Net Contents

Astro®
Insecticide

For Use by Individuals/Firms licensed by the State to apply insecticide products.

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.

FIRST AID	
If swallowed	• Call poison control center or doctor immediately for treatment advice. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give any liquid to the person. • Do not give anything by mouth to an unconscious person.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.

HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-(800)-331-3148 for Emergency Assistance.

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 Information Regarding the Use of this Product Call 1-800-321-1FMC (1362).

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.

FMC Corporation
Agricultural Products Group
Philadelphia PA 19103

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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.

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.

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 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

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.

Ornamental and Lawn Use
(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. Retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Repeat application is necessary only if there are signs of renewed insect activity. Repeat application should be limited to no more than once per seven days.

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.

Do not apply by air.

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.	Ants Aphids Bagworm Beet Armyworm Birch Leafminer Cabbage Looper Cankerworms Citrus Thrips Fungus Gnat Gypsy Moth Caterpillars Heliothis 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	Broadcast 4 to 8 Fl. Oz. per 100 Gals.	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	1 to 2 qts. per 100 Gals.	Apply to the lower branches and trunks prior to adult emergence. Adult emergence varies according to pest species, host tree, environmental conditions and geographic location. Thorough coverage of bark is required for control.
	Bark Beetles Dendroctonus spp., Ips spp., Elm bark beetles, Mountain pine beetle, Pine engravers, Turpentine beetles, Western pine beetle	2 to 5 qts. per 100 Gals.	
	Coleopteran borers Bronze birch borer, Flatheaded appletree borer	2 to 5 qts. per 100 Gals.	
	For maximum residual control of the above listed pests	5.35 qts. per 100 Gals.	
	Nantucket Pine Tip Moth Coneworms* Seed Bugs*	4 to 8 Fl. Oz. per 100 Gals.	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)	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.
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 1 gallon of water 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 2 gallons per 436 sq. ft, the maximum legal dilution of Astro Insecticide is ½ teaspoon per 1gallon.

TREE	PEST	RECOMMENDED RATE	CROP
Almond	Navel Orangeworm Peach Twig Borer	½ to 1 tsp. per 1 gal/436 sq. ft.	Do not harvest nuts within 7 days after application. Do not apply more than 2 tsp. per 436 sq. ft. during hull split. Do not apply more than 5 tsp. per 436 sq. ft. per year.
Apples	Green Fruitworm Oblique Banded Leafroller Plum Curculio Redbanded Leafroller Rosy Apple Aphid Spotted Tentiform Leafminer Tarnished Plant Bug White Apple Leafhopper	¼ to ½ tsp per 1 gal/436 sq. ft.	Do not apply more than 1½ tsp. per 436 sq. ft. per year.
Cherries	Green Fruitworm Lesser Peachtree Borer Plum Curculio Redbanded Leafroller Rose Chafer Tarnished Plant Bug	¼ to ½ 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	½ to 1 tsp. per 1 gal/436 sq. ft.	Do not harvest nuts within 14 days after application. Do not apply more than 4 tsp. per 436 sq. ft. per year.
Peaches	Green Fruitworm Lesser Peachtree Borer Oriental Fruit Moth Peach Twig Borer Plum Curculio Rose Chafer Tarnished Plant Bug	¼ to ¾ tsp per 1 gal/436 sq. ft.	Do not harvest fruit within 14days after application. Do not apply more than 3¾ tsp. per 436 sq. ft. per year
Pears	Pear Psylla	½ to 1 tsp. per 1 gal/436 sq. ft.	Apply only during dormant through delayed dormant growth periods. Do not apply more than 2 tsp. per 436 sq. ft. per year.
Pistachios	Leaffooted Bugs Navel Orangeworm Peach Twig Borer Plant Bugs Stinkbugs	½ to 1 tsp. per 1 gal/436 sq. ft.	Nuts may be harvested on the day of application. Do not apply more than 2 tsp. per 436 sq. ft. 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. Retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Repeat application is necessary only if there are signs of renewed insect activity. Repeat application should be limited to no more than once per seven days.

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 Ant Mounds[1] Armyworm Fire Ants Bees Carpenter Bees Bark Beetles[3] Borers[3] Boxelder Bugs[2] Centipedes Cockroaches Asian Cockroaches Crickets Mole Crickets Earwigs Elm Leaf Beetles[2] Firebrats Fleas[4] Ground Beetles Gypsy Moths (adults & Caterpillars)[2] Millipedes Scorpions Silverfish Sowbugs Spiders Wasps Ticks[4] Flies Carpenter Ants Chinchbugs[4] Pill Bugs Sod Webworm	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. [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, thoroughly but not to the point of runoff. [3] Borers and Bark Beetles: To prevent infestation of trees and woody ornaments, spray the bark thoroughly but not 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: **Lawn / Sq Ft / Oz of Astro® / Gals of Water** Small / 2,000 / 0.8 to 1.6 / 8 to 50 4,000 / 1.6 to 3.2 / 16 to 100 Medium / 6,000 / 2.4 to 4.8 / 24 to 150 Large / 12,000 / 4.8 to 9.6 / 48 to 300 Lawn should not be longer than 3 inches at the time of application. Repeat application should be limited to no more than once per seven days. Application in combination with compatible surfactants may enhance penetration. Arid climates generally require the higher volumes.

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.

Conditions of Sale and Limitation of Warranty and Liability:

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions beyond the control or FMC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold FMC and Seller harmless for any claims relating to such factors.

Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the Directions for Use when used in accordance with the directions under normal conditions of use. FMC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, NOR ANY OTHER EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE SELECTION, PURCHASE, OR USE OF THIS PRODUCT. Any warranties, express or implied, having been made are inapplicable if this product has been used contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to (or beyond the control of) seller or FMC, and buyer assumes the risk of any such use.

To the extent allowed by law, FMC or seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product. THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF FMC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF FMC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

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

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