



**OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION**

WASHINGTON, D.C. 20460

April 24, 2025

Lisa Adamson  
Regulatory Specialist  
Control Solutions, Inc.  
5903 Genoa-Red Bluff  
Pasadena, TX 77507-1041

Subject: Label Amendment - Registration Review Mitigation for Permethrin  
Product Name: Permethrin 10 EWC  
EPA Registration Number: 53883-72  
Application Date: 3/11/21  
Decision Number: 572034  
Case Number: 473764

Dear Lisa Adamson:

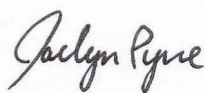
The Agency, in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the Permethrin Interim Decision, and has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide, Fungicide, and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance Assurance.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling and must be used at your next label printing. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 12 months from the date of this letter. After 12 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

If you have any questions about this letter, please contact Carolyn Smith via email at [smith.carolyn@epa.gov](mailto:smith.carolyn@epa.gov).

Sincerely,

A handwritten signature in black ink that reads "Jaclyn Pyne". The signature is written in a cursive, flowing style.

Jaclyn Pyne, Team Leader  
Risk Management and Implementation Branch 3  
Pesticide Re-Evaluation Division  
Office of Pesticide Programs

ENCLOSURE: Stamped label

[FRONT LABEL PANEL]

PERMETHRIN	GROUP	3A	INSECTICIDE
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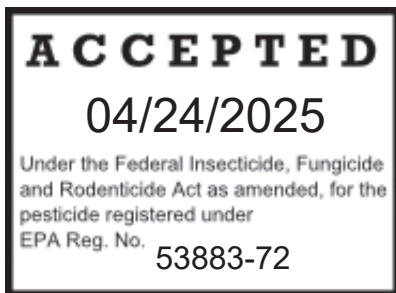
**Permethrin 10 E.W.C.**

[alt. brand name: Vector-Ban Misting Insecticide for Residential Systems and Barns}]

[alt. brand name: Martin's Permethrin 10% Multi-Purpose Insecticide]

For Use by Licensed Pest Control Operators or Commercial Applicators Only

**DO NOT USE ON CATS**



- Kills Termites\*[including dry-wood termites](for localized control only)[Optional Statement]
- For Use around foundations, outside buildings, porches, wood piles, wooden fences and decks, patios [Optional Statement]
- Kills troublesome outdoor insects which destroy Lawns, Roses, Flowers, Trees and Shrubs, Vegetables, Fruits, and Nuts [Optional Statement]
- Provides contact and residual control for up to 4 weeks [Optional Statement]
- KILLS OVER 100 NAMED PESTS [Optional Statement]
- Indoor/Outdoor Insecticide [Optional Statement]
- Subterranean Termite\* Control
- Protects Lawns, Trees & Shrubs, Roses & Flowers, Fruits & Nuts, and Vegetables from: Alfalfa loopers, Ants, Aphids, Armyworms, Bagworms, Beetles, Borers, Brown dog ticks, Budworms, Cabbageworms, Chinch bugs, Cicadas, Citrus black flies, Cluster flies, Codling moths, Corn earworms, Crickets, Cutworms, Earwigs, Elm spanworms, Fall cankerworms, Fire Ants, Fleas, Green fruitworms, Gnats, Grasshoppers, Houseflies, Inchworms, Japanese beetles, Leafhoppers, Leafminers, Leafrollers, Lone Star ticks, Lygus bugs, Mealybugs, Millipedes, Mole crickets, Mosquitoes, Moths, Navel orangeworms, Scales, Sod webworms, Sowbugs (pillbugs), Spider mites, Spring cankerworms, Tent caterpillars, Thrips, Tobacco budworms, Weevils, Whiteflies and many others.
- Controls listed Flies, Lice, Fleas, Mites [Optional Statement]
- A long-lasting livestock and premise spray that provides knockdown, broad-spectrum insecticidal effectiveness and excellent residual activity for up to 28 days. [Optional Statement]
- [insert product name] makes up to 106 gallons for residential systems and up to 50 gallons for use in barns. [Optional Statement]
- [insert product name] controls flies, lice, fleas, ticks, mites, mosquitoes, and many other listed pests [Optional Statement]
- For use outdoors and in cattle barns, poultry houses, milking parlors, feed lots, paddocks, stables, kennels, and horse barns. [Optional Statement]
- [insert product name] is a water-based 10% Permethrin [Optional Statement]
- [insert product name] can be used with a variety of different application methods, including outdoor perimeter treatment of building surfaces for ants, flies, fleas, ticks, and mosquitoes. [insert product name] also helps to prevent infestations of earwigs, millipedes, spiders, and crickets when applied to the exterior perimeter. [Optional Statement]
- [insert product name]'s label allows it to be utilized in misting machines for control of flying nuisance pests in both outdoor residential and livestock sites. [Optional Statement]
- Controls Listed Flying & Crawling Insects [Optional Statement]

- Multi-Purpose, Broad Spectrum Insecticide [Optional Statement]
- For Use On Livestock: Beef & Dairy Cattle, Horses, Sheep, Goats, Swine, Poultry and their Premises [Optional Statement]
- Up to 28 Day Residual Activity [Optional Statement]

**ACTIVE INGREDIENT:**

Permethrin ..... 10.0%

**OTHER INGREDIENTS:** ..... 90.0%

**TOTAL:** ..... 100.0%

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

**See Back/Side Label Panel For Additional Precautionary Statements**

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

[BACK/SIDE LABEL PANEL]

- **READ ENTIRE LABEL BEFORE USE**
- **FOR PET USE - USE ONLY ON DOGS**
- **FOR BOTH INDOOR AND OUTDOOR USE**

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

**CAUTION:** Harmful if swallowed, inhaled or absorbed through skin. Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with skin, eyes or clothing. Remove contaminated clothing and wash before reuse. Wash thoroughly with soap and water after handling. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

DO NOT USE ON CATS. May be toxic or potentially fatal if applied to or ingested by cats. Accidental application to cats and/or grooming a recently treated dog may result in tremors and/or uncoordinated muscle movements. If this occurs, immediate veterinary care should be provided.



<b>FIRST AID</b>	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
If swallowed	<ul style="list-style-type: none"><li>• Call poison control center or doctor immediately for treatment advice.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
If inhaled	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>
If in eyes	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
If on skin or clothing	<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 AND VETERINARIANS:</b> Do not administer or instill milk, cream or other substances containing vegetable or animal fats which will enhance absorption of lipophilic substances. You may also contact SafetyCall® International (866) 897-8050 for emergency medical treatment information.	

**Personal Protective Equipment:**

Some materials that are chemical-resistant to this product are listed below.

**Applicators and other handlers must wear:** Long-sleeved shirt and long pants, chemical-resistant gloves made of barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, or viton, and shoes plus socks. For exposure in enclosed areas, wear a minimum of a NIOSH-approved particulate filtering facepiece respirator with any N\*, R or P filter; OR a NIOSH-approved elastomeric particulate respirator with any N\*, R or P filter; OR a NIOSH-approved powered air purifying respirator with HE filters. Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**Engineering Controls Statements:**

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)] the handler PPE requirements may be reduced or modified as specified in the WPS.

When using in an enclosed area, do not remain in the treated area. Ventilate the area after treatment is completed. Food should be removed or covered during treatments. All food processing surfaces should be covered during treatment or thoroughly cleaned with an effective cleaning compound followed by a potable water rinse before use. When using this product in these areas, apply only when facility is not in operation. Do not apply as a space spray while food processing is underway. Except in Federally inspected meat and poultry plants, food processing operations may continue when this product is applied as a surface spray with care and in accordance with the directions and precautions given below.

**USER SAFETY RECOMMENDATIONS**

Users should:

- 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 pesticide is extremely toxic to fish. Do not apply directly to water. Avoid contamination of ornamental fish ponds. Drifts and runoff from treated areas may be hazardous to aquatic organisms in treated areas. Do not contaminate water when cleaning equipment or 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 to drift to blooming crops if bees are visiting the treatment area. **Protect pollinating insects by following label directions intended to minimize drift and to reduce risk to these organisms.**

**PHYSICAL OR CHEMICAL HAZARDS**

Do not use or store near heat or open flame. Do not use in undiluted form.

**STORAGE AND DISPOSAL**

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

**DO NOT** pour or dispose down-the-drain or sewer. Call your local solid waste agency for local disposal options.

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

**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:**

**For Containers equal to or less than 5 Gallons:** Nonrefillable container. Do not reuse or refill this container. Clean container 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 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. Offer for

recycling if available. If recycling is not available: then dispose of container in a sanitary landfill or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

**For Containers greater than 5 Gallons:** Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 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 it 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. Offer for recycling if available. If recycling is not available: then dispose of container in a sanitary landfill or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

**For Bulk containers: (Refillable Container)** Refill this container with pesticides only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the re-filler. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or re-circulate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this procedure two more times.

**Spills:** If the container is leaking or material is spilled, absorb liquid with an absorbent such as kitty litter and carefully sweep up and wash exposed area with detergent and water. In spill or leak incidents, keep unauthorized people away.

### DIRECTIONS FOR USE

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

#### Keep people and pets off treated areas until the spray has dried.

Treat surfaces to ensure thorough coverage but avoid runoff.

To treat insects harbored in voids and cracks-and-crevices, applications must be made in such a manner to limit dripping and avoid runoff onto untreated structural surfaces and plants.

- **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 requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.
- **DO NOT** allow to enter indoor or outdoor drains (*No permita la entrada a desagües internos o externos*).



- All outdoor spray applications must be limited to spot or crack-and-crevice treatments only, except for the following permitted uses:
  - Application to pervious surfaces such as soil, lawn, turf, and other vegetation;
  - Perimeter band treatments of 7 feet wide or less from the base of a man-made structure to pervious surfaces (e.g. soil, mulch, or lawn);
  - Applications to underside of eaves, soffits, doors, or windows permanently protected from rainfall by a covering, overhang, awning, or other structure;
  - Applications around potential exterior pest entry points into man-made structures such as doorways and windows, when limited to a band not to exceed one inch;
  - Applications to vertical surfaces (such as the side of a man-made structure) directly above impervious surfaces (e.g., driveways, sidewalks, etc.), up to 2 feet above ground level;

- Applications to vertical surfaces directly above pervious surfaces, such as soil, lawn, turf, mulch or other vegetation) only if the pervious surface does not drain into ditches, storm drains, gutters, or surface waters.
- For soil or foliar applications, **DO NOT** apply by ground within 25 feet of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries and commercial fish farm ponds.
- **DO NOT** apply the product into fish pools, ponds, streams, or lakes. **DO NOT** apply directly to sewers or storm drains, or to any area like a drain or 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** apply directly to impervious horizontal surfaces such as sidewalks, driveways, and patios except as a spot or crack-and-crevice treatment.
- **DO NOT** apply or irrigate to the point of runoff.
- **DO NOT** make applications during rain. Avoid making applications when rainfall is expected before the product has sufficient time to dry (minimum 4 hours).
- Rainfall within 24 hours after application may cause unintended runoff of pesticide application.
- For turf and ornamental applications, **DO NOT** apply when the wind speed is greater than 15 mph.
- Spot treatments must not exceed two square feet in size (for example, 2ft. by 1 ft or 4 ft. by 0.5 ft.).

#### **AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard. Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours. PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, wear:

- Coveralls
- Chemical-resistant gloves made of barrier laminate, butyl rubber, nitrile rubber, neoprene rubber or viton.
- Shoes plus socks

#### **NON-AGRICULTURAL USE REQUIREMENTS**

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not allow children or pets to contact treated surfaces until spray has dried.

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



## **RESISTANCE MANAGEMENT**

For resistance management, Permethrin 10 E.W.C. contains a Group 3A insecticide. Any insect population may contain individuals naturally resistant to Permethrin 10 E.W.C. and other Group 3A insecticides. The resistant individuals may dominate the insect population if this group of insecticides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed.

To delay insecticide resistance, take the following steps:

- Use tank mixtures with insecticides from a different group that are equally effective on the target pest when such use is permitted. DO NOT rely on the same mixture repeatedly for the same pest population. Consider any known cross-resistance issues (for the targeted pests) between the individual components of a mixture. In addition, consider the following recommendations provided by the Insecticide Resistance Action Committee (IRAC):
  - Individual insecticides selected for use in mixtures should be highly effective and be applied at the rates at which they are individually registered for use against the target species.
  - Mixtures with components having the same IRAC mode of action classification are not recommended for insect resistance management.
  - When using mixtures, consider any known cross-resistance issues between the individual components for the targeted pest(s).
  - Mixtures become less effective if resistance is already developing to one or both active ingredients, but they may still provide pest management benefits.
  - The insect resistance management benefits of an insecticide mixture are greatest if the two components have similar periods of residual insecticidal activity. Mixtures of insecticides with unequal periods of residual insecticide activity may offer an insect resistance management benefit only for the period where both insecticides are active.
- Adopt an integrated pest management program for insecticide use that includes scouting, uses historical information related to pesticide use, crop rotation, record keeping, and which considers cultural, biological and other chemical control practices.
- Monitor after application for unexpected target pest survival. If the level of survival suggests the presence of resistance, consult with your local university specialist or certified pest control advisor.
- Contact your local extension specialist or certified crop advisor for any additional pesticide resistance-management and or IPM recommendations for the specific site and pest problems in your area.
- For further information or to report suspected resistance contact your local sales representative.

## **SPRAY DRIFT ADVISORIES**

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.  
BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

## **WIND**

Avoid applications during gusty wind conditions

## **HANDHELD TECHNOLOGY APPLICATIONS**

Take precautions to minimize spray drift.

## **SHAKE WELL BEFORE USING**

## **THREE STEPS TO MIX AND APPLY:**

1. For lawns and vegetables, measure the area to be sprayed. Calculate square feet by multiplying length by

- width. For all other applications, apply as a thorough cover spray.
2. Use a clean sprayer. Carefully measure and mix the amount of concentrate and water as directed.
  3. Spray as directed. Thorough coverage is important. Flush sprayer with clean water after each use. Make applications when insects first appear. Repeat applications as directed.

Use Dilution rate as indicated:

1 fl.oz. = 6 tsp. or 2 Tbsp.

8 fl.oz. = ½ pt. or 1 cup

## DIRECTIONS FOR APPLYING

### HOME LAWNS

Turf	Pests	How to Use
Bentgrass, Bermudagrass, Bluegrass, Dichondra, Fescue, Irish Moss, Merion, St. Augustine Grass	Ants, Armyworms, Brown dog ticks, Chinch bugs, Crickets, Cutworms, Fleas, Grasshoppers, Japanese beetle grubs, Mole crickets, Sod webworms, Ticks that carry Lyme Disease, Leafhoppers	Thoroughly wet down grass a few hours before applying. Home lawns should be no taller than 3 inches at time of application. Slightly more water may be used as long as the amount of product per area is as listed below. For heavy infestations, repeat application after 2 weeks. For ants, crickets and grasshoppers, use ½ fl.oz. in 3 gals. of water to cover 1,000 sq.ft. For other listed insects, use 1½ fl.ozs. in 10 gals. of water to cover 1,000 sq.ft.

### HOUSE PLANTS

#### INDOORS: TO PROTECT PLANTS IN RESIDENTIAL GREENHOUSES AND LATHHOUSES AND FOR INDOOR LANDSCAPING:

House Plants	Pests	How to Use
Ageratum, Ardisia, Aster, Baby's Breath, Begonia, Birdsnest Fern, Bleeding Heart, Carnation, Chrysanthemum, Coleus, Crown of Thorns, Cockscomb, Cyclamen, Dracaena, Dumbcane, English Ivy, Fuchsia, Gladiolus, Grape Ivy, Juniper, Lily, Marigold, Orchid, Palm, Pansy, Peperomia, Petunia, Philodendron, Piggy-Back Plant, Poinsettia, Portulaca, Pothos, Prayer Plant, Purple Passion, Rabbits Foot Fern, Rose, Schefflera, Snapdragon, Snake Plant, Statice, Velvet Plant, Verbena, Zinnia	Aphids, Armyworms, Corn earworms, Exposed thrips, Fall cankerworms, Inchworms, Japanese beetles, Leafminers, Leafrollers, Mealybugs, Scales, Solder mites, Spring cankerworms, Whiteflies	Mix ¼ fl.oz. in 1 gal. of water. Contact and residual: Use sufficient spray to obtain full coverage of all foliage. If application is to be made indoors, remove infested plants from living areas prior to application. Use in an area not likely to be occupied by people or pets (particularly fish). After spraying, plants can be returned to original location. Do not use more product than recommended, as this may cause some plant injury. Use with care on ferns, palms and fuchsia. As with all plants listed,

Velvet Plants	Fungus Gnats	especially carnations, chrysanthemums, and roses, there exists a wide variety of species and cultivars, and therefore, a wide variety of susceptibility to injury. To ascertain possible phytotoxicity, treat a few plants as described above, wait 24 hours, and check for possible injury.
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### Fire Ant Control

#### Individual Mound and Plant Container Treatment

Mix ½ fl. oz. in 3 gals. of water and apply as a drench using a sprinkler can. Gently apply 1 gallon of the mixture over the surface of each mound. Thoroughly wet mound and surrounding area of 3x4 ft. (12 sq. ft.). For best results apply in cool weather 65<sup>0</sup>-80<sup>0</sup> F early or late in the day. Treat new mounds as they appear. Pressurized sprays may disturb ants and cause migration which will reduce product effectiveness. **Use the same method as above for the control of Fire Ants that may nest in permanently placed containerized ornamentals plants.**

#### TREES & SHRUBS

Trees & Shrubs	Pests	How to Use
Arizona, Cypress, Azalea, Birch, Cherry, Non-bearing Citrus, Conifers, Elm, English Ivy, Euonymus, Weeping Fig, Fir, Honeysuckle, Lilac, Mock-orange, Oak, Palm, Philodendron, Pine, Poinsettia, Tulip Poplar, Rhododendron, Taxus	Aphids, Bagworms, Cicadas, Exposed thrips, Fall cankerworms, Inchworms, Leafminers, Leafrollers, Mealybugs, Spider mites, Whiteflies, Gypsy Moth, Tent Caterpillar, Japanese Beetles	Use ¼ fl. oz. in 1 gal. of water. Apply as a thorough spray, wetting leaves and branches to the dripping point. Try to penetrate dense foliage. Spray in the late afternoon or evening, when the temperature ranges from 50 <sup>0</sup> -75 <sup>0</sup> F and when there is little or no wind. Spray at the first sign of insects. Application can be made up to the day of collection.
Cherry, Honeysuckle	Fall webworms	
Conifer	Budworms	

Elm	Elm leaf beetles, Elm spanworms, Fall webworms	
Douglas and Grand Firs	Tussock moths	
Non-bearing Citrus	Citrus black flies	
Oak	Oakworms	
Pine	Pine beetles, Pine moths, Pine needle miners, Needle scales	

On Tent caterpillars, application should be made when caterpillars are young and tents are first noticed. For best results, apply in the late afternoon or evening, when caterpillars have returned to their tents. Wet tents with spray on all sides. A few caterpillars may be seen escaping from the tent; however, they should die within several hours.

### ROSES & FLOWERS (ORNAMENTALS)

Roses & Flowers (Ornamentals)	Pests	How to Use
<p>Ageratum, Aster, Ardisia, Azalea, Baby's breath, Begonia, Birds-nest fern, Bleeding heart, Carnation, Chrysanthemum, Coleus, Common Ninebark and Snowberry, Crown of thorns, Cockscomb, Cyclamen, Dracaena, Dumbcane, English Ivy, Exacum, Fuchsia, Gladiolus, Grape Ivy, Gold bells, Hypoestes, Ivy, Juniper, Lilac, Marigold, Mock-Orange, Nannyberry, Orchid, Palm, Pansy, Pea shrub, Peperomia, Petunia, Philodendron, Piggy-back Plant, Poinsettia, Portulaca, Pothos, Prayer Plant, Purple Passion, Rabbits foot fern, Rhododendron, Rose, Schefflera, Snapdragon, Snake Plant, Statice Velvet Plant, Verbena, Zinnia</p>	<p>Aphids, Armyworms, Bagworms, Cabbage worms, Cicadas, Cornworms, Cutworms, Exposed thrips, Fall cankerworms, Fall webworms, Fungus gnat, Inchworms, Japanese beetles, Leafminers, Leafrollers, Mealybugs, Scale crawlers, Spring cankerworms, Spider mites, Whiteflies, Rose Chafer, Psyllids, Scale Insects</p>	<p>Use ¼ fl. oz. in 1 gal. of water. Apply as a thorough spray, wetting the plants to the dripping point. Try to hit underside of leaves and penetrate dense foliage. Spray in the later afternoon or evening when the temperature ranges from 50<sup>0</sup>-75<sup>0</sup>F and when there is little or no wind. Spray at the first sign of insects. Application can be made up to the day of collection.</p>

## FRUITS & NUTS TREES

### GENERAL DIRECTIONS

Use ½ fl. oz. in 1 gal. of water. Apply when insects appear. Wet the plants to the dripping point. Try to hit underside of leaves and penetrate dense foliage.

Fruits & Nuts Trees	Pests	How to Use
Almonds	Navel orangeworms, Peach twig borers	Do not make more than 2 applications during hull split and 5 applications per season. Can be applied up to 7 days prior to harvest.
Apples	Green fruitworms, Aphids, Leafrollers(Oblique-banded, Redbanded), Plum curculio, Rosy apple aphids, Spotted tentiform leafminers, Tarnished plant bugs, White apple leafhoppers, Japanese Beetles	Repeat application only as needed to maintain insect control. Do not make more than 3 applications per growing season. Do not apply after petal fall.
Peaches	Borers(Lesser peachtree, Peach twig), Green fruitworms, Plum curculio, Oriental fruit moths, Tarnished plant bugs	Repeat application only as needed to maintain insect control. Do not apply within 7 days of harvest. Do not make more than 8 applications per season.
Pears (dormant through delayed dormant)	Pear psylla	Repeat application only as needed to maintain insect control. Apply during the dormant through delayed dormant growth period only. Do not make more than 2 applications per season.
Pears (summer)	Codling Moths, Green fruitworms, Pear psylla, Aphids	Repeat application only as needed to maintain insect control. Do not make more than 3 applications per season. Can be applied up to 14 days prior to harvest.

## VEGETABLES

Prepare a spray solution at the dilution rates listed for each crop in the chart below. Apply the spray solution at the rate of 1 gallon to cover 440 square feet surface area.

Vegetables	Pests	How to Use
Asparagus (pre-harvest)	Asparagus beetles, Cutworms	Use ¾ fl. oz. in 2 gals. of water. Apply to ensure uniform coverage. Repeat application only as needed to maintain insect control. Do not apply more than 4 applications per crop. Can be applied up to 3 days prior to harvest.

Asparagus (post-harvest)	Larval stages of asparagus beetle; Tarnished plant bugs, Lygus bugs, Adult Japanese beetle	Use ¼ fl. oz. in 1 gal. of water. Treat ferns or bush growth after spear harvest when insects are present. Repeat application only as needed to maintain insect control.
Celery-see Leafy Vegetables		
Cole Crops, Broccoli, Brussels Sprouts, Cabbage, Cauliflower	Beet armyworms, Cabbage aphids and loopers, Diamondback moths, Imported cabbageworms	Use ¼ fl. oz. in 1 gal. of water. Apply every 5 days or as needed. Can be applied up to 1 day prior to harvest. Do not make more than 8 applications on Cauliflower, Brussels Sprouts and Broccoli and 10 applications on Cabbage.
Corn-see Sweet Corn		
Cucumber, Melons, Pumpkins, Squash	Flea beetle, Leafhopper	Use ½ fl. oz. in 1 gal. water. Repeat application only as needed to maintain insect control. Do not make more than 8 applications per season. Can be applied up to 3 days prior to harvest.
<u>Cucurbits</u> : Balsam pear(bitter melon), Chinese waxgourd(Chinese preserving melon), citron melon, cucumber, gherkin, edible gourds; melons including hybrids such as cantaloupe, casaba, crenshaw, honeydew, honey balls, mango melon, muskmelon, Persian melon, pumpkin, summer & winter squash, watermelon	Aphids, Cabbage looper, Cucumber Beetle (adults), Cutworms, Leafhoppers, Leafminers, Melonworms, Pickleworm, Plant bugs, Squash bugs.	Use ½ fl. oz. in 1 gal. of water. Apply to ensure uniform coverage. Repeat application only as needed to maintain insect control. Do not make more than 8 applications per season. Can be applied up to the day of harvest.

Eggplant	Colorado potato beetles, Vegetable leafminers	Use $\frac{3}{4}$ fl. oz. in 1 gal. of water. Apply to ensure uniform coverage. Repeat application only as needed to maintain insect control. Do not exceed 16 applications. Can be applied up to 3 days prior to harvest.
Horseradish (Foliar application)	Imported crucifer weevils	Use $\frac{3}{4}$ fl. oz. in 1 gal. of water. Repeat application only as needed to maintain insect control. Do not exceed 3 foliar applications. Can be applied up to 22 days prior to harvest.
Head Lettuce	Corn earworms, Beet armyworms, Loopers (Alfalfa, Cabbage), Tobacco budworms	Use $\frac{1}{2}$ fl. oz. in 1 gal. of water. Apply every 5-10 days as needed. Do not make more than 10 applications per season. Can be applied up to 1 day prior to harvest.
<u>Leafy Vegetables:</u> Amaranth, Arrugula, Celery, Celtuce, Chervil, Corn salad, Chrysanthemum(edible-leaved and garland), cress(garden and upland), Dandelion, Dock, Endive, Fennel, Lettuce(head and leaf), Parsley, Purslane(garden and winter), Rhubarb, Spinach, Swiss chard	Alfalfa looper, Aphids, Beet armyworm, Cabbage looper, Corn earworm, Cutworms, European corn borer, Fall armyworm, Green cloverworm, Southern armyworm, Tobacco budworm, Vegetable leafminer.	Use 1/3 fl. oz. in 1 gal. of water. Apply every 5 to 10 days as needed. Can be applied up to 1 day prior to harvest.
Melons-see Cucurbits		



Potatoes	Beet armyworm, Colorado potato beetle, Potato leafhopper, Potato tuberworm, Cabbage looper, Cutworms, European corn borer, Potato psyllid, Tarnished plant bug	Use ¾ fl. oz. in 2 gals. of water. Repeat application only as needed to maintain insect control. Do not make more than 12 applications. Can be applied up to 7 days prior to harvest.
Peppers	Vegetable leafminers, Cabbage looper, Flea beetle, Corn earworm, Pepper weevil, European corn borer, Green cloverworms, Leafhoppers	Use ½ fl. oz. in 1 gal. of water. Repeat application only as needed to maintain insect control. Do not make more than 8 applications per season. Can be applied up to 3 days prior to harvest.
Sweet Corn	Armyworms(Fall, Southern), Corn earworms, European corn borers	Use ¾ fl. oz. in 2 gals. of water. Apply every 5 days, but not more than 6 applications per season. Can be applied up to 1 day prior to harvest.
Tomatoes	Beet and southern armyworm, Tomato pinworm, Tomato fruitworm, Horn worms, Granulate cutworms, Colorado potato beetle, Cabbage looper	Use ½ fl. oz. in 1 gal. of water. Apply to ensure uniform coverage. Repeat application only as needed to maintain insect control. Do not make more than 6 applications per season. Can be applied up to day of harvest.

## VEGETATIVE FILTER STRIPS

Construct and maintain a vegetative filter strip, according to the width specified below, of grass or other permanent vegetation between the field edge and nearby down gradient aquatic habitat (such as, but not limited to, lakes; reservoirs; rivers; streams; marshes or natural ponds; estuaries; and commercial fish farm ponds).

Only apply products containing Permethrin onto fields where a maintained vegetative filter strip of at **least 25 feet** exists between the field edge and where a down gradient aquatic habitat exists. This minimum required width of 25 feet may be reduced or removed under the following conditions:

For Western irrigated agriculture, a maintained vegetative filter strip of at least 10 feet wide is required. Western irrigated agriculture is defined as irrigated farmland in the following states: WA, OR, CA, ID, NV, UT, AZ, MT, WY, CO, NM and TX (west of I-35).

For Western irrigated agriculture, if a sediment control basin is present, a vegetative filter strip is not required. In all other areas, a vegetative filter strip with a minimum width of 25 feet is required, unless the following conditions are met. The vegetative filter strip requirement may be reduced from 25 feet to 15 feet if at least one of the following applies:

1. The area of application is considered prime farmland (as defined in 7 CFR § 657.5).
2. Conservation tillage is being implemented on the area of application. Conservation tillage is defined as any system that leaves at least 30% of the soil surface covered by residue after planting. Conservation tillage practices can include mulch-till, no-till, or strip-till.
3. A functional terrace system is maintained on the area of application.
4. Water and sediment control basins for the area of application are functional and maintained.
5. The area of application is less than or equal to 10 acres.

For further guidance on vegetated filter strips, refer to the following publication for information on constructing and

maintaining effective buffers: Conservation Buffers to Reduce Pesticide Losses. Natural Resources Conservation Services. <https://www.regulations.gov/document?D=EPA-HQ-OPP-2008-0331-0175>

## **NUISANCE PESTS IN OUTDOOR AREAS**

### **GENERAL DIRECTIONS**

Use 1 1/2 fl. oz. in 1 quart of water, treating 400 linear feet with a 6-inch spray band.

### **OUTSIDE SURFACES OF BUILDING**

Use this product on Ants, Clover mites, Crickets, Earwigs, Millipedes, Sowbugs (Pillbugs) and spiders to help prevent infestation of buildings, treat the building foundation to a height of 2 to 3 feet, where pests are active and may find entrance. Also, apply as a residual spray but not to the point of runoff to outside surfaces of building, including porches, screens, window frames, eaves, patios, garages, refuse dumps and other areas where these pests congregate or have been seen.

### **OTHER OUTDOOR AREAS**

Use this product on Ants, Crickets, Earwigs, Fleas, Ticks (**including ticks that may carry Lyme Disease**) for treatment of localized infestations of these insects in areas where there are weeds or bushy non-crop areas, spray infested areas thoroughly. **For ants**, thoroughly wet hills and runways. Repeat application as reinfestations occur.

To reduce annoyance from: **Cluster flies, Flying moths, Gnats, House flies, Mosquitoes**. Spray outside surfaces of screens, doors, window frames or wherever these insects may enter the room. Also treat surfaces around light fixtures on porches, in garages, around shrubbery, and other places where these insects alight or congregate.

### **OUTDOOR RESIDENTIAL MISTING SYSTEMS (RESIDENTIAL YARDS, PLAYSCAPES)**

Use to control, or reduce the populations of spiders and nuisance pest insects including but not limited to mosquitoes and flies.

When using this product installers and service technicians must comply with license, certification, or registration requirements of the states, tribes, or local authorities where they are installed.

Do not apply this pesticide when people, pets, and food are present.

Do not use in an evaporative cooling system.

Direct nozzles to spray towards the target area and away from swimming pools, water bodies, or eating and cooking areas.

If used in a system with a reservoir tank for the end use dilution, the system reservoir tank must be locked. Securely attach the end use and use pesticide label and a dilution statement to the system tank in a weather protected area or plastic sleeve. The dilution statement must be phrased as follows: This container holds 3 parts PERMETHRIN 10 E.W.C. to 640 parts water.

Mixing directions for systems that utilize a reservoir tank for the end dilution:

Partially fill reservoir tank half full with water, add PERMETHRIN 10 E.W.C., then fill remainder of reservoir tank. Mix 6 fluid ounces PERMETHRIN 10 E.W.C. per 10 gallons of water. It is recommended that the system reservoir tank be shaded from direct sunlight and direct heat sources.

If used in a direct injection system, the pesticide container must be locked. Securely attach the end use label to the pesticide container in a weather protected area or plastic sleeve.

This product may only be used in systems that have been calibrated to apply no more than the maximum application rate of 0.0054 pounds PERMETHRIN 10 E.W.C., (0.09 fluid ounces PERMETHRIN 10 E.W.C.,) per 1000 cubic feet per day (equivalent to 1.66 g per 100 M<sup>3</sup>).

System nozzles and pressure should be able to deliver a fine particle droplet size (ULV, mist or aerosol).

If the system works on an automatic timer, set the timing for application when people, pets, and food are unlikely to be present.

If the system works when a person operates a remote activation device, then application of this pesticide when people, pets, and food are present is prohibited.

## Mandatory Spray Drift Management

### Ultra Low Volume Applications

- Apply when ground wind speeds are equal to or greater than 1 mph.
- All types of applications should be conducted when temperatures at ground level are at or above 50°F.

### For Ground Applications:

- Create an optimum swath when possible. An optimum swath width can be achieved when **Permethrin 10 E.W.C.** is applied from a truck that is being driven perpendicular to the wind direction. Direct the spray head of equipment to ensure even distribution of the spray cloud throughout the area.
- FOR BEST RESULTS treat when mosquitoes or insects are most active and weather conditions are conducive to keeping the spray cloud in the air column close to the ground.
- An inversion of air temperatures and a light breeze is preferable. Application during the cooler hours of the night or early morning is recommended.

### Adult mosquito control applications should be limited to trained personnel.

- For use only by federal, state, tribal or local government officials responsible for public health or vector control or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory agency to perform adult mosquito control applications, or by person under their supervision, or as allowed by state regulations for person treating private property.
- This pesticide is extremely toxic to aquatic organisms. Runoff from treated areas or deposition of spray droplets into a body of water may be hazardous to aquatic organisms.
- Do not apply over bodies of water (lakes, rivers, permanent streams, natural ponds, commercial fish ponds, swamps, marshes or estuaries), except when necessary to target areas where adult mosquitoes are present, and weather conditions will facilitate movement of applied material beyond the body of water to minimize incidental deposition into the water body. Do not contaminate the bodies of water when disposing of equipment rinsate or wash waters.
- Before making the first application in a season, it is advisable to consult with the state or tribal agency with primary responsibility for pesticide regulation to determine if other regulatory requirements exist.
- Do not treat a site with more than 0.007 lbs. of each a.i., per acre in a single application or in any 24-hour period. Do not exceed 0.18 lbs. of a.i. per acre in any site in one year. More frequent applications may be made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control Agency on the basis of documented evidence of disease-causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

**WOOD-INFESTING INSECTS (including termites\*): For Beetles (Furniture, Deathwatch, False powderpost, Longhorned, Powderpost), Carpenter Ants (and other wood-infesting ants), Carpenter bees and Termites (including dry-wood termites):**

Treat outside surfaces of buildings, porches, wooden decks and patios, wooden fences, window frames, doorways, foundations, eaves, patios, garages, garbage areas and other areas where you may find these pests.

Mix 2½ fl. ozs. with 1 gallon of water to treat 100 sq. ft. Spray infested surfaces until thoroughly wet avoiding dripping and runoff. Apply evenly on wood surfaces. To treat small areas, apply by brushing or spraying the diluted spray. For large areas, use a coarse, low pressure spray. Do not spray into electrical outlets or utilities.

Spray infested areas and areas likely to be infested, such as wood surfaces, voids and channels in damaged wood, spaces between wooden parts of a structure, and between wood and foundations where infestation is likely to occur, also around fence posts, wood piles (do not use on firewood) and tree stumps.

Suitable protective clothing should be worn in confined or overhead areas to prevent exposure to eyes and skin. The use of eye protection, protective head covering, chemical resistant gloves and footwear, a long-sleeved shirt and long pants or coveralls are recommended. Do not permit contact with treated surfaces until spray has dried. Treated confined areas, such as detached garages, under porches and decks, should be ventilated during and immediately following application before the areas are re-occupied.

**For carpenter ants**, spray around doors and windows and other places where ants may enter or crawl and hide. Also treat cracks and crevices or openings into wall voids or other areas where these ants may be present. **For carpenter bees**, spray or inject into holes and tunnels already made by the bees with a tank sprayer, and spray areas where they are beginning to build tunnels into the wood. **For Termites\* [including dry-wood termites]**: treat as for other wood-infesting insects. This product will kill workers and winged reproductive forms of termites in the treated areas.

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

**Soil Termite Treatment Directions**

**Subterranean Termites:** DO NOT USE INSIDE DWELLINGS. For use around existing structures, not for pre-construction use. For post-construction treatment around residential buildings. **Mix 6.7 oz of this product per 1 gallon of water** (makes 0.5% water emulsion). Apply as specified below. One treatment should last up to 5 years if treated soil is left undisturbed. Kills and controls subterranean termites. Chemicals for soil treatment are used to establish a barrier against termites. The chemical emulsion must be adequately dispersed in the soil to provide a barrier between the wood in the structure and the termite colonies in the soil. Barriers may be established in the soil on the outside perimeter of the house by trenching using a rate of 4 gallons of emulsion per 10 linear feet per foot of depth. A complete treatment may require treatment with another EPA registered product to the inside perimeter of the foundation and to other crucial areas. For these situations, contact a licensed pest control operator for treatment. Do not use under slabs, in crawl spaces, or indoors. If termites are found within the house or structure, contact a licensed pest control operator for treatment.

Suitable protective clothing should be worn in confined or overhead areas to prevent exposure to eyes and skin. The use of eye protection, protective head covering, chemical resistant gloves and footwear, a long-sleeved shirt and long pants or coveralls are recommended. Do not permit contact with treated surfaces until spray has dried. Treated confined areas, such as detached garages, under porches and decks, should be ventilated during and immediately following application before the areas are re-occupied.

Remove all wood debris and wood forms. Around piers, pipes, chimney bases and along foundations of poured

concrete, dig a trench 6 inches wide and 4 inches deep. For brick and block foundations, dig the trench about 12 inches deep. If the footing is more than 12 inches deep, make holes with a crowbar, pipe or rod about 1 foot apart that extend from the trench bottom to the top of the footing. Make holes closer in hard-packed clay soils. NEVER DIG BELOW THE TOP OF THE FOOTING. Apply the prepared emulsion (or solution) in the trench and to the backfill at the rate of 4 gallons per 10 linear feet per foot of depth. Cover the treated soil with a thin layer of untreated soil.

For raised porches, terraces and entrance slabs outdoors, drill holes at one foot intervals, 6 inches from the foundation, and pour one-half gallon of emulsion (or solution) into each hole. Refill holes.

Be sure to treat the interiors of accessible hollow block foundations at the same rate as above. Do not use in structural voids insulated with rigid foam. Be careful to have adequate ventilation when treating areas under structure. For severe infestations or treatment under slabs with heat ducts or radiating heat pipes, in basements and buildings with insufficient crawl space, etc., contact a licensed pest control operator or termite control service.

NOTE: Avoid contamination of public and private water supplies by following these precautions. Do not allow a hose or any type of faucet extension to reach into the termite chemical solution while filling or mixing this material with water. Use of anti-back flow equipment will help ensure that the user of this chemical will not contaminate domestic water supplies. Refer to FHA (Federal Housing Administration), state and local specifications for safe distances of treatment areas from wells. Do not treat structures that have cisterns, wells, French drains, or sump systems. Soil in the vicinity of wells, cisterns or ponds should not be treated. For those situations, contact the local Cooperative Extension Service or consult a commercial pest control service. Do not treat soil that is water saturated or frozen or in any conditions where runoff or movement from the treatment area (site) is likely to occur.

**When to reapply:** Reapplication for subterranean termites should only be made when there has been a disruption of the chemical barrier in the soil due to a construction, excavation, landscaping, etc. Reapplication should be made as a spot treatment to those areas. Annual reapplication of the entire premises must be avoided.

### ANIMALS AND ANIMAL PREMISE USE CATTLE BARNs, SWINE HOUSES, MILK ROOMS, KENNELS, POULTRY HOUSES, HORSE BARNs, DAIRIES, MILKING PARLORS, FEED LOTS, STABLES, PADDOCKS.

For initial clean up of severe insect infestation, dilute at a rate of (1) part concentrate in 19 parts water (6.7 ounces per gallon) (0.5%). For normal infestations dilute (1) part concentrate in 100 parts water (1.33 ounces per gallon of water) ( 2 2/3 tablespoonful per gallon) (0.1%).

REFERENCE CHART		
PESTS	DILUTIONS (Mix Well)	HOW TO APPLY
<b>PESTS ON FARM PREMISES</b>		
<b>(Barns, Dairies, Loafing Sheds, Milking Parlors, Feedlots, Stables, Paddocks, Poultry and Livestock Housing)</b>		
Horseflies, Stableflies,	Dilute 8 ozs. in 6.25 gals. water	Spray walls and surfaces thoroughly but do not allow runoff to occur; about 1gal. per 750-1000 sq.ft. Treat no more often than once every 2 weeks. Do not contaminate animals feed or water by spray. Do not use in milk rooms
lesser Houseflies and other	Dilute 1pt. in 12.5 gals. water	
manure breeding flies, Fleas,	Dilute 1qt. in 25 gals. water	
Lice, Mites, Ticks, including		
Deer tick (carrier of Lyme disease).		
Aids in control of Cockroaches,		
Mosquitoes and Spiders.		
<b>PESTS ON DOG PREMISES (Kennels, Dog Houses, Runs and Yards)</b>		
Fleas, Flies, Ticks, Lice and	Dilute 8 ozs. in 6.25 gals. water	Thoroughly spray infested areas, pet beds and resting quarters. Fresh
Mange Mites (adult and larvae)	Dilute 1pt. in 12.5 gals. water	

Dilute 1qt. in 25 gals. water

bedding should be placed in animals quarters following treatment. Most efficient pest control is accomplished when heavy pressure and good contact is achieved. Timing and frequency of applications should be based on pest populations reaching nuisance levels, but accompanying manure removal and sanitation practices should precede sprays. Do not spray feed, food or water. Repeat as needed but not more than once every two weeks.

<b>PESTS IN CATTLE BARNS, HORSE BARNS, SWINE HOUSES, KENNELS, MILKING PARLORS, MILK ROOMS, DAIRIES, POULTRY HOUSES, FEEDLOTS STABLES AND PADDOCKS</b>
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Flies, Mosquitoes and Gnats

Dilute 8 ozs. in 6.25 gals. water  
Dilute 1pt. in 12.5 gals. water  
Dilute 1qt. in 25 gals. water

FOG OR FINE MIST: Apply, directing the spray toward the ceiling and upper corners until the area is filled with mist. Use about 2 ounces per 1000 cubic feet of space. For best results, close doors and windows before spraying and keep closed for 10-15 minutes. Remove animals prior to treatment, ventilate before reoccupying.

<b>PESTS ON LARGE ANIMALS (Dairy or Beef Cattle, Horses, Sheep and Goats)</b>
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Faceflies, Hornflies,  
Stableflies, Mosquitoes,  
Lice, Mites, Ticks, including  
Deer tick (carrier of Lyme disease)

Dilute 8ozs. in 50 gals. water  
Dilute 1pt. in 100 gals. water  
Dilute 1qt. in 200 gals. water

Spray to thoroughly cover entire animal. For lice or mites a second treatment is recommended 14-21 days later. Spray lactating dairy cows only after milking is completed.

Hornflies, Faceflies,  
Stableflies, Ear Ticks

Dilute 2ozs. in 1 gal. water  
Dilute 1pt. in 8 gals. water

SPOT TREATMENT - LOW PRESSURE SPRAY Apply ½oz. per ear or 2-4oz. on face or 12-16oz. along the backline.

<b>PESTS ON SWINE AND POULTRY (Do not ship swine for slaughter within 5 days of last treatment)</b>
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Mange Mites

Dilute 8ozs. in 25 gals. water  
Dilute 1pt. in 50 gals. water  
Dilute 1qt. in 100 gals. water

Spray, dip or sponge animals. Retreat after 14 days, spraying walls and floor space and bedding to kill later hatching, developing stages.

Blowflies, Flies, Mosquitoes,

Dilute 8ozs. in 25 gals. water

Spray, dip or sponge to apply 1 pint

Hog Lice, Fleas, Ticks, including Dilute 1pt. in 50 gals. water  
Deer tick (carrier of Lyme disease) Dilute 1qt. in 100 gals. water

per pig, especially around ears.

Poultry Mites, Northern Fowl Dilute 8ozs. in 12.5 gals. water  
Mites & Lice Dilute 1pt. in 25 gals. water  
Dilute 1qt. in 50 gals. water

Spray at the rate of ½oz. per bird, or  
1gal per 100 birds, with a fine mist.  
Spray roosts, walls and nests or  
cages.

DIRECTIONS FOR USE IN AUTOMATIC MISTING AND ULV SPRAYING SYSTEMS:

#### SPRAY DRIFT MANAGEMENT

- Ground Application: Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, streams, marshes, ponds, estuaries, and commercial fish ponds).
- Ground Boom Applications:
  - User must only apply with the nozzle height recommended by the manufacturer, but no more than 4 feet above the ground or crop canopy.
  - Applicators are required to select nozzle and pressure that deliver medium or coarser droplets (ASABE S572).
  - Do not apply when wind speeds exceed 15 mph at the application site.
  - Do not apply during temperature inversions.

#### SPRAY DRIFT ADVISORY

- **THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS**
- Controlling Droplet Size – Ground Boom
  - Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
  - Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
  - Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.
- BOOM HEIGHT – Ground Boom
  - For ground equipment, the boom should remain level with the crop and have minimal bounce.
- SHIELDED SPRAYER
  - Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.
- TEMPERATURE AND HUMIDITY
  - When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.



- **TEMPERATURE INVERSIONS**
  - Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.
- **WIND**
  - Drift potential generally increases with wind speed. **AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.**
  - Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

In areas such as animal quarters, dairy and beef barns, poultry houses, swine housing, warehouses, zoos and other listed livestock or animal housing areas. Always use with a piperonyl butoxide (PBO) synergist additive (e.g. Exponent[or SynerPro™ PBO]) as described below.

To kill Flies, House Flies, Horn Flies, Stable Flies, Deer Flies, Horse Flies, Mosquitoes, including the Culex species that may carry and transmit the West Nile Virus, Gnats, Hornets, Wasps, Yellow Jackets, Fire Brats, Small Flying Moths, Earwigs, Fleas, Ticks, Crickets, Cockroaches, Silverfish, Spiders, and other listed insects: Mix ½ gallon (64 fluid ounces) of Permethrin 10EWC concentrate plus the appropriate amount of PBO synergist in 55 gallons of water to yield a solution of 0.09% permethrin plus 0.09% PBO. For example, when using Exponent [or SynerPro™ PBO] as a source of PBO, add 7 fluid ounces of Exponent [or SynerPro™ PBO] to 55 gallons of water. For high populations of insects or when treating species that are difficult to control, mix up to 1 gallon of Permethrin 10 EWC plus the appropriate amount of PBO (e.g. 14 fl. oz. of Exponent [or SynerPro™ PBO]) in 55 gallons of water to yield a solution of 0.18% permethrin and 0.18% piperonyl butoxide. When filling tank, partially fill the system reservoir tank with water, add concentrates to tank, then add water to obtain desired dilution.

System nozzles should deliver fine particle size droplets (aerosol or mist). Nozzles should be rated for a delivery rate not to exceed 1.25 fluid ounces of solution per minute, with one nozzle covering 100 square feet. Set system timer to operate in accordance with equipment directions. Automatic spraying systems must not be designed and programmed to release pesticides where feed is directly exposed to spray mist.

Personnel should vacate containment treatment areas while treatment is in progress. Treated areas should be thoroughly ventilated prior to re-entry by personnel. Do not use in commercial food/feed handling establishments, restaurants, or other areas where food is commercially prepared or processed.

<b>PESTS ON DOGS (DO NOT TREAT PUPPIES LESS THAN TWELVE (12) WEEKS OF AGE)</b>		
Fleas, Ticks, including Deer tick (carrier of Lyme disease), Lice & Mange	Dilute 8ozs. in 12.5 gals. water Dilute 1pt. in 25 gals. water Dilute 1qt. in 50 gals. water	Thoroughly wet the animal by dipping, sponging or spraying. Allow animal to dry in a warm place without rinsing or toweling. Do not reapply product for two to three weeks. Consult a veterinarian before using this product on debilitated, aged, pregnant or nursing animals or animals on medication. <b>Sensitivities may occur after using ANY pesticide product for pets. If signs of sensitivity occur,</b>

Fleas, Ticks, including Deer tick (carrier of Lyme disease), Lice & Mange	Dilute 8ozs. in 12.5 gals. water Dilute 1pt. in 25 gals. water Dilute 1qt. in 50 gals. water	Thoroughly wet the animal by dipping, sponging or spraying. Allow animal to dry in a warm place without rinsing or toweling. Do not reapply product for two to three weeks. Consult a veterinarian before using this product on debilitated, aged, pregnant or nursing animals or animals on medication. <b>Sensitivities may occur after using ANY pesticide product for pets. If signs of sensitivity occur,</b>
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**bathe your pet with mild soap and rinse with large amounts of water. If signs continue, consult a veterinarian immediately.**

Application of product on dogs must only be done indoors.

#### **INDOOR USE AREAS**

**HOMES, AND THE NONFOOD/FEED AREAS OF BAKERIES, BEVERAGE PLANTS, CANNERIES, FLOUR MILLS, FOOD PROCESSING PLANTS, GRAIN ELEVATORS, GRAINARIES, HOSPITALS (non-occupied areas), HOTELS, MOTELS, INDUSTRIAL INSTALLATIONS, KENNELS, MEAT PACKING PLANTS, OFFICE BUILDINGS, RAILROAD CARS, RESTAURANTS, SCHOOLS, SHIPSHOLDS, SUPERMARKETS, TRUCK TRAILERS, WAREHOUSES.**

For initial clean up of severe insect infestation, dilute at a rate of (1) part concentrate in 19 parts water (6.7 ounces per gallon) (0.5%). For normal infestations dilute (1) part concentrate in 100 parts water (1.33 ounces per gallon of water) ( 2 2/3 tablespoonful per gallon) (0.1%).

Do not use in food/feed handling establishments, restaurants or other areas where food/feed is commercially prepared or processed. Do not use in serving areas while food is exposed or facility is in operation. Serving areas are areas where prepared food is served such as dining rooms but excluding areas where food may be prepared or held. In the home, all food processing surfaces and utensils should be covered during treatment or thoroughly washed before use. Exposed food/feed should be covered or removed.

Non-food/feed areas of food/feed manufacturing, processing, and handling establishments are areas such as garbage rooms, lavatories, floor drains (to sewers), entries and vestibules, offices, locker rooms, machine rooms, boiler rooms, garages, mop closets and storage (after canning or bottling).

**Do not apply to classrooms when in use. Do not apply product in occupied patient rooms or any rooms while occupied by the elderly or infirm.**

**Not for use in Federally Inspected Meat and Poultry Plants.**

**As a surface spray to control cockroaches, waterbugs, palmetto bugs, ants, silverfish, beetles, mites, weevils:**

Use a good sprayer and adjust to deliver a coarse, wet spray. Direct the spray into hiding places, cracks and crevices, under pallets, around containers of stored foods, around the base of machinery, and behind shelves and drawers. Spray bookcases for silverfish. Spray ant trails, nests and points of entry. If surface application only is to be used, spray floors, walls and other surfaces, applying at a rate of (1) gallon to 750 square feet of surface.

**To control fleas and ticks (adult and larvae),** thoroughly spray infested areas, pets beds, resting quarters, nearby cracks and crevices, along and behind baseboards, molding, window and door frames, and localized areas of floor and floor covering. Fresh bedding should be placed in animal quarters following treatment. Apply with mechanical or compressed air equipment (non-thermal), adjusted to deliver a fine mist. Close doors and windows and shut off ventilating systems.

**For rapid control of house flies, fruit flies, gnats, mosquitoes, skipper flies, wasps, hornets, bees, black flies, angoumois grain moths and tobacco moths, SPACE SPRAY -** direct spray at an upward angle, disturbing it uniformly through the entire area at a rate of (1) ounce per 1000 cubic feet of space. Keep area closed for at least 10 minutes. Vacate area after treatment and ventilate and sweep up dead insects before occupying.

**For rapid kill of exposed or accessible stages of other insects named on this insert:** Apply using conventional mechanical or compressed air equipment (non-thermal), following directions for space spraying in the paragraph above. Apply the above dilutions at a rate of (1) ounce per 1000 cubic feet of space.

NOTE: Buyer assumes all risks of use, storage or handling of this product not in strict accordance with label DIRECTIONS and PRECAUTIONS. [optional statement]

#### **WARRANTY STATEMENT**

Control Solutions, Inc. warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for purposes stated on such label only when used in accordance with directions under normal use conditions. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Control Solutions, Inc. To the extent allowed by applicable law, Control Solutions, Inc. shall in no event be liable for consequential, special, or indirect damages resulting from the use or handling of this product. All such risks shall be assumed by the Buyer. In addition to the foregoing, no purchaser of this product (other than an end user) shall be entitled to any reimbursement for any loss suffered as a result of any suspension or cancellation of the registration for this product by the U.S. Environmental Protection Agency. Except, as expressly provided herein and to the extent consistent with applicable law, Control Solutions, Inc. makes no warranties, guarantees, or representations of any kind, either expressed or implied, or by usage of trade, statutory or otherwise, with regard to the product sold, including, but not limited to merchantability, fitness for a particular purpose, use or eligibility of the product for any particular trade usage. The exclusive remedy of any buyer or user of this product for any and all losses, injuries, or damage resulting from or in any way arising from the use, handling, or application of this product, whether in contract, warranty, tort, negligence, strict liability, or otherwise, shall be damages not exceeding the purchase price paid for this product or, at Control Solutions, Inc. election, the replacement of this product. *[Optional statement]*

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EPA Establishment No. 53883-TX-002