



BITHOR SC 01/12

For control of pests indoors and outdoors in and around residential, commercial, industrial, institutional and public structures and buildings.

For control of listed insect pests of turfgrass, landscape ornamentals, shrubs, and ornamental trees and structures in lawns, landscapes, playgrounds, parks and athletic fields.

| Active Ingredient: | By Wt. |
|--------------------------|---------------|
| Imidacloprid | 5.0% |
| Bifenthrin* | 4.0% |
| Other Ingredients: | 91.0% |
| TOTAL: | 100.0% |

*Cis isomers 97% minimum, trans isomers 3% maximum

Contains 0.45 pounds of imidacloprid and 0.36 pounds of bifenthrin per gallon

EPA Reg. No. 83923-2 EPA Est. 81824-NC-001

**STOP – Read the label before use
KEEP OUT OF REACH OF CHILDREN**

CAUTION

(PRECAUCION AL USUARIO: Si usted no puede leer o entender ingles, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.)

(TO THE USER: If you cannot read and understand English, do not use this product until the label has been fully explained to you.)

For product use information call 1-866-FOR-THOR (866-367-8467) or visit www.for-thor.com.

NET CONTENTS: Gallon(s)

**Manufactured by:
ENSYSTEX IV, Inc.
2913 Breezewood Ave., Fayetteville, NC 28303**

FIRST AID

| | |
|--------------|--|
| If swallowed | <p>Call poison control center or doctor immediately for treatment advice.</p> <p>Have person sip a glass of water if able to swallow.</p> <p>Do not induce vomiting unless told to do so by the poison control center or doctor.</p> <p>Do not give anything to an unconscious person.</p> |
|--------------|--|

HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-(800)-369-4352 for emergency medical treatment information.

NOTE TO PHYSICIAN

Note To Physician: No specific antidote is available. Treat the patient symptomatically. This product contains a pyrethroid. If large amounts have been ingested, milk, cream and other digestible fats and oils may increase absorption and so should be avoided.

PRECAUTIONARY STATEMENTS Hazards to Humans and Domestic Animals CAUTION

Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Remove and wash contaminated clothing before reuse.

Personal Protective Equipment: Applicators and other handlers must wear long-sleeved shirt, long pants, shoes and socks. Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

This product is extremely toxic to fish and aquatic invertebrates. Run-off may be hazardous to aquatic organisms in water adjacent to treated areas.

This product contains a chemical with properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

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 heavy rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run off to water bodies and drainage systems.

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 if bees are visiting the treatment area.

DIRECTIONS FOR USE

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirement specific to your State or Tribe, consult the agency responsible for pesticide regulation.

RESTRICTIONS

- Do not allow people or pets on treated surfaces until the spray has dried.
- Do not water the treated areas to the point of run-off.
- Do not make applications during rain.
- Do not make applications directly into sewers or drains, or to any area like a gutter where drainage to sewers, storm drains, water bodies or aquatic habitat can occur. Do not allow the product to enter any drain during or after application.
- Do not use household utensils to measure BITHOR SC.
- For broadcast applications, do not apply more than 4.5 pints (0.25 lb imidacloprid, 0.2 lb bifenthrin) per acre or 1.65 fluid ounces per 1000 square feet per application. Do not apply more than 9 pints (0.5 lb of imidacloprid active ingredient, 0.4 lb bifenthrin) per acre or 3.3 fluid ounces per 1000 square feet per year.
- For application to soil by injection or drench, do not exceed 0.4 lb of imidacloprid (7 pints of Bithor SC) per acre per year.
- Do not harvest or consume fruit or nuts from any tree that has been treated within 1 year (365 days).
- BITHOR SC is not for use on plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes.
- BITHOR SC is not for use in commercial greenhouses, nurseries, or on grasses grown for seed, golf courses, turfgrass grown for sale (sod farms) or on commercial fruit and nut trees.
- Do not apply to turf that is frozen, waterlogged or is saturated with water. Turf in this condition will not allow the necessary vertical distribution of the active ingredient down into the soil.
- Do not apply within aircraft cabins.
- Do not apply in food/feed areas of food and feed handling establishments.
- Do not apply to furniture or upholstery where prolonged contact with humans will occur.

APPLICATION FOR TURF PESTS

- Do not spray bed linens, mattresses, blankets or pillows. Do not apply to materials which come in direct contact with occupants of the bed.
- Remove or cover and disconnect aquariums during application.
- Do not apply a broadcast application to interior surfaces of living areas.
- Do not apply to pets, crops, sources of electricity or firewood.
- During any application to overhead areas of structure, cover surfaces below with plastic sheeting or similar material, except for soil surfaces in crawlspaces.
- Wear protective clothing, unvented goggles, gloves and respirator when making an overhead application or when applying in poorly ventilated indoor areas.
- Do not allow dripping or runoff to occur during indoor applications.
- For indoor uses apply only as a spot, crack or crevice treatment. Do not apply as a space spray.
- Do not allow spray to contact food, foodstuffs, food contacting surfaces, food utensils or water supplies.
- Thoroughly wash dishes and food handling utensils with soap and water if they become contaminated by application of this product.
- Do not apply this product in nursing home or patient rooms or in any rooms while occupied by the elderly or infirmed.
- Do not apply in classrooms when they are in use.
- Do not apply when occupants are present in the immediate area in institutions such as health care facilities, libraries, schools, offices, etc.
- Do not apply in livestock buildings such as barns.
- Do not apply where electrical short circuits can occur.
- Do not graze treated areas or use clippings from treated areas for feed or forage.
- Do not allow runoff or puddling of irrigation water following application.
- Do not apply by air.
- Do not apply by any type of irrigation system.

Restrictions Applicable to New York State only:

Do not apply BITHOR SC containing solutions to grass or turf within 100 feet of a body of water (lake, pond, river, stream, wetland or drainage ditch).

Soil Injection is not allowed in Nassau and Suffolk Counties of New York.

Additional Application Restrictions for Residential Outdoor Surface and Space Sprays:

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

- Treatment to soil or vegetation around structures.
- Applications to lawns, turf, and other vegetation.
- 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, windows, door and eaves are limited to spot and crack-and-crevice applications only.

STORAGE AND DISPOSAL

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

Pesticide Storage: Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

Handle and open container in a manner as to prevent spillage. If container is leaking, invert to prevent leakage. If container is leaking or if material is spilled for any reason or cause, carefully contain any spilled material to prevent non-target contamination. Do not walk through spilled material and dispose of as directed for pesticides below. Absorb spilled material with absorbing type compounds and dispose of as directed for pesticides below. Refer to *Precautionary Statements* on label for hazards associated with the handling of this material. In spill or leak incidents, keep unauthorized people away. You may contact ENSYSTEX IV for decontamination procedures or any other assistance that may be necessary at 1-866-367-8467 or contact Chemtrec at 1-800-424-9300.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 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.

PRODUCT INFORMATION

BITHOR SC controls or suppresses a wide spectrum of insects and mites on turfgrass, trees (including non-bearing fruit and nut trees), shrubs, evergreens, flowers, ground covers, bedding plants and foliage plants and pests in, at and/or around residential dwellings (single and multi-family), office, commercial, shopping and institutional buildings and complexes, grounds, parks, recreational areas, athletic fields, playgrounds, airports, cemeteries, lawns and other plantscapes. BITHOR SC mixes readily with water and other aqueous carriers.

Some insects can develop resistance to products used repeatedly for their control. Because the development of resistance by an insect to an insecticide cannot be predicted, the use of this product should be according to established resistance management strategies. Consult your local or state pest management authorities for details.

If necessary, consult resources in horticulture in your area (such as your Cooperative Extension Service) to determine appropriate application timing and cultural practices to control different types of pests.

BITHOR SC can be used for the control of a wide range of pests of turfgrass. Because BITHOR SC's active ingredients have long lasting residual activity, applications for control of subsurface feeders can be made before the occurrence of egg laying activity. BITHOR SC's active ingredients also have sufficient knockdown and residual activity to provide remedial and residual control of surface feeding pests.

Restriction: Do not apply more than 4.5 pints (0.25 lb imidacloprid, 0.2 lb bifenthrin) per acre or 1.65 fluid ounces per 1000 square feet per application. Do not apply more than 9 pints (0.5 lb of imidacloprid active ingredient, 0.4 lb bifenthrin) per acre or 3.3 fluid ounces per 1000 square feet per year.

Application Sites

Permitted sites include but are not limited to lawns, grounds and landscapes at and/or around residential dwellings (single and multi-family), office, commercial, shopping and institutional buildings and complexes, grounds, parks, recreational areas, athletic fields, playgrounds, airports and cemeteries.

Application Timing

The active ingredients in BITHOR SC have sufficiently long-lasting residual activity that applications can be made prior to egg laying by the target pest(s). Optimum control of turf pests will be achieved when application is made prior to egg hatch followed by sufficient irrigation or rainfall to move the active ingredient through the thatch and down into the underlying soil. Applications can be timed based on past experiences at the site or in the area, current results of adult monitoring/trapping or other methods.

Post Application Watering and Mowing

Optimum control is achieved if irrigation or rainfall occurs within 24 hours after application. Uniformity of application may be adversely affected if turf is mowed prior to irrigation/rainfall occurring.

Application Preparations

BITHOR SC can be mixed with other insecticides, miticides, fungicides and fertilizers. Follow the label directions of all the products mixed, making sure not to exceed the labeled application rate of any individual product in the mixture. Any tank mixture that has not been tested before should be tested before full scale use by first mixing a small quantity of the mixture to ensure there is no physical or chemical incompatibility.

Because certain cultivars may be sensitive to the final spray solution, test the effects of applications of different rates and volumes of mixed solution on a small patch of a type of grass (with observations over one week to detect the occurrence of negative effects) before application of solutions to large areas of that type of grass.

Application Equipment and Methods

Apply BITHOR SC mixed in water (according to the table below) as a spray of uniform, coarse droplets at a pressure low enough to eliminate drift from the target area. Properly calibrated application equipment must be used to apply BITHOR SC. Check calibration periodically to ensure that equipment is working properly.

Reapplication

Reapplications may be necessary particularly in the event of high pest pressure. Reapply as necessary to achieve control using higher listed application rates as pest pressure and foliage area increases but make reapplications no more often than once every 7 days. **Restriction: (New York State only)** Make a single reapplication of BITHOR SC if there is renewed insect activity, but not sooner than two weeks after first application.

Turf Pest Application Use Rates

Use rates for BITHOR SC for turf pests are stated in fluid ounces of BITHOR SC per 1000 square feet and pints per acre. The application use rates listed below provide control of the listed pests under normal conditions. Apply BITHOR SC at 0.4 to 1.65 fluid ounces per 1000 square feet or 1.1 to 4.5 pints per acre, depending on the target pest. Rates for specific pests within this range are given below. Use the higher listed application rates when maximum residual control is needed. However, applications of up to 1.65 fluid ounce per 1000 square feet or 4.5 pints per acre are permitted at the discretion of the applicator to control any pest.

Restriction: Do not apply more than 9 pints (0.5 lb of imidacloprid active ingredient, 0.4 lb bifenthrin) per acre or 3.3 fluid ounces per 1000 square feet of product per year.

Turf Application Use Rates

| Use Rate Table for BITHOR SC for Turf Applications | | | |
|--|--|------------------------|-----------|
| Use Rate | Fluid ounces BITHOR SC per 1,000 square feet (Range) | Pints per acre (Range) | BITHOR SC |
| A | 1.32⇒1.65 | 3.6⇒4.5 | |
| B | 0.4⇒1.65 | 1.1⇒4.5 | |

1 fluid ounce = 2 tablespoons = 6 teaspoons

Turf Pests Grouped by Use Rates

Use Rate A: Annual bluegrass weevil, *Aphodius* spp., Asiatic garden beetle, Black turfgrass ateniuss, Black vine weevil, European chafer, European crane fly, Fruit fly, Green June beetle, Imported Fire Ant, Japanese beetle, Mole crickets, Northern masked chafer, Nuisance ants, Oriental beetle, *Phyllophaga* spp., Southern masked chafer, Ticks

Use Rate B: Armyworms, Banks grass mites, Billbugs, Chinch bugs, Centipedes, Crickets, Cutworms, Earwigs, Fleas, Grasshoppers, Leafhoppers, Mealybugs, Millipedes, Mites, Pillbugs, Sod webworms, Sowbugs

Turf Application Volumes

Apply the indicated amount of BITHOR SC mixed in a volume of water sufficient to adequately distribute the active ingredient to the target area(s) and to wet all foliage.

Do not exceed the maximum application rate by applying solution to an area smaller than intended when it was mixed unless doing so will not result in an application rate in excess of the maximum application rate.

Calculating Amounts of BITHOR SC to Mix for Turf Pests

To mix and apply any amount of BITHOR SC for turf pests based on number of square feet, determine:

S = # of Square feet of area to be treated / 1000 (for example 5,500 sq. ft. / 1000 = 5.5)

R = Applicable BITHOR SC Use Rate (fluid ounces per 1000 square feet) for the target pest(s) from the Use Rate Table for BITHOR SC for Turf Applications. If treating for more than one type of pest, select the highest rate.

Calculate the amount of BITHOR SC to mix for turf pests as follows:

Ounces BITHOR SC to use = S x R

Mix this amount of BITHOR SC in the amount of water needed to make the application.

To mix and apply any amount of BITHOR SC for turf pests based on number of acres, determine:

S = # of acres of area to be treated = square feet of area to be treated / 43,560 (1 acre = 43,560 sq. ft.)

R = Applicable BITHOR SC Use Rate (pints per acre) for the target pest(s) from the Use Rate Table for BITHOR SC for Turf Applications. If treating for more than one type of pest, select the highest rate.

Calculate the amount of BITHOR SC to mix for turf pests as follows:

Pints BITHOR SC to use = S x R

Mix this amount of BITHOR SC in the amount of water needed to make the application.

1 Pint = 16 fluid ounces

Application Instructions For Specific Turf Pests

Annual Bluegrass Weevil (*Hyperodes*) adults: Make applications timed to control adult weevils as they leave their overwintering sites and move into grass areas. This movement generally begins when Forsythia is in full bloom and concludes when flowering dogwood (*cornus florida*) is in full bloom. Consult your Cooperative Extension Service for more specific information regarding application timing.

Armyworms, Cutworms and Sod Webworms: To ensure optimum control, delay watering (irrigation) or mowing for 24 hours after application. The highest application rate may be necessary during periods of highest pest pressure if the grass is being maintained at a mowing height of 1 inch or greater.

Billbug adults: Make applications when adults first appear in the spring or when chewed or brown grass indicates damage. Degree day models have been developed to optimize application timing. Consult your Cooperative Extension Service for information specific to your region. In temperate regions, spring applications targeting billbug adults will also provide control of over-wintered chinch bugs.

Chinch Bugs: Because they infest the base of grass plants, chinch bugs are often found in the thatch layer. Irrigation of the grass or high volume applications of solution can increase penetration of the solution to where the chinch bugs are located. Chinch bugs can be one of the most difficult turf pests to control. Higher listed application rates may be required to achieve effective control, particularly in the middle of the summer when both nymphs and adults are present.

Mites: To ensure optimal control of eriophyid mites, apply in combination with the labeled application rate of a surfactant. A second application, no sooner than 7 days after the first, may be necessary to achieve acceptable control.

Flea larvae: Flea larvae develop in the soil of shaded areas that are accessible to pets or other animals. Use a higher volume application when treating these areas to ensure penetration of the insecticide into the soil.

Imported Fire Ants: Combine broadcast treatments to control newly invading ants and mound treatments to eliminate existing ant colonies. If the soil is not moist, irrigate before application or use a high volume application. Make broadcast applications at 1.65 fluid oz. per 1,000 square feet. Treat mounds by diluting 1/3 fluid oz. (2 teaspoons) of BITHOR SC per gallon of water and applying 1 to 2 gallons of finished spray per mound. Treat mounds with sufficient force to break their apex and allow the insecticide solution to flow into the ant tunnels. Treat a four foot diameter circle around the mound. For best results, apply in cool weather (65 - 80°F) or in early morning or late evening hours.

Mole Cricket adults: Adult mole cricket control is difficult to attain because of continuous invasion during the early spring. Make applications as late in the day as possible and water in with 0.5 inches of water immediately following treatment. Irrigating dry soil before application will bring crickets closer to the surface.

Mole Cricket nymphs: Grass areas that received intense adult mole cricket pressure in the spring should be treated immediately prior to peak egg hatch when young nymphs are located near the soil surface. Control of larger, more damaging, nymphs later in the year may require using both higher labeled application rates and more frequent applications to maintain acceptable control. Make applications as late in the day as possible and water in with 0.5 inches of water immediately following treatment. Irrigating dry soil before application will bring crickets closer to the surface.

Ticks (Including ticks that may transmit Lyme Disease and Rocky Mountain Spotted fever): Treat the entire area where exposure to ticks may occur (not spot treatments). Use higher spray volumes when treating areas with dense ground cover or heavy leaf litter. Ticks may be reintroduced from surrounding areas on host animals. Retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Repeat application is necessary only if there are signs of renewed activity.

Restriction:

Do not reapply more than once every seven days.

Deer ticks (*Ixodes* sp.) have a complicated two year life cycle that involves four life stages. Make applications in the late fall and/or early spring to control adult ticks that are usually located on brush or grass above the soil surface and in mid to late spring to control larvae and nymphs that reside in the soil and leaf litter.

American dog ticks commonly congregate along paths or roadways where humans are likely to be encountered. Apply as necessary from mid-spring to early fall to control their larvae, nymphs and adults.

FOLIAR AND BROADCAST APPLICATION FOR ORNAMENTAL PESTS

BITHOR SC, applied to foliage and broadcast on the soil, controls or suppresses a wide range of pests on trees (including non-bearing fruit and nut trees), shrubs, evergreens, flowers, ground covers, bedding plants and foliage plants including plants in interior landscapes.

(Non-bearing trees are perennial plants that will not produce a harvestable agricultural commodity within the next 12 months.)

BITHOR SC is a systemic insecticide meaning it can be translocated by the plant's vascular system from the roots up into the body of the plant. This means optimum effectiveness of BITHOR SC is realized when BITHOR SC is applied on or near a growing portion of the plant from which it may be translocated to other parts of the plant. Combining BITHOR SC with a nitrogen containing fertilizer may accelerate or otherwise enhance the uptake of the active ingredient into the plant. Translocation of soil directed applications made to woody stemmed plants can be delayed by up to 60 days. For this reason, applications should be made prior to anticipated pest infestation to achieve optimum levels of control. Foliar applications of BITHOR SC also have local systemic activity against insect pests.

Restrictions:

BITHOR SC is not for use on plants being grown for sale, fruit, nut or commercial seed production or for research purposes.

Outdoor applications cannot exceed a total of 9.0 pints (0.5 lb of imidacloprid and 0.4 lb of bifenthrin) per acre per year.

Application Sites

For use on ornamental plants including but not limited to trees (including non-bearing fruit and nut trees), shrubs, evergreens, flowers, ground covers, bedding plants and foliage plants including plants in interior landscapes.

Application Preparation

BITHOR SC can be mixed with other insecticides, miticides, fungicides and fertilizers. Follow the label directions of all the products mixed, making sure not to exceed the labeled application rate of any individual product in the mixture. Any tank mixture that has not been tested before should be tested before full scale use by first mixing a small quantity of the mixture to ensure there is no physical or chemical incompatibility.

Foliar Application

Ornamental Application to Control Ants

BITHOR SC can be used to indirectly control ants when applied to control aphids, scale insects, mealybugs and other sucking insects on ornamentals thereby limiting the amount of honeydew available.

Foliar Application Volumes and Application Methods

BITHOR SC mixes readily with water and may be used in many types of application equipment. Mix required amount of product (from the Use Rate Table for BITHOR SC for Foliar Applications below) with the amount of water required to uniformly wet foliage and apply as desired dependent upon the selected use pattern. When making foliar applications on hard to wet foliage such as holly, pine, or ivy, the addition of a spreader/ sticker is recommended. If concentrate or mist type spray equipment is used, use an equivalent amount of product on the area sprayed, as would be used in a dilute application. Begin treatments prior to establishment of high pest populations. Reapply as needed.

Foliar Application Use Rates

Use rates for BITHOR SC for foliar application for ornamental pests are stated in fluid ounces (and milliliters) of BITHOR SC per 100 gallons of water. The application rates listed below provide control of the listed pests under normal conditions. Apply BITHOR SC at 6.7 to 21.3 fluid ounces per 100 gallons, depending on the target pest. Labeled rates for specific pests within this range are given below. Use the higher listed application rates when maximum residual control is needed. However, applications of up to 21.3 fluid ounces per 100 gallons are permitted at the discretion of the applicator to control any pest.

| Use Rate Table for BITHOR SC for Foliar Applications | | |
|--|---|--|
| Use Rate | Fluid ounces BITHOR SC per 100 gallons of water | Milliliters BITHOR SC per 100 gallons of water |
| A | 21.3 | 630 |
| B | 10.7⇒21.3 | 315⇒630 |
| C | 6.7⇒21.3 | 200⇒630 |

1 fluid ounce = 2 tablespoons = 6 teaspoons

Ornamental Pests Controlled by Foliar Application

Use Rate A: Ants, Beet Armyworm, Black vine weevil adult, Broad mites, Budworms, Scale crawlers, Citrus thrips, Clover mites, Diaprepes (adults), European red mites, Fleabeetles, Fungus gnats (adults), Grasshoppers, Leafrollers, Mites, Mosquitoes, Orchid weevil, Pine needle scales (crawlers), Plant bugs, San Jose scale (crawlers), Spider Mites, Thrips, Tip moths, Twig borers, Wasps

Use Rate B: Bagworms, Cutworms, Fall webworms, Gypsy moth caterpillars, Leaf feeding caterpillars, Tent caterpillars

Use Rate C: Adelgids, Aphids, Japanese beetles, Lacebugs, Leafbeetles (including elm and viburnum leaf beetles), Leafhoppers (including glassy-winged sharpshooter), Mealybugs, Psyllids, Sawfly larvae, Thrips (suppression), Treehoppers, Whiteflies

Broadcast Application

Broadcast Application Volumes and Application Method

Mix required amount of product in a quantity of water sufficient to uniformly treat area. Use a minimum of 2 gallons of water per 1000 square feet. To achieve optimum control, irrigate treated area in order to incorporate treatment into upper level of soil.

Restrictions:

Do not exceed the maximum application rate by applying solution to an area smaller than intended when it was mixed unless doing so will not result in an application rate in excess of the maximum application rate.

Outdoor applications cannot exceed a total of 9.0 pints (0.5 lb of imidacloprid and 0.4 lb of bifenthrin) per acre or 3.3 fluid ounces per 1000 square feet per year.

Broadcast Application Use Rates

Use rates for BITHOR SC for broadcast application for ornamental pests are stated in fluid ounces (and milliliters) of BITHOR SC per 1000 square feet. The application rates listed below provide control of the listed pests under normal conditions. Apply BITHOR SC at 0.4 to 1.65 fluid ounces per 1000 square feet, depending on the target pest. Labeled rates for specific pests within this range are given below. Use the higher labeled application rates when maximum residual control is needed.

| Use Rate Table for BITHOR SC for Broadcast Applications | | |
|---|---|--|
| Use Rate | Fluid ounces BITHOR SC per 1000 square feet | Milliliters BITHOR SC per 1000 square feet |
| A | 1.32⇒1.65 | 40⇒50 |
| B | 0.4⇒0.85 | 12⇒26 |

Ornamental Pests Controlled by Broadcast Application

Use Rate A: White grub larvae (such as Japanese beetle larvae, Chafers, *Phyllophaga* spp., Asiatic garden beetle, Oriental beetle), Imported Fire Ants, Nuisance Ants

Use Rate B: Centipedes, Crickets, Earwigs, Pillbugs, Sowbugs, Armyworms, Cutworms, Sod webworms

SOIL INJECTION AND SOIL DRENCH FOR ORNAMENTAL PESTS

BITHOR SC, applied as a soil drench or soil injection, controls or suppresses a wide range of insects on trees (including non-bearing fruit and nut trees), shrubs, evergreens, flowers, foliage plants, ground covers and interior landscapes. (Non-bearing trees are perennial plants that will not produce a harvestable agricultural commodity within the next 12 months.)

BITHOR SC is a systemic insecticide meaning it can be translocated by the plant's vascular system from the roots up into the body of the plant. This means optimum effectiveness of BITHOR SC is realized when BITHOR SC is applied on or near a growing portion of the plant from which it may be translocated to other parts of the plant. Combining BITHOR SC with a nitrogen containing fertilizer may accelerate or otherwise enhance the uptake of the active ingredient into the plant. Translocation of soil directed applications made to woody stemmed plants can be delayed by up to 60 days. For this reason, make applications prior to anticipated pest infestation to achieve optimum levels of control.

Applications to trees for the control of existing borer infestations may not prevent the eventual loss of the tree due to existing damage already caused by the pest and stress to the tree caused by the pest infestation.

Restriction: BITHOR SC is not for use on plants being grown for sale, fruit, nut or commercial seed production or for research purposes.

Application Sites

For use on ornamental plants and non-bearing fruit and nut trees, shrubs, evergreens, flowers, ground covers, bedding plants and foliage plants including plants in interior landscapes.

Application Preparation

BITHOR SC can be mixed with other insecticides, miticides, fungicides and fertilizers. Follow the label directions of all the products mixed, making sure not to exceed the labeled application rate of any individual product in the mixture. Any tank mixture that has not been tested before should be tested before full scale use by first mixing a small quantity of the mixture to ensure there is no physical or chemical incompatibility.

Ornamental Pests Controlled by Soil Injection or Drench Application

Adelgids, Aphids, Armored scales (suppression), Black vine weevil larvae, Eucalyptus longhorned borer, Flatheaded borers (including bronze birch borer and alder borer), Japanese beetles, Lace bugs, Leaf beetles (including elm and viburnum leaf beetles), Leafhoppers (including glassy-winged sharpshooter), Leaf miners, Mealybugs, Pine tip moth larvae, Psyllids, Royal palm bugs, Sawfly larvae, Soft scales, Thrips (suppression), White grub larvae, Whiteflies.

Soil Injection for Trees

Restriction: Soil Injection is not allowed in Nassau and Suffolk Counties of New York.

Soil Injection Use Rate for Trees

| Use Rate Table for BITHOR SC for Soil Injection for Trees | |
|--|--|
| 0.45 to 0.9 fluid ounces per inch of trunk diameter (D. B. H.) / | |
| 14 to 27 milliliters per inch of trunk diameter (D. B. H.) | |

D.B.H. = Diameter at Breast Height

D.B.H. is measured at 4 ½ feet from the ground.

Soil Injection Volumes and Application Method for Trees

Mix the calculated amount of BITHOR SC in the amount of water determined to be adequate for the treatment to be adequately dispersed. Apply at a low pressure according to one of the two following methods. Make a minimum of 4 injection holes per tree. For optimum control, maintain a high level of soil moisture in the treated area for 7 to 10 days after treatment.

Grid Injection: Evenly space holes on 2.5 foot centers in a grid pattern in the soil beneath the tree's branches/foliage out to the tree's drip line.

Basal Injection: Evenly space injection holes around the base of the tree no more than 12 inches out from the tree.

Soil Drench for Trees

Soil Drench Use Rate for Trees

| Use Rate Table for BITHOR SC for Soil Drench for Trees | |
|--|--|
| 0.45 to 0.9 fluid ounces per inch of trunk diameter (D. B. H.) / | |
| 14 to 27 milliliters per inch of trunk diameter (D. B. H.) | |

Soil Drench Volume and Application Method for Trees

Mix the calculated amount of BITHOR SC in the amount of water determined to be adequate for the solution to be adequately dispersed. Apply solution at a rate of no less than 10 gallons per 1000 square feet around the base of the tree directed to the root zone. If present, remove any barrier to the movement of the solution into the soil such as a plastic vapor barrier.

Soil Injection for Shrubs

Restriction: Soil Injection is not allowed in Nassau and Suffolk Counties of New York.

Soil Injection Use Rate for Shrubs

| Use Rate Table for BITHOR SC for Soil Injection for Shrubs | |
|--|--|
| 0.45 to 0.9 fluid ounces per foot of shrub height | |
| 14 to 27 milliliters per foot of shrub height | |

Soil Injection Volume and Application Method for Shrubs

Mix the calculated amount of BITHOR SC in the amount of water determined to be adequate for the treatment to be adequately dispersed. Apply to individual plants using dosage indicated at a low pressure, making a minimum of 4 injection holes per shrub. For optimum control, maintain a high level of soil moisture in the treated area for 7 to 10 days after treatment.

Soil Drench for Shrubs

Soil Drench Use Rate for Shrubs

| Use Rate Table for BITHOR SC for Soil Drench for Shrubs | |
|---|--|
| 0.45 to 0.9 fluid ounces per foot of shrub height | |
| 14 to 27 milliliters per foot of shrub height | |

Soil Drench Volumes and Application Method for Shrubs

Mix the calculated amount of BITHOR SC in the amount of water determined to be adequate for the solution to be adequately dispersed, but at a rate no less than 10 gallons per 1000 square feet around the base of each shrub directed to the root zone. If present, remove any barrier to the movement of the solution into the soil such as a plastic vapor barrier

Soil Incorporation for Flowers and Groundcovers

Apply as a broadcast treatment and incorporate into the soil before planting or apply after plants are established. If application is made to established plants, optimum control will be attained if area is irrigated thoroughly after application.

Soil Incorporation Use Rate for Flowers and Groundcovers

| Use Rate Table for BITHOR SC for Soil Incorporation for Flowers and Groundcovers | |
|--|--|
| 1.32 to 1.65 fluid ounces per 1000 square feet | |
| 40 to 50 milliliters per 1000 square feet | |

PESTS INSIDE AND OUTSIDE OF STRUCTURES

(OTHER THAN WOOD INFESTING INSECTS)

Bithor SC controls a wide range of nuisance pests inside and outside of structures and modes of transport. Bithor SC can be applied in and around any type of residential or commercial structure, building or mode of transport including non-food/non-feed areas of food/feed handling establishments. Permitted application sites include but are not limited to the interior and exterior of homes, apartments, commercial buildings, manufacturing establishments, office buildings, stores, food processing plants (non-food/non-feed areas), warehouses, schools, factories, hospitals, nursing homes, mobile and modular homes, vehicles and marine vessels.

Bithor SC will not stain or damage any surface that water alone will not stain or damage.

Restriction: Do not apply within aircraft cabins.

Dilution of Bithor SC

Use rates for Bithor SC are expressed and mixed according to the percentage (%) concentration solution it forms when mixed in water as found in the table below.

| Mixing Table for Bithor SC Inside and Outside of Structures | | | |
|---|----------------------|---|---|
| Use Rate | % Bithor SC in water | Fluid ounces Bithor SC to add per gallon of water for desired % | Milliliters of Bithor SC to add per gallon of water for desired % |
| A | 0.068% | 0.89 | 26 |
| B | 0.135% | 1.78 | 52 |

PESTS OUTSIDE AND AROUND STRUCTURES

Pests Controlled

Ants (except Carpenter Ant), Armyworms, Bees (except Carpenter Bees), Biting Flies, Blue or Green Bottle Fly, Boxelder Bug, Centipedes, Chiggers, Chinch Bug, Clover Mites, Cluster Flies, Cockroaches, Crickets, Cutworms, Dichondra Flea Beetle, Earwigs, Elm Leaf Beetle, Firebrats, Fleas, Flesh Flies, Flies, Gnats, Grasshoppers, Ground Beetle, Hornets, Housefly, Japanese Beetle, Lady Beetles, Midges, Millipedes, Mole Crickets, Mosquitoes, Moths, Pillbugs, Scorpions, Silverfish, Sod Webworms, Sowbugs, Spider Mites, Spiders, Springtails, Stable Flies, Ticks, Wasps and Yellow Jackets.

Application Methods

Apply Bithor SC as a solution in the form of a general surface, spot, crack and crevice, void, pinstream or coarse spray to the structure or areas around the structure where pests can enter the structure or where they have been seen or found or can find shelter. Bithor SC may also be applied with a paintbrush.

Bithor SC may be converted to foam and used to treat structural voids. First form a solution of Bithor SC of the appropriate percentage concentration and volume. Then add required volume of a compatible foaming agent. Verify that the foaming agent is compatible with Bithor SC.

When treating overhead, wear safety glasses, goggles or face shield and a dust/mist respirator.

Restrictions:

Do not contact treated surfaces until they are dry.

Do not apply as a space spray.

Application Use Rates and Volumes

Select a Use Rate from the Bithor SC Mixing Table above. Use the 0.135% rate for severe infestations, faster knockdown or longer residual and for Fire Ants, Hornets, Wasps and Yellow Jackets.

Apply at a high enough volume to adequately wet the treated area without excessive dripping or runoff. Higher application volumes may be used if necessary to sufficiently wet vegetation and landscaping with the spray solution. Higher application volumes may also be used for severe infestations, faster knockdown or longer residual control. For high volume applications, Bithor SC may be diluted to lower concentrations by applying the same amount of Bithor SC in greater volumes of water.

Re-Application

Do not repeat treatments more often than once every 7-10 days. The best efficacy and longest residual control is achieved when the highest concentration is used.

Application Locations

Apply spray to the exterior surfaces of structures and to grounds, lawns, landscaping and plants. Can also be applied to any areas where pests congregate or have been seen.

Perimeter Band Treatment

To help prevent pest infestation of structures, create a treated zone or band on the structure, soil and vegetation around the entire perimeter of a structure. Apply solution to all surfaces within a band beginning 6 to 10 feet from the exterior foundation of the structure that extends back to the structure and then continues 2 to 3 feet up the exterior surface of the structure from the ground. Application volume will depend upon the nature of the surface being treated. Mulch areas, for example, require more volume and hard surface areas requiring less.

Control of Specific Pests Outdoors

Ants (Nuisance ants other than Carpenter Ants) Outdoors: To achieve the highest level of control, locate and directly treat ant nests. Apply solution to ant trails, around doors and windows and at points where ants can be expected to forage or congregate. Apply to flowers and shrubs and ornamental plant beds where ants may forage for food (such as honeydew produced by plant-sucking insects). It is recommended that shrubbery and other vegetation directly touching the structure be trimmed away.

For Ant (including Fire Ant) Mounds: Treat mounds and area within a 2 foot radius of the center of the mound with 1-2 gallons of 0.135% solution. When mounds exceed 12 inches in size use the higher solution.

Bees, Wasps, Hornets, and Yellow Jackets: Always use the highest rate (0.135%). Spray nest openings in ground, in bushes and wherever insects may be nesting. Spray to the point of saturation with a pinstream application. Spray as many insects as possible. Remove and destroy treated nests to prevent emergence of newly hatched insects.

Boxelder Bug and other Occasional Invaders: Apply a perimeter application directly to where insects have congregated at points of entry. It may be necessary to also treat trees.

Centipedes, Earwigs, Millipedes, Pillbugs, Sowbugs, Springtails: Thoroughly treat mulch areas. The reduction of moisture in mulch areas may also aid in control of these pests.

House Flies and Cluster Flies: Spray surfaces where flies may rest. For Cluster Flies, treat in late summer or fall before flies begin looking for winter shelter.

Mosquitoes: Apply solution to lawns and landscaping, under decks and to building foundations and other points where mosquitoes may rest. Refer to FOLIAR AND BROADCAST APPLICATION FOR ORNAMENTAL PESTS section for mixing and applying large amounts of solution against mosquitoes.

Fleas and Ticks: Treat the entire area where insects could be present. Begin treatments in the spring. Insects may be re-introduced by host animals in the surrounding area. Retreatment may be necessary to achieve and maintain control during periods of high pest pressure.

Scorpions: Treat around firewood (but not firewood) and other hiding places. Remove piles of material that may serve as hiding places. Apply a perimeter treatment.

Restriction: Do not treat firewood.

PESTS INSIDE STRUCTURES (OTHER THAN FOOD/FEE AREAS OF FOOD/FEE HANDLING ESTABLISHMENTS) INCLUDING MODES OF TRANSPORT

Pests Controlled

Ants (other than Carpenter), Bedbug, Bees (except Carpenter), Beetles (except wood infesting), Blue or Green Bottle Fly, Hide or Leather Beetle, Boxelder Bug, Carpet Beetles, Centipedes, Clothes Moth, Clover Mites, Cluster Fly, Cockroaches, Crickets, Dermestids, Earwigs, Elm leaf Beetle, Fleas, Firebrats, Flies, Gnats, Hornets, House fly, Lady Beetles, Midges, Millipedes, Mosquitoes, Moths, Pillbugs, Scorpions, Sowbugs, Silverfish, Spiders, Springtails, Ticks, Wasps and Yellow Jackets

Application Preparation

When treating in home food preparation and storage areas, cover all food preparation surfaces and utensils prior to beginning treatment. Thoroughly wash surfaces or items that cannot be covered or removed after treatment and before use. Remove food that cannot be covered. Disconnect fish tanks aerators and remove tanks or securely cover before application occurs.

Restriction: Do not allow people and pets to touch treated surfaces until they have dried.

Application Use Rates

Use a 0.068% or 0.135% solution of Bithor SC. Use the higher rate for severe infestations, faster knockdown or longer residual.

Application Methods

Apply Bithor SC as a solution in the form of a spot, crack and crevice, void, pinstream or coarse spray. Bithor SC may also be applied with a paintbrush.

Bithor SC may be converted to foam and used to treat structural voids. First form a solution of Bithor SC of the appropriate percentage concentration and volume. Then add required volume of a compatible foaming agent. Verify that the foaming agent is compatible with Bithor SC.

When treating overhead, wear safety glasses, goggles or face shield and a dust/mist respirator.

Restriction: For indoor uses apply only as a spot, crack or crevice treatment. Do not apply as a space spray.

Application Locations

Apply to and around any areas pests or their evidence is seen or found, could hide or rest or could enter the premises including cracks and crevices, behind and under cabinets and appliances, around doors, windows and eaves, in attics and storage areas and around pipes and under appliances. Spot treat floor or rugs beneath furniture, in closets, and storage areas. Do not treat an area larger than 3 feet x 3 feet.

Control of Specific Pests Indoors

Cockroaches, Crickets, Firebrats, Scorpions, Silverfish, Spiders, and Ticks: Apply wherever these pests may hide, enter the structure or congregate such as cracks and crevices, baseboards, water pipe openings, around doors and windows, behind and under cabinets and appliances and within storage and attic areas.

Bedbug: To aid in control, apply to cracks and crevices wherever evidence of bedbugs has been found including within empty dressers and closets, on bed frames and box springs and behind high and low wall moldings and wallpaper edges. Not for use as a sole control agent against bedbugs. If evidence of bedbugs is found on or in mattresses, use only products approved for application to this item. Do not apply more often than once every 7-10 days.

Restrictions:

Do not spray bed linens, mattresses, blankets or pillows. Do not apply to materials which come in direct contact with occupants of the bed.

Remove all clothes and other articles from dressers or closets before application within them.

Do not apply to furniture or upholstery where prolonged contact with humans will occur.

Boxelder Bug, Centipedes, Earwigs, Beetles, Millipedes, Pillbugs, Sowbugs: Apply to points of pest entry into structure such as around windows and doors. Apply anywhere else pests may congregate or be located.

Bees, Wasps, Hornets, Yellow-Jackets: Always use the highest rate (0.135%) when treating bees, wasps, hornets and yellow-jackets. Apply solution to hiding and breeding places, contacting as many insects as possible. Best results are achieved when application is made in the evening when insects are at rest and to avoid stings. Spray to the point of saturation. Spray as many insects as possible. Remove and destroy treated nests to prevent emergence of newly hatched insects.

Ants (Nuisance ants other than Carpenter Ants) Indoors: To achieve the highest level of control, locate and directly treat ant nests and ant trails. Apply solution in areas infested by or expected to be infested by ants such as on walls, tile, baseboards, under cabinets and around pipes.

IMPORTANT READ BEFORE USE

NOTICE: Read the entire Directions for Use, Conditions of Sale, Disclaimer of Warranties and Limitations of 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. By using this product, user or buyer accepts the following conditions, disclaimer of warranties and limitations of liability.

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This Conditions of Sale and Limitation of Warranty and Liability may not be amended by any oral or written agreement.

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Revised 01/05/12

Material Safety Data Sheet

BITHOR SC

Emergency Phone 1-800-424-9300 (Chemtrec)

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: BITHOR SC

CHEMICAL NAME: Imidacloprid plus Bifenthrin

CHEMICAL FAMILY: Chloro-nicotinyl plus pyrethroid insecticide

COMPANY: Ensystem IV, Inc.

ADDRESS: 2713 Breezewood Ave., Fayetteville, NC 28303

DAYTIME PHONE: 1-866-367-8467

2. COMPOSITION / INFORMATION ON INGREDIENTS

Imidacloprid 5.0% CAS# 138261-41-3

Bifenthrin 4.0% CAS# 82657-04-3

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Caution. Harmful if swallowed or absorbed through the skin.

PHYSICAL STATE: Viscous liquid suspension

ODOR: Mild

APPEARANCE: Off white to light brown

ROUTES OF EXPOSURE: Inhalation, skin contact, eye contact

IMMEDIATE EFFECTS

EYE: May cause mild eye irritation. Avoid contact with eyes.

SKIN: May cause slight irritation. Avoid contact with skin and clothing.

INGESTION: Harmful if swallowed. Do not take internally.

INHALATION: Inhalation not likely.

4. FIRST AID MEASURES

EYES: Hold eye open and rinse slowly and gently with water for 15 to 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.

SKIN: Take off contaminated clothing and shoes immediately. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

INGESTION: Call a poison control center or doctor immediately for treatment advice. Rinse out mouth and 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. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

INHALATION: 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 a poison control center or doctor for further treatment advice.

NOTES TO MEDICAL DOCTOR: This product contains a pyrethroid. Treat symptomatically. There is no antidote.

5. FIRE FIGHTING MEASURES

FLASH POINT: >93°C / > 199 °F

EXTINGUISHING MEDIA: Water spray, Carbon dioxide, dry chemical powder or appropriate foam.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride gas, Nitrogen oxides.

SUITABLE EXTINGUISHING MEDIA: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

FIRE FIGHTING PROCEDURES: Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke, gases or vapors generated. Keep out of smoke. Fight fire from an upwind position. Cool closed containers exposed to fire with water spray. Dike area to prevent runoff and contamination of water sources. Equipment or materials involved in pesticide fires may become contaminated.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTION(S): Isolate and post spill area. Wear protective clothing and personal protective equipment as prescribed in Section 8, "Exposure Controls/Personal Protection". Keep unprotected persons and animals out of the area.

METHOD FOR CLEANING UP: Dike area to prevent runoff. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder,

universal binder, sawdust). Clean contaminated floors and objects thoroughly, observing environmental regulations. Collect and transfer the product into a properly labeled and tightly closed container. Do not allow material to enter streams, sewers, or other waterways. You may contact Ensystem III at 1-866-367-8467 for assistance if necessary. You may also contact Chemtrec at 1-800-424-9300 for assistance.

7. HANDLING AND STORAGE

STORAGE PROCEDURES: Store in a cool, dry, well-ventilated and preferably locked storage area. Keep out of reach of children and animals. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal. Store in original containers only. Keep storage container tightly closed. Do not freeze.

WORK/HYGENIC PROCEDURES: Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: General air replacement or dilution ventilation is sufficient for material handling and storage.

PERSONAL PROTECTIVE EQUIPMENT: Applicators and other handlers must wear long-sleeved shirt and long pants and shoes plus socks (PPE). Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

USER SAFETY RECOMMENDATIONS: Wash hands before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

EXPOSURE LIMITS: Glycerine CAS # 56-81-5 ACGIH TWA 10 mg/m3
Form of exposure - Mist

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Off-white to light brown

PHYSICAL STATE: Viscous liquid suspension

ODOR: Mild

WATER SOLUBILITY: Dispersible

10. STABILITY AND REACTIVITY

STABILITY: Stable under recommended storage conditions.

11. TOXICOLOGICAL INFORMATION

The non-acute information pertains to the active ingredient.

ACUTE TOXICITY

EYE EFFECTS: Mild eye irritation (rabbits)

SKIN SENSITIZATION: No (guinea pig)

SKIN IRRITATION: Slight (rabbit)

ACUTE ORAL TOXICITY FEMALE RAT: LD50 > 1,030 mg/kg

ACUTE DERMAL TOXICITY FEMALE RAT: LD50: > 5,000 mg/kg

ACUTE INHALATION TOXICITY FEMALE COMBINED RAT: LC50 - 4-hr exposure to liquid aerosol: 2.03 mg/l (actual). LC50: 1-hr exposure to liquid aerosol: 8.12 mg/l (Extrapolated from 4 hr. LC50.)

SUBCHRONIC TOXICITY

IMIDACLOPRID TECHNICAL

In a 3-week dermal toxicity study, rabbits treated with imidacloprid showed no local or systemic effects at levels up to and including 1000 mg/kg, the limit dose. In a 4-week inhalation study, rats exposed to high concentrations of imidacloprid exhibited decreased body weight gains and changes in clinical chemistries and organ weights.

BIFENTHRIN TECHNICAL

In a 21-day dermal toxicity study in rabbits, bifenthrin caused a loss of muscle coordination. In subchronic toxicity studies, tremors were observed in rats and dogs following dietary exposure to bifenthrin.

CHRONIC TOXICITY

IMIDACLOPRID TECHNICAL

In chronic dietary studies in rats and dogs exposed to imidacloprid, the target organs were the thyroids and/or liver.

BIFENTHRIN TECHNICAL

The principal effect observed in rats, mice and dogs from long-term exposure to bifenthrin was clinical signs of toxicity (e.g., tremors).

ASSESSMENT CARCINOGENICITY

IMIDACLOPRID TECHNICAL

In oncogenicity studies in rats and mice, imidacloprid was not considered carcinogenic in either species.

BIFENTHRIN TECHNICAL

Bifenthrin was not carcinogenic in a chronic feeding study in rats. In an oncogenicity study in mice, there was an increased incidence of tumors (urinary bladder, liver, lung). EPA classified bifenthrin as Group C (possible human carcinogen) chemical based on urinary bladder tumors in mice. The Agency used a nonlinear methodology approach for determining the Margin of Exposure (MOE) for the estimation of cancer risk. Therefore, EPA has a reasonable certainty that no harm will result from exposure to residues of bifenthrin.

CARCINOGENICITY

IARC: Not listed

NTP: Not listed

OSHA: Not listed

REPRODUCTIVE AND DEVELOPMENTAL TOXICITY

IMIDACLOPRID TECHNICAL

REPRODUCTION: In a two-generation reproduction study in rats, imidacloprid was not a primary reproductive toxicant. Offspring exhibited reduced body weights at the high dose and in conjunction with maternal toxicity.

DEVELOPMENTAL TOXICITY: In developmental toxicity studies in rats and rabbits, there was no evidence of an embryotoxic or teratogenic potential for imidacloprid. In both species, developmental effects were observed only at high doses and in conjunction with maternal toxicity.

BIFENTHRIN TECHNICAL

REPRODUCTION: Bifenthrin is not a reproductive toxicant based on a multigeneration reproduction study in rats.

DEVELOPMENTAL TOXICITY: Bifenthrin is not a developmental toxicant based on developmental toxicity studies in rats and rabbits.

NEUROTOXICITY

IMIDACLOPRID TECHNICAL

In acute and subchronic neurotoxicity screening studies in rats, imidacloprid produced slight neurobehavioral effects in each study at the highest dose tested. There were no correlating morphological changes observed in the neural tissues.

In a one-generation developmental neurotoxicity screening study in rats, offspring exposed to imidacloprid showed decreased motor activities. These effects occurred at the highest dose tested and in conjunction with maternal toxicity. There were no correlating morphological changes observed in the neural tissues.

BIFENTHRIN TECHNICAL

Bifenthrin did not cause delayed neurotoxicity in hens. In acute and subchronic neurotoxicity screening studies in rats, transient well-defined neurobehavioral effects were seen without correlating morphological changes in the neural tissues.

MUTAGENICITY

IMIDACLOPRID TECHNICAL

The imidacloprid mutagenicity studies, taken collectively, demonstrate that the active ingredient is not genotoxic or mutagenic.

BIFENTHRIN TECHNICAL

Bifenthrin is not considered genotoxic or mutagenic based on in vitro and in vivo mutagenicity studies.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL PRECAUTIONS: This pesticide is highly toxic to aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

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.

ECOLOGICAL INFORMATION: This chemical demonstrates the 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.

13. DISPOSAL CONSIDERATIONS

GENERAL DISPOSAL GUIDANCE: Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of at an approved waste facility in accordance with applicable Federal, state and local laws and regulations.

CONTAINER DISPOSAL: Follow advice on product label and/or leaflet.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION: Not regulated.

FREIGHT CLASSIFICATION: Insecticides or Fungicides, N.O.I., other than poison

15. REGULATORY INFORMATION

CERCLA REPORTABLE QUANTITY: No components listed.

Sara Title III – section 313 – Toxic Chemical Release Reporting:

Bifenthrin 82657-04-3 1.0%

16. OTHER INFORMATION

NFPA 704: (National Fire Protection Association)

Health - 2 Flammability - 1 Reactivity - 1 Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Revised 03/07