

**GROUP 3A 4A INSECTICIDES**

Shake well before using.



For use in, on, and around buildings and structures for the control of listed pests, including on lawns, ornamental trees, and shrubs around residential, institutional, public, commercial, and industrial buildings, and in parks, recreational areas, and athletic fields.

In the State of New York, this product may only be applied for indoor uses.

<i>Active Ingredients:</i>	
Thiamethoxam (CAS No. 153719-23-4).....	11.6%
Lambda-cyhalothrin <sup>1</sup> (CAS No. 91465-08-6).....	3.5%
<hr/>	
<i>Other Ingredients:</i>	84.9%
<i>Total:</i>	100.0%

<sup>1</sup>Microencapsulated

**KEEP OUT OF REACH OF CHILDREN.  
CAUTION/PRECAUCIÓN**

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

See additional precautionary statements and directions for use in booklet.

EPA Reg. No. 100-1437

EPA Est. 61282-WI-1

Formulated in USA

SCP 1437A-L1D 1213

**1 qt (32 fl oz)  
Net Contents**



**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 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 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>

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**HOT LINE NUMBER**

For 24-Hour Medical Emergency Assistance  
(Human or Animal)  
Or  
Chemical Emergency Assistance  
(Spill, Leak, Fire or Accident)  
Call  
**1-800-888-8372**

**PRECAUTIONARY STATEMENTS**

**Hazards to Humans and Domestic Animals**

**CAUTION/PRECAUCIÓN**

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

**Environmental Hazards**

This product is toxic to wildlife, highly toxic to aquatic invertebrates, and extremely toxic to fish. Use of this pesticide adjacent to water may affect aquatic organisms. To protect these organisms, do not apply this pesticide within 25 ft of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters, or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid runoff to water bodies or drainage systems. Do not contaminate water when cleaning equipment or disposing of equipment wash water. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Apply this product only as specified on

this label. When making applications, care should be used to avoid household pets, particularly fish and reptile pets.

This product is highly toxic to bees exposed to direct treatment or residues on blooming plants or weeds. Do not apply this product or allow it to drift to blooming plants or weeds if bees are foraging.

• **Surface Water Advisory**

This product may contaminate water through drift of spray in wind. This product has a high potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall runoff. (See manual at the following internet address: <http://www.wsi.nrcs.usda.gov/products/W2Q/pest/core4.html>.)

Runoff of this product will be reduced by avoiding applications when rainfall is forecast to occur within 48 hours.

• **Ground Water Advisory**

Thiamethoxam has properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

• **Spray Drift Advisory**

Do not allow this product to drift.

- Direct contact during foliar applications, or contact with residues on plant surfaces after foliar applications
- Ingestion of residues in nectar and pollen when the pesticide is applied as a seed treatment, soil, tree injection, as well as foliar applications.

When Using This Product Take Steps To:

- Minimize exposure of this product to bees and other insect pollinators when they are foraging on pollinator attractive plants around the application site.
- Minimize drift of this product on to beehives or to off-site pollinator attractive habitat. Drift of this product onto beehives or off-site to pollinator attractive habitat can result in bee kills.


Information on protecting bees and other insect pollinators may be found at the Pesticide Environmental Stewardship website at: <http://pesticidestewardship.org/PollinatorProtection/Pages/default.aspx>.

Pesticide incidents (for example, bee kills) should immediately be reported to the state/tribal lead agency. For contact information for your state, go to: [www.aapco.org/officials.html](http://www.aapco.org/officials.html). Pesticide incidents should also be reported to the National Pesticide Information Center at: [www.npic.orst.edu](http://www.npic.orst.edu) or directly to EPA at: [beekill@epa.gov](mailto:beekill@epa.gov)


**Physical and Chemical Hazards**

Do not use this product in or on electrical equipment due to the possibility of shock hazard from the water used in mixing this product.

**PROTECTION OF POLLINATORS**



**APPLICATION RESTRICTIONS** EXIST FOR THIS PRODUCT BECAUSE OF RISK TO BEES AND OTHER INSECT POLLINATORS. FOLLOW APPLICATION RESTRICTIONS FOUND IN THE DIRECTIONS FOR USE TO PROTECT POLLINATORS.



Look for the bee hazard icon in the Directions for Use for each application site for specific use restrictions and instructions to protect bees and other insect pollinators.

**This product can kill bees and other insect pollinators.**

Bees and other insect pollinators will forage on plants when they flower, shed pollen, or produce nectar.

Bees and other insect pollinators can be exposed to this pesticide from:

**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 must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA 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, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this

warranty does not extend to the use of this product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and (2) Buyer and User assume the risk of any such use. TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and of Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

## DIRECTIONS FOR USE

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



**Do not apply Tandem while bees are foraging. Do not apply Tandem to plants that are flowering. Only apply after all flower petals have fallen off.**

## PRECAUTIONS

**Shake well before using.**

**Let treated surfaces dry before allowing humans and pets to contact surfaces.**

Use in all indoor permitted sites, including food-handling establishments, must be restricted to areas which eliminate exposure to food-handling surfaces and areas that are not easily accessible to occupants.

**Do not** use this product with oil.

**Do not** apply this product in any room being used as a living, eating, sleeping, or recovery area by patients, the elderly, or infirm when they are in the room.

**Do not** apply to classrooms, nurseries, or daycare facilities when in use.

**Do not** apply to institutions (including libraries, sports facilities, etc.) when occupants are present in the immediate treatment area.

**Do not** apply this product to edible growing crops or stored raw agricultural commodities used for food or feed.

**Do not** allow applications to contact water inhabited by fish, such as in aquariums and ornamental fish ponds that are located in/around structures being treated.

**Do not** use water-based sprays of Tandem in conduits, motor housings, junction boxes, switch boxes, or other electrical equipment because of possible shock hazard.

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

1. Treatment to soil or vegetation around structures;
2. Applications to lawns, turf, and other vegetation;
3. Applications to building foundations, up to a maximum height of 3 feet.

Other than applications to building foundations or the undersides of eaves (i.e., soffits), all outdoor applications to impervious surfaces such as sidewalks, driveways, patios, porches, and structural surfaces (such as windows, doors, and eaves) are limited to spot and crack-and-crevice applications only.

**Do not** water treated area to the point of runoff.

**Do not** make applications during rain.

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

**Surface Staining:** Tandem **has not stained** or caused damage to painted or varnished surfaces, plastics, fabrics, tile, siding or other surfaces where water applied alone causes no damage. However, treat a small area and allow it to dry to determine whether staining will occur. To avoid contamination from previous treatments, thoroughly wash out sprayer, hoses and screens with water and detergent before using Tandem.

## RESISTANCE MANAGEMENT

GROUP	3A	4A	INSECTICIDES
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Some insect pests are known to develop resistance to products after repeated use. Because resistance development cannot be predicted, the use of this product should conform to sound resistance management strategies established for the crop and use area. SYNGENTA encourages responsible product stewardship to ensure effective long-term control of the insects on the label.

Tandem contains a Group 3A insecticide (lambda-cyhalothrin, belonging to the pyrethroid class of chemistry) and a Group 4A insecticide (thiamethoxam, belonging to the neonicotinoid class of chemistry). Insect biotypes with acquired or inherent resistance to Group 3A or Group 4A insecticides may eventually dominate the insect population if Group 3A or Group 4A insecticides are used repeatedly as the predominant method of control for targeted species. This may result in partial or total loss of control of those species by Tandem or other Group 3A or Group 4A insecticides.

If resistance to this product develops in your area, this product, or other products with a similar mode of action, may not provide adequate control. If poor performance

cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present. If you experience difficulty with control and resistance is a reasonable cause, immediately consult your local company representative or extension specialist for the best alternative method of control for your area.

**In order to maintain susceptibility to these classes of chemistry:**

- Avoid using Group 3A and/or Group 4A insecticides exclusively for season-long control of insect species with more than one generation per crop season.
- For insect species with successive or overlapping generations, apply Tandem or other Group 3A and/or Group 4A insecticides using a “treatment window” approach. A treatment window is a period of time as defined by the stage of crop development and/or the biology of the pests of concern. Within the treatment window, depending on the length of residual activity, there may either be single or consecutive applications of the Group 3A and/or Group 4A insecticides. Do not exceed the maximum Tandem allowed per year.
- Following a treatment window of Group 3A and/or Group 4A insecticides, rotate to a treatment window of effective products with a different mode of action before making additional applications of Group 3A and/or Group 4A insecticides.
- A treatment window rotation, along with other IPM practices for the crop and use area, is considered an effective strategy for preventing or delaying a pest’s ability to develop resistance to these classes of chemistry.
- If resistance is suspected, do not reapply Tandem or other Group 3A or Group 4A insecticides.

**Other Insect Resistance Management (IRM) practices include:**

- Incorporating IPM techniques into your insect control program.
- Monitoring treated insect populations for loss of field efficacy.
- Using tank mixtures or premixes with insecticides from a different target site of action group as long as the involved products are all registered for the same crop and effective rates are applied.

**For additional information on Insect Resistance Management:**

- Contact your local extension specialist and/or product manufacturer for additional insect resistance management recommendations.
- Visit the Insecticide Resistance Action Committee (IRAC) on the web at: <http://www.irac-online.org/>.

**INFORMATION: STRUCTURAL AND PERIMETER PEST CONTROL**

**USE SITES**

**Use Tandem as a perimeter, crack-and-crevice, and/or spot treatment in and around structures or modes of transportation. Treatment to soil or vegetation around structures and building foundations (up to a maximum height of 3 feet) may be made as a surface treatment. Permitted areas of use include the following buildings, structures, and modes of transport:**

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- |   |                                |                       |
|---|--------------------------------|-----------------------|
| • aircraft (cargo and other non-cabin areas only)   | • furniture                    | • offices             |
| • apartment buildings   | • garages                      | • patios              |
| • boiler rooms  | • garbage rooms                | • pet kennels         |
| • buses   | • greenhouses (non-commercial) | • porches             |
| • closets   | • hospitals                    | • railcars            |
| • correctional facilities   | • hotels and motels            | • restaurants         |
| • decks   | • houses                       | • storage rooms       |
| • dumpsters   | • industrial buildings         | • schools             |
| • entries   | • laboratories                 | • stores              |
| • factories   | • landscape vegetation         | • trailers            |
| • fencing   | • locker rooms                 | • trees               |
| • food manufacturing, processing and serving establishments, such as bakeries, breweries, canneries, granaries, grain mills, etc. | • machine rooms                | • trucks              |
|   | • mausoleums                   | • utility passages    |
|   | • mobile homes                 | • vessels, vestibules |
|   | • mop closets                  | • warehouses          |
|   | • mulch                        | • wineries            |
|   | • nursing homes                | • yards               |
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For indoor applications, retreat at 21-day intervals or as necessary to maintain control.

**Mixing Instructions**

Tandem is intended for dilution with water for application using hand-held or power-operated application equipment as a coarse spray for crack-and-crevice, spot, and surface treatments. Application equipment that delivers low-volume treatments may also be used. A surface treatment of Tandem may be applied by using a paintbrush or other porous applicator attached to a handle. Fill applicator tank with the desired volume of water and add Tandem. Close and agitate before use in order to ensure proper mixing. Re-agitate applicator tank before use if application is interrupted. Mix only amount of treatment volume as required.

**Tank Mixing**

Tandem may be tank mixed with other currently registered pesticides unless expressly prohibited by the product label. To ensure compatibility, conduct a small volume mixing test with the other products. If mixed with sanitizers, add Tandem to the tank first. If other chemicals are added to the applicator tank, add Tandem last. Fill tank to desired volume and re-agitate while making applications.

**Observe all restrictions and precautions which appear on the labels of any tank-mix products.**

**Foam Applications**

Tandem may be converted to foam and the foam used to treat structural voids to control or prevent pests including ants, wasps, wood-destroying insects, or other arthropods harboring in walls, under slabs, or in other void areas. Mix end-use dilution with manufacturer’s recommended

volume of foaming agent. For applications inside wall voids, expansion ratios of 15:1 or drier are suggested.

**Fixed In-Wall Delivery Systems**

Closed, in-wall insecticidal delivery systems such as permanently installed piping or flexible tubing may also be used to deliver diluted product to inaccessible areas. Generally, about one ounce of finished liquid product is needed per 35-40 ft of tubing (based on 1/8"-diameter tubes). For these systems, use 0.065%-0.13% dilution rates as listed in the **General Household Pests** table. Prepare the finished product at the appropriate dilution, then inject into system as recommended by delivery system manufacturer.

**Spot Treatments**

Spot treatments may be made by spraying, misting, painting, or otherwise applying to surfaces, including a contiguous area no larger than 2 feet by 2 feet. For areas limited to spot or crack-and-crevice treatments, multiple spot treatments can be made to surfaces as long as 20% of the total target area is not exceeded.

**GENERAL HOUSEHOLD PESTS**

Pests Controlled	Concentration of Active Ingredient in Final Dilution	Rates for Mixing
Ants <sup>1</sup> Bed Bugs <sup>2</sup> Beetles (including Multicolored Asian Lady Beetle) Boxelder Bugs Carpenter Bees Carpet Beetles Centipedes Cigarette Beetles Clover Mites Cluster Flies Cockroaches Confused Flour Beetles Crickets Earwigs Firebrats Fleas <sup>3</sup> Flies Grasshoppers Lesser Grain Borers Millipedes Mosquitoes Red Flour Beetles Rice Weevils	0.065%–0.13%	To mix 0.065% concentration: • Use 16 ml (0.55 fl oz) Tandem/gal of water.  To mix 0.13% concentration: • Use 32 ml (1.1 fl oz) Tandem/gal of water.

*Continued...*

**GENERAL HOUSEHOLD PESTS (continued)**

Pests Controlled	Concentration of Active Ingredient in Final Dilution	Rates for Mixing
Saw-toothed Grain Beetles Silverfish Sowbugs Spiders Springtails Stink Bugs (including Brown Marmorated Stink Bug and Kudzu Stink Bug) Ticks Wasps, Hornets and Yellow Jackets <sup>4</sup>	0.065%–0.13%	To mix 0.065% concentration: • Use 16 ml (0.55 fl oz) Tandem/gal of water.  To mix 0.13% concentration: • Use 32 ml (1.1 fl. oz.) Tandem/gal. of water.

<sup>1</sup> For treatment of fire ant mounds, see Lawns/Turfgrass Section of this label.  
<sup>2</sup> Use 0.13% rate.  
<sup>3</sup> For outdoor use only - use 0.13% rate.  
<sup>4</sup> See **Information: Control of Yellow Jackets, Hornets, and Wasps (Localized Treatment)** section for specific instructions.

**INFORMATION: INDOOR PESTS**

**Ants (Including Carpenter Ants and Nuisance Ants)**

Apply as a spot, crack-and-crevice, and/or void treatment to ant trails around doors and windows and other places where ants may be found. Indoors, apply as a residual surface treatment to active areas such as baseboards; corners; around pipes; in and behind cabinets; behind and under refrigerators, sinks, furnaces and stoves; and in cracks and crevices. For best results, locate and treat nests. Outdoors, apply as a crack-and-crevice, spot, or perimeter barrier treatment; also see **Information: Outdoor Pests**.

**Bed Bugs**

Apply as a spot, crack-and-crevice, or void treatment to harborage areas. Example harborages include voids behind attached headboards, baseboards, moldings, doorframes, window frames, and shelving; behind mirrors and picture frames; and around edges of carpet or other floor coverings. Apply only to areas where prolonged contact by humans or pets will not occur. **Do not use on bed linens, bed frames, mattresses, box springs, or other areas where human contact is common.**

**Crawling Insects (Beetles, Clover Mites, Cockroaches, Crickets, Earwigs, Firebrats, Silverfish, and Spiders)**

Apply as a spot, crack-and-crevice, and/or void treatment to areas where these pests hide, such as baseboards; corners; storage areas; closets; around water pipes, doors, and windows; attics and eaves; cabinets; behind and under refrigerators or other household items such as furniture, sinks, furnaces, and stoves; and to the underside of shelves, drawers and similar areas. Pay particular attention to cracks and crevices.

**Flying Insects (Flies, Mosquitoes, and Wasps)**

Tandem may be applied as a spot or crack-and-crevice treatment directly into cracks and crevices or other non-exposure areas as a low-pressure spray using equipment capable of delivering a pin stream of insecticide inside residential buildings (in attics, crawl spaces, and other non-living spaces), as well as in and around carports, garages, and storage sheds; also see **Information: Outdoor Pests**. Do not make surface applications to living spaces. For wasps, hornets, and yellow jackets, see section on **Control of Yellow Jackets, Hornets, and Wasps**.

**Occasional Invaders (Boxelder Bugs, Centipedes, Millipedes, Multicolored Asian Lady Beetles, Pillbugs, Sowbugs, and Stink Bugs)**

Apply as a spot, crack-and-crevice, and/or void treatment around doors and windows, baseboards and other places where these pests may be found or where they may enter premises. Apply outdoor treatments to prevent infestation as described below; also see **Information: Outdoor Pests – Perimeter Treatments around Structures**.

**Pantry Pests (i.e., Carpet beetle, Cigarette beetle, Confused flour beetle, Lesser grain borer, Red flour beetle, Rice weevil, and Saw-toothed grain beetle)**

Apply as a spot or crack-and-crevice treatment to cupboards, shelving, and storage areas. Remove all utensils, uncovered foodstuffs (or any having original package opened), and shelf paper before making application. Allow treated surfaces to dry and cover shelves with clean paper before replacing any utensils, foodstuff, or other items. Any foodstuff accidentally contaminated with treatment solution should be destroyed.

**Application within Food-Handling Establishments (places other than private residences in which exposed food is held, processed, prepared, or served, including, but not limited to, areas for receiving, storing, packing (canning, bottling, wrapping, boxing), and preparing foods; edible waste storage; enclosed processing systems (mills, dairies, edible oils, syrups); and serving areas)**

Use as a crack-and-crevice, spot, or void treatment in and around both food and non-food areas. Apply in small amounts directly into cracks and crevices, using equipment capable of delivering a pin stream of insecticide; in points between different elements of construction; between equipment and floor; in openings leading to voids; and in hollow spaces in walls, equipment, and bases. Clean food-contact surfaces and equipment with an effective cleaning compound and rinse with potable water before using.

Limit individual spot treatments to an area no larger than 20% of the treated surface. Individual spot treatments should not exceed 2 sq ft. Take extreme care that the product is not introduced into the air. Do not contaminate food and food-processing surfaces.

**Application within Food-Serving Areas (facilities where foods are served, such as dining rooms)**

Apply as a crack-and-crevice, spot, or void treatment to selected surfaces such as under elements of construction and into cracks and crevices. Do not treat surfaces likely

to be contacted by food. (Do not apply when facility is in operation or foods are exposed.) Food must be covered or removed from area being treated. Do not apply directly to food or allow applications to contaminate food.

*Application of this product in the food areas and/or food-serving areas of food-handling establishments, other than as a spot, crack-and-crevice, or void treatment, is not permitted.*

**INFORMATION: OUTDOOR PESTS**

For control of ants, bees, centipedes, cockroaches, crickets, fleas, flies, millipedes, mosquitoes, sowbugs, pillbugs, stink bugs, spiders, ticks, wasps, and other similar perimeter arthropod pests. Apply with either hand or power application equipment as a residual treatment around buildings and to surfaces of buildings, porches, screens, window frames, eaves, patios, garages, refuse dumps, and other similar areas where these insect pests are active. When applying as a continuous band around structures, limit treatment to a band up to 7 ft wide around the structure (or according to state regulations governing commercial pest control) and upwards along the foundation to 3 ft. For vertical surfaces more than 3 ft above the foundation, use spot or crack-and-crevice treatments, e.g., around windows, doors, and roof overhangs.

Do not allow this product to contact plants in bloom if bees are foraging in/adjacent to the treatment area.

**Ants**

Apply Tandem as a spot, crack-and-crevice, pin-stream, or perimeter-banded treatment to ant trails and potential entry points such as around doors or windows. As a banded application, apply according to instructions on perimeter treatments below.

Tandem contains thiamethoxam, a plant-systemic insecticide which can reduce populations of plant-feeding insects, such as aphids, mealybugs, and whiteflies. Control of these insects can reduce the amount of honeydew, a food source for ants foraging in and around structures. To reduce populations of honeydew-producing insects, apply Tandem at up to 0.13% as a foliar spray or directed treatment to soil at the base of the landscape plants. When targeting landscape ornamental pests, see directions for use in the **Application to Ornamentals** section.

**Fleas and Ticks**

To control nuisance fleas and ticks (e.g., dog ticks), apply to kennels, yards, runs, and other areas where pets may frequent. For best coverage to control ticks, apply using a coarse fan spray to vegetation brush, branches, rock walls, and other areas near habitation where ticks may harbor or frequent. Do not apply to pasture or cropland, and do not allow animals and people access to treated areas until the spray deposit has dried. Applications can be made on a monthly basis, beginning in the spring, and can continue until frost to control both larvae and adult ticks. Do not apply directly to pets.



**House Flies and Cluster Flies**

Apply as a spray or low-volume mist to outdoor surfaces of structures, patios, fences, or other areas where flies are likely to collect or rest, or to areas of structures that serve as entry points (doors, windows, under eaves). Applications to vertical surfaces above 3 feet from the foundation are limited to spot treatments. Applications under eaves may be made as a surface spray.

For cluster flies, use spot treatments around entry points or fly resting areas of structural surfaces, paying particular attention to south-facing surfaces. In winter and spring, when flies become active and are emerging, interior crack-and-crevice, spot, and void treatments can help reduce the infestation in areas such as attics, crawl spaces, or indoor non-living spaces.

**Mosquitoes**

For adult mosquito control, apply as a structural perimeter spray or spot treatment to landscape plantings and turf, around buildings and foundations, under decks, or to other areas that are likely to serve as adult mosquito resting areas. Yards or other frequented areas enclosed by landscaping can benefit from a banded treatment to reduce invading adult mosquitoes by the treatment of perimeter vegetation. Apply Tandem at specified rates at 2-5 gallons of water per 1,000 sq ft. Low-volume mist blowers may be used as well. Application to vegetation away from structures may require additional state certifications, e.g., in turf or ornamental categories. Consult your state regulatory agency for requirements.

**Occasional Invaders (Beetles, Boxelder bugs, Centipedes, Earwigs, Grasshoppers, Stink bugs, etc.)**

Apply to outdoor structural surfaces where insects are found and around likely entry points such as doors, windows, and utility penetrations. Banded applications as described in the **Information: Outdoor Pests -- Perimeter Treatments around Structures** section can provide additional protection against these pests entering the structure.

**INFORMATION: CONTROL OF YELLOW JACKETS, HORNETS, AND WASPS (LOCALIZED TREATMENT)**

Use caution when treating nests of stinging insects as Tandem does not provide instant knockdown. Protective equipment for the applicator may be required to reduce the risk of insect stings during application. The use of an extension wand is recommended when applying the liquid or foam to nests to reduce the risk of being stung. For best results, treat nests in the evening when most insects will be present.

For control of ground-nesting yellow jacket wasps, make an application of 0.13% liquid or finished foam into the below-ground nest. Apply a sufficient amount of liquid or foam to fill the nest and coat the opening to the nest. The use of an extension wand is recommended when applying

to reduce the risk of being stung.

For application to paper-covered wasp nests (for example, bald-faced hornets), apply a 0.13% dilution of Tandem as a finished foam or as a spray into the opening of the nest. Apply a sufficient amount of foam to fill the nest without allowing runoff. As a spray, apply product to the entire outside surface of the nest as well as the nest opening. The use of an extension wand is recommended when applying the foam to reduce the risk of being stung.

For visible wasp nests, spray the outside of the nest with a 0.13% dilution. Apply spray to the entire surface of the nest. For wasp nests within voids such as under soffits, behind rain gutters, etc., make an application of 0.13% liquid or foam into the nesting area. Apply a sufficient amount of foam to fill the nesting void.

Do not allow this product to contact plants in bloom if bees are foraging in/adjacent to the treatment area.

**INFORMATION: OUTDOOR PESTS – PERIMETER TREATMENTS AROUND STRUCTURES**

Applying a continuous band of insecticide around a building foundation and around windows, doors, service line entrances, eaves, vents, and other areas can greatly reduce the potential for entry by crawling pests. For best results, before application, remove debris and leaf litter from next to the foundation; cut back vegetation and branches that touch the foundation, walls, or roof; and move or rake back rocks, deep mulch, or other potential pest harborage next to the foundation. Apply the band up to 7 ft wide around the structure (or according to state regulations governing commercial pest control) and upwards along the foundation to 3 ft and spot treatments around windows, doors, and roof overhangs. Apply as a coarse spray to thoroughly and uniformly wet the foundation and/or band area so that the insecticide will reach the soil or thatch level where pests may be active. Treatments applied to vertical surfaces higher than 3 feet above the foundation must be done as a spot or crack-and-crevice treatment.

Amount of concentrate is dependent upon pest species (see pest table and comments), infestation levels, and service interval desired. Agitate occasionally during application.

**Rate Table for Perimeter Applications around Structures**

Application Rate: Fl oz (ml) of Tandem	Gal of Water <sup>1</sup>	Area of Coverage (sq ft)
0.55 fl oz (16 ml)	1–5 gal	800–1600 sq ft
1.1 fl oz (32 ml)	1–5 gal	800–1600 sq ft

<sup>1</sup>Application volume may be greater than 5 gal./800–1600 sq ft if required under heavy vegetative or landscaping materials in order to obtain desired coverage.

## Examples of Dilutions for Structural Perimeter Applications

Application Volume (Gal of Solution/ 1,000 sq ft)	Application Rate (Fl oz (ml) of Tandem/ 1,000 sq ft)	Fl. oz. (ml.) of Tandem to Dilute in Water According to Spray Tank Volumes		
		10 gal	25 gal	50 gal
1 gal./1,000 sq ft	0.55 fl oz (16 ml)	5.5 fl oz (163 ml)	13.8 fl oz (407 ml)	27.5 fl oz (813 ml)
	1.1 fl oz (32 ml)	11.0 fl oz (325 ml)	27.5 fl oz (813 ml)	55 fl oz (1627 ml)
2 gal./1,000 sq ft	0.55 fl oz (16 ml)	2.8 fl oz (81 ml)	6.9 fl oz (203 ml)	13.8 fl oz (407 ml)
	1.1 fl oz (32 ml)	5.5 fl oz (163 ml)	13.8 fl oz (407 ml)	27.5 fl oz (813 ml)
5 gal./1,000 sq ft	0.55 fl oz (16 ml)	1.1 fl oz (33 ml)	2.8 fl oz (81 ml)	5.5 fl oz (163 ml)
	1.1 fl oz (32 ml)	2.2 fl oz (65 ml)	5.5 fl oz (163 ml)	11.0 fl oz (325 ml)

**INFORMATION: CONTROL OF WOOD-DESTROYING INSECTS**

Use Tandem to control the following wood-destroying insects. For specific application instructions, refer to label text.

Pests	Application Method	Finished Dilution (% active ingredient)	Comments
Drywood Termites	<i>Remedial Control:</i>	0.13%	Re-treat as needed
Carpenter Ants <sup>1</sup>	• Liquid or foam – Gallery treatment	To mix 0.13% concentration: Use 32 ml (1.1 oz) Tandem/gal of water.	
Carpenter Bees	<i>Preventive treatment:</i>		
Wood-Destroying Beetles and Borers	• Wood Surface Spray		

<sup>1</sup>0.065% to 0.13% rates may be used per instructions under **Control of Carpenter Ants** section.

**Control of Drywood Termites**

When used as specified in this label, Tandem provides effective remedial control of localized infestations of drywood termites, including species of *Incisitermes*, *Cryptotermes*, and *Marginitermes*. Knowledge of the biology and behavior of the drywood termite species involved, the locations, and the extent of the infestation(s) will help to ensure successful control.

Treatment requirements for drywood termite control may vary due to state and local regulations. For advice concerning current drywood termite control regulations under local conditions, consult your State structural pest control regulatory agency.

*Directions for Remedial Control of Drywood Termites in Infested Wood*

To control drywood termites in localized areas of infested wood in structures, apply 0.13% Tandem as a liquid or foam to voids and galleries in damaged wood, in spaces between wooden structural members, or between wood and foundations. Locate galleries by using visual signs (e.g., fresh fecal pellets or blistered wood), the presence of live termites, mechanical sounding techniques (tapping on the wood surface and listening for changes in sound to indicate changes in wood density), listening devices,

motion detection devices, or other technologies that help pinpoint drywood termite activity.

*Wood Injection Method*

Drill small diameter holes of appropriate size for the injection tip or use a self-puncturing tip positioned to intersect termite galleries within infested wood. Drywood termite emergence or pellet kick-out holes connect directly to galleries and are indicators of potential sites to drill and inject Tandem. Care should be taken to avoid electrical wiring, plumbing, etc. when drilling and injecting. Do not drill or puncture completely through wood. Spacing of the holes will depend on the distribution of insect activity and galleries. Injection holes may be clustered in areas with insect activity as indicated by damage, live insects, or other indicators previously described. Injection holes on opposite sides of large (4"x10" or larger) structural beams may be necessary to effectively penetrate galleries.

Apply up to 50 ml (1.7 fl oz) of finished liquid solution of Tandem at each injection hole. If using Tandem as a foam preparation, inject a sufficient amount to fill galleries without allowing runoff.

Re-apply if insect activity within treated areas is detected 4 or more weeks following treatment. For best results in treating galleries, inject Tandem into new injection holes positioned between previous injection sites.

*Wood Surface Treatment*

Surface applications may also be used to supplement spot treatment for drywood termites as a means to prevent re-infestation by swarming adult termites. Apply a 0.13% dilution as a surface spray or mist to exposed wood surfaces in areas not used as living spaces, such as attics, crawl spaces, unfinished basements, or structural voids.

**Control of Carpenter Ants**

Apply to ant trails around doors and windows and other places where ants may be found. Indoors, apply as a residual surface treatment to active areas such as baseboards; corners; around pipes; in and behind cabinets; behind and under refrigerators, sinks, furnaces, and stoves; and in cracks and crevices. For best results, locate and treat nests. Outdoors, apply as a crack-and-crevice, spot, or banded treatment; also see **Information: Outdoor Pests**.

Inside voids where ants or nests occur, drill (or use existing opening) and inject spray or foam into the cavity. Inside decking materials or other structural materials, poles, or trees infested with carpenter ants, drill and inject



spray or foam into cavities. Apply up to 50 ml (1.7 fl oz) of finished liquid solution of Tandem at each injection hole. If using Tandem as a foam preparation, inject a sufficient amount to cover the area without allowing runoff.

### Control of Carpenter Bees (localized treatment)

#### *Gallery Treatment*

Apply a 0.13% dilution of Tandem into carpenter bee galleries as a spray, mist, or foam application. As a liquid, apply up to 50 ml (1.7 fl oz) of finished solution of Tandem at each injection hole. If using Tandem as a foam preparation, inject a sufficient amount to fill galleries without allowing runoff.

#### *Wood Surface Treatment*

Apply coarse spray as a spot treatment to thoroughly wet wood surfaces where bees have been previously active or to provide protection against further damage. Apply early in the spring to prevent bees from invading wood. When bees have infested wood, surface applications can help control embedded larvae and bees that emerge from the wood. Applications can be made on a monthly basis to maintain protection of treated areas.

### Control of Wood-Destroying Beetles and Borers

For control of wood-destroying beetles or borers, including old house borers, powderpost beetles, false powderpost beetles, death-watch beetles, and ambrosia or bark beetles. Apply Tandem diluted to 0.13% as a spray, mist, or foam to galleries, in structural voids, and/or as wood surface treatments. For old house borers, or other beetles that form large galleries, treat the gallery system by drilling and injecting product with sufficient volume to cover the galleries. For beetles or borers that do not form galleries which can be readily injected (e.g., powderpost beetles), apply product as a liquid, mist, or foam to exposed wooden surfaces in non-living space areas in crawlspaces, basements, and attics; to structural voids; to spaces between wood elements of a structure; or at joints between wood and foundations. Apply as a coarse liquid spray with low pressure (<25 psi), as a foam or mist application, or by brushing diluted product onto the surface. Applications should be made in sufficient volumes to coat the target surface, but less than the volume that creates runoff. Re-treat as needed to maintain protection. Allow treated surfaces to dry before contacting them.

### INFORMATION: LAWNS/TURFGRASS AND ORNAMENTALS

Tandem contains two insecticides, thiamethoxam and lambda-cyhalothrin. Thiamethoxam and lambda-cyhalothrin provide long-lasting, broad-spectrum contact and systemic control of turf and ornamental plant insects.

Tandem may be used for applications to maintain outdoor areas where turf and ornamentals are grown, such as residential landscaped areas and non-residential landscapes around institutional, public, commercial, and industrial buildings; parks; recreational areas; and athletic fields. Consult your state extension office or pesticide regulatory officials for further information.

**IMPORTANT:** Do not apply to plants that are flowering. Only apply after all flower petals have fallen off. Time

application during periods when pollinating insects are not present, such as early morning or late evening.

**IMPORTANT:** Not for use on plants being grown for sale or other commercial use, or for commercial seed production.

**Do not** apply this product through any type of irrigation system.

**Do not** apply this product to edible crops.

**Do not** apply this product by aerial application.

**Do not** water the treated area to the point of runoff.

**Do not** make applications during rain.

### Mixing Instructions (Turf and Ornamental Dilutions)

Tandem may be mixed with water and used in all types of standard application equipment. Fill applicator tank with ½ to ¾ volume of water and add Tandem. Adjust water pH with a buffering agent if necessary to achieve a pH of 5-7. Slowly add Tandem to applicator tank water with maximum agitation. Fill the tank to the desired volume and continue to agitate while making applications. Close and shake or re-agitate applicator tank before use if application is interrupted. Make up only the amount of treatment volume required.

### Tank Mixing (Turf and Ornamental Dilutions)

Tandem may be tank mixed with other currently registered pesticides unless expressly prohibited by the product label. To ensure compatibility, conduct a small-volume mixing test with the other products. If other chemicals are added to the applicator tank, add Tandem last. Fill tank to desired volume and continue to agitate while making applications. If mixed with EC formulations, use within 24 hours.

Observe all restrictions and precautions which appear on the labels of these products.

### APPLICATION TO TURFGRASS

**Sites of Application** – Tandem may be used for applications to turfgrasses around residential, institutional, public, commercial and industrial buildings; parks; recreational areas; and athletic fields.

**Broadcast Applications to Turfgrass** – Apply Tandem as a broadcast application to turfgrass for control of targeted pests. Use sufficient water volume (2-10 gal/1,000 sq ft) to uniformly distribute Tandem over the area being treated and to adequately move the active ingredient into the canopy and thatch layers. Tandem is not phytotoxic to any major turfgrass species. Tandem can be applied to established turf or at seeding or during seed germination.

Do not allow this product to contact plants in bloom if bees are foraging in/adjacent to the treatment area.

**Application Timing** – Maintain adequate soil moisture before and after application for optimum control and healthy turfgrass growth. Excessively wet or dry conditions may impact the performance of Tandem against white grubs. Do not mow the turf until the treated area has been irrigated or rainfall has occurred to allow for maximum and uniform uptake into the turfgrass or soil. Do not apply when turfgrass is waterlogged or when soils are saturated

with water (i.e., will not accept irrigation).

Do not apply more than 32 fluid ounces of Tandem per acre per year.

**KEEP CHILDREN AND PETS OFF TREATED AREAS FOLLOWING THE APPLICATION UNTIL SPRAY HAS DRIED.**

Pests	Dosage of Tandem
Annual bluegrass weevils <sup>1</sup> Armyworms Black turfgrass ataenius (adults) Bluegrass billbug (adults and larvae) Chinch bugs <sup>2</sup> Crickets Cutworms Fire Ants Hyperodes weevil (adults and larvae) Japanese beetles (adult) Mole Cricket (young adults and nymphs) <sup>3</sup> Sod webworms White grubs <sup>4</sup> : <i>Aphodius</i> Asiatic Garden Beetle Black Turfgrass Ataenius European Chafer Green June Beetle Japanese Beetle May or June Beetle Northern Masked Chafer Oriental Beetle Southern Masked Chafer	Apply a single application of 28 fl oz per acre.  <b>or</b>  Apply two applications of 14 fl oz per acre on a 3- to 5-week interval.
Chiggers Grasshoppers	Apply 10.5 fl oz per acre on a 3- to 5-week interval.

<sup>1</sup> **Annual Bluegrass Weevils and Billbugs** – Applications can be timed for the adult weevil as they move from their over-wintering sites into turf. Applications made for adult weevils will also control larvae.

<sup>2</sup> **Chinch Bug** – Apply when insects are first observed. Repeat applications on a 3- to 5-week interval to obtain control.

<sup>3</sup> **Mole Crickets** – Apply from first egg hatch to peak egg hatch. If the soil is dry, irrigate after application to move insecticides into the soil.

<sup>4</sup> **White grubs** -- Begin applications up to 45 days before the historical peak of adult flight to second instar grub of the species being targeted. For optimum control, treat from peak flight to peak egg hatch. Irrigate to move Tandem into the root zone. Full-season control of white grubs will be obtained with either a single 28-fl-oz application or two 14-fl-oz applications.

Apply to turf prior to the establishment of high insect pressure or significant turf damage.

**Fire Ant Mound Treatment** - Treat individual mounds with a drench application using a watering can. Use 0.15 fluid ounces of Tandem per 2.5 gallons of water. Thoroughly soak each mound and a 3-ft. diameter circle around each mound. Gently apply the mixture to avoid disturbing the mound. Disturbing the mound may cause the ants to migrate and reduce the effectiveness of the treatment. For best results, apply in early morning or late evening hours. Applications can be made on a monthly basis to maintain protection of treated areas.

**Surface Insect Control (armyworm, cutworms, fleas, etc.)** - Apply Tandem at specified rates in 2-5 gallons of

water per 1,000 sq ft. The use of a spreader-sticker may be useful if high rainfall amounts are forecast; otherwise, the addition of adjuvants is not necessary under normal conditions for surface insect control in turf.

Delay watering or mowing for 12-24 hours after application for optimum control of surface-feeding insect pests.

**Thatch-Inhabiting Insect Control (chinch bugs, etc.) –**

Apply Tandem at specified rates in 2-10 gallons of water per 1,000 sq ft. The use of a nonionic wetting agent, penetrant, or similar adjuvant is recommended. Irrigate after application with up to 1/2 inch of water to move the Tandem into the thatch layer. If irrigation is not available, then use high water application rates volumes (>4 gal/1,000 sq ft) for optimum results.

For specific information about developmental stages of the target pest and optimal timing of applications, consult with your State Cooperative Extension Service.

**APPLICATION TO ORNAMENTALS**

**Applications to Ornamentals:** Apply to ornamentals in residential landscaped areas and landscaped areas around institutional, public, commercial and industrial buildings; parks; recreational areas; and athletic fields (including trees, shrubs, flowers, evergreens, foliage plants, and groundcovers).

Do not apply more than 32 fluid ounces of Tandem per acre per year.

Pests <sup>1</sup>	Dosage of Tandem
Adelgids (including Hemlock wooly adelgid) Armyworms Azalea caterpillars Aphids Bagworms Black vine weevils (adult) Boxelder bugs Budworms California oakworms Cankerworms Crickets Cutworms Elm leaf beetles Fall webworms Flea beetles Grasshoppers Japanese beetles (adults) June beetles (adults) Lace bugs Leaf-feeding caterpillars Leaf-gall-forming insects Leafhoppers Leafminers (adults) Leaf rollers Leaf skeletonizers Mealybugs Midges Oleander moth larvae Pine shoot beetles Pinetip moths Plant bugs Psyllids (including Asian citrus psyllid) Root weevils Sawflies Scale insects (crawlers) Spittlebugs	4.2-13.9 fl oz per 100 gallons  <b>or</b>  125-410 ml per 100 gallons

Pests <sup>1</sup>	Dosage of Tandem
Striped beetles Thrips Tip moths Tussock moth larvae	
Broadmites Brown soft scale California red scale (crawlers) Clover mites Mealybugs Pine needle scale (crawlers) Whiteflies	8.5-13.9 fl oz per 100 gallons  or  250-410 ml per 100 gallons

<sup>1</sup> For nuisance pests other than plant-feeding pests (e.g., spiders, cockroaches, mosquitoes), refer to **Information: Outdoor Pests** section for use instructions.

Start application to ornamentals prior to the establishment of high insect pest populations. Make reapplications as necessary to keep pest populations under control, using higher rates within the listed rate range as pest pressure increases.

Apply at 7-day intervals if retreatment is necessary. Limit more frequent treatments to spot treatments.

Good spray coverage is necessary to provide the most effective level of control. Spray uniformly to wet plant, but not to the point of runoff or drip. Addition of a spreader-sticker at specified rates may enhance the control of insects on certain species of ornamentals having waxy, hard-to-wet foliage.

Consult your state university or local Cooperative Extension Service office for specific pest control application timing in your area.

**NOTE:** While phytotoxicity testing has been carried out on a wide range of ornamental plants under various environmental conditions, and no phytotoxicity has been observed, certain cultivars may be sensitive to the final spray solution.

Pre-spray a selection of ornamental plants and observe them for 7-10 days prior to treating large areas if local use experience is unavailable. This is especially advisable if Tandem is being mixed with another product or ingredient besides water. See **Tank Mixing (Turf and Ornamental Dilutions)** instructions.

**Scale:** Thoroughly cover the plant with Tandem spray, including trunks, stems, twigs, and foliage for control of scale insects.

**Bagworm:** Apply Tandem when bagworm larvae begin to hatch. Spray directly on the larvae. Application is most effective when the larvae are young.

#### **Ornamental, Non-Bearing Fruit and Nut Trees and Woody Shrubs**

Tandem contains thiamethoxam, which is a systemic insecticide that will be translocated upward into the plant from root uptake. Tandem must be placed in an area where roots can absorb the active ingredient. It may take 2-4 weeks for the active ingredient to move from the root zone to the area of the trees affected. If insect pests are already present and causing damage, consider making a foliar application and then follow up with a soil application. For best results, water in after application with enough water to move the insecticide into the root zone of the tree.

For trees and shrubs, use 0.2 fluid ounces (6 ml.) of Tandem per inch cumulative trunk diameter (DBH) of the plant(s) or per foot of shrub height (less than 6 ft tall).

## **STORAGE AND DISPOSAL**

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

### **Pesticide Storage**

Keep container closed when not in use. Do not store near food or feed. Shake well before use. Protect from freezing. In case of spill or leak on floor or paved surfaces, soak up with sand, earth, or synthetic absorbent. Remove to chemical waste storage area until proper disposal can be made.

### **Pesticide Disposal**

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

### **Container Handling**

Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. 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.

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Manufactured for:  
Syngenta Crop Protection, LLC  
P.O. Box 18300  
Greensboro, North Carolina 27419-8300

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