

655-783

2/10/2014

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

Prentiss LLC  
c/o Sharon Johnston, Esq.  
509 Tower Valley Drive  
Hillsboro, MO 63050

FEB 10 2014

Dear Ms. Johnston:

Subject: Amendment: Revise per Agency pyrethroid letter dated January 10, 2013  
Prentox Perm-X 1E  
EPA Reg. No. 655-783  
Your submission dated November 4, 2013

The amendment referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) section 3(c)(7)(a), is acceptable and a stamped copy of the label is enclosed for your records.

Please be reminded that 40 CFR Part 156.140(a)(4) requires that a batch code, lot number, or other code identifying the batch of the pesticide distributed and sold be placed on nonrefillable containers. The code may appear either on the label (and can be added by non-notification/PR Notice 98-10), or durably marked on the container itself.

If you have any questions regarding this letter, please contact Dana Pilitt, Ph.D. at (703) 305-7071 or via e-mail at [pilitt.dana@epa.gov](mailto:pilitt.dana@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Richard Gebken".

Richard Gebken  
Product Manager 10  
Insecticide Branch  
Registration Division (7505P)

655-783 D 484043



**FIRST AID**

<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eyes 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 eyes.</li> <li>• Call a poison control center for treatment advice.</li> </ul>
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Immediately call a poison control center or doctor.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or a doctor.</li> <li>• Do not give any liquid to the person.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may contact 1-800-222-1222 for emergency medical treatment information. You may also contact the National Pesticide Telecommunication Network at 1-800-858-7378 for information including health concerns, medical emergencies or pesticide incidents.	
<b>NOTE TO PHYSICIAN:</b> Contains petroleum distillate – vomiting may cause aspiration pneumonia. This product is caustic and probable mucosal damage may contraindicate gastric lavage. Do not administer whole milk, cream or other substances containing vegetable or animal fats which enhance absorption of lipophilic substances.	

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

**Warning:** Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wear goggles or face shield. Wear long sleeved shirt and long pants, socks and shoes.

**Personal Protective Equipment (PPE):** Some materials that are chemical-resistant to this product are barrier laminate or viton. If you want more options, follow the instructions for category G on an EPA chemical resistance category selection chart.

Applicators using ULV cold foggers or fog/mist generators in indoor spaces must wear:

- Coveralls over long-sleeved shirt and long pants;
- Chemical-resistant gloves;
- Goggles or face shield;
- Chemical resistant footwear plus socks;
- Half-face or full-face or hood style NIOSH-approved respirator with dust/mist filtering cartridge with MSHA/NIOSH approval number prefix TC-21C or a cartridge or canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G) or a cartridge or canister with any R,P, or HE filter; and
- Chemical resistant headgear, if overhead exposure.

Applicators using ULV cold foggers and/or fog/mist generators in outdoor spaces must wear:

- Long-sleeved shirt and long pants;
- Shoes plus socks;
- Goggles or face shield; and
- Chemical resistant gloves

All other mixers, loaders, applicators and other handlers must wear:

- Long sleeve shirt and long pants;
- Shoes plus socks;
- Chemical resistant gloves;
- Goggles or face shield; and
- Chemical-resistant apron for mixers/loaders, persons cleaning equipment and persons exposed to the concentrate and for handlers performing animal dip applications.

**User Safety Requirements:**

- Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.
- Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

**User Safety Recommendations:**

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

**ENVIRONMENTAL HAZARDS**

This product is extremely toxic to aquatic organisms, including fish and invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean water mark. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment wash-waters.

Under some conditions, it may also have a potential for transport into surface water in runoff (primarily absorbed to suspended soil particles), for several months or more after application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, and areas overlying extremely shallow groundwater, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas over-lying tile drainage system that drain to surface waters.

This pesticide is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area.

{Containers larger than 5 gallons} 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 to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

### PHYSICAL AND CHEMICAL HAZARDS

Do not use or store near an open flame.

### DIRECTIONS FOR USE

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

#### Restrictions

- Apply this product only as specified on this label.
- For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.
- Except when applying to dogs, 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.
- Use in stationary foggers: For 4 hours following applications, do not allow any person to re-enter treated areas.
- Use in handheld cold or thermal foggers is prohibited.
- Applications to Dogs: Do not apply to dogs less than 12 weeks old. Consult a veterinarian before using this product on medicated, debilitated, aged, pregnant or nursing animals. Sensitivities may occur after using ANY pesticide product for pets. If signs of sensitivity occur, bathe your pet with mild soap and rinse with large amounts of water. If signs continue, consult a veterinarian immediately. DO NOT USE ON CATS.
- Do not breathe vapors, or spray mist.
- Except when applying to dogs, only protected handlers may be in the area during application.
- Do not apply as a broadcast or spot-treatment to indoor surfaces at residential sites, including nurseries, day care centers, schools, hospitals, and nursing homes.
- Applications to indoor residential surfaces may only be applied at concentrations of no more than 0.5% permethrin.
- Do not apply when food is present.
- Do not use in food areas of food handling establishments, restaurants, or other areas where food 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 foods are served, such as dining rooms, but excluding areas where foods 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 should be covered or removed.
- Remove or cover fish bowls before application.
- Do not apply this product in patient rooms or in any room occupied by the elderly or infirmed.
- Do not apply to classrooms when in use.
- Do not apply to institutions (including libraries, sports facilities, etc.) in the immediate area when occupants are present.
- Not for use in commercial animal premise automatic misting systems.
- When used in dairy barns or facilities: Close milk bulk tank lids to prevent contamination from spray and from dead or falling insects. Remove or cover milking utensils before application. Wash teats of animals before milking.
- Do not apply directly to sewers or drains, or to any area like a gutter where drainage to sewers, storm drains, water bodies, or aquatic habitat can occur except as directed by this label.
- All outdoor applications, if permitted elsewhere on this label, must be limited to spot or crack-and-crevice treatments only, except for the following permitted uses: 1) Applications to soil or vegetation, as listed on this label, around structures; 2) Applications to lawns, turf and other vegetation as listed on this label; 3) Applications to the side of a building, up to a maximum height of 3 feet above grade; 4) Applications to underside of eaves, soffits, doors or windows permanently protected from rainfall by a covering, overhang, awning or other structure; 5) Applications around potential pest entry points into buildings when limited to a surface band not to exceed one inch in width; 6) Applications made through the use of a coarse, low pressure spray to only those portions of surfaces that are directly above bare soil, lawn, turf, mulch or other vegetation, as listed on this label and not over an impervious surface, drainage or other condition that could result in runoff into storm drains, drainage ditches, gutters or surface waters, in order to control occasional invaders or aggregating pests.
- Do not water the treated area to the point of run-off.
- Do not make outdoor applications during rain.
- Not for use in outdoor residential misting systems.
- Do not apply directly to livestock.
- Do not use this product in or on electrical equipment due to the possibility of shock hazard.

### NON-AGRICULTURAL USE REQUIREMENTS

- Except when applying to pets, do not enter or allow others to enter until sprays have dried.
- For space spray applications, do not enter or allow others to enter until vapors, mists, and aerosols have dispersed, and the treated area has been thoroughly ventilated.

### 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). 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 12 hours.

PPE required for early entry into 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, is:

- coveralls
- shoes plus socks
- chemical-resistant gloves made of waterproof material

**FOR USE IN NON-FOOD AREAS, INDOORS AND OUTSIDE PREMISES OF HOTELS, MOTELS, HOMES, PRESCHOOLS, NURSERIES, DAY CAMPS, GREENHOUSES, SLATHOUSES, SEED HOUSES, FOOD HANDLING ESTABLISHMENTS, PACKAGING AND PROCESSING PLANTS, COMMERCIAL INDUSTRIAL, OFFICE, INSTITUTIONAL AND STORAGE BUILDINGS, DAIRIES, MILK STORAGE ROOMS, EGG PROCESSING PLANTS, SUPERMARKETS, RESTAURANTS, BOTTLING PLANTS, CANNERIES, FLOUR AND FEED MILLS, BAKERIES, AND HOSPITALS. NONFOOD 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). IN HOSPITALS, PATIENTS SHOULD BE REMOVED PRIOR TO TREATMENT. ALSO FOR USE IN CAMPERS, MOBILE HOMES, BUSES, AUTOMOBILES, TRUCKS, BOXCARS. ALSO FOR USE IN DOG KENNELS AND HORSE STABLES. IN HORSE STABLES, NOT FOR APPLICATION IF HORSES WILL BE USED FOR FOOD.**

**NOTE TO PEST CONTROL OPERATORS:** One gallon of finished spray is sufficient to treat 1580 linear feet with a 6 inch spray band.

For contact and residual sprays, mix Perm-X 1E with water in the following manner:

FINISHED SPRAY	PERM-X 1E (fluid ounces)	WATER
0.25%	2 1/2	1 gallon
0.25%	3/4	1 quart
0.50%	5 1/2	1 gallon
0.50%	1 1/4	1 quart

For heavy infestation use the 0.50% dilution. For lighter infestations and for maintenance purposes, use the 0.25% solution.

### PESTS INDOORS

For residual and contact control of cockroaches (waterbugs, crickets, silverfish (firebrats), clover mites, millipedes, centipedes, earwigs, sowbugs (pillbugs), spiders, brown dog ticks, lone start ticks, ants, fire ants, clothes moths, carpet beetles, fleas boxelder bugs, scorpions, spider beetles, bed bugs, grasshoppers, house flies, mosquitoes, gnats, fruit flies, cluster flies, flying moths, confused flour beetles, saw-toothed grain beetles, shiny spider beetles, grain mites, red flour beetles, Angoumois grain moths, grain weevils, Indian meal moths, Mediterranean flour moths, lesser grain borers, cigarette beetles, drug store beetles, chocolate moths. Spray thoroughly into hiding places such as cracks, crevices, moist areas, openings around pipes and sinks, under refrigerators, baseboards and storage areas. Spray directly on insects where possible. Spray until the surface is just damp, but not to the point of run-off. Avoid excess application.

**For Bedbugs:** Apply as a spot treatment to cracks and crevices, around baseboards, floorboards, bedboards and walls. First, thoroughly clean and air mattresses and springs. Then spot treat only areas that may harbor bedbugs concentrating on tufts, folds and seams. Spray until the surface is just damp, but not to the point of run-off. Avoid excess application. Repeat treatment in 7 - 14 days if infestation continues. Allow all treated articles to thoroughly dry before use.

**Grain Insects:** To control confused flour beetles, saw-toothed grain beetles, spider beetles, shiny spider beetles, grain mites, red flour beetles, Angoumois grain moths, grain weevils, Indian meal moths, Mediterranean flour moths, lesser grain borers, cigarette beetles, drug store beetles, chocolate moths, carpet beetles — remove infested grain, cereal or flour and destroy. Avoid contamination of other food and food stuffs in the areas by removing before spraying. Spray directly on exposed stages and into cracks and crevices where grain insects may be hiding. Spray until the surface is just damp, but not to the point of run-off. Avoid excess application. In homes, dispose of all infested products. The shelves and drawers should be cleaned and thoroughly sprayed so as to contact all pests, and covered with shelf paper after allowing shelves to dry. Any utensils that are contacted with spray should be washed before using. Repeat treatment in 7 - 14 days if infestation continues.

**Spiders:** Spray directly on these pests and use repeated applications to the webbing and all cracks and crevices which harbor spiders. Spray until the surface is just damp, but not to the point of run-off. Avoid excess application.

**Ants:** To kill ants, spray trails, nests and points of entry within buildings and homes. Spray directly on ants where possible. Spray until the surface is just damp, but not to the point of run-off. Avoid excess application. Repeat treatment in 7 - 14 days if infestation continues.

**Wasps, Hornets, Yellow Jackets, Bees:** Application should be made in the late evening when insects are at rest. Spray liberally into hiding and breeding places, especially under attic rafters, contacting as many insects as possible. Spray until the surface is just damp, but not to the point of run-off. Avoid excess application. Repeat treatment in 7 - 14 days if infestation continues.

**Fleas, Brown Dog and Lone Star Ticks on Premises:** To prevent re-infestation, thoroughly spray the animals bedding and other resting areas until the surface is slightly moist, contacting as many insects as possible. Treat the floor areas, cracks and crevices in the floor and along baseboards at the rate of 2 seconds per linear foot at a distance of 12 to 18 inches. Also spray the entire inside surface of dog homes. Spray until the surface is just damp, but not to the point of run-off. Avoid excess application.

**House Flies, Mosquitoes, Cluster Flies, Gnats, Fruit Flies, Flying Moths:** Close off all doors and windows. Point sprayer upward. Direct spray mist to all parts of the room, especially windows and other light sources which may attract these insects. Fill the room with mist, then leave the treated area. Spray until the surface is just damp, but not to the point of run-off. Avoid excess application. Keep the room closed for at least 15 minutes.

**Carpet Beetles and Clothes Moths:** To treat carpets — hold container 14-18 inches from carpet. Apply spray evenly, covering the entire surface until slightly moist. Spray underside of carpet when possible. Spray until the surface is just damp, but not to the point of run-off. Avoid excess application. Avoid wetting or soaking. **To Treat Garments, Blankets, Carpets and Other Fabrics Before Storage:** Dry clean or wash before treatment and after storage. Apply spray evenly, covering the material on both sides until slightly moist. Spray until the surface is just damp, but not to the point of run-off. Avoid excess application. For best results, place treated materials in plastic bags after drying and store in a dark place. Also spray floor and baseboards, closets, cracks, crevices, infested areas of shelving and/or wherever these insects are seen or suspected.

**FOR USE ON ORNAMENTAL PLANTS, MIX PERM-X WITH WATER IN THE FOLLOWING MANNER**

FINISHED SPRAY	PERM-X 1E	WATER
0.015%	1 teaspoon	1 gallon

\*Note: Do not use more Perm-X 1E than recommended, as this may cause some plant injury. Use this dilution unless other instructions are given.

**CONTACT AND RESIDUAL SPRAY** — Apply a finished spray of Perm-X 1E. USE SUFFICIENT SPRAY TO OBTAIN FULL COVERAGE OF ALL FOLIAGE. ADJUST SPRAY VOLUME USED TO PLANT SIZE. Spray until the surface is just damp, but not to the point of run-off. Avoid excess application.

To protect plants in greenhouses and slathouses, and for indoor landscaping — Spray directly on insects to kill leafrollers, armyworms, cutworms. Cabbage worms on chrysanthemums, fungus gnats on velvet plants. Spray as directed above. Spray until the surface is just damp, but not to the point of run-off. Avoid excess applications. Also see specific chrysanthemum directions below. Spray as directed above to control aphids, armyworms, corn earworms, fall cankerworms, inchworms, Japanese beetles, leafminers, leafrollers, mealybugs, scales, spider mites, spring cankerworms, exposed thrips, and whiteflies on the following plants:

Ageratum, Ardista, Aster, Azalea, Baby's Breath, Begonia, Bird's-nest Fern, Bleeding Heart, Carnation, Chrysanthemum, Coleus, Crown of Thorns, Cockscomb, Cyclamen, Dracaena, Dumbcane, English Ivy, Fuchsia, Gladiolus, Grape Ivy, Hypoestes, Ivy, Juniper, Lily, Marigold, Orchid, Palm, Pansy, Piperomia, Petunia, Philodendron, Piggy-back plant, Poinsettia, Portulaca, Pothos, Prayer Plant, Purple Passion, Rabbits foot fern, Rose, Scheffiera, Snapdragon, Snake Plant, Stalice, Velvet Plant, Verbena, Zinnia.

Remove infested plants from living areas prior to application. Spray plants in an area not likely to be occupied by children or pets (particularly fish). When leaves dry, plants can be returned to original location.

Use with care on ferns, palms and fuchsia. As with all plants listed above, 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, spray a few plants as described above, wait 24 hours, and check for possible injury.

Repeat applications may be necessary to control adult Japanese beetles on roses.

**FOR THE CONTROL OF LEAFMINERS ON CHRYSANTHEMUMS GROWN IN GREENHOUSES AND SLATHOUSES**

To control the insects listed above, apply Perm-X 1E foliar spray only in accordance with the chart below. DO NOT USE AS SOIL DRENCH. USE SUFFICIENT WATER TO OBTAIN FULL COVERAGE OF ALL FOLIAGE. ADJUST SPRAY VOLUME TO PLANT SIZE. USE SPRAY INTERVALS OF 4 TO 8 DAYS. Timing and frequency of applications should be based upon insect populations reaching economic thresholds. Use the longer interval between sprays and lower application rate when population control has already been obtained and pressure is already declining due to initial Perm-X 1E application, and/or whenever preventive leafminer control is desired. High rate of application may be required under conditions of very heavy infestations and/or where local difficulty in control of leafminers has been reported. Perm-X 1E application can be made to the day of harvest.

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**PETS**

**READ ENTIRE LABEL BEFORE EACH USE**

**USE ONLY ON DOGS TO KILL FLEAS, BROWN DOG AND LONE STAR TICKS**

**APPLICATION DIRECTIONS:**

**Fleas, Brown Dog and Lone Star Ticks on Dogs:** Spray animals along back, under forelegs and on other areas, except scrotum, face and anus. Part hair to contact skin and insure good coverage. Hold sprayer about one foot, (30 cm) away while spraying. Apply until hair is thoroughly moist. Do not spray directly in eyes, mouth, or nose of animal. Do not reapply product for 7 days.

**PEST OUTDOORS**

**Pest on Outside Surfaces of Buildings:** Use this product to control ants, clover mites, crickets, earwigs, millipedes and sowbugs (pillbugs) on the outside surfaces of buildings. To help prevent infestation of buildings, treat the building foundation to a height of 2 to 3 feet, where pests are and may find entrance. Also, apply as a residual spray to outside surfaces of buildings, including porches, screens, window frames, eaves, patios, garages, refuse dumps, and other areas where these pests congregate or have been seen. Repeat treatment in 7-14 days if infestation continues.

**House Flies, Mosquitoes, Cluster Flies, Gnats, Flying Moths outdoors:** For outdoor use only as an aid in reducing annoyance from these insects. 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, and other places where these insects alight or congregate. Repeat treatment in 7 -14 days if infestation continues.

**Ants, Lone Star Ticks, Fleas, and Earwigs Outdoors:** For treatment of localized infestations of these insects in outdoor areas where there are weeds or bushy non-crop areas, spray infested areas thoroughly. For ants, thoroughly wet hills and runways. Repeat treatment in 7 - 14 days if infestation continues.

**TO CONTROL FIRE ANTS:** Dilute 2 tablespoons of this product in 1 gallon of water. Apply 1 gallon of solution as a gentle rain to each fire ant mound using a sprinkler can. Thoroughly wet the mound and surrounding area to a 4 foot diameter. For best results, apply in cool weather, 65-80° F (18.5-27° C), or in early morning or late evening hours. Treat new mounds as they appear. Do not disturb the mound prior to treatment. If possible, treat all mounds in the vicinity, and treat all colonies which may not as yet have constructed a mound. Larger quantities of solution can be prepared for multiple mound treatments. Equipment to deliver the diluted product as a gentle rain at the rate of 1 gallon (3.79 L) per mound is still required. Do not use equipment that produces a pressurized spray, as pressurized sprays may disturb fire ants and cause migration reducing product effectiveness.

**FOR USE ON ORNAMENTAL PLANTS, MIX PERM-X WITH WATER IN THE FOLLOWING MANNER**

FINISHED SPRAY	PERM-X 1E	WATER
0.015%	1 teaspoon	1 gallon

\*Note: Do not use more Perm-X 1E than recommended, as this may cause some plant injury. Use this dilution unless other instructions are given.

**CONTACT AND RESIDUAL SPRAY** — Apply a finished spray of Perm-X 1E. USE SUFFICIENT SPRAY TO OBTAIN FULL COVERAGE OF ALL FOLIAGE. ADJUST SPRAY VOLUME USED TO PLANT SIZE. Spray until the surface is just damp, but not to the point of run-off. Avoid excess application.

Spray directly on insects to kill leafrollers, armyworms, cutworms. Cabbage worms on chrysanthemums, fungus gnats on velvet plants. Spray as directed above. Spray until the surface is just damp, but not to the point of run-off. Avoid excess applications. Also see specific chrysanthemum directions. Spray as directed above to control aphids, armyworms, corn earworms, fall cankerworms, inchworms, Japanese beetles, leafminers, leafrollers, mealybugs, scales, spider mites, spring cankerworms, exposed thrips, and whiteflies on the following plants:

Ageratum, Ardisia, Aster, Azalea, Baby's Breath, Begonia, Bird's-nest Fern, Bleeding Heart, Carnation, Chrysanthemum, Coleus, Crown of Thorns, Cockscomb, Cyclamen, Dracaena, Dumbcane, English Ivy, Fuchsia, Gladiolus, Grape Ivy, Hypoestes, Ivy, Juniper, Lily, Marigold, Orchid, Palm, Parsley, Piperomia, Petunia, Philodendron, Piggy-back plant, Poinsettia, Portulaca, Pothos, Prayer Plant, Purple Passion, Rabbits foot fern, Rose, Scheffiera, Snapdragon, Snake Plant, Stalice, Velvet Plant, Verbena, Zinnia.

Spray plants in an area not likely to be occupied by children or pets (particularly fish). When leaves dry, plants can be returned to original location.

Use with care on ferns, palms and fuchsia. As with all plants listed above, 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, spray a few plants as described above, wait 24 hours, and check for possible injury.

Repeat applications may be necessary to control adult Japanese beetles on roses.

**FOR THE CONTROL OF LEAFMINERS ON CHRYSANTHEMUMS**

To control the insects listed above, apply Perm-X 1E foliar spray only in accordance with the chart below. DO NOT USE AS SOIL DRENCH. USE SUFFICIENT WATER TO OBTAIN FULL COVERAGE OF ALL FOLIAGE. ADJUST SPRAY VOLUME TO PLANT SIZE. USE SPRAY INTERVALS OF 4 TO 8 DAYS. Timing and frequency of applications should be based upon insect populations reaching economic thresholds. Use the longer interval between sprays and lower application rate when population control has already been obtained and pressure is already declining due to initial Perm-X 1E

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application, and/or whenever preventive leafminer control is desired. High rate of application may be required under conditions of very heavy infestations and/or where local difficulty in control of leafminers has been reported. Perm-X 1E application can be made to the day of harvest.

**MIXING INSTRUCTIONS**

Prepare final spray solution by adding the required amount of Perm-X 1E to the mixing tank which has been pre-filled with water to the 1/2 Full Mark. Thereupon under agitation carefully mix while adding water until the spray tank is filled to its Full-Mark or to the desired spray volume. Use the Perm-X1E final spray during the day of preparation.

**CHRYSANTHEMUM SPRAY DIRECTIONS**

Crop	Target Pest	Lbs.a.i./100 gals. of spray	No. of pints of Perm-X 1E per 100 gallons of spray
Chrysanthemum	Vegetable Leafminers	Normal 0.125 High 0.4	1 pint 3.2 pints

Use one teaspoon of Perm-X 1E in one gallon of water.

**CONTACT AND RESIDUAL SPRAY:** Apply a finished spray of Perm-X 1E. USE SUFFICIENT SPRAY TO OBTAIN FULL COVERAGE OF ALL FOLIAGE ADJUST SPRAY VOLUME USED TO PLANT SIZE.

Spray in the late afternoon or evening when the temperature ranges from 50° F to 75° F and where there is little or no wind. Spray at the first indication of insect pests. On those plants that will flower during the season, the spray schedule should be completed before blossom formation. Repeat treatment in 7- 14 days if infestation continues. Application can be made up to the day of collection.

Spray as directed above to control aphids, cicadas, corn earworms, fall cankerworms, inchworms, leafminers, leafrollers, mealy bugs, bagworms, spider mites, exposed thrips and whiteflies on the following plants.

Ageratum, Arizona Cypress, Aster, Azalea, Begonia, Coleus, Common nineback, Common snowberry, Elm, Exacum, Euonymous, English Ivy, Gladiolus, Gold Bells, Hypoestes, Ivy, Lilac, Marigold, Mock Orange, Nannyberry, Orchid, Palm, Pansy, Pea Shrub, Petunia, Philodendron, Poinsettia, Rhododendron, Rose, Snapdragon, Saxus, Wax plants, Weeping fig, Zinnia.

**FOR ORNAMENTAL TREES GROWN AROUND THE HOME**

Use one teaspoon of Perm-X 1E in one gallon of water.

Use sufficient spray to obtain full coverage of all foliage. Avoid heavy wetting. Use to control: Pine moths, pine needle miners, pine beetles and needle scales or pine; Budworms on conifers, Oakworms on oak; Fall webworms on cherry, elm and honeysuckle, Aphids on tulip poplar; Citrus black flies on non-bearing citrus, Tussock moths on Douglas and grand firs; Leafminers on birch, Elm leaf beetle and elm spanworms on elms.

**TO KILL 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. Mix 2 fl. ozs. of this product in one gal. of water. Wet tents with spray on all sides. A few caterpillars may be seen escaping from the tent, however, they should die within several hours.

**CLUSTER FLIES**

Apply this product undiluted to the outside surfaces of buildings at the rate of 2.5 fl. oz/1000 sq. ft. Use apparatus which delivers a strong mist spray of small particle size. Hold nozzle about three feet from surface to be treated. Apply when wind velocity is less than 2 mph to avoid drift.

**FOR USE ON HOME LAWNS**

For control of ants (including fire ants), armyworms, chinch bugs, crickets, cutworms, Japanese beetle grubs, grasshoppers, mole crickets and sod webworms, consult the following chart.

PESTS	DILUTION
army worms cutworms chinch bugs Japanese beetle grubs mole crickets sod webworms	5 tsp./10 gal. water/1000 ft <sup>2</sup>
crickets grasshoppers ants (including fire ants)	2 tsp./3 gal. water/1000 ft <sup>2</sup>

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 above. For heavy infestations, repeat application after two weeks.

Also for control of cutworms on dichondra and Irish moss. Use as directed above for lawns.



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### STORAGE & DISPOSAL

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

**STORAGE:** Store this product in original container in a locked storage area.

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

**CONTAINER DISPOSAL:** Non-refillable container. Do not refill or reuse this container. 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. [For containers too large to shake (i.e., with capacities greater than 5 gallons or 50 lbs) triple rinse as follows: 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 it back and forth for the 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.] Then, offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and Local authorities.

