

# UP-Star<sup>®</sup> 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 listed insect pests and mites indoors, in livestock/poultry housing structures and pet kennels, 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:**

Bifenthrin* .....	By Wt. 7.9%
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<b>OTHER INGREDIENTS:</b> .....	92.1%
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<b>TOTAL:</b> .....	100.0%
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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

## KEEP OUT OF REACH OF CHILDREN CAUTION

**FIRST AID**

<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For emergency medical treatment, contact the Rocky Mountain Poison Control Center at 1-866-673-6671.

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



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

**Net Contents:** \_\_\_\_\_ **Gallons**



## Index to Uses Listed on this Label

### Termiticide Uses

#### Subterranean Termite Control

#### Pre-Construction Subterranean Termite Treatment

#### Post-Construction Subterranean Termite Treatment

### Specific Pest Control Applications

#### Post, Poles and Other Constructions

#### Treatment of Wood in Place

#### Control of Bees and Wasps Indoors

#### Broadcast Treatment of Wood on Outside of Structure

#### Pests Under Slabs

### Lawn and Ornamentals

### Ornamentals and Trees

### Pest Control on Outside Surfaces and Around Buildings

### Indoor Use

#### Termite Control (Above Ground)

#### Ant Control

#### Food Handling Establishments

#### Livestock/Poultry Housing Structures and Pet Kennels

#### 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 off-site 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.



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.

- a. 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.
- b. Avoid soil wash-out around the footing.
- c. 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.
- d. 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.

- a. Holes should be drilled in the slab and/or foundation to create a continuous insecticidal barrier.
- b. 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.

- c. If foundation is deeper than 1 foot, follow rates for basements.
- d. 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. 801OLP 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.



Where birds are grown on litter – apply UP-Star Gold to litter after birds are removed and during tilling at a rate equivalent to 0.33 to 1 fl. oz. per 1,000 square feet. If litter is removed and replaced with fresh litter, make an application to bare soil or concrete at a rate equivalent to 0.33 to 1 fl. oz. per 1,000 square feet, and treat the new litter once it is spread. Spray inside walls, posts, and exterior perimeter. Reapply between each flock.

Broiler-breeder houses – to control beetles, apply as directed above for litter and soil/floor treatment.

Caged-layer houses – for control of beetles, do not treat accumulated manure because it may disrupt natural enemies that control fly breeding. Treat the perimeter of the manure at a rate equivalent to 0.33 to 1 fl. oz. per 1,000 square feet. Also spray pit walls, posts, and the exterior of the structure. Reapply between each flock.

Before applying disinfectants, ensure that the UP-Star Gold treatment is dry.

DO NOT apply UP-Star Gold as a general surface spray when animals are present in the facility. Allow applications to dry before restocking the facility. Crack and crevice treatment may be made when animals are present.

DO NOT apply UP-Star Gold to any animal feed, water, or watering equipment.

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

### 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 feet with the recommended amount of UP-Star Gold Insecticide per 1,000 square feet. 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. Apply bulk fertilizer impregnated with UP-Star Gold Insecticide immediately. Do not store impregnated fertilizer.

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)	<p>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.</p> <p>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.</p> <p><b>Cockroaches, Crickets, Firebrats, Scorpions, Silverfish, Spiders, and Ticks:</b> Apply as a coarse, low pressure spray to areas where these pests hide.</p> <p><b>Ants:</b> Apply to trails, around doors and windows and other places where ants may be found.</p> <p><b>Bees and Wasps:</b> 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.</p> <p><b>Boxelder Bugs, Centipedes, Earwigs, Beetles, Millipedes, Pillbugs, and Sowbugs:</b> 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.</p>



## ANT CONTROL

PEST LOCATION	RATE	REMARKS
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 sq. ft.	Low volume application. The following procedures must be followed to help achieve maximum control of the pest: Treat non-porous surfaces only in areas protected from rainfall and spray from sprinklers with low volume applications using 0.5 to 1.0 fl. oz. of product per gallon of water and applying this dilution at the rate of one gallon per 1,000 sq. ft.
Porous surfaces and vegetation	0.5 – 1.0 fl. oz. per 1,000 sq. ft.	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 sq. ft.	
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 sq. ft. 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



## 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 <sup>st</sup> and 2 <sup>nd</sup> 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.
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 sq. ft. 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  Mound application: 1 teaspoon per 1 gallon of water	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. 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 sq. ft. of UP-Star Gold Insecticide in 5 gallons per 1,000 sq. ft., the spray tank contains the approximate dilution (equivalent to 1 teaspoon per gallon) required for fire ant mound drenches.

# 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.



## 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	
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.



# 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				
	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	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				
	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	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				
	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	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

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).

\*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.



**IMPORTANT INFORMATION  
READ BEFORE USING PRODUCT**

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Rev. 9/4/12 70506-24(090512-4225)