

ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY

Soluble Insecticide

Kills fire ants

ACTIVE INGREDIENT

*Acephate.....97.4 %

OTHER INGREDIENTS.....2.6 %

Total.....100.0 %

*O,S-Dimethyl acetylphosphoramidothioate

U.S. Patent. No. 6,013,272

KEEP OUT OF REACH OF CHILDREN CAUTION

FIRST AID	
Acephate is an organophosphate, cholinesterase inhibitor.	
If swallowed:	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If in eyes:	<ul style="list-style-type: none"> • 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.
If on skin or clothing:	<ul style="list-style-type: none"> • 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 inhaled:	<ul style="list-style-type: none"> • 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.
NOTE TO PHYSICIAN This material contains a cholinesterase inhibitor. Measurement of blood cholinesterase activity may be useful in monitoring exposure but decisions regarding treatment will usually need to be made before test results are available. If signs of cholinesterase inhibition appear, atropine sulfate is antidotal. 2-PAM (PROTOPAM) is also antidotal and may be used in conjunction with atropine but should not be used alone.	

EMERGENCY INFORMATION	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. FOR THE FOLLOWING EMERGENCIES, PHONE 24 HOURS A DAY:	
For Medical Emergencies phone:	1-888-681-4261
For Product Use Information phone: AMVAC®	1-888-462-6822

For Transportation Emergencies, including spill, leak or fire, phone: CHEMTREC®.....1-800-424-9300

SEE SIDE/BACK PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND DIRECTIONS FOR USE.

EPA Reg. No. 5481-8978

Net Contents: __

EPA Est. No.



Manufactured For:
AMVAC Chemical Corporation
4695 MacArthur Court, Suite 1200
Newport Beach, CA 92660 U.S.A.
1-888-462-6822

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION

Harmful if swallowed. Avoid contact with eyes, skin and clothing. Avoid breathing dust or spray mist. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Mixers, Loaders, Applicators and Other Handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

All Mixers and Loaders and all Applicators using low pressure hand wand application equipment must 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 a HE filter.

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE 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 toxic to birds. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Cover with soil or soil-incorporate spills.

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.

This product and its degradate are 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 foraging the treatment area.

DIRECTIONS FOR USE

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

READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

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.

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.

CALIFORNIA USERS: Fieldworkers performing any type of fieldwork for trellised crops/vines must observe a 10-day reentry interval for these activities for grapes and kiwi fruit.

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 made of any waterproof material
- 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 enter or allow others to enter until sprays have dried.

TANK MIXES

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Read and follow the entire label of each product to be used in the tank mix with this product.

USE RESTRICTIONS

- Not for indoor residential use.
- For use on turf, use limited to sod farms and golf courses, except when applying to mound or spot treatment for fire ant and harvester ant control.

- Do not apply with low pressure handwand except for control of fire ants as a mound treatment and when used on ornamental trees, shrubs and floral plants grown for non-agricultural or non-commercial use.
- For greenhouse use, use is limited to commercial greenhouses for use on ornamental, floral and foliage plants.
- Do not apply through any type of irrigation equipment.
- Not for aerial application.

MIXING INSTRUCTIONS

Thoroughly clean all sprayer components prior to mixing. Add approximately 1/2 of the required amount of water to the spray tank and begin agitation. Add the required amount of ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY insecticide and mix thoroughly. Then add other tank mix partners or foliar feed additives and the remaining water. Maintain agitation during filling and spraying to ensure a uniform spray mixture.

For application equipment which has minimal agitation, proper attention to mixing the product should be given.

SPRAY DRIFT MANAGEMENT

A variety of factors including weather conditions, (e.g., wind directions, wind speed, temperature, relative humidity) and method of application (e.g., ground, airblast) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

- All application equipment must be properly maintained and calibrated using water as the carrier.
- Do not apply this product as an ultralow (ULV) spray or in any carrier other than water.
- Use the largest droplet size consistent with good pest control. Small droplets are more prone to spray drift and can be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible and by avoiding excessive spray boom pressure.
- Do not apply at wind speeds greater than 10 mph at the application site.
- Apply as close to target plants as practical to obtain a good spray pattern for adequate coverage.
- For airblast applications, direct spray above foliage and turn off outward pointing nozzles at row ends and outer rows. Apply only when wind speed is 3 to 10 mph at the application site as measured by an anemometer outside of the treated area on the upwind side.
- For ground boom applications, apply with nozzle height no more than 4 feet above the ground and when wind speed is 10 mph or less at the application site as measured by an anemometer. Use medium or coarser spray according to the ASAE 572 definition for standard nozzles or VMD for spinning atomizer nozzles.
- Do not allow spray to drift from the application site and contact people, structures people occupy at any time and the associated property, parks and recreation areas, nontarget crops, aquatic and wetland areas, woodlands, pastures, rangelands or animals.
- The applicator also must use all other measures necessary to control drift.

Resistance Management

For resistance management, ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY contains acephate, a Group 1 insecticide. Any insect population may contain individuals naturally resistant to ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY and other Group 1 insecticides. The resistant individuals may dominate the insect population if this group of insecticides are used repeatedly in the same locations. Appropriate resistance management strategies should be followed.

To delay insecticide resistance, take one or more of the following steps:

- Rotate the use of ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY or other Group 1 insecticides within the year with different groups that control the same pests.
- 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 the mixture. In addition, consider the following recommendations from the Insect 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 pests.
- 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 greater 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 insect management program for insecticide use that includes scouting, uses historical information related to pesticide use 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 pest control advisor for any additional pesticide resistance-management and/or IPM recommendations for specific site and pest problems in your area.

For further information or to report suspected resistance contact AMVAC at (1-888-462-6822). You can also contact your pesticide distributor or university extension specialist to report resistance.

SMALL VOLUME SPRAY EQUIPMENT

Preparation of Product Spray Mix Using a Small Fluid Ounce Measuring Cup	
LABEL RATES PRODUCT IN 100 GALS. OF WATER	EQUIVALENT PRODUCT IN 25 GALS. OF WATER
1/4 lb.	1 oz.
1/2 lb.	2 oz.
3/4 lb.	3 oz.
1 lb.	4 oz.

NON-BEARING CITRUS

USE RESTRICTIONS

- **CALIFORNIA USERS:** When airblast applications are being undertaken an enclosed cab is required or chemical resistant full body protection suit over long-sleeved shirt and long pants is required to be worn by the applicator.
- Do not allow livestock to graze treated areas.
- Do not harvest citrus for one year (365 days) after treatment (except mound drench treatment).
- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb. product/A.
- Do not apply pelleted product by hand.
- **CALIFORNIA USERS:** For mixer/loaders who will also apply ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY with a high pressure sprayer, do not mix and apply more than 250 gallons per day.

PLANTS	PESTS CONTROLLED	APPLICATION RATE PER ACRE	TIME OF APPLICATION	APPLICATION INSTRUCTIONS
Non-bearing Citrus (including citrus nursery seedlings)	Aphid Grasshopper Katydid Mealybugs Orangedogs Plant Bugs (Lygus) Thrips Whiteflies	1/2 lb. (8 oz.)	Apply as needed for control of existing populations.	Apply product in 100 to 200 gals. of water per acre. Spray individual juvenile or non-bearing trees for coverage with total application not to exceed specified rate in lbs. per acre. Length of residual activity will depend upon spray coverage and the amount of moisture following application.
	Citrus Blackfly* Citrus Root Weevil*	1/2 to 3/4 lb. (8 to 12 oz.)	The higher listed rate should be used when a heavy infestation of Citrus Blackfly is present. Begin applications when eggs or adults first appear. Apply on a 7 to 10 day interval or as needed to maintain control.	
Non-bearing Citrus (including citrus nursery seedlings)	Ants (excluding Carpenter, Fire, Harvester and Pharaoh)*	Foliar Spray 3/4 lb. (12 oz.)	Apply as needed for control of existing populations.	Apply product in 100 to 200 gals. of water per acre. Spray individual juvenile or non-bearing trees for coverage with total application not to exceed specified rate in lbs. per acre. Length of residual activity will depend upon spray coverage and the amount of moisture following application.
		Drench Method: Mix 3/4 oz. (3/64 lbs) in 5 gals. of water. Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a four (4) foot diameter circle around the mound. To make up a spray solution of 1 gallon volumetrically use 2 level teaspoons (0.15 oz.) of dry material.		For best results apply the material in the early morning or late afternoon when the ants are most active. Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest.

*Not registered in CA for control of Citrus Blackfly, Citrus Root Weevil and Harvester Ants.

NURSERY STOCK

Non-Bearing Deciduous Fruit Trees, Nut Trees and Vines In Nursery Fields or Non-Bearing Orchards

USE RESTRICTIONS

- Do not allow livestock to graze treated areas.
- For application only to non-bearing trees and vines in nursery fields or in non-bearing orchards.
- Do not apply to interplants or single trees in a bearing orchard.
- Do not harvest any fruit from sprayed trees for one year (365 days) after application.
- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb. product/A.
- **CALIFORNIA USERS:** Fieldworkers performing any type of fieldwork for trellised crops/vines must observe a 10-day reentry interval for these activities for grapes and kiwi fruit.
- Do not apply pelleted product by hand.

- **CALIFORNIA USERS:** When airblast applications are being undertaken an enclosed cab is required or chemical resistant full body protection suit over long-sleeved shirt and long pants and face shield is required to be worn by the applicator.
- **CALIFORNIA USERS:** For mixer/loaders who will also apply ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY with a high pressure sprayer, do not mix and apply more than 250 gallons per day.

PLANTS	PESTS CONTROLLED	APPLICATION RATE PER ACRE	TIME OF APPLICATION	APPLICATION INSTRUCTIONS
Nursery Stock (Non-bearing Deciduous Fruit Trees, Nut Trees, Vines) Almond Apple Apricot Cherry Grape Kiwi Pear Pistachio Plum Prune Walnut	Aphid Plant Bugs (Lygus) Thrips Bagworm Birch Leafminer Lace Bug Leafroller Tent Caterpillar Douglas Fir Tussock Moth Larvae Gypsy Moth Larvae Webworms Scales (Crawlers) Ponderosa Pine Needle Miner Grasshopper California Oakworm Cankerworm (Spring and Fall) Nantucket Pine Tip Moth Larvae Root Weevil Adults Box Elder Bug Budworm Leafhopper Sawflies Japanese Beetle Elm Leaf Beetle (larvae) Douglas Fir Needle Midge Douglas Fir Tussock Moth	1/2 to 1 lb. (8 to 16 oz.)	Apply as needed for control of existing populations.	Apply product in 50 to 200 gals. of water per acre by ground.

NON-CROP AREAS

Field Borders, Fencerows, Roadsides, Ditchbanks, Borrow Pits

USE RESTRICTIONS

- Do not graze or feed vegetation cut from treated areas.
- Do not treat mounds more than once per year.
- Do not use on turf for control of grasshoppers.

CROP	PESTS CONTROLLED	APPLICATION RATE PER ACRE	APPLICATION INSTRUCTIONS
Non-Crop Areas (field borders, fencerows, roadsides, ditchbanks and borrow pits)	Grasshopper	1/4 lb. (4 oz.)	For early to mid-season application to grasshopper in field borders, fencerows, roadsides, ditchbanks and borrow pits. Apply in 10 to 20 gals. of water with ground equipment. Use the higher volumes when spraying heavier foliage.

Non-Crop Areas	Ants (excluding carpenter and pharaoh)	<p>Drench Method: Mix 3/4 oz. (3/64 lbs) in 5 gals. of water. Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a 4 foot diameter circle around the mound.</p> <p>To make up a spray solution of 1 gallon volumetrically use 2 level teaspoons (0.15 oz.) of dry material.</p>	<p>For best results apply the material in the early morning or late afternoon when the ants are most active.</p> <p>Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest.</p> <p>Grass in treated area may be injured.</p>
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CONTAINER GROWN NURSERY STOCK

USE RESTRICTIONS

- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb. product/A.
- Do not apply pelleted product by hand.
- CALIFORNIA USERS:** For mixer/loaders who will also apply ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY, do not mix and apply more than 250 gallons per day.

PLANTS	PESTS CONTROLLED	AMOUNT OF PRODUCT PER 100 GALS.	TIME OF APPLICATION	APPLICATION INSTRUCTIONS
Container Grown Nursery Stock (including but not limited to: Arborvitae Azalea Camellia Rhododendron Roses Viburnum Yew)	Black Vine Weevil Strawberry Root Weevil	3/4 lb. (12 oz.)	Application should be made by mid-September for greenhouse stock and by mid-October for outdoor stock. Consult your local county extension agent for information on the identification and control of root weevils on ornamentals.	Apply the specified amount of product per 100 gals. of solution so as to thoroughly drench the root system. Before treating large plantings, spray only a few plants and observe two weeks for phytotoxicity.
	Ants (excluding Fire, Harvester, Carpenter and Pharaoh Ants)	3/4 lb. (12 oz.)	Apply as needed to control the pest.	

ORNAMENTAL TREES AND SHRUBS

USE RESTRICTIONS

- Do not exceed 16 oz. of ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY per acre per application.
- Do not apply with a low pressure hand wand.
- For foliar treatment repeat applications, use a minimum spray interval of 14 days (except flowering crabapples and Douglas Fir)
- For Douglas Fir do not make more than 1 application per year.
- For flowering crabapples do not apply more often than 3 times in a growing season at a minimum 4 week interval.
- CALIFORNIA USERS:** For crepe myrtle do not mix and apply more than 5 oz of paste per day.
- Do not apply pelleted product by hand.
- CALIFORNIA USERS:** When airblast applications are being undertaken an enclosed cab is required or chemical resistant full body protection suit over long-sleeved shirt and long pants and face shield is required to be worn by the applicator.
- CALIFORNIA USERS:** For mixer/loaders who will also apply ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY, do not mix and apply more than 250 gallons per day.

PLANTS	PESTS CONTROLLED	AMOUNT OF PRODUCT PER 100 GALS.	TIME OF APPLICATION	APPLICATION INSTRUCTIONS
Trees and Shrubs (except Flowering Crabapple)	Aphid Bagworm Birch Leafminer Lace Bug Leafroller Tent Caterpillar*	1/4 to 1/2 lb. (4 to 8 oz.)	As the insects begin to appear.	Apply the specified amount of product in 100 gals. water with a hydraulic sprayer. The addition of a suitable sticker improves control of Gypsy Moth larvae.
	Douglas Fir Tussock Moth Larvae Gypsy Moth Larvae* Webworms	1/2 lb. (8 oz.)	As the insects begin to appear.	*Mist blower application: Adjust rates to 1 lb. product per 100 gals. of water for Gypsy Moth control and 3/4 lb. product per 100 gals. of water for Tent Caterpillar control.
	Scales (Crawlers)	1/2 lb. (8 oz.)	As crawlers begin to appear. Repeat applications, at a 2 week or more interval, may be necessary where there is continuous crawler production.	AMVAC does not advise application be made to Huckleberry, Balm of Gilead, Cottonwood, Lombardy Poplar and Viburnum suspensum as it may result in phytotoxicity in these plants. Nursery crops: Before treating large plantings, spray only a few plants and observe two weeks for phytotoxicity.
	Ponderosa Pine Needle Miner	1/2 lb. (8 oz.)	Time of application is important. Consult your Farm Advisor or County Extension Agent.	Apply the specified amount of product in 100 gals. water with a hydraulic sprayer as a full coverage spray.
	Grasshopper	1/2 lb. (8 oz.)	As the grasshoppers begin to appear.	
Trees and Shrubs (except Flowering Crabapple)	California Oakworm Cankerworm (Spring and Fall)	1/4 to 1/2 lb. (4 to 8 oz.)	As the insects begin to appear. Use the higher amount when the larger larvae are present.	Apply the specified amount of product in 100 gals. water with a hydraulic sprayer.
	Nantucket Pine Tip Moth Larvae	3/4 lb. (12 oz.)	Time of application is important. Consult your Farm Advisor or County Extension Agent. Repeat applications will be required for subsequent generations.	
	Root Weevil Adults	3/4 lb. (12 oz.)	Apply when first feeding damage occurs. Repeat applications, at 4 week intervals until the first heavy frost, may be necessary for complete foliage protection.	Apply the specified amount of product in 100 gals. of water with a hydraulic sprayer as a full coverage spray.
	Box Elder Bug Budworm Leafhopper Sawflies	3/4 lb. (12 oz.)	As the insects begin to appear.	
	Japanese Beetle	1 lb. (16 oz.)	As the Japanese Beetles begin to appear. Repeat applications, at 2 week intervals, may be necessary.	Apply the specified amount of product in 100 gals. of water with a hydraulic sprayer as a full coverage spray.
	Elm Leaf Beetle (larvae)	1 lb. (16 oz.)	As the larvae begin to appear. Product will not prevent Elm Leaf Beetle eggs from hatching.	Apply the specified amount of product in 100 gals. of water with a hydraulic sprayer as a full coverage spray.
Douglas Fir	Douglas Fir Needle Midge Douglas Fir Tussock Moth	1/2 lb. (8 oz.) (1/2 lb./A)	Application should be made no more than 2 weeks prior to bud burst. For additional pest management information, consult your County Extension Service.	Apply the specified amount of product in not less than 100 gals. of spray per acre by ground.

Flowering Crabapples	Aphid Leafroller Tent Caterpillar	1/4 lb. (4 oz.)	As the insects begin to appear.	Apply the specified amount of product in 100 gals. of water with a hydraulic sprayer. Caution: Phytotoxicity has occurred on the following Crabapple varieties: Hopa, Ichonoski, Malusfloribunda, Pink Perfection, Red Wine and Snow Cloud.
Crepe Myrtle	Aphid	2 to 3 level Tbsp. (0.6 to 0.9 oz.) per 1 Tbsp. of water.	As aphids begin to appear.	Make a paint on slurry by mixing the specified amount of product with 1 Tbsp. of water. Remove the loose bark from the trunk areas to be treated. Completely paint a band around each trunk to a width twice its diameter. Application should be made to trunks within a zone 6 to 12 inches above the ground and below the point where branching begins. For multi-trunk plants be certain to treat all trunks. For either single or multi-trunk plants, application should be made as low as possible within the recommended treatment zone.

ORNAMENTAL TREES AND SHRUBS – SOIL INJECTION

USE RESTRICTIONS

- Apply the specified amount of ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY as a soil injection.
- Do not apply more than 5 lbs. of product per acre (1.84 oz. of product per 1,000 sq. ft. of area under the dripline of the tree or shrub) per application.
- Do not apply more than once per month.
- Do not apply to areas where food crops are grown (i.e., vegetable gardens, fruit trees, berry vines, etc.), children's play areas or animal runs.
- **CALIFORNIA USERS:** For mixer/loaders who will also apply ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY, do not mix and apply more than 250 gallons per day.

PLANTS	PESTS CONTROLLED	AMOUNT OF PRODUCT	APPLICATION INSTRUCTIONS
Alder American Elm Ash Aspen Birch Boxwood Crepe Myrtle Dogwood Euonymus Hackberry Hawthorn Honeylocust Honeysuckle Linden Maple Oak Rive Birch Roses Snowball Viburnum Spirea Spruce Willow	Aphids, Spider mites, Ash Sawfly*	1/10 oz. (1/160 lbs) to 1/5 oz. (1/80 lbs.) per inch diameter of trunk at breast height (DBH) Dilute 0.75 lb. (12 oz.) in 126-252 qts. of water to treat 63-126 inches of trunk diameter. To make up a solution of 1 quart volumetrically use 1.33 (0.1 oz.) to 2.67 (0.2 oz.) level teaspoons of dry material and apply using one qt. of dilution per inch of DBH and one injection site per inch of DBH. OR 1/10 oz. (1/160 lbs.) to 1/5 oz. (1/80 lbs.) per 100 sq. ft. of area under the dripline of the tree or shrub Dilute 0.75 lbs. (12 oz.) in 189-378 qts. of water to treat 6,336-12,672 sq. ft. of area under the dripline of the tree or shrub.	A minimum of two (2) injection sites per inch Diameter at Breast Height (DBH, 4' 6" above the soil line) is required. For multi-stemmed trees and shrubs, use diameter of individual canes at soil line instead of DBH. Apply one (1) quart of diluted solution per injection site. Injection sites should be evenly distributed between base of trunk and dripline of canopy. (Exceptions to this use are listed under "Use Precautions"). Make a minimum of four (4) injections per 25 sq. ft. of area under the dripline of the tree or shrub, using a grid pattern. Apply at least six (6) oz. of dilute solution per injection site. Basal Injection: Space injection holes evenly around the base of the trunk no more than 24 inches out from the base.

USE PRECAUTIONS: Use injection equipment that can be accurately calibrated. Injections must reach a minimum depth of six (6) inches. For optimal uptake, irrigate the treated area after injecting to promote absorption into the root system. Application to dry soil may decrease performance. Performance will be optimized by thorough and uniform application to the treated root system.

*Not Registered for Use in California

GOLF COURSE TURFGRASS

USE RESTRICTIONS

- Do not allow livestock to graze treated areas.
- Do not feed treated grass to livestock.
- Do not apply to turfgrass by air.
- **CALIFORNIA USERS:** Apply by ground boom only.
- Do not apply more than 4 1/8 lbs. (4.0 lbs. ai/A) of ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY to golf courses per single application.
- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb/A.
- Do not mow turfgrass for at least 24 hours after application for Greenbug or grasshopper control.
- For Sod Webworm, Greenbug and Grasshopper control do not repeat at less than 1 week intervals.
- For Mole Cricket and Spittlebug control do not irrigate after application.

PLANT	PESTS CONTROLLED	APPLICATION RATE PER 1000 SQ. FT.	TIME OF APPLICATION	APPLICATION INSTRUCTIONS
Golf Course Turfgrass	Cutworm Fall Armyworm Yellow Striped Armyworm Southern Armyworm	0.4 to 0.9 oz. (equivalent to 1 to 2 1/2 lbs./A)	As the insects appear. A repeat application at 2 week intervals may be necessary.	Apply the specified amount of product per 1,000 sq. ft. Use 1 to 5 gals. water per 1,000 sq. ft. to obtain good coverage.
	Chinch Bug	0.9 to 1.5 oz. (equivalent to 2 1/2 to 4 lbs./A)	Apply as needed for adult population knockdown (10 to 14 days).	Apply the specified amount of product per 1,000 sq. ft. Use 1 to 5 gals. water per 1,000 sq. ft. to obtain good coverage.
	Sod Webworm	0.4 to 0.8 oz. (equivalent to 1 to 2 lbs./A)	As sod webworms begin to appear. Use the higher listed rate when quick knockdown is needed or with heavy infestations. Repeat application may be necessary.	
	Leafhopper	0.8 oz. (equivalent to 2 lbs./A)	As the leafhoppers begin to appear. A repeat application at 1 week intervals may be necessary.	

Golf Course Turfgrass	Mole Cricket (except CA) Spittlebug (except CA)	0.8 to 1.4 oz. (equivalent to 2 to 3.9 lbs./A)	As mole crickets begin to appear. For knockdown of existing populations, more than one application may be required throughout the growing season. For heavy infestations, use the higher dosage rate.	<p>Apply the specified amount of product per 1,000 sq. ft. Use 1 to 5 gals. of water per 1,000 sq. ft. to obtain good coverage.</p> <p>Apply during late afternoon or early evening hours and after an irrigation.</p> <p>The use of a lemon fragrance substance in the spray mix may act as a flushing agent and thus provide increased mole cricket contact with the product. The following lemon scented products have been shown to be effective flushing agents: Lemon Joy®, Lemon Palmolive®, and Mighty Myrt® Products Manufacture Base Pure Lemon Fragrance. The use rate for these lemon-scented products is 2 tsp. per gal. of water for small total mix volumes or 6 fl. oz. per 50 gals. of water for large total mix volumes.</p>
	Greenbug (<i>Schizaphis graminum</i>) Grasshopper	0.4 oz. (equivalent to 1.0 lb./A)	Apply when insects or their damage first appears. Repeat as necessary.	Apply the specified amount of product. Use 1 to 5 gals. of water per 1,000 sq. ft. to obtain good coverage.
	Black Turfgrass Ataenius (except CA)	1.1 to 1.5 oz. (equivalent to 3 to 4 lbs./A)	Apply when insects or their damage first appear.	<p>Apply the specified Amount of product per 1,000 sq. ft. Use 1 to 5 gals. of water per 1,000 sq. ft.</p> <p>Irrigate lightly after application (not more than 1/2 inch). Use the higher listed rate for severe infestations.</p>

SOD FARM TURFGRASS

USE RESTRICTIONS

- Do not allow livestock to graze treated areas.
- Do not feed treated grass to livestock.
- Do not apply to turfgrass by air.
- Do not apply more than 3.1 lbs./A (3.0 lbs. ai/A) ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY to sod farm turfgrass in a single application.
- User must allow at least 3 days between last application and harvesting of sod.
- For Sod Webworm control do not repeat at less than 1 week intervals.
- **CALIFORNIA USERS:** Apply by ground boom only.

PLANT	PESTS CONTROLLED	APPLICATION RATE PER 1000 SQ. FT.	TIME OF APPLICATION	APPLICATION INSTRUCTIONS
Sod Farm Turfgrass	Cutworm Fall Armyworm Grasshopper Greenbug Leafhopper Sod Webworm Southern Armyworm Yellow Striped Armyworm	0.4 to 0.9 oz. (equivalent to 1 to 2 1/2 lbs./A)	As the insects appear. A repeat application at 2 week intervals may be necessary.	Apply the specified amount of product per 1,000 sq. ft. Use 1 to 5 gals. of water per 1,000 sq. ft. to obtain good coverage.
	Chinch Bugs Mole Cricket (except CA) Spittlebug (except CA)	0.9 to 1.1 oz. (equivalent to 2 1/2 to 3 lbs./A)	Apply as needed for adult population knockdown (10 to 14 days).	Apply the specified amount of product per 1,000 sq. ft. Use 1 to 5 gals. of water per 1,000 sq. ft. to obtain good coverage.

	Sod Webworm	0.4 to 0.8 oz. (equivalent to 1 to 2 lbs./A)	As sod webworms begin to appear. Use the higher listed rate when quick knockdown is needed or with heavy infestations. Repeat application may be necessary.	
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MOUND TREATMENT OF FIRE ANTS AND HARVESTER ANTS IN TURFGRASS

USE RESTRICTIONS

- Do not allow livestock to graze treated areas.
- Do not feed treated grass to livestock.
- PHI for sod farms is 3 days.
- Do not treat mounds more than once per year.

PLANT	PESTS CONTROLLED	AMOUNT OF PRODUCT	TIME OF APPLICATION	APPLICATION INSTRUCTIONS
Turfgrass Residential, Recreational, and Commercial Turf	Imported Fire Ants and Harvester Ants	Mound Treatment- Drench Method: Mix 3/4 oz. (3/64 lbs) in 5 gals. of water. Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a 4 foot diameter circle around the mound. To make up a spray solution of 1 gallon volumetrically use 2 level teaspoons (0.15 oz.) of dry material.	For best results apply the material in the early morning or late afternoon when the ants are most active. Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest.	Apply the specified amount of product as directed. Grass in treated areas may be injured.

OUTDOOR AND PERIMETER SPRAY

USE RESTRICTIONS

- Not for use on residential turf grass.
- Do not apply with a low pressure hand wand.

LOCATION	PESTS CONTROLLED	AMOUNT OF PRODUCT PER GALLON	TIME OF APPLICATION	APPLICATION INSTRUCTIONS
Outdoor and Perimeter Area.	Wasps	1.2 oz. (3/40 lbs.) To make up a spray solution of 1 gallon volumetrically use 5.33 level tablespoons (1.2 oz) of dry material.	Treat early or late in the day, as wasps are generally less active during these times.	Apply specified amount of product per each gallon of water used. Apply as a spot treatment to the nest, nest entrance, and surrounding areas where the wasps alight.

	Ants (excluding Fire, Harvester, Carpenter and Pharaoh Ants) Cockroaches Crickets Earwigs Pillbugs	1.2 oz.(3/40 lbs) To make up a spray solution of 1 gallon volumetrically use 5.33 level tablespoons (1.2 oz.) of dry material.	As the insects appear.	Apply specified amount of product per each gallon of water used. Apply to a band of soil 6 to 10 ft. adjacent to the structure and to a height of 2 to 3 ft. on the foundation where pests may be active or may find entrance. Also apply as a residual spray or with a paint brush to surfaces of buildings, window frames, shutters, entryways, screens, eaves, patios, garages, carports, around garage areas and other areas where these pests congregate.
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ORNAMENTAL PLANTS GROWN FOR CUT FLOWER PRODUCTION

USE RESTRICTIONS

- Do not apply more than 1/2 lb./A ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY per 100 gals. of water.
- Do not exceed 0.75 lb./A ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY for cut flowers.
- Do not exceed 12 ounces of product per acre.
- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 0.5 lb. ai/A and 7 days for application rates greater than 0.5 lb. ai/A.
- Do not apply pelleted product by hand.
- CALIFORNIA USERS:** For mixer/loaders who will also apply ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY with a high pressure sprayer, do not mix and apply more than 250 gallons per day.

PLANT	PESTS CONTROLLED	AMOUNT OF PRODUCT PER 100 GALS.	TIME OF APPLICATION	APPLICATION INSTRUCTIONS
Plants including but not limited to: Chrysanthemums Daisies Gladioli Roses	Aphid Lygus Thrips	8 oz. (1/2 lb.)	As insects begin to appear. Repeat applications may be necessary.	Apply the specified amount of product in 100 gals. of water with a hydraulic sprayer as a full coverage spray. Multiple applications may cause slight tip burn or marginal leaf necrosis on some varieties. Test on a few plants to determine varietal susceptibility.

GREENHOUSE (Commercial only) AND OUTDOOR ORNAMENTAL PLANTS, FLORAL CROPS, GROUND COVERS AND FOLIAGE PLANT CROPS (Plants Not Produced for Cut Flowers)

USE RESTRICTIONS

- Not for residential greenhouse use.
- Do not apply more than 12 oz. (0.75 lb.) of product per 100 gals. of water per acre.
- Do not apply with a low pressure hand wand.
- For repeat applications, use a minimum spray interval of 3 days for application rates up to and including 1/2 lb. product/A and a minimum of 7 days for rates exceeding 1/2 lb. product/A.
- Do not apply more often than once every 28 days to carnations and chrysanthemums.
- Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.
- This product is sold by weight and package is full when packed and is inclined to settle.
- Do not apply pelleted product by hand.

- **CALIFORNIA USERS:** For mixer/loaders who will also apply ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY with a high pressure sprayer, do not mix and apply more than 250 gallons per day.

PLANTS	PESTS CONTROLLED	AMOUNT OF PRODUCT PER 100 GALS.	TIME OF APPLICATION	APPLICATION INSTRUCTIONS
Carnations Chrysanthemums	Aphid Thrips	8 oz. (1/2 lb.)	As aphids begin to appear. As thrips begin to appear or at the tight flower bud stage. Repeat applications may be necessary.	Apply the specified amount of product in 100 gals. water with a hydraulic sprayer as a full coverage spray. Caution: Phytotoxicity has occurred on the following Chrysanthemum varieties: Albatross, Bonnie Jean, Dixie, Garland, Gem, Iceberg, Pride, Showoff, Statesman, Tally Ho, Westward Ho and Wild Honey. Before treating large Chrysanthemum plantings, spray only a few plants and observe two weeks for varietal phytotoxicity. Application to Chrysanthemums in flower may result in flower damage.
Floral Crops including but not limited to: Dahlias Daisies Easter Lily Gladioli <i>Gypsophila</i> Pachysandra Pansy Peony Sedum Statice Strawflower Yarrow Zinnia Foliage Plants including but not limited to: Anthuriums Cacti Orchids Poinsettia	Aphid	8 oz. (1/2 lb.)	As aphids begin to appear.	Apply the specified amount of product in 100 gals. water with a hydraulic sprayer as a full coverage spray. The addition of a wetting agent may be required on difficult to wet foliage.
	Mealybug Thrips Whitefly	8 oz. (1/2 lb.)	As the insects begin to appear. A repeat application, at a 2 week interval, may be necessary for control of mealybugs and whiteflies.	Caution: Phytotoxicity has occurred on the following foliage plants: <i>Blechnum gibbum</i> , <i>Cissus antarctica</i> , <i>Ficus triangularis</i> , <i>Fittonia verchaffeltii</i> , <i>Maranta leuconeura kerchoveana</i> , <i>Pachystachya lutea</i> , <i>Plectranthus australis</i> , <i>Polypodium aureus</i> , <i>Polystichum</i> , <i>Pteris ensiformis</i> , <i>Tolmiea menziesii</i> . Before treating large plantings spray only a few plants and observe 2 weeks for varietal phytotoxicity. Application of product on Poinsettias after bract formation may result in phytotoxicity on certain varieties.
	Scales (Crawlers)	8 oz. (1/2 lb.)	As crawlers begin to appear. Repeat applications, at a 2 week or more interval, may be necessary where there is continuous crawler production.	For sweetpotato whitefly control, apply the specified amount of product plus fenpropathrin as a tank mix at a volume necessary to obtain good coverage. Follow the appropriate fenpropathrin label(s) for specific instructions on the alternation of fenpropathrin plus acephate and fenpropathrin alone and the rotation instructions to avoid potential resistance.
	Sweetpotato Whitefly (except CA)	4 oz. (1/4 lb.) + (0.2 lb. ai) fenpropathrin	Apply when insects first appear. If a population is well established, make one application of the tank mix and follow 5 to 7 days later with fenpropathrin alone. See fenpropathrin label(s) for instructions.	
Roses	Aphid Leafroller Thrip	8 to 12 oz. (1/2 to 3/4 lb.)	As leaf rollers begin to appear. Use the higher amount when the large larvae are present.	Apply the specified amount of product in 100 gals. water with a hydraulic sprayer as a full coverage spray. Application to Roses in flower may result in flower damage.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE

Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Store in a cool, dry place. Protect from excessive heat. Do not contaminate food or foodstuffs. Do not store or transport near feed or food.

PESTICIDE DISPOSAL: To avoid wastes, use all materials in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal

program (often such programs are run by state or local governments or by industry).

CONTAINER HANDLING

Nonrefillable container. Do not reuse or refill this container. Completely empty canister into application equipment. Do not reuse container. Dispose of empty canister in a sanitary landfill, by incineration or by other procedures approved by state and local authorities. Offer for recycling if available.

For help with any spill, leak, fire or exposure involving this material, call day or night 1-888-462-6822.

LIMITED WARRANTY AND DISCLAIMER

The manufacturer warrants (a) that this product conforms to the chemical description on the label; and (b) that the directions, warnings, and other statements on this label are based upon responsible experts' evaluations of reasonable tests of effectiveness, of toxicity to laboratory animals and to plants and residues on food crops, and upon reports of field experience. Tests have not been made on all varieties of food crops and plants, or in all states or under all conditions. THIS WARRANTY DOES NOT EXTEND TO THE USE OF THIS PRODUCT CONTRARY TO LABEL INSTRUCTIONS, OR UNDER CONDITIONS NOT REASONABLY FORESEEABLE.

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