

71532-28

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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

WASHINGTON, D.C. 20460

OFFICE OF  
CHEMICAL SAFETY AND  
POLLUTION PREVENTION

**October 19, 2011**

**Matthew Brooks, Regulatory Consultant**  
**LG Life Sciences**  
**c/o Ag-Chem Consulting**  
**12208 Quinque Lane**  
**Clifton, VA 20124**

**Subject:** Label Amendment—Addition of specific non-public health pests and re-wording of stored product use directions.

**Product Name:** ESFENVALERATE 3.5% CS

**EPA Reg. No.:** 71532-28

**EPA Decision No.** 456049

**Application Dated:** October 3, 2011

Dear Mr. Brooks:

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable. A stamped copy of the label is enclosed for your records

If you have any questions, you may contact Clayton Myers at (703) 347-8874 or [myers.clayton@epa.gov](mailto:myers.clayton@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to be "R. Gebken", written over a large, stylized circular scribble.

Richard J. Gebken, Product Manager  
Insecticide Branch  
Registration Division (7505P)

Enclosure:  
Stamped Label

# ESFENVALERATE 3.5% CS

**ACTIVE INGREDIENT:**

Esfenvalerate (CAS #66230-04-4).....	3.5%
OTHER INGREDIENTS.....	96.5%
	100.00%

Contain 0.3 lbs active ingredient per gallon

## KEEP OUT OF REACH OF CHILDREN CAUTION

<b>FIRST AID</b>	
<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have a person sip a glass of water if able to do swallow</li> <li>• Do not induce vomiting unless told to by a poison control center or doctor</li> <li>• Do not give anything to an unconscious person.</li> </ul>
<b>IF IN EYES:</b>	<ul style="list-style-type: none"> <li>• Hold 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</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF ON SKIN:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes</li> <li>• Call a poison control center or doctor for treatment advice</li> </ul>
<b>NOTE TO PHYSICIAN:</b> Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information regarding medical emergencies or pesticide incidents, call 1-888-740-8712.	

Manufactured by:  
 LG Life Sciences, Ltd.  
 910 Sylvan Avenue  
 Englewood Cliffs, NJ 07632

**ACCEPTED**  
**OCT 19 2011**  
 Under the Federal Insecticide, Fungicide,  
 and Rodenticide Act, as amended, for the  
 pesticide registered under:

EPA Reg. No. 71532-28  
 EPA Est. No. 71532-KOR-001

EPA. Reg. No: 71532 - 28

Net Contents \_\_\_\_\_



**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**CAUTION**

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Wear protective eyewear. 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 fish, birds and other wildlife. 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 ornamental fish ponds. Do not contaminate water when disposing of equipment washwaters or rinsate. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product into sewer systems without previously notifying the sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

**PHYSICAL OR CHEMICAL HAZARDS**

COMBUSTIBLE. Do not use or store near heat or open flame. Do not apply this product around electrical equipment due to the possibility of shock hazard.

**DIRECTIONS FOR USE**

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

Remove pets, birds, and cover fish aquariums before spraying.

For control of insects, indoors and outdoors, in food and non-food areas such as, but not limited to: homes, schools, warehouses, office buildings, apartment buildings, theatres, hotels, industrial buildings, motels, kennels, livestock housing, food processing plants, food service establishments, restaurants, supermarkets and grocery stores, transportation equipment, truck trailers, railroad cars, and food manufacturing and warehousing establishments. Also for use on backyards, lawns, trees, ornamental landscaping, recreational areas, parks and athletic fields.

**Pests Controlled Include:**

**General:** Ants (including Caribbean crazy ants and fire ants), aphids, asian lady beetles, bedbugs, beetles, boxelder bugs, carpet beetles, centipedes, cockroaches, crickets, dog ticks, earwigs, firebrats, fleas, mealy bugs, midges, millipedes, mites, pillbugs, psocids, scales, silverfish, spiders, springtails, stink bugs ( including brown marmorated stink bug and kudzu bug), swarming termites, ticks and waterbugs.

**Flying Pests:** Blow flies, clothes moths, crane flies, deer flies, face flies, fruit flies, gnats including fungus gnats, horn flies, houseflies, mosquitoes, small flying moths and whiteflies.

**Biting and Stinging Pests:** Bedbugs, bees, biting flies, chiggers, deer flies, deer ticks, dog ticks, fire ants, fleas, gnats, hornets, lice, mosquitoes, scorpions, spiders, ticks, wasps and yellow jackets.

**Stored Product Pests:** Angoumois grain moths, ants, cadelles, cigarette beetles, confused flour beetles, dark mealworms, dried fruit beetles, drugstore beetles, flat grain beetles, fruit flies, grain mites, grain moths, granary weevils, indian meal moths, lesser grain borers, maize weevils, meal moth larvae, Mediterranean flour moths, merchant grain beetles, red flour beetles, rice weevils, rusty grain beetles, saw-toothed grain beetles, skippers, spider beetles, spider mites, square-necked grain beetles, tobacco moths and yellow mealworms.

**Livestock Premise Pests:** Bedbugs, carrion beetles, chiggers, darkling beetles (lesser mealworm), deer flies, face flies, fleas, flies, hide beetles, horn flies, horse flies, lice, litter beetles, mites, mosquitoes and stable flies.

**Wood-Destroying Pests:** Carpenter ants, carpenter bees, deathwatch beetles, furniture beetles, old house borers, powder post beetles, round-headed house borers and swarming termites.

**Plant Pests:** Alfalfa caterpillars, artichoke plum moth, American plum borers, annual bluegrass weevils, aphids, apple maggots, armyworms, bagworms, balsam woolly adelgids, beet armyworms, billbugs, blueberry spanworms, cherry fruit flies, cherry fruitworms, chinch bugs, codling moths, cowpea curculios, cranberry fruitworms, cranberry weevils, cucumber beetles, cutworms, diamondback moths, elm leaf beetles, european pine sawflies, fall webworms, filbert worms, flea beetles, grasshoppers, green cloverworms, green fruitworms, gypsy moth caterpillars, hickory shuckworms, imported cabbageworms, Japanese beetles, lace bugs, leaf feeding caterpillars, leaf miners, leaf rollers, leaf tiers, leafhoppers, lesser appleworms, lesser peach tree borers, loopers, lygus bugs, Mexican bean beetles, mites, mole crickets, naval orangeworms, northern pine weevils, oriental fruit moths, painted lady caterpillars, pea weevils, peach tree borers, peach twig borers, pear psyllid, pear slugs, pecan leaf phylloxera, pecan nut casebearers, pecan spittlebugs, pecan stem phylloxera, pecan weevils, pepper weevils, periodical cicadas, pickleworms, pillbugs, pine chafers, pine coreid bugs, plant bugs, plum curculios, red pine sawflies, red-striped fireworms, red-headed pine sawflies, rindworms, salt marsh caterpillars, sap beetles, scales, sod webworms, sowbugs, spiders, spittlebugs, stink bugs (including brown marmorated stink bug and kudzu bug), tarnished plant bugs, tent caterpillars, thrips, tobacco hornworms, tufted apple bud moths, velvet bean caterpillars, walnut husk flies, western bean cutworms and whiteflies.

## GENERAL INFORMATION

Do not apply this product in patient rooms or in any rooms while occupied by patients, the elderly or infirm. Do not apply to classrooms while in use. Do not apply in institutions (including libraries, sports facilities, etc.) in the immediate area where occupants are present.

Esfenvalerate 3.5% CS is a microencapsulated suspension concentrate containing 0.3 pounds active ingredient per gallon.

Esfenvalerate 3.5% CS is designed to provide long residual activity against pests listed on this label when applied as surface or spot treatments or as a crack and crevice spray in and around residential and commercial structures, as well as on turf and landscaping. Esfenvalerate 3.5% CS may be sprayed on any surface that will not be stained by water. DO NOT use this product as a fogger or apply it as a space spray. Do not apply in electrical conduits, junction and switch boxes, motor housings, or other electrical equipment due to shock hazard from water-based spray.

Use only in areas described. Remove pets and cover fish aquariums and pets' food and water dishes before spraying. Keep all people (especially children) and pets out of areas being treated and restrict access to these areas until all surfaces are dry. DO NOT leave product where children or pets can come into contact with it. DO NOT allow spray to contact food or food-containing surfaces, feed, or water



supplies. Thoroughly wash dishes and food handling utensils with soap and water if they become contaminated with this product. Food utensils such as teaspoons and measuring cups must not be used for food purposes after use with pesticides.

**INDOOR USE:**

**APPLICATION IN FOOD PROCESSING/ HANDLING ESTABLISHMENTS:**

Application is Permitted Within Food and Non-Food Areas of Food Service and Handling Establishments (Places Other Than Private Residences) Including, But Not Limited to: Restaurants, Meat Processing Plants, Grocery Stores, Bakeries, Food Manufacturing and Processing Establishments, and Food Warehousing Establishments. Do not treat establishments where livestock feed is present.

Food areas include areas for receiving, storing, packing, canning, bottling, wrapping, boxing, preparing, edible waste storage and enclosed processing systems, mills and dairies. Serving areas are places where prepared foods are served, such as dining rooms, but excluding areas where foods may be prepared or held. Non-food areas include garbage rooms, lavatories, floor drains (to sewers), entries and vestibules, offices, locker rooms, machine rooms, garages, mop closets and storage after canning or bottling.

General Surface Applications: Do not apply Esfenvalerate 3.5% CS as a general surface application in food areas of the facility when the facility is in operation or food is exposed. Do not apply directly to food. Cover or remove all food and food processing equipment prior to application. After spraying in nonfood areas of meat packing plants, bakeries, and other food processing plants, wash with an effective cleaning compound, and then rinse all equipment, benches, shelving, etc where exposed food will be handled with potable water. Repeat applications as need, but do not exceed more than one (1) application every (14) days.

Spot or Crack & Crevice Applications: Spot or crack and crevice applications may be made while facility is in operation, provided exposed food is covered or removed from the area being treated. Do not apply directly to food or food-handling surfaces. Repeat applications as needed, but do not exceed more than one (1) application every (14) days.

**MIXING INSTRUCTIONS:**

Esfenvalerate 3.5% CS should be mixed with water and applied with hand pressurized or power operated sprayers. Shake container of Esfenvalerate 3.5% CS before diluting. Clean spray equipment before use. For dilution, add approximately half the required water to spray tank and then add the appropriate amount of Esfenvalerate 3.5% CS. Agitate and slowly add the remaining water. Agitate spray thoroughly before using and also occasionally during use to ensure dispersion. If spray filter screens are used, they should be 50 mesh or larger. Use 1.0 fluid ounce (30 cc.) of Esfenvalerate 3.5% CS in 1 gallon of water to make a spray mix containing 0.025% active ingredient. Use 2.0 fluid ounces (60 cc.) per gallon of water to make a spray containing 0.05% active ingredient. Use 0.025% solution, for light infestations or as a maintenance control rate. Use 0.05% for heavy infestations or as an initial clean out rate. Apply two-second bursts of spray per square foot of area being treated. Avoid excessive application. Dampen surfaces but not to the point of saturation or run-off. Only dilute Esfenvalerate 3.5% CS with water.

*Formula for determining the active ingredient content of the finished spray mixture:* The following formula may be used to determine the percent active ingredient that is in the sprayer tank after mixing Esfenvalerate 3.5% CS:

$$(3.48) \times (\text{number of fl. oz. of Esfenvalerate 3.5\% CS added to tank})$$

$$(\text{Gallons of finished spray mix}) \times (128) = \text{Percent Active Ingredient of Spray Mix}$$

**Tank Mixing:**

Esfenvalerate 3.5% CS may be tank mixed with an insect growth regulator such as NyGuard® IGR Concentrate or pyrethrum-containing products or any other currently registered pesticides unless expressly prohibited the product label. The resulting tank mix may be applied in areas where these products are allowed to be sprayed. Do not tank mix Esfenvalerate 3.5% CS with products containing dichlorvos (DDVP).

**Application Rates for Indoor Structural Pests:**

Pests	Concentration of Active Ingredient	Dilution Rate in Water	Application Rate of Mixed Solution	Application Method(s)
Crawling Insects Light Infestations	0.025%	1.0 fl. oz./gallon	1 gallon/1,000 sq. ft.	Apply as a course, wet spray
Heavy Infestations	0.050%	2.0 fl. oz./gallon		*Broadcast Surface Spray
Flying Insects	0.025%	1.0 fl. oz./gallon	1 gallon/1,000 sq. ft.	
Stinging Insects	0.050%	2.0 fl. oz./gallon	1 gallon/1,000 sq. ft.	*Crack & Crevice Treatment
Ticks	0.025%	1.0 fl. oz./gallon	1 gallon/1,000 sq. ft.	*Spot Treatment *Injected into Wall Voids
Fleas, Lice & Bedbugs	0.025%	1.0 fl. oz./gallon	1 gallon/1,000 sq. ft.	Apply as noted above, with a fine particle spray.

**Crawling Insect Pests Indoors:**

Apply as a course, wet spray to surfaces where these pests are normally found. Treat floors, baseboards, around doors and windows, in attics, crawl spaces, eaves, corners, closets, walls, utility pipes, storage areas, and all cracks and crevices. Treat underneath sinks, dishwashers, refrigerators, stoves, the underside of shelves, drawers, cabinets, areas behind pipes, and in all places where these insects shelter. Contact as many insects as possible with direct spray. Repeat applications as needed, but do not exceed more than one (1) application every seven (7) days.

**For Ant Control Indoors:**

Apply to ant trails, around garbage receptacles, and near food sources. Also apply around doors and windows and wherever these pests may find entrance to the structure. Remove sources of food through basic hygiene practices whenever possible.

**Flying Insect Pests Indoors:**

Treat insect resting areas such as walls and ceilings, screens, around windows, doors, and light fixtures, and other surfaces that attract flying insects. Initiate treatments at the beginning of fly season, and repeat treatments during periods of heavy infestation.



**Stinging Insect Pests Indoors:**

Apply spray to nests late in the evening when stinging insects are at rest. Thoroughly spray nest, nest entrance, and surrounding areas where insects land or walk. Treat around doors and windows, in attics, crawl spaces, and possible harborage sites or points of entry.

**For Control of Brown Dog Ticks:**

Thoroughly apply as a spot treatment to infested areas such as pet beds and resting areas, nearby cracks and crevices, along and behind baseboards, windows and door frames, and localized areas of floor and floor coverings where these pests may be present. **DO NOT SPRAY PETS WITH THIS PRODUCT.** Treat dogs and cats with a product registered for use on animals.

**For Control of Fleas:**

Thoroughly apply as a fine particle broadcast spray to infested rugs, carpets, and pet resting areas. Prior to treatment, aquariums and fish bowls should be covered, and pet animals should be removed from the area being treated. Do not permit humans or pets to contact treated surfaces until spray has dried. Old pet bedding should be removed and replaced with clean, fresh bedding after treatment. **DO NOT SPRAY PETS WITH THIS PRODUCT.** Treat dogs and cats with a product registered for use on animals.

**To Control Bedbugs:**

Thoroughly clean and sanitize mattresses and box springs. Treat mattresses and box springs with an approved pesticide, such as a pyrethrin aerosol. Apply Esfenvalerate 3.5% CS as a spot treatment to potential harborage sites and migration paths, and cracks and crevices, around baseboards, floorboards, headboards, and walls.

**For Control of Stored Product Pests:**

Spray thoroughly around and into floor drains, non-food conveyors, benches, pipes, pallets, moist areas, storage racks, pieces of equipment, and other areas where stored product pests may be found. Tank-mix or sequential use of an insect growth regulator, such as NyGuard® IGR Concentrate, is recommended to break the insect reproduction cycle. Do not apply this spray to surfaces or utensils that may come in contact with food, since excessive residues in food may result.

**To Treat Voids in Equipment and Structures:**

To kill insects harboring in wall voids and other inaccessible spaces in equipment and structures, use injection equipment designed for deep void applications. Follow the injection equipment manufacturer's recommendations for proper set up and air pressures. Place the applicator tip at or into the void space to be treated. For inaccessible voids, it may be necessary to drill and access hole(s). Inject product into the void space in short bursts, allowing air pressure to push insecticide deep into the space. Avoid applying to the point of runoff or drip. Ventilate area thoroughly before re-entry. Do not reapply more than every fourteen (14) days.

**To Kill the Accessible Stages of Listed Granary Insects:** Pest Management Professionals and grain, spice, nut, seed, etc., producers may use Esfenvalerate 3.5% CS to treat grain storage facilities and other listed areas for storage of grain, dried nut, seed, or spice products, including silos, storage bins, chambers, containers, and shelters. For control of exposed adult and immature stages of stored product pest, apply to cracks, crevices, joints, small voids and other surface where the pests have been seen or have harborage. Treat areas where products are stored before filling with the product. Apply at the concentration and rates

listed in prior charts. Cleaning all areas prior to use will increase levels of control. Any foodstuffs infested with pests should be removed and destroyed..

Repeat application as needed but DO NOT exceed more than one application every fourteen (14) days.

## **RESIDENTIAL AREAS:**

### **RESIDENTIAL /COMMERCIAL USE INDOORS**

Application within residential and non-residential buildings including homes, apartment buildings, kennels, food and non-food areas of industrial, institutional, and commercial buildings, such as hospitals, hotels, warehouses, truck trailers, railroad cars, theatres, office buildings, and schools.

Apply as a coarse, wet spray to thoroughly treat hiding places, such as cracks, crevices, and moist areas around pipes, under refrigerators, and along baseboards to control pests listed below. Spray directly on insects when possible. Do not permit humans or pets to contact treated surfaces until the spray has dried. Repeat as necessary. Do not treat establishments where livestock feed is present.

In the home, cover exposed food and do not allow spray to contact food surfaces. If spray does contact these surfaces, clean surfaces with soap and water.

### **MIXING INSTRUCTIONS:**

Esfenvalerate 3.5% CS should be mixed with water and applied with hand pressurized or power operated sprayers. Shake container of Esfenvalerate 3.5% CS before diluting. Clean spray equipment before use. For dilution, add approximately half the required water to spray tank and then add the appropriate amount of Esfenvalerate 3.5% CS. Agitate and slowly add the remaining water. Agitate spray thoroughly before using and also occasionally during use to ensure dispersion. If spray filter screens are used, they should be 50 mesh or larger. Use 1.0 fluid ounce (30 cc.) of Esfenvalerate 3.5% CS in 1 gallon of water to make a spray mix containing 0.025% active ingredient. Use 2.0 fluid ounces (60 cc.) per gallon of water to make a spray containing 0.05% active ingredient. Use 0.025% solution, for light infestations or as a maintenance control rate. Use 0.05% for heavy infestations or as an initial clean out rate. Apply two-second bursts of spray per square foot of area being treated. Avoid excessive application. Dampen surfaces but not to the point of saturation or run-off. Only dilute Esfenvalerate 3.5% CS with water.

**Formula for determining the active ingredient content of the finished spray mixture:** The following formula may be used to determine the percent active ingredient that is in the sprayer tank after mixing Esfenvalerate 3.5% CS:

$$\frac{(3.48) \times (\text{number of fl. oz. of Esfenvalerate 3.5\% CS added to tank})}{(\text{Gallons of finished spray mix}) \times (128)} = \text{Percent Active Ingredient of Spray Mix}$$

### **Tank Mixing:**

Esfenvalerate 3.5% CS may be tank mixed with an insect growth regulator such as NyGuard® IGR Concentrate or pyrethrum-containing products or any other currently registered pesticides unless expressly prohibited the product label. The resulting tank mix may be applied in areas where these



products are allowed to be sprayed. Do not tank mix Esfenvalerate 3.5% CS with products containing dichlorvos (DDVP).

**Application Rates for Indoor Structural Pests:**

Pests	Concentration of Active Ingredient	Dilution Rate in Water	Application Rate of Mixed Solution	Application Method(s)
Crawling Insects Light Infestations Heavy Infestations	0.025% 0.050%	1.0fl. oz./gallon 2.0fl. oz./gallon	1 gallon/1,000 sq. ft.	Apply as a course, wet spray *Broadcast Surface
Flying Insects	0.025%	1.0 fl. oz./gallon	1 gallon/1,000 sq. ft.	Spray
Stinging Insects	0.050%	2.0 fl. oz./gallon	1 gallon/1,000 sq. ft.	*Crack & Crevice Treatment
Ticks	0.025%	1.0 fl. oz./gallon	1 gallon/1,000 sq. ft.	*Spot Treatment
Fleas, Lice & Bedbugs	0.025%	1.0 fl. oz./gallon	1 gallon/1,000 sq. ft.	Apply as noted above, with a fine particle spray.

**Crawling Insect Pests Indoors:**

Apply as a course, wet spray to surfaces where these pests are normally found. Treat floors, baseboards, around doors and windows, in attics, crawl spaces, eaves, corners, closets, walls, utility pipes, storage areas, and all cracks and crevices. Treat underneath sinks, dishwashers, refrigerators, stoves, the underside of shelves, drawers, cabinets, areas behind pipes, and in all places where these insects shelter. Contact as many insects as possible with direct spray. Repeat applications as needed, but do not exceed more than one (1) application every seven (7) days.

**For Ant Control Indoors:**

Apply to ant trails, around garbage receptacles, and near food sources. Also apply around doors and windows and wherever these pests may find entrance to the structure. Remove sources of food through basic hygiene practices whenever possible.

**Flying Insect Pests Indoors:**

Treat insect resting areas such as walls and ceilings, screens, around windows, doors, and light fixtures, and other surfaces that attract flying insects. Initiate treatments at the beginning of fly season, and repeat treatments during periods of heavy infestation.

**Stinging Insect Pests Indoors:**

Apply spray to nests late in the evening when stinging insects are at rest. Thoroughly spray nest, nest entrance, and surrounding areas where insects land or walk. Treat around doors and windows, in attics, crawl spaces, and possible harborage sites or points of entry.

**For Control of Brown Dog Ticks:**

Thoroughly apply as a spot treatment to infested areas such as pet beds and resting areas, nearby cracks and crevices, along and behind baseboards, windows and door frames, and localized areas of floor and

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floor coverings where these pests may be present. **DO NOT SPRAY PETS WITH THIS PRODUCT.** Treat dogs and cats with a product registered for use on animals.

**For Control of Fleas:**

Thoroughly apply as a fine particle broadcast spray to infested rugs, carpets, and pet resting areas. Prior to treatment, aquariums and fish bowls should be covered, and pet animals should be removed from the area being treated. Do not permit humans or pets to contact treated surfaces until spray has dried. Old pet bedding should be removed and replaced with clean, fresh bedding after treatment. **DO NOT SPRAY PETS WITH THIS PRODUCT.** Treat dogs and cats with a product registered for use on animals.

**To Control Bedbugs:**

Thoroughly clean and sanitize mattresses and box springs. Treat mattresses and box springs with an approved pesticide, such as a pyrethrin aerosol. Apply Esfenvalerate 3.5% CS as a spot treatment to potential harborage sites and migration paths, and cracks and crevices, around baseboards, floorboards, headboards, and walls.

**For Control of Stored Product Pests:**

Spray thoroughly around and into floor drains, non-food conveyors, benches, pipes, pallets, moist areas, storage racks, pieces of equipment, and other areas where stored product pests may be found. Tank-mix or sequential use of an insect growth regulator, such as NyGuard<sup>®</sup> IGR Concentrate, is recommended to break the insect reproduction cycle. Do not apply this spray to surfaces or utensils that may come in contact with food, since excessive residues in food may result.

**To Kill the Accessible Stages of Listed Granary Insects:** Pest Management Professionals and grain, spice, nut, seed, etc., producers may use Esfenvalerate 3.5% CS to treat grain and other storage facilities, and other listed areas, such as but not limited to silos, storage bins, chambers, containers, shelters, and other potential areas for stored product pest control. For control of exposed adult and immature stages of stored product pest, apply to cracks, crevices, joints, small voids and other surface where the pests have been seen or have harborage. Treat areas where products are stored before filling with the product. Apply at the concentration and rates listed in prior charts. Cleaning all areas prior to use will increase levels of control. Any foodstuffs infested with pests should be removed and destroyed.

Repeat application as needed but **DO NOT** exceed more than one application every fourteen (14) days.

**USE IN AND AROUND LIVESTOCK HOUSING:**

For use in and around unoccupied areas of livestock facilities, such as: Barns, Cow and Calf Pens & Hutches, Dairy Barns & Milk Rooms, Hog Barns, Horse Barns, Sheep Barns, Poultry Houses, and Rabbit Hutches. Do not contaminate milk, food, or drinking water. Remove animals from area being treated. Cover feeders and waterers. Do not apply or allow insecticide to drift onto animals. Do not allow animals to enter treated areas until spray solution has dried.

**MIXING INSTRUCTIONS:**

Esfenvalerate 3.5% CS should be mixed with water and applied with hand pressurized or power operated sprayers. Shake container of Esfenvalerate 3.5% CS before diluting. Clean spray equipment before use. For dilution, add approximately half the required water to spray tank and then add the appropriate amount of Esfenvalerate 3.5% CS. Agitate and slowly add the remaining water. Agitate spray thoroughly before using and also occasionally during use to ensure dispersion. If spray filter screens are used, they should be 50 mesh or larger. Use 1.0 fluid ounce (30 cc.) of Esfenvalerate 3.5% CS in 1 gallon of water to make a spray mix containing 0.025% active ingredient. Use 2.0 fluid ounces (60 cc.) per gallon of water to make a spray containing 0.05% active ingredient. Use 0.025% solution, for light infestations or as a



maintenance control rate. Use 0.05% for heavy infestations or as an initial clean out rate. Apply two-second bursts of spray per square foot of area being treated. Avoid excessive application. Dampen surfaces but not to the point of saturation or run-off. Only dilute Esfenvalerate 3.5% CS with water.

**Formula for determining the active ingredient content of the finished spray mixture:** The following formula may be used to determine the percent active ingredient that is in the sprayer tank after mixing Esfenvalerate 3.5% CS:

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**Tank Mixing:**

Esfenvalerate 3.5% CS may be tank mixed with an insect growth regulator such as NyGuard® IGR Concentrate or pyrethrum-containing products or any other currently registered pesticides unless expressly prohibited the product label. The resulting tank mix may be applied in areas where these products are allowed to be sprayed. Do not tank mix Esfenvalerate 3.5% CS with products containing dichlorvos (DDVP).

Pests	Concentration of Active Ingredient	Dilution Rate in Water	Application Method(s)
Crawling Insects *Including litter beetles	0.050%	2 fl. oz./gallon or 2 fl. oz. in sufficient water to cover 1,000 sq. ft.	Apply as a coarse, wet spray *General Surface Spray *Crack & Crevice Treatment *Spot Treatment
Flying Insects	0.025%	1 fl. oz./gallon or 1 fl. oz. in sufficient water to cover 1,000 sq. ft.	

**Crawling Insect Pests in Livestock and Poultry Premises:**

Apply as a general surface, spot treatment, and/or crack and crevice treatment. Apply to floors and vertical and overhead surfaces where crawling insects are or may be present. Treat stanchions, pipes, windows, doors, posts, cage framing, gates, under (but not in) feeders, and other areas where insects hide or congregate. To reduce immigration of insects, make a perimeter treatment around the outside of building foundations. Apply in a uniform band 1-3 feet up the exterior foundation wall and 3-6 feet out from the foundation.

**Litter Beetle Control in Livestock and Poultry Premises:**

To control litter beetles (darkling, hide, and carrion beetles), apply Esfenvalerate 3.5% CS to walls and floors at cleanout and before reintroduction of animals. Treat areas where beetles frequently occur, such as walls, supports, cages, cage framing, stalls and around feeders. To reduce immigration of insects, make a perimeter treatment around the outside of building foundations. Apply in a uniform band 1-3 feet up the exterior foundation wall and 3-6 feet out from the foundation.

**Flying Insect Pests in Livestock and Poultry Premises:**

For residual control of flying insects, treat insect resting areas such walls, ceilings, screens, around windows, doors, light fixtures, and other surfaces that attract flying insects. Initiate treatments at the beginning of fly season and repeat treatments during periods of heavy infestation.

**OUTDOOR USE:**

Do not spray in or near fishponds or other bodies of water.

Not for use on plants being grown for sale or other commercial use. Not for use in nurseries, on all turf types such as golf course greens, tees and fairways and on sod farms.

**MIXING INSTRUCTIONS:**

Esfenvalerate 3.5% CS should be mixed with water and applied with hand pressurized or power operated sprayers. Shake container of Esfenvalerate 3.5% CS before diluting. Clean spray equipment before use. For dilution, add approximately half the required water to spray tank and then add the appropriate amount of Esfenvalerate 3.5% CS. Agitate and slowly add the remaining water. Agitate spray thoroughly before using and also occasionally during use to ensure dispersion. If spray filter screens are used, they should be 50 mesh or larger. Use 1.0 fluid ounce (30 cc.) of Esfenvalerate 3.5% CS in 1 gallon of water to make a spray mix containing 0.025% active ingredient. Use 2.0 fluid ounces (60 cc.) per gallon of water to make a spray containing 0.05% active ingredient. Use 0.025% solution, for light infestations or as a maintenance control rate. Use 0.05% for heavy infestations or as an initial clean out rate. Apply two-second bursts of spray per square foot of area being treated. Avoid excessive application. Dampen surfaces but not to the point of saturation or run-off. Only dilute Esfenvalerate 3.5% CS with water.

***Formula for determining the active ingredient content of the finished spray mixture:*** The following formula may be used to determine the percent active ingredient that is in the sprayer tank after mixing Esfenvalerate 3.5% CS:

$$\frac{(3.48) \times (\text{number of fl. oz. of Esfenvalerate 3.5\% CS added to tank})}{(\text{Gallons of finished spray mix}) \times (128)} = \text{Percent Active Ingredient of Spray Mix}$$

**Tank Mixing:**

Esfenvalerate 3.5% CS may be tank mixed with an insect growth regulator such as NyGuard® IGR Concentrate or pyrethrum-containing products or any other currently registered pesticides unless expressly prohibited the product label. The resulting tank mix may be applied in areas where these products are allowed to be sprayed. Do not tank mix Esfenvalerate 3.5% CS with products containing dichlorvos (DDVP).



**Application Rates for Outdoor Pests:**

	<b>Concentration of Active Ingredient</b>	<b>Dilution Rate in Water</b>	<b>Application Method(s)</b>
Treating Exterior Walls, Foundations and Structures	0.025 to 0.050%	1 to 2 fl. oz./gallon or 1 to 2 fl. oz. in sufficient water to cover 1,000 sq. ft.	Apply as a coarse, wet spray *General Surface Spray *Crack & Crevice Treatment
Treating nests and harborage areas of stinging insects	0.050%	2 fl. oz./gallon or 2 fl. oz. in sufficient water to cover 1,000 sq. ft.	*Spot Treatment
To Control Swarming Termites and Wood Destroying Pests	0.050%	2 fl. oz./gallon or 2 fl. oz. in sufficient water to cover 1,000 sq. ft.	
Treating Ornamental Trees and Landscapes	0.005 to 0.050%	0.2 to 2 fl. oz./gallon or 0.2 to 2 fl. oz. in sufficient water to cover 1,000 sq. ft.	Apply as a coarse, wet spray *Broadcast Spray Treatment *Foliar Spray Treatment
Mosquito Breeding Sites	0.025%	1 fl. oz./gallon or 1 fl. oz. in sufficient water to cover 1,000 sq. ft.	
Treating Lawns and Turf	0.005 to 0.050%	0.2 to 2 fl. oz./gallon or 0.2 to 2 fl. oz. in sufficient water to cover 1,000 sq. ft.	Apply as a coarse, wet spray *Broadcast Spray Treatment

**Treating Exterior Walls, Foundations and Structures:**

To control infestations of listed pests, treat exterior surfaces of buildings, walls, window frames, around garbage cans, eaves, cracks and crevices, porches, decks, gazebos, patios, carports, garages, fence lines, and other areas where pests are active or may be hiding.

To help prevent insect infestation of buildings: Treat a 2-6 foot band of soil or other substrate adjacent to buildings. Treat building foundation to a height of 2-3 feet. Treat exterior walls, eaves, cracks and crevices, and other areas where listed pests are active, and may find entrance into building.

Apply with sufficient water to adequately cover the area being treated, but do not allow dripping or runoff to occur. Alternate mixing directions are to use 4 to 8 fluid ounces of concentrate per 50 gallons of water.

**Stinging Insect Control Outdoors:**

For stinging insects, apply spray solution to nests and harborage areas late in the evening when stinging insects are commonly at rest. Thoroughly spray nest, nest entrance, harborage sites, and surrounding areas where insects land or walk. For nests inside walls, inject sufficient spray to treat nest. Do not use in areas where an electrical shock hazard exists. For applications made when pests are active, applicator should wear protective equipment as required. Repeat application when there are signs of renewed insect activity.

For Yellow Jacket control, Esfenvalerate 3.5% CS can be mixed with baits in traps. Follow trap instructions for preparation of bait.

For control of Fire Ants, combine broadcast application with mound drenches to control foraging workers and newly mated fly-in queens. Apply Esfenvalerate 3.5% CS as a broadcast application at a rate of 16 fl. oz. of concentrate per 1,000 square feet. Treat mounds with a registered fire ant mound treatment.

**Insect Control in Ornamental Trees and Landscapes:**

For residential and commercial trees, shrubs, ground covers, and bedding and foliage plants that will not be harvested for food, apply Esfenvalerate 3.5% CS in appropriate volumes of water to obtain thorough coverage. Apply as a full-coverage foliar spray, applying to the point of drip but not runoff. Treat active soil pests with an application to surrounding soil. Repeat treatments as necessary to achieve control, using higher application rates as pest pressure and foliage area increases. Repeat applications as necessary but no more than once every seven (7) days. Certain plants may be sensitive to the final spray solution. A small-scale test is recommended to verify safety to ornamental plants. Spray and observe for one (1) week prior to application of an entire planting.

**Insect Control on Lawns, Turf Grass, and Turf:**

For best results, lawn or turf grass should be mowed 1 -2 days before spraying. Treat with spraying equipment or a hand sprayer. Use application volumes of up to 10 gallons per 1,000 square feet to get uniform coverage when treating dense grass foliage. For low volume applications using less than 2 gallons of spray solution per 1,000 square feet, immediate irrigation with at least 0.25 inches of water is recommended to improve effectiveness on subsurface pests.

When hand spraying, spray using a slow, even sweeping motion, making sure to cover the entire lawn or turf grass areas where pests are observed. Spray under ornamentals and trees. Repeat treatments may be necessary at 7 to 14-day intervals.

**Rate Range:**

Use lower rate range for pests that are commonly exposed and will be contacted by spray solution at the time of application. For pests that will not be contacted by spray solution at the time of application, use the upper rate range. Use 2 fl. oz. per 1,000 sq. ft. when treating Mole Crickets and Chinch Bugs.

**To Kill Swarming Termites: OUTDOORS ONLY.**

Apply spray mix as a coarse wetting spray when swarming termites are seen emerging from woodpiles, wooden fence posts, wooden structures, or from the ground. Swarming usually occurs in the spring or at other times when a termite colony becomes overcrowded and new reproductive termites with wings emerge and fly away to mate and establish new colonies. This treatment will control the sprayed termites and will not protect the structure from which the swarm is coming. Use only as a contact spray to kill



emerging reproductive (winged) and worker termites emerging from infested wood. This treatment is not a substitute for a comprehensive termite control program.

**To Kill Wood Destroying Pests: OUTDOORS ONLY.**

Apply spray mix as a coarse wetting spray to exposed pests and to the damaged areas of wood, spraying into galleries or tunnels in the exposed wood. Also, spray around doors, window and door frames, and other areas where these pests may hide or enter the house. Spray into cracks and crevices and, if necessary, drill small holes and spray into inaccessible wooden structural voids where these pests are suspected.

**Mosquito Breeding Sites:**

Mosquito populations may be reduced by application of Esfenvalerate 3.5% CS to sites where mosquitoes rest, harbor, and breed. Apply spray solution into tall grass, shrubbery, and around backyards and lawns where these pests may hover or rest. Apply while air is still.

Not for wide area mosquito use. Do not apply with hand held or truck mounted cold aerosol ULV sprayers and thermal fogging devices.

**STORAGE AND DISPOSAL**

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

**PESTICIDE STORAGE:** Store in a warm, dry area. Always store pesticides in the original container. Store away from food and pet food.

**PESTICIDE DISPOSAL:**

To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by stator or local governments or by industry.)

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. In case of spill or leak, soak up with sand, earth or synthetic absorbents. Do not use alkaline absorbents or clean area of spill with alkaline detergents.

**PESTICIDE DISPOSAL AND CONTAINER HANDLING [RESIDENTIAL USE]:** Nonrefillable container. Do not reuse or refill this container. If empty: Place in trash or offer or recycling if available. If partly filled: Call your local solid waste agency for disposal instructions. Never placed unused product down nay indoor or outdoor drain.

**CONTAINER HANDLING:**

Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill.

Triple Rinse as follows [for containers of 5 Gallons (18.9 L) or less]: 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 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.

Triple Rinse as follows [for containers greater than 5 Gallons (18.9 L)]: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

**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 and 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 should 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 LG Life Sciences, Ltd. or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold LG Life Sciences, Ltd. and Seller harmless for any claims relating to such factors.**

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