



For use to control insect pests on lawns, ornamental trees and shrubs and around buildings for perimeter insect control including landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas and athletic fields.

EPA Reg. No. 279-3141

EPA Est. 279-

Active Ingredient:	By Wt.
Permethrin**	36.8%
Inert Ingredients***	63.2%
	100.0%

**cis/trans ratio: Max. 55% (±) cis and min. 45% (±) trans

***Contains petroleum distillates.

Contains 3.2 pounds permethrin per gallon

U.S. Patent No. 4,024,163

KEEP OUT OF REACH OF CHILDREN

CAUTION

See other panels for additional precautionary information.

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Call a physician or Poison Control Center. Do not induce vomiting as it may cause aspiration pneumonia. Do not give anything by mouth to an unconscious person. Avoid alcohol.

IF INHALED: Remove victim to fresh air. If not breathing give artificial respiration, preferably mouth to mouth. Get medical attention.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

IF IN EYES: Flush eyes with plenty of water. Call a physician if irritation persists.

Note to Physician: This product contains aromatic hydrocarbons which can produce a severe pneumonitis if aspirated, consideration should be given to gastric lavage with an endotracheal tube in place. Treatment is controlled removal of exposure followed by symptomatic and supportive care.

For Emergency Assistance Call: (800) 331-3148.

PRECAUTIONARY STATEMENTS

Hazards to Humans (and Domestic Animals)

CAUTION

Harmful if swallowed, inhaled or absorbed through the skin. Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

Personal Protective Equipment

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category D on an EPA chemical resistance category selection chart.

Applicators and other handlers who handle this pesticide for any use covered by Worker Protection Standard (CFR Part 170) -- in general, only agricultural-plant uses are covered -- must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate or butyl rubber.
- Shoes plus socks

Follow 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 Statement

When handlers use closed systems, enclosed cabs, or aircraft 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.

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.

Environmental Hazards

This pesticide is highly toxic to bees exposed to direct treatment or residues on crops or weeds. Do not apply this product or allow it to drift to crops or weeds on which bees are actively foraging. Additional information may be obtained from your Cooperative Extension Service.

This product is extremely toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not 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 washwaters.

Physical and Chemical Hazards

Do not use or store near heat or open flame.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Shake well before using.



FMC Corporation
Agricultural Products Group
Philadelphia PA 19103

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 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.

Do not enter or allow worker entry to treated areas during the restricted entry interval (REI) of 12 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, is:

Coveralls over long-sleeved shirt and long pants.

Chemical-resistant gloves, such as barrier laminate or butyl rubber.

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 Standards for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries and greenhouses.

Do not allow people or pets on treated surfaces until the spray has dried.

Do not touch treated surface until dry.

Storage and Disposal

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

Storage: Store at temperatures above 40°F (5°C)

If separation occurs during storage, and less than entire contents of container are to be used, remix by inverting and shaking the container several times until contents are homogeneous. For the 5 gallon U-Turn® container, grasp handle and rock container forward and backward vigorously until contents are homogeneous. For 10 gallon U-Turn container, remix with mechanical agitator by attaching a power drill with ¼ inch chuck to agitator shaft and agitating by spinning shaft for 1 minute prior to dispensing.

If crystals have formed, warm to room temperature (70°F) (21°C) by room heating for 24–48 hours and shake occasionally until crystals dissolve and product appears uniform. Do not use external source of heat for warming container.

Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry place and avoid excess heat. Carefully open containers. After partial use, replace lids and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. Call FMC: (800) 331-3148.

To confine spill: If liquid, dike surrounding area or absorb with sand, cat litter, or commercial clay or gel absorbents. If dry material, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. 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:

Plastic Containers—Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Metal Containers—Triple rinse (or equivalent). 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. Do not cut or weld metal containers.

Returnable/Refillable Sealed Container—Do not rinse container. Do not empty remaining formulated product. Do not break seals. Return intact to point of purchase.

Chemigation Use Directions

Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation system. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system.

Crop injury, lack of effectiveness, or illegal residues in the crop can result from nonuniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustment should the need arise.

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Astro® insecticide should be applied continuously for the duration of the water application. Astro should be diluted in sufficient volume to ensure accurate application over the area to be treated. When using chemigation, a minimum of 0.5 inch per acre of irrigation water is recommended. Agitation generally is not required when a suitable carrier is used.

Ornamental and Lawn Use (Including Field and Container Grown Nursery Stock, Greenhouses, Interiorscapes and Plantscapes, Lawns, Trees and Shrubs)

General Application Instructions

Astro may be used to control insect pests on ornamentals and lawns in landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas and athletic fields.

Astro is a 3.2 pounds per gallon formulation of the insecticide permethrin. Apply Astro when insects appear or feeding is noticed. The higher rate should be used as pest populations increase. Repeat the application as necessary to maintain control. Astro may be applied by ground equipment. Use sufficient water to obtain full coverage.

To prepare a 0.5% emulsion, mix 1.6 oz. (50 ml) of Astro Insecticide in 1 gallon of water.

Do not apply more than 2.0 lb. a.i./A/year.

Astro has demonstrated excellent plant safety; however, not all cultivars have been tested. Before treating large numbers of plants of a particular cultivar, treat a few plants and observe prior to full scale application.

Spray Drift Precautions:

All ground application equipment must be properly maintained and calibrated using appropriate carriers.

Do not make ground applications during temperature inversions.

Make ground applications when the wind velocity favors on target product disposition (approximately 3 to 10 mph). Do not apply when wind velocity exceeds 15 mph.

Do not apply by ground equipment within 25 feet of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds.

Resistance: Some insects are known to develop resistance to products used repeatedly for control. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. Consult your local or state pest management authorities for details.

If resistance to this product develops in your area, this product, or other products with a similar mode of action, may not provide adequate control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present. If you experience difficulty with control and suspect that resistance is a reasonable cause, immediately consult your local company representative or pest management advisor for the best alternative method of control for your area.

Recommended Application Rates

CROP	PEST	RECOMMENDED RATE	SPECIFIC INSTRUCTIONS
Ornamentals in greenhouses and interiorscapes, in residential landscaped areas and landscaped areas around institutional, public, commercial and industrial buildings, parks, recreational areas and athletic fields (Including field and container grown foliage and flowering plants, woody and herbaceous non-edible ornamentals and non-bearing plants of fruiting species)	Ants Aphids Bagworm Beet Armyworm Birch Leafminer Cabbage Looper Cankerworms Citrus Thrips Fungus Gnat Gypsy Moth Caterpillars Heliiothis spp Japanese Beetles Lace Bug Leaf Feeding Caterpillars Leafminers Leafhoppers Leafrollers Lygus Bugs Mealybugs Pine Sawflies Plant Bugs Root Weevils (Adult) Tent Caterpillars Webworms Whiteflies Zimmerman Pine Moths	4 to 8 Fl. Oz. per 100 Gals. — or — Broadcast 4 to 8 Fl. Oz. per Acre	Apply sufficient volume of water to adequately cover foliage. Use higher rate for moderate to high infestations. Direct application to blooms may cause browning of petals. Marginal leaf burn may occur on Salvia, Dieffenbachia and Pteris Fern.
	Ornamental Trees	Clearwing Moth Borers Ash Borer, Banded ash Clearwing, Dogwood borer, Lesser peachtree borer, Lilac borer, Oak borer, Peachtree borer, Rhododendron borer Bark Beetles Dendroctonus spp., Ips spp., Elm bark beetles, Mountain pine beetle, Pine engravers, Turpentine beetles, Western pine beetle Coleopteran borers Bronze birch borer, Flatheaded appletree borer For maximum residual control of the above listed pests	1 to 2 qts. per 100 Gals. 2 to 5 qts. per 100 Gals. 2 to 5 qts. per 100 Gals. 5.35 qts. per 100 Gals.
Conifers (Field and Container Grown), Christmas trees and Pine Seed Orchards*	Nantucket Pine Tip Moth Coneworms* Seed Bugs*	4 to 8 Fl. Oz. per 100 Gals. — or — Broadcast 4 to 8 Fl. Oz. per Acre	Begin application when adults appear. Repeat applications may be made on 5–7 day intervals as needed.
Lawns (around residential, institutional, public, commercial and industrial buildings, parks, recreational areas and athletic fields) and grass nurseries	Chinchbugs Pill Bugs Sod Webworm (See also list of pests under Pest control on outside surfaces and around buildings)	0.4 to 0.8 fl. oz. per 1000 sq. ft.	Apply using sufficient water to provide adequate coverage.

*To control Coneworm, Seed Bugs—Use Astro® Insecticide at the following rates:
For high volume sprayers: Use 8 ounces in 100 gallons of water. Apply 5 to 10 gallons of finished spray per tree.
For low volume sprayers: Use 42 ounces in 100 gallons of water. Apply 100 gallons per acre.
To control Webbing Coneworm—make first application within 1 week of female flower closure or peak pollen flight.
To control other coneworms and seed bugs—make first application within 30 days following flower closure.

Recommended Application Rates for Fruit and Nut Trees Around Residential Sites Only

Apply the appropriate amount of Astro insecticide (see table below) in 100 gallons of water per acre (1 gallon per 436 sq. ft.). Astro insecticide may be diluted and applied in greater volumes of water providing that the maximum application rates listed below are not exceeded on a per acre basis. For example: when attempting to control Navel Orangeworm on almonds using an application volume of 200 gallons per acre (2 gallons per 436 sq. ft.), the maximum legal dilution of Astro Insecticide is 8 fluid ounces per 100 gallons (½ teaspoon per 1gallon).

TREE	PEST	RECOMMENDED RATE	CROP
Almond	Navel Orangeworm Peach Twig Borer	8 to 16 fl.oz per 100 gal/A or ½ to 1 tsp. per 1 gal/436 sq. ft.	Do not harvest nuts within 7 days after application. Do not apply more than 32 fluid ounces per acre during hull split. Do not apply more than 80 fluid ounces per acre per year.
Apples	Green Fruitworm Oblique Banded Leafroller Plum Curculio Redbanded Leafroller Rosy Apple Aphid Spotted Tentiform Leafminer Tarnished Plant Bug White Apple Leafhopper	4 to 8 fl.oz per 100 gal/A or ½ to ¾ tsp per 1 gal/436 sq. ft.	Do not apply more than 24 fluid ounces per acre per year.
Cherries	Green Fruitworm Lesser Peachtree Borer Plum Curculio Redbanded Leafroller Rose Chafer Tarnished Plant Bug	4 to 8 fl.oz per 100 gal/A or ½ to ¾ tsp per 1 gal/436 sq. ft.	Do not harvest fruit within 3 days after application. Do not make more than 4 applications per year. Do not make more than 3 applications after petal fall.
Filberts	Filbertworm Oblique Banded Leafroller	8 to 16 fl.oz per 100 gal/A or ½ to 1 tsp. per 1 gal/436 sq. ft.	Do not harvest nuts within 14 days after application. Do not apply more than 64 fluid ounces per acre per year.
Peaches	Green Fruitworm Lesser Peachtree Borer Oriental Fruit Moth Peach Twig Borer Plum Curculio Rose Chafer Tarnished Plant Bug	4 to 12 fl.oz per 100 gal/A or ¼ to ¾ tsp per 1 gal/436 sq. ft.	Do not harvest fruit within 14days after application. Do not apply more than 60 fluid ounces per acre per year
Pears	Pear Psylla	8 to 16 fl.oz per 100 gal/A or ½ to 1 tsp. per 1 gal/436 sq. ft.	Apply only during dormant through delayed dormant growth periods. Do not apply more than 32 fluid ounces per acre per year.
Pistachios	Leaffooted Bugs Navel Orangeworm Peach Twig Borer Plant Bugs Stinkbugs	8 to 16 fl.oz per 100 gal/A or ½ to 1 tsp. per 1 gal/436 sq. ft.	Nuts may be harvested on the day of application. Do not apply more than 32 fluid ounces per acre per year. Do not apply after 10 percent hull split.

1fl. oz. = 2 tablespoons = 6 teaspoons.
Do not use household utensils to measure Astro Insecticide.

Astro insecticide is not for use on commercial fruit and nut trees.

Pest Control on Outside Surfaces and Buildings

Apply Astro® insecticide using a 0.5% emulsion as a residual spray to outside surfaces of buildings including, but not limited to, exterior siding, foundations, porches, window frames, eaves, patios, garages, refuse dumps, lawn areas adjacent or around private homes, duplexes, townhouses, condominiums, house trailers, apartment complexes, carports, garages, fence lines, storage sheds, barns, other residential structures, commercial, industrial and institutional buildings, soil, trunks of woody ornamentals and other areas where pests congregate or have been seen. Repeat treatment as necessary to maintain effectiveness.

Perimeter Treatment: Apply to a band of soil and vegetation 6 to 10 feet wide around and adjacent to the structure. Also, treat the foundation of the structure to a height of 2 to 3 feet. Use a spray volume of 2 to 10 gallons of emulsion per 1000 square feet. Higher volumes of water may be needed if mulch or leaf litter is present or foliage is dense. House siding may be treated if pests such as Gypsy moth adults and caterpillars, boxelder bugs, elm leaf beetles, earwigs or silverfish are present.

Applications to Outside Surfaces

Pest	Specific Instructions																								
Ants	Apply as a pinstream, as a fine/coarse, low pressure spray (20 psi or less), as a spot treatment or with a paintbrush. Treat where pests are found or entry points of the structure such as window and door frames and along the foundation.																								
Ant Mounds ¹																									
Armyworm																									
Fire Ants																									
Bees																									
Carpenter Bees																									
Bark Beetles ³																									
Borers ³																									
Boxelder Bugs ²																									
Centipedes																									
Cockroaches	¹ Drench Method: Apply 1-2 gallons of emulsion to each mound area by sprinkling the mound until it is wet and treat a 4 foot diameter circle around the mound. Use the higher volume for mounds larger than 12". For best results, apply in cool weather, such as in early morning or late evening hours, but not in the heat of the day. ² Boxelder Bugs, Elm Leaf Beetles, Gypsy Moth Caterpillars: Spray tree trunks, building siding or wherever pests congregate, to the point of runoff. ³ Borers and Bark Beetles: To prevent infestation of trees and woody ornaments, spray the bark to the point of runoff. ⁴ Fleas: Mix 1.6-3.2 oz. of Astro in 16 to 100 gallons of water and apply to 4000 square feet of lawn. Use the lower rate to knock down existing fleas and the higher rate where faster knockdown or greater residual is desired. For example: <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>Lawn</th> <th>Sq Ft</th> <th>Oz of Astro®</th> <th>Gals of Water</th> </tr> </thead> <tbody> <tr> <td>Small</td> <td>2,000</td> <td>0.8 to 1.6</td> <td>8 to 50</td> </tr> <tr> <td>Spiders</td> <td>4,000</td> <td>1.6 to 3.2</td> <td>16 to 100</td> </tr> <tr> <td>Wasps</td> <td>Medium 6,000</td> <td>2.4 to 4.8</td> <td>24 to 150</td> </tr> <tr> <td>Ticks⁴</td> <td>Large 12,000</td> <td>4.8 to 9.6</td> <td>48 to 300</td> </tr> <tr> <td>Flies</td> <td>1 Acre 44,000</td> <td>17.0 to 34.0</td> <td>176 to 1,100</td> </tr> </tbody> </table>	Lawn	Sq Ft	Oz of Astro®	Gals of Water	Small	2,000	0.8 to 1.6	8 to 50	Spiders	4,000	1.6 to 3.2	16 to 100	Wasps	Medium 6,000	2.4 to 4.8	24 to 150	Ticks ⁴	Large 12,000	4.8 to 9.6	48 to 300	Flies	1 Acre 44,000	17.0 to 34.0	176 to 1,100
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Firebrats																									
Fleas ⁴																									
Ground Beetles																									
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Carpenter Ants	Lawn should not be longer than 3 inches at the time of application. Repeat application if necessary. Application in combination with compatible surfactants may enhance penetration. Arid climates generally require the higher volumes.																								
Chinchbugs ⁴																									
Pill Bugs																									
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Subsurface Injection of Astro to Flush Mole Crickets: **(In New York State, this product may NOT be used for subsurface injection).** To increase flushing of mole crickets with subsurface insecticide applications, use Astro with a companion mole cricket control product (such as Talstar PL Granular) and apply at the rate of 0.2 to 0.8 fluid ounces of Astro per 1,000 square feet. Applications must be made in accordance with the more restrictive of label limitations and precautions. No label application rates may be exceeded. This product cannot be used with any product with label prohibitions against such mixing.

Attention

Do not apply to pets, crops, or sources of electricity.

Firewood is not to be treated.

Use only in well ventilated areas.

Do not allow spray to contact food, foodstuffs, food contacting surfaces, food utensils or water supplies.

Dealers Should Sell in Original Packages Only.

Terms of Sale or Use: On purchase of this product buyer and user agree to the following conditions:

Warranty: FMC makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Except as so warranted, the product is sold as is. Buyer and user assume all risk of use and/or handling and/or storage of this material when such use and/or handling and/or storage is contrary to label instructions.

Use of Product: FMC's recommendations for the use of this product are based upon tests believed to be reliable. The use of this product being beyond the control of the manufacturer, no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice.

Damages: Buyer's or user's exclusive remedy for damages for breach of warranty or negligence shall be limited to direct damages not exceeding the purchase price paid and shall not include incidental or consequential damages.

Astro, U-Turn and **FMC**—Trademarks of FMC Corporation (1547-3/16/99)

REVISIONS:

1. See shaded area of page 3.
2. Remove aerial equipment reference from General Applications Instructions section.