

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 ¹ (CAS No. 91465-08-6) | 3.5% |
| <i>Other Ingredients:</i> | 84.9% |
| <i>Total:</i> | 100.0% |

¹Microencapsulated

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

SCP 1437A-L1D 0113

1 quart (32 fluid ounces)

Net Contents



| FIRST AID | |
|--|---|
| If swallowed | <ul style="list-style-type: none">• Call a poison control center or doctor immediately for treatment advice.• Have person sip a glass of water if able to swallow.• Do not induce vomiting unless told to do so by the poison control center or doctor.• Do not give anything by mouth to an unconscious person. |
| If on skin or clothing | <ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15-20 minutes.• Call a poison control center or doctor for treatment advice. |
| If inhaled | <ul style="list-style-type: none">• Move person to fresh air.• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.• Call a poison control center or doctor for further treatment advice. |
| 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

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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.

- **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/WV2Q/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.

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.

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.

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.

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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

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:

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

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 1/2"-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 ¹ Bed Bugs ² 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 ³ 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 ⁴ | 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. |

¹ For treatment of fire ant mounds, see Lawns/Turfgrass Section of this label.

² Use 0.13% rate.

³ For outdoor use only -- use 0.13% rate.

⁴ 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

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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.

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.

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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.

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.

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. (16ml.) | 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% To mix 0.13% concentration: Use 32 ml. (1.1 oz.) Tandem/gal. of water. | Re-treat as needed |
| Carpenter Ants ¹ | •Liquid or foam – Gallery treatment | | |
| Carpenter Bees | | | |
| Wood-Destroying Beetles and Borers | <i>Preventive treatment:</i> •Wood Surface Spray | | |

¹0.065% to 0.13% rates may be used per instructions under **Control of Carpenter Ants** section.

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 ¹ | 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. |

¹Application 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.

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 *Inclisitermes*, *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

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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: Time application to flowering plants 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.

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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.

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 ¹ Armyworms Black turfgrass ataenius (adults) Bluegrass billbug (adults and larvae) Chinch bugs ² Crickets Cutworms Fire Ants Hyperodes weevil (adults and larvae) Japanese beetles (adult) Mole Cricket (young adults and nymphs) ³ Sod webworms White grubs ⁴ : <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. or 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. |

¹ **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.

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

³ **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.

⁴ **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.

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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 ¹ | Dosage of Tandem |
|---------------------------------|----------------------------------|
| Broadmites | 8.5-13.9 fl. oz. per 100 gallons |
| Brown soft scale | |
| California red scale (crawlers) | or |
| Clover mites | |
| Mealybugs | 250-410 ml. per 100 gallons |
| Pine needle scale (crawlers) | |
| Whiteflies | |

¹For 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).

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

Continued...

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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For non-emergency (e.g., current product information), call Syngenta Crop Protection at 1-800-334-9481.

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

SCP 1437A-L1D 0113



Syngenta Crop Protection, LLC
Post Office Box 18300
Greensboro, NC 27419

In Case of Emergency, Call
1-800-888-8372

1. PRODUCT IDENTIFICATION

Product Name: **TANDEM** Product No.: A18484A
EPA Signal Word: Caution
Active Ingredient(%): Lambda-Cyhalothrin (3.5%) CAS No.: 91465-08-6
Chemical Name: [1a(S*),3a(Z)]-cyano(3-phenoxyphenyl)methyl-3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate
Chemical Class: A pyrethroid insecticide
Active Ingredient(%): Thiamethoxam (11.6%) CAS No.: 153719-23-4
Chemical Name: 3-(2-chloro-1,3-thiazol-5-ylmethyl)-5-methyl-1,3,5-oxadiazinan-4-ylidene(nitro)amine
Chemical Class: Neonicotinoid Insecticide
EPA Registration Number(s): 100-1437 Section(s) Revised: 14

2. HAZARDS IDENTIFICATION

Health and Environmental

Harmful if swallowed or inhaled. Causes mild eye and skin irritation.
May cause temporary itching, tingling, burning or numbness of exposed skin, called paresthesia.

Hazardous Decomposition Products

None known.

Physical Properties

Appearance: Beige-brown liquid

Odor: Strong aromatic

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Material | OSHA PEL | ACGIH TLV | Other | NTP/IARC/OSHA Carcinogen |
|---------------------------|-----------------|-----------------|--|-----------------------------|
| Propylene Glycol | Not Established | Not Established | 10 mg/m ³ TWA **** | No |
| Lambda-Cyhalothrin (3.5%) | Not Established | Not Established | 0.04 mg/m ³ TWA (skin) *** | No |
| Thiamethoxam (11.6%) | Not Established | Not Established | 3 mg/m ³ TWA *** | No |

*** Syngenta Occupational Exposure Limit (OEL)

**** Recommended by AIHA (American Industrial Hygiene Association)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
Syngenta Hazard Category: D, S

4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

- Ingestion:** If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Eye Contact:** If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Skin Contact:** If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Inhalation:** If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Notes to Physician

There is no specific antidote if this product is ingested.

Treat symptomatically.

Skin contact paresthesia effects (itching, tingling, burning or numbness) are transient, lasting up to 24 hours. Treat symptomatically.

Medical Condition Likely to be Aggravated by Exposure

None known.

5. FIRE FIGHTING MEASURES

Fire and Explosion

| | | |
|------------------------------|-----------------------|-----------------------|
| Flash Point (Test Method): | Not Available | |
| Flammable Limits (% in Air): | Lower: Not Applicable | Upper: Not Applicable |
| Autoignition Temperature: | Not Available | |
| Flammability: | Not Available | |

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

In Case of Fire

Use dry chemical, foam or CO₂ extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a

potential for exposure to the material. Wash thoroughly with soap and water after handling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

- Ingestion: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.
- Eye Contact: Where eye contact is likely, use chemical splash goggles.
- Skin Contact: Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear.
Stringent housekeeping measures are necessary to prevent translocation of the material from contaminated work surfaces to uncontaminated surfaces (railings, doors, etc.). Unprotected contact with such translocated material can result in paresthesia effects (see Section 11 of MSDS). Do not touch unprotected skin areas (face) with contaminated gloves or clothing.
- Inhalation: A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH certified respirator with any N, R, P or HE filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance: Beige-brown liquid
- Odor: Strong aromatic
- Melting Point: Not Applicable
- Boiling Point: Not Available
- Specific Gravity/Density: 1.086 g/cm³ @ 68°F (20°C)
- pH: 4.5 - 6.5 (as packaged)

Solubility in H₂O

- Lambda-Cyhalothrin : 0.004 mg/l
- Thiamethoxam: 4.1 g/l @ 77°F (25°C)

Vapor Pressure

- Lambda-Cyhalothrin : 1.5 x 10⁽⁻⁹⁾ mmHg @ 68°F (20°C)
- Thiamethoxam: 2 x 10⁽⁻¹¹⁾ mmHg @ 68°F (20°C)

10. STABILITY AND REACTIVITY

- Stability: Stable under normal use and storage conditions.
- Hazardous Polymerization: Will not occur.
- Conditions to Avoid: None known.
- Materials to Avoid: None known.
- Hazardous Decomposition Products: None known.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

- Ingestion: Oral (LD50 Female Rat) : 1750 mg/kg body weight
- Dermal: Dermal (LD50 Rat) : > 5000 mg/kg body weight
- Inhalation: Inhalation (LC50 Rat) : > 2.52 mg/l air - 4 hours

Eye Contact: Minimally Irritating (Rabbit)
Skin Contact: Slightly Irritating (Rabbit)
Skin Sensitization: Not a Sensitizer (Guinea Pig)

Reproductive/Developmental Effects

Lambda-Cyhalothrin : Not a developmental or reproductive toxicant.

Thiamethoxam: Developmental: Not teratogenic in rats or rabbits.

Reproductive: No effects on reproduction. Minor increase in a common testis effect in rats at high doses, which did not affect reproduction. When used in accordance with label directions and recommendations in this MSDS, no effects would be expected in humans.

Chronic/Subchronic Toxicity Studies

Lambda-Cyhalothrin : Reversible paresthesia (abnormal skin sensation).

Reversible clinical signs of neurotoxicity in mammals.

Thiamethoxam: Subchronic: Liver effects occurred in rodents only at high dose levels. Not neurotoxic after high acute and subchronic exposure in rats.

Carcinogenicity

Lambda-Cyhalothrin : No treatment-related tumors in rats or mice.

Thiamethoxam: Classified as "not likely to be carcinogenic in humans" based on lifetime studies in mice and rats.

Other Toxicity Information

In humans, contact with exposed skin may result in temporary itching, tingling, burning or numbness, called paresthesia. The effect may result from splash, aerosol, or hot vapor contact, or transfer to the face from contaminated gloves and hands. The symptoms normally disappear within 24 hours. Face and genital areas are especially susceptible to this effect. Paresthesia involving the face is also known as "subjective facial sensation" or SFS.

Toxicity of Other Components

Propylene Glycol

Test results reported in Section 11 for the final product take into account any acute hazards related to the propylene glycol in the formulation.

Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea.

Chronic dietary exposure caused kidney and liver injury in experimental animals.

Target Organs

Active Ingredients

Lambda-Cyhalothrin : Liver, nervous system

Thiamethoxam: Liver

Inert Ingredients

Propylene Glycol: CNS, kidney, liver

12. ECOLOGICAL INFORMATION

Ecotoxicity Effects

Lambda-Cyhalothrin :

Fish (Rainbow Trout) 96-hour LC50 0.19 ppb

Bird (Mallard Duck) LD50 Oral > 3950 mg/kg

Invertebrate (Water Flea) 48-hour EC50 0.04 ppb

Thiamethoxam:

Fish (Rainbow Trout) 96-hour LC50 > 100 ppm

Bird (Mallard Duck) LD50 Oral 576 mg/kg

Invertebrate (Daphnia Magna) 48-hour EC50 > 106 ppm

Green Algae 4-day EC50 > 97 ppm

Environmental Fate

Lambda-Cyhalothrin :

The information presented here is for the active ingredient, lambda-cyhalothrin.
Not persistent in soil or water. Immobile in soil. Sinks in water (after 24 h).

Thiamethoxam:

The information presented here is for the active ingredient, thiamethoxam.
Not persistent in soil. Stable in water. Moderate mobility in soil. Floats in water (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA
Not regulated.

Comments

Water Transport - International
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Lambda-Cyhalothrin, Thiamethoxam),
Marine Pollutant
Hazard Class: Class 9
Identification Number: UN 3082
Packing Group: PG III

Air Transport
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Lambda-Cyhalothrin, Thiamethoxam)
Hazard Class: Class 9
Identification Number: UN 3082
Packing Group: PG III

15. REGULATORY INFORMATION

EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard
Chronic Health Hazard

Section 313 Toxic Chemicals: Not Applicable

California Proposition 65

This product does not contain chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

CERCLA/SARA 304 Reportable Quantity (RQ)

Not Applicable

RCRA Hazardous Waste Classification (40 CFR 261)

Not Applicable

TSCA Status

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 2
Flammability: 1
Instability: 0

HMIS Hazard Ratings

Health: 2
Flammability: 1
Reactivity: 0

| | |
|---|----------|
| 0 | Minimal |
| 1 | Slight |
| 2 | Moderate |
| 3 | Serious |
| 4 | Extreme |

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 3/5/2012

Revision Date: 6/8/2012

Replaces: 5/14/2012

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

End of MSDS



Demand® CS Insecticide

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, agricultural and industrial buildings; and parks, recreational areas and athletic fields.

| | |
|---------------------------------------|--------|
| <i>Active Ingredient:</i> | |
| Lambda-cyhalothrin ¹ | 9.7% |
| <i>Other Ingredients:</i> | 90.3% |
| <i>Total:</i> | 100.0% |

¹Synthetic pyrethroid, capsule suspension (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. 100-1066 EPA Est. 61282-WI-1

Product of the United Kingdom Formulated in the USA

SCP 1066A-L1J 0810

**1 quart
Net Contents**

| FIRST AID | |
|---|--|
| If on skin or clothing | <ul style="list-style-type: none"> Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. |
| If in eyes | <ul style="list-style-type: none"> Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. |
| If swallowed | <ul style="list-style-type: none"> Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person. |
| If inhaled | <ul style="list-style-type: none"> Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice. |
| 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 absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic skin reactions in some individuals. Avoid contact with skin, eyes, or clothing. Avoid breathing spray mist or vapor. Wash thoroughly with soap and water after handling, and before eating, drinking, chewing gum or using tobacco. Remove contaminated clothing and wash before reuse.

Environmental Hazards

This product is extremely toxic to fish. 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 run-off to water bodies or drainage systems. 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 crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

Physical and Chemical Hazards

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

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, Inc. 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.

IMPORTANT: Not for use on plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes. For use on plants intended for aesthetic purposes or climatic modification and being grown in interior plantscapes, ornamental gardens or parks, or on lawns or grounds.

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

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

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

- Do not water treated area to the point of run-off.
- Do not make applications during rain.
- Do not apply directly to sewers or drains, or to any area like a gutter where drainage to sewers, storm drains, water bodies, or aquatic habitat can occur, except as directed by this label.

This product is restricted for use in the State of New York.

INFORMATION: STRUCTURAL AND PERIMETER PEST CONTROL

For use as a surface, crack and crevice, or spot treatment in, on, and around buildings and structures and their immediate surroundings, and on modes of transport. Permitted areas of use include, but are not limited to, aircraft (cargo and other non-cabin areas only), apartment buildings, boiler rooms, buses, closets, correctional facilities, decks, entries, factories, fencing, floor drains (that lead to sewers), food granaries, food grain mills, food manufacturing, processing and serving establishments; furniture, garages, garbage rooms, greenhouses (non-commercial), hospitals, hotels and motels, houses, industrial buildings, laboratories, livestock/poultry housing, landscape vegetation, locker rooms, machine rooms, mausoleums, mobile homes, mop closets, mulch, nursing homes, offices, patios, pet kennels, porches, railcars, restaurants, storage rooms, schools, sewers (dry), stores, trailers, trees, trucks, utility passages, vessels, vestibules, warehouses, wineries and yards.

For indoor applications, retreat at 21 day intervals or as necessary to maintain control.

Mixing Instructions

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

Tank Mixing

Demand CS Insecticide 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 Demand CS Insecticide to the tank first. If other chemicals are added to the applicator tank, add Demand CS Insecticide last. If mixed with EC formulations, use within 24 hrs. Fill tank to desired volume and continue to agitate while making applications.

Demand CS Insecticide may be tank mixed with an Insect Growth Regulator (IGR) such as Archer® Insect Growth Regulator.

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

Foam Applications

Demand CS Insecticide may be converted to a foam and the foam used to treat structural voids to control or prevent pests including ants, bees, termites (above ground only), wasps, or other arthropods harboring in walls, under slabs, or in other void areas.

| RATES FOR STRUCTURAL PESTS (HAND APPLICATION EQUIPMENT) | | |
|--|-----------------------|--|
| Pests | Concentration of A.I. | Dilution Rate |
| Ants Bedbugs (adult) Bees Beetles Boxelder Bugs Carpenter Bees Carpet Beetles Centipedes Cigarette Beetles Clover Mites Cockroaches ¹ Confused Flour Beetles Crickets Earwigs Firebrats Fleas ² Flies Lesser Grain Borers Millipedes Mosquitoes Red Flour Beetles Rice Weevils Saw-toothed Grain Beetles Silverfish Sowbugs Spiders Termites (above ground only) Ticks Wasps | 0.015– 0.03% | 0.015%: 0.2 fl.oz.(6mL)/gal. of water 0.03%: 0.4 fl.oz.(12mL)/gal. of water |
| Cockroaches ¹ Crickets ⁶ Flies ^{5*} Litter Beetles ³ (such as Darkling, Hide, and Carrion) Mosquitoes ⁴ Pillbugs Scorpions Spiders ⁶ Spider Mites (Twospotted, Spruce) Ticks ⁶ | 0.06% | 0.8 fl.oz.(24mL)/gal. of water |

*Not approved for use in California at the high rate.

¹ For cockroaches, the recommended rate for maintenance treatments is 0.015% and for clean-out treatments is 0.03%. For control of SEVERE infestations, use 0.06% rate.

² For outdoor use only and use 0.03% rate.

³ For control of LIGHT beetle infestations, use 0.03% rate.

⁴ For residual control, use 0.06% rate.

⁵ Rates for flies may be increased to 0.06% when environmental conditions are severe and/or populations are high.

⁶ For clean-out/severe infestations, use 0.06% rate.

SPECIFIC USE DIRECTIONS

Ants

Apply to any trails around doors and windows and other places where ants may be found. For best results, locate and treat nests. Where ants are trailing inside, 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, cracks and crevices. When combining baits and residual surface insecticides, apply surface insecticides in cracks and crevices, along baseboards, and infested surfaces and outside barrier treatments. Treatment of perimeter landscaping can reduce honeydew-producing insects and limit this ant food source. Use baits in other areas that are untreated by residual insecticides; also see **Outdoor Surfaces Use**.

Cockroaches, Crickets, Earwigs, Firebrats, Silverfish, and Spiders

Apply as a coarse, low-pressure spray 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, furniture, sinks, furnaces and stoves, the underside of shelves, drawers and similar areas. Pay particular attention to cracks and crevices; also see **Outdoor Surfaces Use**.

Bedbugs

Clean floors and surfaces by vacuuming before applications. Apply as a coarse, low-pressure spray to harborage areas including crevices, baseboards, loose plaster, behind bed frames and headboards, beneath beds and furniture, and to bedsprings and bed frames. Do not apply to furniture surfaces or mattresses where people will be laying or sitting. Do not treat infested bedding, but remove and place in sealed plastic bags, and take for laundering and drying at high temperatures.

Bees, Flies, Mosquitoes, and Wasps

Apply directly to walls, ceilings, window screens, and other resting areas as a residual surface treatment. May be used inside residential buildings as well as in and around carports, garages, and storage sheds; also see **Outdoor Surfaces Use**. Use caution when treating nests of stinging insects as Demand CS Insecticide does not provide instant knockdown. Protective equipment for the applicator may be required. For best results, treat bee, wasp and hornet nests late in the day when most insects will be present. Allow 2-3 days for colony to die and retreat if necessary.

For mosquito control, apply as a structural perimeter spray to landscape plantings, turf, and building foundations to control mosquitoes. Yards or other frequented areas enclosed by landscaping can benefit from the creation of a mosquito barrier to reduce invading mosquitoes by the treatment of perimeter vegetation. Apply Demand CS Insecticide at specified rates in 2-5 gals. of water per 1,000 sq. ft. Higher volumes applied result in better coverage and, as a rule, will improve control. Application to vegetation away from structures may require additional certification, e.g. in turf or ornamental categories. Consult your state regulatory agency for requirements.

Carpenter Bees

Apply coarse spray 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.

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 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.

Boxelder Bugs, Centipedes, Millipedes, Pillbugs, and Sowbugs

Apply around doors and windows and other places where these pests may be found or where they may enter premises. Treat baseboards, storage areas, and other locations. Apply barrier treatments to prevent infestation as described below; also see **Outdoor Surfaces Use**.

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. Treat entire area rather than making spot treatments, and retreat as necessary to maintain control. Do not apply to pasture or cropland, and do not allow animals and people access to treated areas until the 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. Also, treat pets with a product registered for flea and tick control. See **Outdoor Surfaces Use**.

Cluster Flies

Apply in late summer or early fall before flies are observed alighting on surfaces. Apply thoroughly on siding, under eaves, and around windows and doors, paying particular attention to south-facing surfaces. Apply just enough dilution to adequately cover the area without excessive dripping or runoff. Volume can vary depending on the surface type treated. Heavy precipitation prior to frost may require re-treatments to maintain protection. In winter and spring when flies become active and are emerging, interior crack and crevice and void treatments can help reduce the infestation, along with ULV or surface application in infested attics or unoccupied lofts.

Litter Beetles (Darkling, Hide, and Carrion Beetles) and Flies In Animal Housing (Such As Poultry Houses)

To control adult litter beetles, apply Demand CS Insecticide to walls and floors at cleanout, before reintroduction of animals. This will suppress beetles that escaped earlier treatment and will help delay onset of future infestations. Pay attention to areas where beetles frequently occur, such as walls, supports, cages, stalls, and around feeders. To help control flies, apply a directed application to horizontal surfaces and overhead areas and allow to dry before reintroduction of animals; also see **Livestock/Poultry Housing Structures and Pet Kennels**.

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, storage, packing (canning, bottling, wrapping, boxing), preparing foods, edible waste storage and enclosed processing systems (mills, dairies, edible oils, syrups), and serving areas.

Use as a crack and crevice or spot treatment in and around both food and nonfood 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, openings leading to voids and 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. Avoid contamination of 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 or spot treatment to selective surfaces such as baseboards, 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 in 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 and/or crack and crevice treatment is not permitted. Limit the use of application equipment such as the Micro-Injector or Actisol applicator in food areas to crack and crevice treatment only.

Livestock/Poultry Housing Structures and Pet Kennels

Apply as a surface (including directed sprays) and/or crack and crevice treatment. Control is enhanced when interior and exterior perimeter applications are made in and around the livestock, poultry, and pet housing structures. Normal cleaning practices of the structure also must

be followed along with applications of Demand CS Insecticide to effectively control the crawling and flying insect pests listed in the table.

For unoccupied areas of livestock barns or housing structures, apply to floors, vertical, and overhead surfaces where crawling or flying insect pests are or may be present. Cover feeders, waterers, and feed carts before application to prevent contamination. Do not apply to milk rooms or feed rooms. Pay attention to animal areas including stanchions, pipes, windows and doors, and areas where insect pests hide or congregate. Exterior applications to south facing walls and foundation perimeters can help prevent interior infestations of flying and crawling insect pests.

For poultry houses, apply to floor area (birds grown on litter) or to walls, posts, and cage framing (birds grown in cages). Also make applications into cracks and crevices around insulation. Reapply after each growout or sanitization procedure. Indoor control can be enhanced by making perimeter treatments around the outside of building foundations to prevent immigrating adult beetles. Apply in a uniform band 1–3 ft. up and 2–6 ft. out from foundation. Maintaining a year-round treatment program will prevent background populations from reaching problem levels.

Do not make interior applications of Demand CS Insecticide in areas of facility where animals other than cattle or calves are present. Allow treated surfaces to completely dry before restocking the facility.

DO NOT make applications to any animal feedstuffs, water, or watering equipment.

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

Outdoor Surfaces Use

For control of ants, bees, centipedes, cockroaches, crickets, fleas, flies, millipedes, mosquitoes, scorpions, sowbugs, pillbugs, spiders, termites (above ground only), ticks, wasps, and other similar perimeter arthropod pests. Apply with either hand or power application equipment as a residual treatment to ornamental plants next to foundations of 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. For termites, this type of application is not intended as a substitute for soil treatment labeled termiticides or mechanical alteration to control subterranean termites, or fumigation for extensive infestation of drywood termites or other wood-infesting insects.

The purpose of such applications of Demand CS Insecticide for termites is to kill workers or winged reproductive forms which may be present in treated channels at the time of treatment. Such applications are not a substitute for mechanical alteration, soil treatment or foundation treatment, but are merely a supplement. This product is not recommended as sole protection against termites. For active termite infestations, get a professional inspection.

Structural Perimeter Barrier Treatments

Applying a continual 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. To facilitate application, remove debris and leaf litter from next to the foundation, cut back vegetation and branches that touch the foundation, and move or rake back rocks, deep mulch, or other potential pest harborage next to the foundation. Apply the band up to 10 ft. wide around the structure (or according to state regulations governing commercial pest control) and upwards along the foundation to 3 ft. and 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.

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

Rate Table For Structural Perimeter Barrier Applications

| Application Rate: Fl. oz. (mL) of Demand CS Insecticide | Gals. of Water ¹ | Area of Coverage (sq. ft.) |
|---|-----------------------------|-------------------------------|
| 0.2 fl. oz. (6mL) | 1–5 gals. | 800–1600 sq. ft. |
| 0.4 fl. oz. (12 mL) | 1–5 gals. | 800–1600 sq. ft. |
| 0.8 fl. oz. (24 mL) | 1–5 gals. | 800–1600 sq. ft. |

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

Examples of Dilutions for Structural Perimeter Barrier Applications

| Application Volume Gals. of Solution/ 1000 sq. ft. | Application Rate Fl. oz. (mL) of Demand CS Insecticide/ 1000 sq. ft. | Fl. oz. (mL) of Demand CS Insecticide to Dilute in Water According to Spray Tank Volumes | | |
|---|---|--|------------------------|---------------------------|
| | | 5 gals. | 10 gals. | 50 gals. |
| 1 gal./1000 sq. ft. | 0.2 fl. oz. (6mL) | 1 fl. oz. (30 mL) | 2 fl. oz. (60 mL) | 10 fl. oz. (300mL) |
| | 0.4 fl. oz. (12 mL) | 2 fl. oz. (60 mL) | 4 fl. oz. (120mL) | 20 fl. oz. (600 mL) |
| | 0.8 fl. oz. (24 mL) | 4 fl. oz. (120mL) | 8 fl. oz. (240mL) | 40 fl. oz.(1200 mL) |
| 2 gal./1000 sq. ft. | 0.2 fl. oz. (6mL) | 0.5 fl. oz. (15 mL) | 1 fl. oz. (30 mL) | 5 fl. oz. (150 mL) |
| | 0.4 fl. oz. (12 mL) | 1 fl. oz. (30 mL) | 2 fl. oz. (60 mL) | 10 fl. oz. (300 mL) |
| | 0.8 fl. oz. (24 mL) | 2 fl. oz. (60 mL) | 4 fl. oz. (120 mL) | 20 fl. oz. (600 mL) |
| 5 gal./1000 sq. ft. | 0.2 fl. oz. (6mL) | 0.2 fl. oz. (6 mL) | 0.4 fl. oz. (12 mL) | 2 fl. oz. (60 mL) |
| | 0.4 fl. oz. (12 mL) | 0.4 fl. oz. (12 mL) | 0.8 fl. oz. (24 mL) | 4 fl. oz. (120 mL) |
| | 0.8 fl. oz. (24 mL) | 0.8 fl. oz. (24 mL) | 1.6 fl. oz. (48 mL) | 8 fl. oz. (240 mL) |

Example calculation: to apply the mid-rate of Demand CS Insecticide at a volume of 5 gal./1000 sq. ft., mix 4 fl. oz. of concentrate in 50 gallons of water.

The percent active ingredient in the finished Demand CS Insecticide dilution can be calculated with the following formula:

mL needed to add times 9.7% active in concentrate, divided by gal. finished dilution times 3785 mL/gal. = % active in dilution.
(Example: 4 fl. oz. in 50 gal. is 120 mL, times 9.7 equals 1164, and 50 gal. times 3785 is 189250. Dividing 1164 by 189250 equals 0.006% active in the tank dilution).

NOTE: Do not use water base sprays of Demand CS Insecticide in conduits, motor housings, junction boxes, switch boxes, or other electrical equipment because of possible shock hazard. Thoroughly wash out sprayer and screen with water and detergent before using Demand CS Insecticide. Demand CS Insecticide has not stained or caused damage to painted or varnished surfaces, plastics, fabrics, or other surfaces where water applied alone causes no damage. However, treat a small area and allow to dry, to determine whether staining will occur.

LET TREATED SURFACES DRY BEFORE ALLOWING HUMANS AND PETS TO CONTACT SURFACES.

Do not use this product with oil.

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

Do not apply to classrooms when in use.

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

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.

INFORMATION: LAWNS/TURFGRASS AND ORNAMENTALS

Demand CS Insecticide may be used for applications to maintain indoor or 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. Application rates for turf and ornamental applications of Demand CS Insecticide are lower than structural pest control rates, reflecting that treatment intervals are generally more frequent.

Applicators must ensure that they are certified in the necessary pesticide certification categories to allow application of Demand CS Insecticide away from structures, such as to turf and ornamental plantings. Structural pest control certification categories may limit the distance away from structures for pesticide application. Consult your state extension office or pesticide regulatory officials for further information.

IMPORTANT: Time application to flowering plants during periods when pollinating insects are not present, such as early morning or late evening.

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.

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 make outdoor broadcast applications to turf and ornamentals when wind speed is 15 mph or greater.

In the state of New York, do not apply within 100 ft. of coastal marshes or streams that drain into coastal marshes.

Mixing Instructions (Turf and Ornamental Dilutions)

Demand CS Insecticide is to be mixed with water and may be used in all types of standard application equipment. Fill applicator tank with the desired volume of water and add Demand CS Insecticide. Adjust water pH with a buffering agent if necessary to achieve a pH of 5-7. Slowly add Demand CS Insecticide to applicator tank water with maximum agitation. Close and shake or reagitator applicator tank before use if application is interrupted. Make up only amount of treatment volume as required.

Tank Mixing (Turf and Ornamental Dilutions)

Demand CS Insecticide may be tank mixed with other currently registered pesticides unless expressly prohibited by the product label. Adjuvants such as spreader stickers, wetting agents, and penetrants may also be added. To ensure compatibility, conduct a small volume mixing test with the other products. If other chemicals are added to the applicator tank, add Demand CS Insecticide 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.

Tank Dilution Rates for Ornamental Pests

| Use | Pest | Amount of Demand CS Insecticide |
|--|---|---------------------------------|
| 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) | Ants (Including Imported fire ants) | 1.5-5 fl. oz./100 gals. |
| | Armyworms Azalea caterpillars Aphids Bagworms Black vine weevils (adult) Boxelder bugs Budworms California oakworms Cankerworm Cockroaches Crickets Cutworms Eastern tent caterpillars Elm leaf beetles European sawflies Fall webworms Flea beetles Forest tent caterpillars Gypsy moth larvae Japanese beetles (adults) June beetles (adults) Lace bugs Leaf-feeding caterpillars Leafhoppers Leafminers (adults) Leaf rollers Leaf skeletonizers Midges Mosquitoes Oleander moth larvae Pillbugs Pine sawflies Pine shoot beetles Pinetip moths Plant bugs Root weevils Sawflies Scale insects (crawlers) Spiders Spittlebugs Striped beetles Striped oakworms Thrips Tip moths Tussock moth larvae Wasps | or 44-148 mL/100 gals. |

Example calculation: to prepare a mid-rate dilution of Demand CS Insecticide, mix 3 fl. oz. (88 mL) of concentrate in 100 gals.

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 as pest pressure increases.

Apply at 7-day intervals if retreatment is necessary. Limit more frequent treatments to spot treatments. Recognize that as plants grow, new foliage will be unprotected until treated.

Do not apply more than 0.36 lbs. of the a.i. (52.4 fl. oz. of concentrate)/A per year.

Good spray coverage is necessary to provide the most effective level of control. 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.

For spot treatments use 0.5 fl. oz. Demand CS Insecticide per 1–2½ gals. of water.

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.

Prespray 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 Demand CS Insecticide is being mixed with another product or ingredient besides water. See **Tank Mixing (Turf and Ornamental Dilutions)** instructions.

Scale: Thoroughly cover the plant with Demand CS Insecticide spray, including trunks, stems, twigs, and foliage for control of scale insects (crawler stage).

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

Demand CS Insecticide Mixing Chart for Ornamental Insect Pest Control

| Rate of Demand CS Insecticide | 25 Gals | 50 Gals | 100 Gals | 200 Gals | 300 Gals |
|-------------------------------|-------------|-------------|-------------|--------------|--------------|
| 1.5 fl. oz. ¹ | 0.4 fl. oz. | 0.8 fl. oz. | 1.5 fl. oz. | 3.0 fl. oz. | 4.5 fl. oz. |
| 3.0 fl. oz. ² | 0.8 fl. oz. | 1.5 fl. oz. | 3.0 fl. oz. | 6.0 fl. oz. | 9.0 fl. oz. |
| 5.0 fl. oz. ³ | 1.3 fl. oz. | 2.5 fl. oz. | 5.0 fl. oz. | 10.0 fl. oz. | 15.0 fl. oz. |

¹Equivalent to 3.5 mL/1000 sq. ft. (or 5 fl. oz./A) when applied at 8 gal./1000 sq. ft.

²Equivalent to 7 mL/1000 sq. ft. (or 10 fl. oz./A) when applied at 8 gal./1000 sq. ft.

³Equivalent to 9.5 mL/1000 sq. ft. (or 14 fl. oz./A) when applied at 8 gal./1000 sq. ft.

Power Spray Rates for Lawn and Turfgrass Pests

| Use | Pest | Amount of Demand CS Insecticide |
|--|--|---|
| Lawns/Turfgrass Around Residential, Institutional, Public, Commercial and Industrial Buildings, Parks, Recreational Areas and Athletic Fields | Ants (Including Imported fire ants) Armyworms Centipedes Crickets Cutworms Earwigs Fleas (adult) Grasshoppers Japanese beetles (adult) Millipedes Mites Mosquitoes (adult) Pillbugs Sod webworms Sow bugs Ticks (including species which transmit Lyme disease) | 3.4–7 mL/1000 sq. ft. or 5–10 fl. oz./A |
| | Bluegrass billbugs (adult) Black turfgrass ataenius (adult) Chiggers Fleas (adult) Grubs (suppression) Hyperodes weevils (adult) Mole crickets (nymphs and young adults) | 7 mL/1000 sq. ft. or 10 fl. oz./A |

Example calculation: to treat listed turf pests at the mid-rate for Demand CS Insecticide of 7 mL/1000 sq. ft., determine gals./dilution/1000 sq. ft. needed to cover turf. At 5 gal./1000 sq. ft., add 7 mL + 5 or 1.4 mL per gallon. For a 50 gallon tank, this would be equivalent to 70 mL or 2.5 fl. oz. in 50 gals. water.

Start application to turf prior to the establishment of high insect pest populations and significant turf damage. Make reapplications as necessary to keep pest populations under control, using higher rates as pest pressure increases.

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

Do not apply more than 0.36 lbs. of a.i. (52.4 fl. oz. of concentrate)/A per year.

For spot treatments, use 0.5 fl. oz. of Demand CS Insecticide per 1–2.5 gals. of water.

Do not apply when turfgrass is waterlogged or when soils are saturated with water (i.e. will not accept irrigation).

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

Surface Insect Control (armyworm, cutworms, fleas, etc.)

Apply Demand CS Insecticide at specified rates in 2–5 gals. 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 for optimum control of surface-feeding insect pests.

Thatch Inhabiting Insect Control (chinch bugs, billbugs, etc.)

Apply Demand CS Insecticide at specified rates in 2–10 gals. of water per 1,000 sq. ft. The use of a nonionic wetting agent, penetrant or similar adjuvant is recommended. Lightly irrigate after application with up to 1/2 inch of water to move the Demand CS Insecticide into the thatch layer. If irrigation is not available, then use high water application rates for optimum results.

Subsurface Insect Control (mole crickets, grubs, etc.)

Apply Demand CS Insecticide at specified rates in 4–10 gals. of water per 1,000 sq. ft. The use of a nonionic wetting agent, penetrant or similar adjuvant is strongly recommended. Use the highest water application rates possible with your sprayer. Apply Demand CS Insecticide to turf wet with dew, rain or irrigation. Water-in immediately after application with 1/4–1/2 inch of water for optimum results.

Fire Ant Control

Treat individual mounds with a drench application using a watering can. Use 0.5 fl. oz. of Demand CS Insecticide per 2.5 gals. 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.

Mosquito Control

Apply as a spray around landscape plantings, turf, and building foundations to control mosquitoes. Yards or other frequented areas enclosed by landscaping can benefit from the creation of a mosquito barrier to reduce invading mosquitoes by the treatment of perimeter vegetation. Apply Demand CS Insecticide at specified rates in 2–5 gals. of water per 1,000 sq. ft. Higher volumes applied result in better coverage and, as a rule, will improve control.

Demand CS Insecticide Mixing Chart for Turf Insect Pest Control**(Demand CS Insecticide to add per 100 gal. spray tank)**

| Rate of Demand CS Insecticide | Application Rate Per 1,000 Sq. Ft. of Turf | | | | |
|-------------------------------|--|-------------|-------------|-------------|-------------|
| | 2 gal. | 4 gal. | 6 gal. | 8 gal. | 10 gal. |
| 5 fl. oz./A | 5.7 fl. oz. | 2.9 fl. oz. | 1.9 fl. oz. | 1.4 fl. oz. | 1.2 fl. oz. |
| 10 fl. oz./A | 11.5 fl. oz. | 5.7 fl. oz. | 3.8 fl. oz. | 2.9 fl. oz. | 2.3 fl. oz. |

Conversion Rate: 1 fluid ounce (fl. oz.) equals 29 milliliters (mL).

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Do not reuse empty container.

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

Nonrefillable 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 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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Micro-Injector® is a registered trademark of Whitmire Micro-Gen Research Laboratories, Inc.

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For non-emergency
(e.g. current product information)
call Syngenta Crop Protection
at 1-800-334-9481.

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





MATERIAL SAFETY DATA SHEET

Syngenta Crop Protection, LLC
Post Office Box 18300
Greensboro, NC 27419

In Case of Emergency, Call
1-800-888-8372

1. PRODUCT IDENTIFICATION

Product Name: **DEMAND CS** Product No.: A12690A
EPA Signal Word: Caution
Active Ingredient(%): Lambda-Cyhalothrin (9.7%) CAS No.: 91465-08-6
Chemical Name: [1a(S*),3a(Z)]-cyano(3-phenoxyphenyl)methyl-3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate
Chemical Class: A pyrethroid insecticide
EPA Registration Number(s): 100-1066 Section(s) Revised: 11

2. HAZARDS IDENTIFICATION

Health and Environmental

Harmful if inhaled. May be harmful in contact with skin. May cause an allergic skin reaction. Causes mild skin irritation. Vapors may cause drowsiness and dizziness. May be harmful if swallowed and enters airway. May cause temporary itching, tingling, burning or numbness of exposed skin, called paresthesia.

Hazardous Decomposition Products

None known.

Physical Properties

Appearance: Off-white liquid
Odor: Slight odor/typical aromatic solvent

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Material | OSHA PEL | ACGIH TLV | Other | NTP/IARC/OSHA Carcinogen |
|---------------------------------|-------------------|---------------------------|---------------------------------------|--------------------------|
| Cumene (< 1%) | 50 ppm TWA (skin) | 50 ppm TWA | Not Established | No |
| Petroleum Solvent | Not Established | Not Established | 100 mg/m ³ (19 ppm) TWA * | No |
| Propylene Glycol | Not Established | Not Established | 10 mg/m ³ TWA **** | No |
| 1,2,4-Trimethylbenzene (< 2.5%) | Not Established | 25 ppm TWA | 25 ppm TWA ** | No |
| Xylene (< 1%) | 100 ppm TWA | 100 ppm TWA; 150 ppm STEL | 100 ppm TWA ** | IARC Group 3 |
| Lambda-Cyhalothrin (9.7%) | Not Established | Not Established | 0.04 mg/m ³ TWA (skin) *** | No |

* recommended by manufacturer

** recommended by NIOSH

*** Syngenta Occupational Exposure Limit (OEL)

**** Recommended by AIHA (American Industrial Hygiene Association)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
Syngenta Hazard Category: C, S

4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

- Ingestion:** If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Eye Contact:** If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Skin Contact:** If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Inhalation:** If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Notes to Physician

There is no specific antidote if this product is ingested.

Treat symptomatically.

Persons suffering a temporary allergic reaction may respond to treatment with antihistamines or steroid creams and/or systemic steroids.

Skin contact paresthesia effects (itching, tingling, burning or numbness) are transient, lasting up to 24 hours. Treat symptomatically.

Contains petroleum distillate - vomiting may cause aspiration pneumonia.

Medical Condition Likely to be Aggravated by Exposure

None known.

5. FIRE FIGHTING MEASURES

Fire and Explosion

- Flash Point (Test Method): > 212°F (Setaflash)
- Flammable Limits (% in Air): Lower: Not Applicable Upper: Not Applicable
- Autoignition Temperature: Not Available
- Flammability: Not Applicable

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

In Case of Fire

Use dry chemical, foam or CO2 extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and

drainage systems or any body of water. Clean up spills immediately, observing precautions in Protective Equipment Section. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

- Ingestion: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.
- Eye Contact: Where eye contact is likely, use chemical splash goggles.
- Skin Contact: Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber or Viton), coveralls, socks and chemical-resistant footwear. Stringent housekeeping measures are necessary to prevent translocation of the material from contaminated work surfaces to uncontaminated surfaces (railings, doors, etc.). Unprotected contact with such translocated material can result in paresthesia effects (see Section 11).
- Inhalation: A combination particulate/organic vapor respirator should be used until effective engineering controls are installed to comply with occupational exposure limits, or until exposure limits are established. Use a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any R, P or HE filter.

Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance: Off-white liquid
- Odor: Slight odor/typical aromatic solvent
- Melting Point: Not Applicable
- Boiling Point: 212 °F
- Specific Gravity/Density: 1.036 @ 68°F (20°C)
- pH: 7.3 (1% w/w dilution in deionized water)

Solubility in H₂O

Lambda-Cyhalothrin : 0.004 mg/l

Vapor Pressure

Lambda-Cyhalothrin : 1.5 x 10⁽⁻⁹⁾ mmHg @ 68°F (20°C)

10. STABILITY AND REACTIVITY

- Stability: Stable under normal use and storage conditions.
- Hazardous Polymerization: Will not occur.
- Conditions to Avoid: None known.
- Materials to Avoid: None known.
- Hazardous Decomposition Products: None known.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

| | | |
|---------------------|---|---------------------------|
| Ingestion: | Oral (LD50 Rat) : | > 5000 mg/kg body weight |
| Dermal: | Dermal (LD50 Rat) : | > 2000 mg/kg body weight |
| Inhalation: | Inhalation (LC50 Rat) : | > 4.62 mg/l air - 4 hours |
| Eye Contact: | Non-Irritating (Rabbit) | |
| Skin Contact: | Practically Non-Irritating (Rabbit) | |
| Skin Sensitization: | A weak skin sensitizer in animal tests. | |

Reproductive/Developmental Effects

Lambda-Cyhalothrin : Not a developmental or reproductive toxicant.

Chronic/Subchronic Toxicity Studies

Lambda-Cyhalothrin : Reversible paresthesia (abnormal skin sensation).
Reversible clinical signs of neurotoxicity in mammals.

Carcinogenicity

Lambda-Cyhalothrin : No treatment-related tumors in rats or mice.

Other Toxicity Information

In humans, contact with exposed skin may result in temporary itching, tingling, burning or numbness, called paresthesia. The effect may result from splash, aerosol, or hot vapor contact, or transfer to the face from contaminated gloves and hands. The symptoms normally disappear within 24 hours. Face and genital areas are especially susceptible to this effect. Paresthesia involving the face is also known as "subjective facial sensation" or SFS.

Toxicity of Other Components

1,2,4-Trimethylbenzene (< 2.5%)

Test results reported in Section 11 for the final product take into account any acute hazards related to the 1,2,4-trimethylbenzene in the formulation.

Cumene (< 1%)

Exposure to cumene vapors may cause irritation to eyes, skin, and respiratory tract. Cumene may also cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects. Prolonged exposure to high concentrations (>100 PPM) may result in liver, kidney or lung damage.

Petroleum Solvent

The supplier reports that high vapor/aerosol concentrations (> 1000 ppm) are irritating to the eyes and the respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects.

Propylene Glycol

Test results reported in Section 11 for the final product take into account any acute hazards related to the propylene glycol in the formulation.
Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea. Chronic dietary exposure caused kidney and liver injury in experimental animals.

Xylene (< 1%)

Test results reported in Section 11 for the final product take into account any acute hazards related to the xylene in the formulation.

Target Organs

Active Ingredients

Lambda-Cyhalothrin : Liver, nervous system

Inert Ingredients

1,2,4-Trimethylbenzene: Not Applicable

Cumene: Skin, eye, liver, respiratory tract, kidney, CNS

Petroleum Solvent: Eye, respiratory tract, CNS

Propylene Glycol: CNS, kidney, liver

Xylene: Not Applicable

12. ECOLOGICAL INFORMATION

Ecotoxicity Effects

Lambda-Cyhalothrin :

Fish (Rainbow Trout) 96-hour LC50 0.19 ppb

Bird (Mallard Duck) LD50 Oral > 3950 mg/kg

Invertebrate (Water Flea) 48-hour EC50 0.04 ppb

Environmental Fate

Lambda-Cyhalothrin :

The information presented here is for the active ingredient, lambda-cyhalothrin.

Not persistent in soil or water. Immobile in soil. Sinks in water (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA

Containers < 450 liters: Not regulated.

Containers > 450 liters:

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Lambda-Cyhalothrin)

Hazard Class or Division: Class 9

Identification Number: UN 3082

Packing Group: PG III

Comments

Water Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Lambda-Cyhalothrin), Marine Pollutant

Hazard Class or Division: Class 9

Identification Number: UN 3082

Packing Group: PG III

Air Transport

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Lambda-Cyhalothrin)

Hazard Class or Division: Class 9

Identification Number: UN 3082

Packing Group: PG III

15. REGULATORY INFORMATION

EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard
Chronic Health Hazard

Section 313 Toxic Chemicals: Cumene (< 1%) (CAS No. 98-82-8)
1,2,4-Trimethylbenzene (< 2.5%) (CAS No. 95-63-6)
Xylene (< 1%) (CAS No. 1330-20-7)

California Proposition 65

Not Applicable

CERCLA/SARA 302 Reportable Quantity (RQ)

Report product spills > 520 gal. (based on xylene [RQ = 100 lbs.] content in the formulation)

RCRA Hazardous Waste Classification (40 CFR 261)

Not Applicable

TSCA Status

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 2
Flammability: 1
Instability: 0

HMIS Hazard Ratings

Health: 2
Flammability: 1
Reactivity: 0

| | |
|---|----------|
| 0 | Minimal |
| 1 | Slight |
| 2 | Moderate |
| 3 | Serious |
| 4 | Extreme |

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 7/14/1999

Revision Date: 7/14/2011

Replaces: 7/13/2010

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

End of MSDS