as around residential dwellings, ornamental gardens, parks, institutional buildings, recreational areas, athletic fields and home lawns)

UP-Star Gold Insecticide may be applied to the following plants:

Trees, Shrubs, Foliage plants, Non-bearing fruit and nut trees (that is, perennial crops that will not produce a harvestable raw agricultural commodity during the season of application), Flowers
UP-Star Gold Insecticide formulation mixes readily with water and other aqueous carriers. Use UP-Star Gold as a tank-mix with other pesticides, including insect growth regulators. If applying as a tank mix, all precautions and limitations on each separate product label must be followed.

Tank Mix Compatibility Testing: A jar test is recommended prior to tank mixing to ensure compatibility of UP-Star Gold and other products. Use a clear glass quart jar with lid and mix the

tank mix ingredients in their relative proportions. Always use water from the intended source. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. Evaluate the solution for uniformity and stability. If the mixture balls-up, forms flakes, sludges, gels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Tank Mix Preparation: To prepare a new tank mix, add the products listed to the tank mix in the order given. After addition of each product, agitate the tank mix before adding the next product: (1) wettable powders; (2) liquids and flowable concentrates; (3) emulsifiable concentrates.

UP-Star Gold is an insecticide. Any insect/mite population may contain individual insects that may develop resistance to a specific pesticide product used in consecutive generations to control these pests. Prediction of resistance development is uncertain. Appropriate resistance management strategies should be followed. Contact your local extension specialist or certified crop advisors for any additional pesticide resistance management and/or Integrated Pest Management recommendations for the specific site and pest problems in your area.

How to Calculate the Active Ingredient Content of the Finished Spray Mixture

Use the following equation to calculate the percent active ingredient that is in the spray tank after mixing UP-Star Gold Insecticide:

$$\frac{(7.9) \times (\text{Fl. Oz. of UP-Star Gold Insecticide added to tank})}{(\text{Gallons of finished spray mix}) \times (128)} = \text{Percent Active Ingredient of spray mix}$$

In the State of New York, for application uses outdoors on ornamentals and lawns in landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas and athletic fields:

The Following Precautionary Measures Must be Obeyed.

A 100 foot buffer must be maintained between the application site and waters of the State. A 100 foot buffer is required for all waters except those entirely privately owned with no outlet to State waters. The buffer must consist of well maintained, established vegetation (i.e. grass, etc.) growth and must be maintained to prevent the development of channels.

In New York State, do make a single repeat application of this product if there are signs of renewed insect activity, but no sooner than two weeks after the first application.

LAWNS: Apply UP-Star Gold Insecticide as a broadcast treatment in volumes of up to 10 gallons per 1,000 square feet for uniform coverage of grass foliage.

If applications are made in spray volumes of less than 2 gallons per 1,000 square feet, immediately irrigate the treated area with at least 0.25 inches of water to ensure the product reaches pests below the grass.

LAWN APPLICATION RATES

Follow the application rates in the table below. Under typical conditions, excellent control of these pests can be achieved. If maximum residual control is needed, the applicator may apply UP-Star Gold at up to 1.0 fl. oz. per 1,000 sq. ft. to control these pests.

DIRECTIONS FOR USE OF UP-STAR GOLD ON LAWNS

PESTS CONTROLLED	APPLICATION RATE OF UP-STAR GOLD INSECTICIDE, FL. OZ. PER 1,000 SQ. FT.	SPECIFIC APPLICATION INSTRUCTIONS
Armyworms Cutworms Sod Webworm	0.18 – 0.25	Optimum control is achieved if irrigation and mowing is delayed until one day after application.
	1.0	Use the higher application rates if the grass is greater than 1 inch high and under conditions of severe pest pressure.
Annual Bluegrass Weevil (Hyperodes) (Adult)	0.25 – 0.5	Time applications so that adult weevils are controlled as they leave their overwintering sites. Movement of adult weevils into grass areas starts when <i>Forsythia</i> is blooming and usually ends when flowering dogwood (<i>Cornus florida</i>) is blooming. Consult your State Cooperative Extension Service for more specific information regarding application timing.
Banks Grass Mite Mites	0.25 – 0.5	Optimum control of eriophyid mites is achieved when UP-Star Gold is applied with the labeled application rate of a surfactant. One repeat application (5-7 days after the first application) may be needed for acceptable control.
Billbugs (Adult)	0.25 – 0.5	Make applications when pests first appear (April and May). Use degree day models for determining optimum application timing. Consult your State Cooperative Extension Service for information specific to your region. Control of over-wintered chinch bugs is achieved by application in the spring (temperate regions only).
Black Turfgrass Ataenius (Adult)	0.25 – 0.5	Control of 1 st and 2 nd generation adults are achieved by timing applications to be made in May and July, respectively. Optimum control is obtained if the application in May occurs when Vanhoutte spiraea (<i>Spiraea vanhouttei</i>) and horse chestnut (<i>Aesculus hippocastanum</i>) are in full bloom. Optimum control is obtained when the July application occurs when Rose of Sharon (<i>Hibiscus syriacus</i>) is in full bloom.

(continued)

DIRECTIONS FOR USE OF UP-STAR GOLD ON LAWNS

PESTS CONTROLLED	APPLICATION RATE OF UP-STAR GOLD INSECTICIDE, FL. OZ. PER 1,000 SQ. FT.	SPECIFIC APPLICATION INSTRUCTIONS
Centipedes Crickets Earwigs Fleas (Adult) Grasshoppers Leafhoppers Mealybugs Millipedes Pillbugs Sowbugs	0.25 – 0.5	
Chinch Bugs	0.25 – 0.5	Optimal control occurs if the grass is irrigated before treatment so that UP-Star Gold can move to the base of the grass plant and thatch area where chinch bugs are found. When the thatch layer is thick or grass height maintained at a high level, a higher volume application may be made.
	1.0	In mid-summer, chinch bugs, especially if nymphs and adults are present, become more difficult to control and this higher rate should be use.
Ants Japanese Beetle (Adult) Fleas (Larvae)	0.5 – 1.0	Use a higher volume application when treating areas where flea larvae develop such as in the soil in shaded areas. When the grass is treated with UP-Star Gold Insecticide at the 0.25 fluid oz. per 1,000 square feet rate to control adult fleas, larvae can be controlled by increasing the application volume by two- to four-fold.
Imported Fire Ants	Broadcast application: 1.0	Optimal control is achieved using a combination of broadcast application and mound drenches in the morning or evening when the temperature is between 65 and 80 °F.
	Mound application: 1 teaspoon per 1 gallon of water	Irrigate prior to application if the soil is dry, or a higher volume application can be used. Apply 1 to 2 gal. of finished spray to each mound area by sprinkling the mound until it is wet. Treat a four foot diameter circle around the mound. For spray rig applications that are calibrated to apply 1 fluid oz. per 1,000 square feet of UP-Star Gold Insecticide in 5 gallons per 1,000 square feet, the spray tank contains the approximate dilution (equivalent to 1 teaspoon per gallon) required for fire ant mound drenches.
Mole Cricket (Adult)	0.5 – 1.0	Make applications in the early spring late in the day and water-in UP-Star Gold with up to 0.5 inches of water immediately after treatment. Irrigation prior to application when soil is dry may also achieve better control to enable contact of the mole crickets with UP-Star Gold. If adult mole crickets are detected, treat the grass areas at peak egg hatch to ensure optimum control of subsequent nymph populations (see next section below).
Mole Cricket (Nymph)	0.5 – 1.0	Treat grass areas which are heavily infested with adult mole cricket in the spring, just prior to peak egg hatch. Higher application rates and more frequent applications may be needed to control larger nymphs or to achieve acceptable control. Make applications late in the day and water-in UP-Star Gold with up to 0.5 inches of water immediately after treatment. Irrigation prior to application when soil is dry may also achieve better control to enable contact of the mole crickets with UP-Star Gold.
Ticks (including Deer Tick and Western Black-legged tick which may carry Lyme Disease and Rocky Mountain Spotted Fever)	0.5 – 1.0	Spot applications should not be made: treat the entire area where ticks may be found. When ground cover is dense and leaf litter heavy, a higher spray volume application may be used. A repeat application once every 7 days may be required. Deer ticks (<i>Ixodes sp.</i>): Make applications in late fall and/or early spring. Controls adult ticks which are often found on brush or grass. Controls larvae and nymphs and in mid to late spring which are found in the soil on leaf litter. American dog ticks: Apply as needed from mid-spring to early fall. Controls tick larvae, nymphs and adults in and around paved or unpaved paths or roads.

UP-STAR GOLD INSECTICIDE LAWN DILUTION CHART

Application Volume Gallons Per 1,000 Sq. Ft.	Fluid Ounces* of UP-Star Gold Insecticide Diluted to 100 gallons			
	0.18 fl. oz./1,000 sq. ft.	0.25 fl. oz./1,000 sq. ft.	0.5 fl. oz./1,000 sq. ft.	1.0 fl. oz./1,000 sq. ft.
1.0	18	25	50	100
2.0	9.0	12.5	25.0	50.0
3.0	6.0	8.3	16.7	33.3
4.0	4.5	6.3	12.5	25.0
5.0	3.6	5.0	10.0	20.0
10.0	1.8	2.5	5.0	10.0
	Fluid Ounces* of UP-Star Gold Insecticide Diluted to 10 gallons			
1.0	1.8	2.5	5.0	10.0
2.0	0.9	1.25	2.5	5.0
3.0	0.60	0.83	1.67	3.33
4.0	0.45	0.63	1.25	2.5
5.0	0.36	0.5	1.0	2.0
10.0	0.18	0.25	0.5	1.0
	Fluid Ounces* of UP-Star Gold Insecticide Diluted to 5 gallons			
1.0	0.9	1.25	2.5	5.0
2.0	0.45	0.63	1.25	2.5
3.0	0.30	0.42	0.83	1.67
4.0	0.23	0.31	0.63	1.25
5.0	0.18	0.25	0.5	1.0
10.0	--	0.13	0.25	0.5
	Fluid Ounces* of UP-Star Gold Insecticide Diluted to 1 gallon			
1.0	0.18	0.25	0.5	1.0
2.0	--	0.13	0.25	0.5
3.0	--	--	0.17	0.33
4.0	--	--	0.13	0.25
5.0	--	--	0.1	0.2
10.0	--	--	--	0.1

*To convert fluid ounces to milliliters, multiply by 29.57.

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

Do not use household utensils to measure UP-Star Gold Insecticide.

ORNAMENTALS AND TREES

UP-Star Gold can be applied to ornamental such as trees, shrubs, ground covers, bedding plants, and foliage plants. Apply 0.125 to 1.0 fluid oz. of UP-Star Gold Insecticide per 1,000 square feet or 5.4 to 43.5 fl. oz. per 100 gallons. Dilute UP-Star Gold Insecticide as needed and apply in different volumes of water to give the maximum use rate of 1.0 fluid oz. per 1,000 square feet or 43.5 fl. oz. per 100 gallons. Do not exceed the maximum label use rate. Use low volume application equipment. Dilute with water or other carriers. Typical application volumes for landscape ornamentals are 300 gallons per acre.

A full coverage foliar spray application can be followed by retreatments as needed. Higher rates may be needed for adequate pest control or as the foliage increase. Do not apply more often than once every seven days.

Before treating large numbers of plantings, spray only a few plants and observe one week for varietal phytotoxicity. To prevent or delay pest resistance, alternate treatments with different classes of chemistry.

UP-STAR GOLD INSECTICIDE ORNAMENTAL DILUTION CHART

Application Volume Gallons Per 1,000 Sq. Ft.	Application Rate: Gallons per Acre	Fluid Ounces* of UP-Star Gold Insecticide Diluted to 100 gallons			
		0.125 fl. oz./ 1,000 sq. ft.	0.25 fl. oz./ 1,000 sq. ft.	0.5 fl. oz./ 1,000 sq. ft.	1.0 fl. oz./ 1,000 sq. ft.
2.3	100	5.4	10.8	21.7	43.5
4.6	200	2.7	5.4	10.9	21.7
6.9	300	1.8	3.6	7.2	14.5
Fluid Ounces* of UP-Star Gold Insecticide Diluted to 10 gallons					
2.3	100	0.54	1.08	2.17	4.35
4.6	200	0.27	0.54	1.09	2.17
6.9	300	0.18	0.36	0.72	1.45
Fluid Ounces* of UP-Star Gold Insecticide Diluted to 5 gallons					
2.3	100	0.27	0.54	1.09	2.17
4.6	200	0.14	0.27	0.54	1.09
6.9	300	--	0.18	0.36	0.72
Fluid Ounces* of UP-Star Gold Insecticide Diluted to 1 gallon					
2.3	100	--	0.11	0.22	0.44
4.6	200	--	--	0.11	0.22
6.9	300	--	--	--	0.15

*To convert fluid ounces to milliliters, multiply by 29.57.

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

Do not use household utensils to measure UP-Star Gold Insecticide.

How to Determine the Dilution Rates using the Ornamental Application Rates Table and the UP-Star Gold Insecticide Ornamental Dilution Chart

- Determine the pest which is most difficult to control.
- Find the fl. oz. of UP-Star Gold Insecticide application rate from one of the tables.
- Determine the application volume and amount of spray mix needed.
- Refer to the Ornamental Dilution Chart to find the appropriate volume of UP-Star Gold Insecticide to be mixed in the desired volume of water.

In the State of New York, for application uses outdoors on ornamentals and lawns in landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas and athletic fields:

The Following Precautionary Measures Must be Obeyed.

A 100 foot buffer must be maintained between the application site and waters of the State. A 100 foot buffer is required for all waters except those entirely privately owned with no outlet to State waters. The buffer must consist of well maintained, established vegetation (i.e. grass, etc.) growth and must be maintained to prevent the development of channels.

In New York State, do make a single repeat application of this product if there are signs of renewed insect activity, but no sooner than two weeks after the first application.

ORNAMENTAL APPLICATION RATES

Consult the following table for the application rates to control the listed pests under typical conditions. The applicator has the option of applying UP-Star Gold Insecticide at up to 1 fluid oz. per 1,000 square feet (43.5 fl. oz. per 100 gallons) to control each of the pests listed in this Table under conditions where maximum residual control is desired.

DIRECTIONS FOR USE OF UP-STAR GOLD ON ORNAMENTALS

PESTS CONTROLLED	APPLICATION RATE OF UP-STAR GOLD INSECTICIDE		SPECIFIC APPLICATION INSTRUCTIONS
	FL. OZ. PER 1,000 SQ. FT.	FL. OZ. PER 100 GAL.	
Bagworms	0.125 – 0.25	5.4 – 10.8	For optimum control, applications should be made directly onto the larvae as the larvae begin to hatch.
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 Black Vine Weevil (Adults) Brown Soft Scales Broad Mites Budworms Centipedes Cicadas Citrus Thrips Clover Mites Crickets Diaprepes (Adults) Earwigs European Red Mite Flea Beetles Fungus Gnats (Adults) Grasshoppers Japanese Beetle (Adults) Leafhoppers Leafrollers Mealybugs Millipedes Mites Mosquitoes Orchid Weevil Pillbugs Plant Bugs (including <i>Lygus</i> spp.) Psyllids Scorpions Sowbugs Spider Mites Spiders Spittlebugs Thrips Tip Moths Treehoppers Wasps Whiteflies	0.25 – 0.5	10.8 – 21.7	

(continued)

DIRECTIONS FOR USE OF UP-STAR GOLD ON ORNAMENTALS

PESTS CONTROLLED	APPLICATION RATE OF UP-STAR GOLD INSECTICIDE		SPECIFIC APPLICATION INSTRUCTIONS
	FL. OZ. PER 1,000 SQ. FT.	FL. OZ. PER 100 GAL.	
Beetles California Red Scale (Crawlers) San Jose Scales (Crawlers) Pine Needle Scales (Crawlers) Twig Borers Weevils	0.25 – 0.5	10.8 – 21.7	Direct sprays to foliage of plants and to tree trunks, stems and twigs.
Imported Fire Ants** Leafminers Pecan Leaf Scorch Mite Pine Shoot Beetle (Adults)	0.5 – 1.0	21.7 – 43.5	**For foraging ants.
Spider Mites			For optimal control, apply during spring through mid-summer. For control during mid- to late-summer, it may be necessary to use higher rates and/or more frequent applications. Increased control may be achieved with the addition of a surfactant or horticultural oil. Tank-mixes with other registered mite control products may increase the effectiveness of UP-Star Gold. Rotate the use of UP-Star Gold Insecticide with other insecticides with different modes of action. Consult your local Cooperative Extension Service for resistance management recommendations in your region.

PEST CONTROL ON OUTSIDE SURFACES AND AROUND BUILDINGS

UP-Star Gold may be applied to the following sites:

Eaves

Exterior siding

Foundations

Garages

Lawns such as grass areas adjacent or around private homes, duplexes, townhouses, condominiums, house trailers, apartment complexes, carports, garages, fence lines, storage sheds, barns, and other residential and Non-commercial structures

Outside surfaces of buildings

Other areas where pests are present

Patios

Porches

Refuse dumps

Soil

Trunks of woody ornamentals

Window frames

For the desired application rate, use the chart below to determine the amount of UP-Star Gold for 1 gallon of finished emulsion.

UP-STAR GOLD INSECTICIDE OUTSIDE SURFACES APPLICATION DILUTION CHART

Concentration of Active Ingredient	Dilution Rate
0.02%	0.33 fl. oz. per 1 gal. water
0.06%	1.0 fl. oz. per 1 gal. water

Follow the application instructions in the table below to control of target pests.

UP-STAR GOLD INSECTICIDE OUTSIDE SURFACES APPLICATION INSTRUCTIONS

PESTS CONTROLLED	SPECIFIC APPLICATION INSTRUCTIONS
Ants Carpenter Ants 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 Grasshoppers Hornets Japanese Beetles† Millipedes Moths Roaches (including Cockroaches) Scorpions Silverfish Sod Webworms Sowbugs (Pillbugs) Spiders (including Black Widow Spiders) Springtails Ticks (including Brown Dog Ticks) Wasps † Not for use in California	Use a 0.02 to 0.06% emulsion as a residual spray in a spray volume of up to 10 gallons of emulsion per 1,000 square feet. For thorough coverage of plants with dense foliage, use the higher application volume. The higher rate should be used for heavy pest infestation, quicker knockdown or longer residual control. Repeat applications at no more than once every seven days under severe insect infestation or if insects return. Barrier treatment: To prevent infestation of buildings, apply to a band of soil and vegetation 6 to 10 feet wide around and adjacent to the building. Apply from the base of the foundation to 2 to 3 feet above the foundation. Use dilutions of 0.33 to 1.0 fluid oz. of UP-Star Gold Insecticide per 1,000 square feet in sufficient water to provide adequate coverage (refer to Perimeter Application Dilution Chart).

(continued)

UP-STAR GOLD INSECTICIDE OUTSIDE SURFACES APPLICATION INSTRUCTIONS

PESTS CONTROLLED	SPECIFIC APPLICATION INSTRUCTIONS
Ants and Fire Ant Mounds	Use UP-Star Gold Insecticide at a dilution of 0.06% emulsion. Apply using the Drench Method by applying 1 to 2 gal. of finished spray to each mound area by sprinkling the mound until it is wet. Treat a four foot diameter circle around the mound. If the mound diameter is greater than one foot, use the higher volume. Optimum results are achieved if applications are made during cool hours of the day.
Mosquitoes	Use a dilution rate of 0.33 to 1.0 fluid oz. of UP-Star Gold Insecticide per gallon of water. Apply one gallon of emulsion per 1,000 square feet to treat around landscapes, lawn and buildings. If applications at higher volume are required, UP-Star Gold Insecticide may be diluted at lower concentrations and applied at greater volumes to deliver the desired amount of product per area (refer to the Ornamental or Perimeter Application Dilution Charts).

UP-STAR GOLD INSECTICIDE PERIMETER APPLICATION DILUTION CHART

Application Volume Gallons Per 1,000 Sq. Ft.	Fluid Ounces* of UP-Star Gold Insecticide Diluted to 100 gallons				
	0.33 fl. oz./ 1,000 sq. ft.	0.5 fl. oz./ 1,000 sq. ft.	0.67 fl. oz./ 1,000 sq. ft.	0.75 fl. oz./ 1,000 sq. ft.	1.0 fl. oz./ 1,000 sq. ft.
1.0	33.3	50.0	66.7	75.0	100
2.0	16.5	25.0	33.5	37.5	50.0
3.0	11.0	16.7	22.3	25.0	33.3
4.0	8.3	12.5	16.7	18.8	25.0
5.0	6.7	10.0	13.3	15.0	20.0
10.0	3.3	5.0	6.7	7.5	10.0
	Fluid Ounces* of UP-Star Gold Insecticide Diluted to 10 gallons				
1.0	3.3	5.0	6.7	7.5	10.0
2.0	1.65	2.5	3.35	3.75	5.0
3.0	1.10	1.67	2.23	2.5	3.33
4.0	0.83	1.25	1.67	1.88	2.5
5.0	0.67	1.0	1.33	1.5	2.0
10.0	0.33	0.5	0.67	0.75	1.0
	Fluid Ounces* of UP-Star Gold Insecticide Diluted to 5 gallons				
1.0	1.67	2.5	3.33	3.75	5.0
2.0	0.83	1.25	1.67	1.88	2.5
3.0	0.55	0.83	1.11	1.25	1.67
4.0	0.42	0.63	0.84	0.94	1.25
5.0	0.33	0.5	0.67	0.75	1.0
10.0	0.17	0.25	0.33	0.38	0.5
	Fluid Ounces* of UP-Star Gold Insecticide Diluted to 1 gallon				
1.0	0.33	0.5	0.67	0.75	1.0
2.0	0.17	0.25	0.33	0.38	0.5
3.0	0.11	0.17	0.22	0.25	0.33
4.0	--	0.13	0.17	0.19	0.25
5.0	--	0.1	0.13	0.15	0.2
10.0	--	--	--	--	0.1

*To convert fluid ounces to milliliters, multiply by 29.57.

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

Do not use household utensils to measure UP-Star Gold Insecticide.

IMPREGNATION AND APPLICATION OF UP-STAR GOLD INSECTICIDE ON DRY BULK LAWN FERTILIZERS

UP-Star Gold Insecticide may be impregnated on dry bulk fertilizers. When applied as directed, UP-Star Gold Insecticide/dry bulk fertilizer mixtures provide insect control equal to that provided by the same rates of UP-Star Gold Insecticide applied in water.

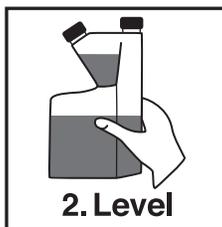
Impregnation: Apply using a minimum 2.3 pounds of dry bulk fertilizer per 1,000 square ft. with the recommended amount of UP-Star Gold Insecticide per 1,000 square ft. Use a closed rotary-drum mixer or a similar type of closed blender equipped with suitable spray equipment. The spray nozzle(s) should be positioned to provide a uniform, fine spray pattern over the tumbling fertilizer for thorough coverage. The physical properties of fertilizers vary, particularly in liquid absorptive capacity. When absorptivity is sufficient, simple spray impregnation of the fertilizer with UP-Star Gold Insecticide provides a satisfactory dry mixture. If the absorptive capacity is inadequate, use of a highly absorptive powder is required to provide a dry, flowable mixture. Microcel E (Johns-Manville Products Corporation) is a recommended absorbent powder. Generally less than 2% by weight of Microcel E is required. **DO NOT** impregnate UP-Star Gold Insecticide onto straight coated ammonium nitrate or straight limestone because these materials will not absorb the insecticide. Dry fertilizer blends containing mixtures of ammonium nitrate or limestone may be impregnated with UP-Star Gold Insecticide.

The amount of UP-Star Gold Insecticide actually required in the preparation of individual fertilizer mixtures should be determined carefully for each production operation. This is necessary to ensure that the amount of pesticide actually contained in the mixture applied to the soil represents the correct rate of use. Bulk fertilizer impregnated with UP-Star Gold Insecticide should be applied immediately, not stored.

All individual Federal and State regulations relating to bulk dry fertilizer blending, registration, labeling, and application of the mixtures are the responsibility of the individual and/or company selling the fertilizer and UP-Star Gold Insecticide mixture.

Fertilizer for this use should be Turf fertilizers recommended for specific regions.

[For the 1 qt. Tip N Pour package] CONTAINER USE DIRECTIONS:



1. Twist off the cap to the measuring compartment and remove the foil induction seal. Put the cap back on and tighten to secure. Tip the container so that the liquid fills the measuring chamber to the desired level.
2. Return the container to a level position and ensure the desired amount is in the measuring chamber.
3. Twist off the cap to the measuring chamber and pour the liquid into the proper application equipment.

To measure more than a single dose: Remove the cap to the chamber side (the right hand side that is not the measuring side) and pour the liquid following the etchings on the side of the bottle.

WARNING – DO NOT APPLY UP-STAR GOLD AS FOLLOWS

As a broadcast application to interior surfaces of homes.

In occupied areas of institutions such as libraries, sports facilities, etc. To classrooms when in use. To occupied hospital patient rooms, or rooms in which the infirm, elderly, or children occupy for long periods of time.

To pets, crops, or sources of electricity.

To firewood.

In areas where food is exposed.

WARNING – FOLLOW THESE INSTRUCTIONS WHEN USING UP-STAR GOLD

Use in well ventilated areas.

When treating overhead areas of a structure, the surfaces below must be covered with plastic sheeting or similar material (exception: when applied to soil surfaces in crawl spaces).

Avoid contact of spray solution with food, foodstuffs, food contacting surfaces, food utensils or water supplies.

If contacted by spray solution of this product, thoroughly wash dishes and food handling utensils with soap and water.

During indoor surface applications, prevent run-off or dripping of product.

Allow surfaces to dry before people and pets touch treated surfaces.

NOTE

UP-Star Gold Insecticide will not stain or damage any surface that water alone will not stain or damage.

UP-Star Gold can be applied using low volume treatments with equipment such as the Micro-Injector® or Actisol® applicators. This same equipment may be used to make crack and crevice, deep penetration, spot, and general surface treatments of UP-Star Gold Insecticide.

Distributors Must Sell in Original Packages Only.

**IMPORTANT INFORMATION
READ BEFORE USING PRODUCT**

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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

The Directions for Use of this product reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of United Phosphorus, Inc. or Seller. Handling, storage, and use of the product by Buyer or User are beyond the control of United Phosphorus, Inc. and Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold United Phosphorus, Inc. and Seller harmless for any claims relating to such factors.

To the extent consistent with applicable law, United Phosphorus, Inc. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or United Phosphorus, Inc., and Buyer and User assume the risk of any such use. To the extent consistent with applicable law, UNITED PHOSPHORUS, INC. MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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