

RESTRICTED USE PESTICIDE

For retail sale and use by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's Certification.

Nufarm

Chlorpyrifos SPC 4

Insecticide

Nufarm Chlorpyrifos SPC 4 Insecticide contains chlorpyrifos, the active ingredient used in Dursban®.

For control of listed pests in the following areas: Commercial Nursery/Commercial Greenhouse (Soil treatment, Dormant Spray of Tree Pests, Pre-Plant Incorporation of Field Grown Nursery Stock); Golf Course Turf, Turf and Ornamentals Around Industrial Buildings; Turf and Ornamentals in Road Medians.

ACTIVE INGREDIENT:

Chlorpyrifos (O,O-diethyl O-(3,5,6-trichloro-2-pyridinyl) phosphorothioate) 44.70%

OTHER INGREDIENTS: 55.30%

TOTAL: 100.00%

Contains 4 pounds of chlorpyrifos per gallon. Contains petroleum distillates.

KEEP OUT OF REACH OF CHILDREN WARNING/AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand this label, find someone to explain it to you in detail.)

See inside label booklet for additional FIRST AID and PRECAUTIONARY STATEMENTS

For Chemical Spill, Leak, Fire, or Exposure, Call CHEMTREC (800) 424-9300

For Medical Emergencies Only, Call (877) 325-1840

EPA REG. NO. 228-624

Manufactured for
Nufarm Americas Inc.
11901 S. Austin Avenue
Alsip, IL 60803



Grow a better tomorrow.

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
WARNING/AVISO**

Causes skin irritation and moderate eye irritation. Harmful if swallowed. Do not get on skin or on clothing. Avoid contact with eyes.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are barrier laminate and viton. For more information, follow the instructions in Supplement Three of PR Notice 93-7. If you want more options, follow the instructions for category G on an EPA chemical-resistance category selection chart.

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

- Coveralls over long-sleeved shirt and long pants;
- Chemical-resistant gloves;
- Chemical-resistant apron when mixing or loading or exposed to the concentrate;
- Chemical-resistant footwear plus socks;
- Chemical-resistant headgear for overhead exposures;
- A NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approval number prefix TC-21C or a NIOSH-approved respirator with any R, P, or HE filter.

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

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

Engineering Controls

When handlers use closed systems or closed cab motorized ground application equipment 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 thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

FIRST AID

If swallowed:	<ul style="list-style-type: none">• Immediately call a poison control center or doctor.• Do not induce vomiting unless told to do so by a poison control center or doctor.• Do not give any liquid to the person.• 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.

HOT LINE 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 1-800-424-9300 for emergency medical treatment information.

NOTE TO PHYSICIAN

Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. Atropine, only by injection, is an antidote. This product is an organophosphorus ester that inhibits cholinesterase. Contains petroleum distillate – vomiting may cause aspiration pneumonia.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish, aquatic invertebrates, small mammals and birds. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated sites. Do not contaminate water when disposing of equipment wash water or rinsate.

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

PHYSICAL AND CHEMICAL HAZARDS

COMBUSTIBLE: 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. 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.

Aerial applications of this product are not permitted.

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), notification to workers, and restricted-entry interval. The requirements in this box apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

PPE required for early entry to treated areas (that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water), is:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves made out of any waterproof material
- Chemical-resistant footwear plus socks
- Chemical-resistant headgear for overhead exposures

Notify workers of the application by warning them orally and by posting warning signs at entrances to treated areas.

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.

SPRAY DRIFT MANAGEMENT

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.

AQUATIC BUFFERS

For ground boom applications, do not apply within 25 feet of rivers, natural ponds, lakes, streams, reservoirs, marshes, estuaries and commercial fish ponds. Apply with nozzle height no more than 4 feet above the ground or crop canopy and when wind speed is 10 mph or less at the application site as measured by an anemometer. Use fine or coarser spray according to ASAE 572 definition for standard nozzles or VMD for spinning atomizer nozzles.

SENSITIVE SITES BUFFERS

The buffer distances specified in the below table are distances in feet that must exist to separate sensitive areas from the targeted application site. Buffers are measured from the edge of the sensitive site to the edge of the application site.

Sensitive sites are areas frequented by non-occupational bystanders (especially children). These include residential lawns, pedestrian sidewalks, outdoor recreational areas such as school grounds, athletic fields, parks and all property associated with buildings occupied by humans for residential or commercial purposes. Sensitive sites include homes, and hospitals. Non-residential agricultural buildings, including barns, livestock facilities, sheds, and outhouses are not included in this prohibition.

Application rate (lb ai./A)	Nozzle Droplet Type	Required Setback (Buffer Zones) (feet)	
		Airblast	Ground
> 0.5 - 1	coarse or very coarse	10	10
> 0.5 - 1	medium	10	10
>1 - 2	coarse or very coarse	10	10
>1 - 2	medium	10	10
>2 - 3	coarse or very coarse	10	10
>2 - 3	medium or coarse	10	10
>3 - 4	medium or coarse	25	10
>4	medium or coarse	50	10

Only pesticide handlers are permitted in the setback area during application of this product. Do not apply this product if anyone other than a mixer, loader or applicator is in the setback area. Exception: Vehicles and persons riding bicycles that are passing through the setback area on public or private roadways are permitted.

At this time, the above language does not apply to non-agricultural uses such as golf course turf, greenhouses and wood products or as an adult mosquitoicide. The applicator also must use all other measures necessary to control drift.

CHEMIGATION PROHIBITION

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

PRODUCT INFORMATION TURF AND OTHER NONRESIDENTIAL OUTDOOR USES

This product is an emulsifiable concentrate for control of pests located around industrial buildings (turf and ornamentals), road medians (turf and ornamentals), and golf course turf only. Do not apply more than 1 lb. a.i./acre (1 qt./acre of this product) to golf course turf. Pests controlled by this product are listed in the following tables. This product is compatible with fungicides, insecticides and miticides commonly used except for alkaline materials such as Bordeaux mixtures and lime. A small jar compatibility test should always be conducted using proper proportions of chemicals and water to check for physical compatibility prior to tank mixing.

Precautions and Restrictions: Keep out of fish pools and other bodies of water. Do not treat vegetable gardens. Do not allow livestock to graze in treated areas. Do not feed treated grass cuttings (hay) or seed screenings to livestock or use hay for livestock bedding. Do not use this product in poultry houses.

ORNAMENTALS AROUND INDUSTRIAL BUILDINGS AND ROAD MEDIANS

Use this product to treat evergreens, vines, flowers, shrubs, shade and flowering trees, non-bearing fruit, nut and citrus trees found around industrial buildings and road medians infested with pests listed in the following table. Dilute this product with water according to the directions given in the table and apply using suitable hand- or power-operated spray equipment. Ensure complete and uniform coverage. Uniform coverage is critical for effective insect and mite control. Apply a coarse spray to thoroughly wet both upper and lower leaf surfaces and infested limb and trunk areas. Attempt to penetrate dense foliage but avoid over-spraying to the point of excessive runoff. Treat when pests appear and repeat at 7 to 10 day intervals, if needed. For application timing and other specific use information, consult your State Agricultural Experiment Station or Extension Service specialist.

Note: Environmental factors have significant effects on phytotoxic expression. This product has been tested on numerous ornamental plants without causing serious phytotoxicity at specified use rates. Some varieties of azaleas, camellias, poinsettias, rose bushes, or variegated ivy have shown varying degrees of phytotoxicity following treatment with this product. Before treating large numbers of plants (especially those previously listed), treat a small block of plants and observe for 7 to 10 days to determine phytotoxic potential.

Note: The user assumes responsibility for determining if this product is safe to treated plants under commercial growing conditions.

PEST*	Amount of Product in Water to Make		Specific Directions
	Per Acre	100 Gallons	
Adelgids (Cooley) (Eastern spruce galls) (Pine bark) Ants (including foraging fire ants) Aphids (Apple) (Chrysanthemum) (Cottonwood) (Elm leaf) (Peach) (Rose) (Spirea) (Woolly) Armyworms (Fall) (Yellowstriped) Bagworms ¹ Boxelder bugs Cankerworms Carpenter ants ² Catalpa sphinx Chiggers Citrus mealy bugs Cockroaches (American) (Brownbanded) (German) (Oriental) (Smokey brown) Elm spanworms Fall webworms ³ Grasshoppers Green fruitworms Hornworms Jackpine budworms Juniper webworms Katydid Lace bugs Leafhoppers Leafrollers ⁴ Maple leafcutters ⁵ Mites ⁶ (Clover) (Red spider) (Southern red) (Spruce spider) (Twospotted spider)	1 pt. – 1 qt.	8-16 fl. oz.	¹ Treat when bagworm larvae are small and actively feeding. ² Locate carpenter ant nest, if possible and drench thoroughly. ³ Directly spray into web and immediately adjacent foliage for control of fall webworms. ⁴ For effective control of leafrollers, spray before leaves are tightly rolled. ⁵ Apply spray to maple leafcutter larvae as cases are being formed for effective control. Do not treat sugar maple trees intended for maple syrup production. ⁶ For effective control of spider mites when large numbers of eggs are present, apply a 2 nd spray 3-5 days in the South or 7-10 days in the North after initial treatment to control newly hatched nymphs.

*Superscripts refer to Specific Directions

(Continued)

PEST*	Amount of Product in Water to Make		Specific Directions
	Per Acre	100 Gallons	
Oleander caterpillars Orange tortrix Periodical cicada Plant bugs Poplar tentmaker Psyllids Puss caterpillars Rose chafers Sawflies, exposed (Pin oak) (Pine) (Redheaded) Sowbugs Spittlebugs Spring elm caterpillars Springtails Spruce budworms (Eastern) (Western) Tent caterpillars (Eastern) (Forest) (Western) Thornbug Walnut caterpillars Whiteflies Yellownecked caterpillars	1 pt. – 1 qt.	8-16 fl. oz.	
Armyworms (Beet) Beetles (Fuller rose) (Native elm bark) ¹ Browntail moth Cutworms Leafhoppers Mahogany webworms Mealybugs Mimosa webworms Moths (Browntail) (Cypress tip) (Douglas fir tussock) (European pine shoot) (Gypsy) ² (Holly bud) (Nantucket pine tip) (Pandora) (Pitch pine tip) (Subtropical pine tip) (Tussock)	1 qt.	1 pt.	¹ Make applications in the spring or early summer to reduce twig and branch feeding by bark beetles. ² To kill migrating and invading gypsy moth larvae, treat trunks and foliage. ³ Blackvine weevils are night feeders. Late afternoon spraying will maximize control.

*Superscripts refer to Specific Directions

(Continued)

PEST*	Amount of Product in Water to Make		Specific Directions
	Per Acre	100 Gallons	
Oakworms (California) (Orangestriped) (Redhumped) Redhumped caterpillars Thrips (exposed) Weevils (Blackvine) ³ (Pine production) (Yellow poplar)	1 qt.	1 pt.	
Foliar feeding Beetles (Blister leaf) (Cottonwood leaf) ¹ (Elm leaf) (Flea) (Fuller rose) (Japanese) (June) (Willow leaf)	1 qt.	1 pt.	¹ Use this product in water to control cottonwood leaf beetle larvae and adults infesting cottonwoods. Make the treatment when field counts indicate damaging beetle populations are developing or present.
Borers ¹ Clearwing moths (Ash) (Dogwood) (Lesser peachtree) (Lilac) (Oak) (Rhododendron) Metallic wood (Bronze birch) (Flathead appletree) (Twolined chestnut) Longhorned beetles (Locust) (Red oak) Cranberry girdler larvae ² Leafminers Needleminers (Jeffrey pine) (Lodgepole pine) (Spruce)	1 qt.	1 qt.	¹ For borers, apply this product to the trunks and lower limbs of trees and shrubs when the adults begin to emerge. Consult your State Agricultural Experiment Station or Extension Service specialist for proper time to treat. Apply uniformly as a coarse low-pressure spray. Pheromone traps aid in detection of adult clearwing moths. ² Apply 1 qt. of this product for cranberry girdler larvae. Direct spray at the base of tree using 50 gallons of water per acre. Irrigate immediately after application for soil penetration of 1-2 inches. Treat after egg laying during the summer. ³ Time applications for control of scale insects when crawlers or first two stages of settled nymphs are present.

*Superscripts refer to Specific Directions

(Continued)

PEST*	Amount of Product in Water to Make		Specific Directions
	Per Acre	100 Gallons	
Scale insects ³ (Cottonycushion) (Cottony maple) (Euonymus) (Fletcher) (Florida wax) (Golden oak) (Hemispherical) (Lecanium) (Magnolia) (Oak kermes) (Oak lacanium) (Oystershell) (Pine needle) (San Jose) (Tea) (White birch) (White peach)	1 qt.	1 qt.	
Borers (Cottonwood) (Peachtree) ¹	1 qt.	3 qts.**	¹ For peachtree borers, apply this product in water to flowering trees and shrubs of the genus <i>Prunus</i> as a trunk spray before newly-hatched larvae enter the trees. Apply as a coarse, low-pressure spray. Thoroughly wet all bark areas from ground level to scaffold limbs. **When using the 3 qt. per 100 gallon dilution, do not exceed 1 qt. of this product per acre.
Beetles ¹ (Includes Wood Infesting) (Ambrosia) (Anobiidae) (Black turpentine) (Cottonwood leaf) (Elm leaf) (European elm bark) (Flea) (Fuller rose) (Japanese) (June) (Native elm bark) ² (Southern pine) (Willow leaf)	1 qt.	2 gals.***	¹ For preventative treatment, apply the spray to the main trunk of trees in the early spring or when threat of attack exists from nearby infested trees. For remedial treatment, apply the spray to the main trunk of infested trees when damage occurs but before adult beetles begin to emerge. ² To prevent native elm bark beetles from overwintering in uninfested trees, apply this product in water to the bottom 9 ft. of the trunk. Wet the trunk thoroughly but do not spray to runoff. Care should be taken to apply the spray right to the base of the root flare. Application can be made with either a backpack mistblower or a hydraulic pressure sprayer from spring through early fall. ***When using the 2-gallon per 100-gallon dilution, do not exceed 1 qt. of this product per acre.

*Superscripts refer to Specific Directions

ORNAMENTALS IN NURSERIES AND GREENHOUSES (SOIL TREATMENT) USDA QUARANTINE ONLY

Use this product to treat containerized, potted, or balled and burlapped nursery stock to control the insects in the soil attached to the roots of these plants. Completely submerge the container with drain holes or root ball stabilized by burlap in a tank containing diluted this product. Do not remove burlap wrap or plastic containers with drain holes prior to submerging. Keep the container or root ball submerged until complete soil saturation has occurred, normally about 30 seconds.

Precautions: During all operations (submerging, drenching, injecting), wear a chemical-resistant apron in addition to other PPE listed for applicators and other handlers. Make applications in a well-ventilated area.

Note: To be used in the USDA Quarantine program only.

Note: Environmental factors have significant effects on phytotoxic expression. This product has been tested on numerous ornamental plants without causing serious phytotoxicity at specified use rates. However, because of the numerous varieties grown, treat a small group of plants at the specified rate under the anticipated growing conditions and observe for at least 7 days to determine phytotoxic potential before treating a larger number of plants.

Note: The professional user assumes responsibility for determining if this product is safe to treated plants under commercial growing conditions.

PEST*	Amount of Product in Water to Make		Specific Directions
	1 Gallon	100 Gallons	
Fire Ants ¹	1/25 fl. oz.	4 fl. oz.	¹ As an alternative to submerging potted plants, dilute 4 oz. of this product in 100 gallons of water. Apply this dilution to the point of runoff twice daily for 3 consecutive days. Do not remove burlap wrap or container from plants prior to treatment.
White Grubs ² Weevils ³ (such as Blackvine)	2/3 fl. oz.	2 qts.**	² An alternative treatment to submerging containerized plants is to drench the container with the diluted insecticide solution applying approximately 10 to 12 fl. oz. of diluted insecticide solution per gallon of container size (4-5 fl. oz./100 cubic inches of container). The container media should be pre-moistened by irrigation or rainfall before drenching. Do not remove plants from container prior to treatment.
Coffee root mealybug ²	1/6 fl. oz.	1 pint	³ An alternate treatment to submerging balled and burlapped plants is to inject this product into the root ball. Equally distribute 1 to 3 quarts of the dilute product solution per cubic foot of soil volume through an injection rod inserted into the soil ball surrounding the plant roots. Uniform distribution of the insecticide throughout the soil of the root ball is critical for effective control. Insert the injection rod in at least 4 equally spaced locations around the stem of the plant at a 30-45 degree angle from the plant between the stem and the upper, outer perimeter of the ball. This technique has been shown to be most effective with small root balls (up to 1.5 ft. in diameter). Larger root balls require more injection points to ensure thorough soil distribution of the insecticide. The injection rod should be coupled to a flow meter to monitor the correct volume applied per root ball using an injection pressure of at least 30 psi. The application should be made such that splash-back and runoff are minimized. **Do not exceed more than 1 quart of this product per acre.

*Superscripts refer to Specific Directions.

ORNAMENTAL IN GREENHOUSES, INDUSTRIAL PLANT SITES AND ROAD MEDIANS (DORMANT SPRAY OF TREE PESTS)

Use this product as a dormant or delayed dormant spray at the rates indicated to control the listed insects. Use this product without oil; however, oil can be used to control additional pests such as the European red mite.

For high volume (dilute) sprays (200 to 600 gallons of spray mixture per acre), tank mix the specified dosage with 1 to 2 gallons of a petroleum spray oil specified for dormant use in 100 gallons of water. Spray the entire tree to runoff using suitable ground spray equipment.

For low volume (concentrate) sprays (less than 200 gallons of spray mixture per acre), use the same amount of this product as for a dilute spray and apply in a manner that will ensure thorough coverage of the trees. Use oil as specified by your State Agricultural Experiment Station or Extension Service specialist.

Precautions: Do not apply until rain or irrigation have replenished soil moisture such that bark and twigs are not desiccated since cold dry conditions causes this product plus oil to infuse trees resulting in bud damage or drop.

For nurseries: Do not use more than 2 pints of this product per acre.

Restrictions: Make only one application during the dormant season except for the control of the apple ermine moth. Do not allow meat or dairy animals to graze in treated areas.

PEST	Amount of Product in Water to Make			Specific Directions
	1 Gallon	3 Gallons	100 Gallons	
Aphids (Mealy plum) (Rosy apple) (Woolly apple) Borers (Peach twig) Cutworms (Climbing) Leafrollers (Pandemis) Pear psylla adults Plant bugs Scale (San Jose)	1/12-1/6 fl. oz.	¼-1/2 fl. oz.	½-1 pt.	Tank mix with 1-2 gallons of a petroleum spray oil specified for dormant use in 100 gallons of water.
Apple ermine moth	1/12 fl. oz.	¼ fl. oz.	½ pt.	For control on <i>Malus</i> species, make 2 applications at a 7-14 day interval in combination with a petroleum spray oil at the rate of 2-4% (v/v) in a spray to wet application to ensure thorough coverage of all stems and branches. When using tank mixtures, follow all label directions for the mixing partner (oil). Use appropriate application equipment and spray volumes to ensure complete coverage of the plant(s) or control will be compromised.

ORNAMENTALS IN GREENHOUSES, (PREPLANT INCORPORATION TREATMENT OF FIELD GROWN NURSERY STOCK)

White Grubs and White Fringed Beetles:

To control white grubs and white fringed beetles during transplant or seedling establishment, apply this product to soil and incorporate before transplanting or planting. Apply to the soil surface as a broadcast spray at a rate of 1 quart per acre using sufficient water to obtain adequate coverage. Do not make aerial applications. On the same day of treatment, incorporate the insecticide into the top 2 to 4 inches of the soil using a tandem disc, field cultivator or equivalent incorporation equipment capable of thorough soil mixing.

Precaution: Environmental factors and varietal variation can significantly affect the potential for phytotoxicity from pesticide use. This product has been evaluated at the above indicated rate on loblolly pine without phytotoxic effects. Prior to making large-scale applications, growers should prepare and observe a small test plot as above in order to determine the potential phytotoxicity in species or varieties other than loblolly pine. Use the following procedure: (1) Treat a small test block as above; (2) Seed or transplant the test species or variety and observe for symptoms of phytotoxicity for a minimum of 14 days following emergence or transplanting.

Note: The professional user assumes responsibility for determining if this product is safe to treated plants under commercial growing conditions.

Garden Symphylans:

Apply this product as a preplant incorporated treatment to suppress garden symphylans on land to be planted to field grown ornamentals. Apply as a broadcast application to the soil surface at the maximum rate of 1 quart per acre in at least 10 gallons of water per acre. On the same day of treatment, incorporate the insecticide to a depth of up to 8 inches using a disc, rotovator or other suitable equipment. Use the higher rate range for longer residual control or where deeper incorporation is necessary.

Precaution: Environmental factors significantly affect phytotoxicity. This product has been tested on numerous ornamental plants without causing serious phytotoxicity. However, because of the numerous varieties grown, treat a small group of plants at the specified rate under the anticipated growing conditions and observe for phytotoxic symptoms for at least 7 days, before a large number of plants are treated. Do not blend this product with dry bulk fertilizer materials.

Note: The professional user assumes responsibility for determining if this product is safe to treated plants under commercial growing conditions.

TREE PESTS IN GREENHOUSES

Use this product to treat shade and flowering trees, and evergreens infested with pests listed in the following table. Dilute this product with water according to the directions given in the table and apply using suitable hand- or power-operated spray equipment in a manner to provide complete and uniform coverage. Apply a coarse spray to thoroughly wet both the upper and lower leaf surfaces and to infested limb and trunk areas. Attempt to penetrate dense foliage, but avoid overspraying to the point of excessive runoff. Treat when pests appear and repeat application at 7 to 10 day intervals, if needed. Consult your State Agricultural Experiment Station or Extension Service specialist for application timing and other specific use information applicable to your area.

PEST*	Amount of Product in Water to Make			Specific Directions
	1 Gallon	3 Gallons	100 Gallons	
Adelgids (Cooley) (Eastern spruce gall) (Pine bark)	1/12 fl. oz.	¼ fl. oz.	8 fl. oz.	¹ Treat when bagworm larvae are small and actively feeding. ² For effective control of fall webworms, direct spray into web and immediately surrounding foliage. ³ For control of leafrollers, apply spray before leaves are tightly rolled. ⁴ Apply spray to maple leafcutter larvae as cases are being formed. Do not treat sugar maple trees intended for maple syrup production. ⁵ For effective control of spider mites, when large numbers of eggs are present, apply a second spray 3-5 days after the initial treatment in the South and 7-10 days in the North to control newly hatched nymphs.
Aphids (Apple) (Chrysanthemum) (Cottonwood) (Elm leaf) (Peach) (Rose) (Spirea) (Woolly)				
Bagworms ¹				
Boxelder bugs				
Cankerworms				
Catalpa sphinx				
Citrus mealybugs				
Elm spanworms				
Fall webworms ²				
Greenstriped mapleworms				

*Superscripts refer to Specific Directions

(Continued)

PEST*	Amount of Product in Water to Make			Specific Directions
	1 Gallon	3 Gallons	100 Gallons	
Jackpine budworms Juniper webworms Katydid Lace bugs Leafhoppers Leafrollers ³ Maple leafcutters ⁴ Mites ⁵ (Clover) (Red spider) (Southern red) Oak skeletonizers Poplar tentmakers Puss caterpillars Sawflies, exposed (Pin oak) (Pine) Spring elm caterpillars Spruce budworms Tent caterpillars (Eastern) (Forest) (Western) Walnut caterpillars Western spruce budworms Yellownecked caterpillars	1/12 fl. oz.	¼ fl. oz.	8 fl. oz.	
Beetles (Fuller rose) (Native elm bark) ¹ Leafhoppers Mahogany webworms Mealybugs Mimosa webworms Moths (Browntail) (Cypress tip) (Douglas fir tussock) (European pine shoot) (Gypsy) ² (Holly bud) (Nantucket pine tip) (Pandora) (Pitch pine tip) (Subtropical pine tip) (Tussock) Oakworms (California) (Orangestriped) (Redhumped) Redhumped caterpillars Thrips (exposed) Weevils (Blackvine) ³ (Pine reproduction) (Yellow poplar)	1/6 fl. oz.	½ fl. oz.	1 pt.	¹ To reduce foliar feeding on twigs and branches by beetles, apply in the spring or early summer. ² To kill migrating and invading gypsy moth larvae, treat trunk and foliage. ³ Blackvine weevils are night feeders. Late afternoon spraying will maximize control.

*Superscripts refer to Specific Directions

(Continued)

PEST*	Amount of Product in Water to Make			Specific Directions
	1 Gallon	3 Gallons	100 Gallons	
Beetles (Cottonwood leaf) ¹ (Elm leaf) (Flea) (Willow leaf)	1/6-1/3 fl. oz.	½-1 fl. oz.	1 pt.-1 qt.	¹ For cottonwood leaf beetles, use this product in water to control larvae and adults infesting cottonwoods. Apply when field counts indicate damaging beetle populations are developing or are present. For seedlings, use 8-20 gallons of spray volume per acre.
Borers ¹ Clearwing moths (Ash) (Dogwood) (Lesser peachtree) (Lilac) (Oak) (Rhododendron) Metallic wood (Bronze birch) (Flatheaded appletree) (Twolined chestnut) Longhorned beetles (Locust) (Red oak) Cranberry girdler larvae ² Leafminers Needleminers (Jeffrey pine) (Lodgepole pine) (Spruce) Scale insects ³ (Cottonycushion) (Cottony maple) (Euonymus) (Fletcher) (Florida wax) (Golden oak) (Hemispherical) (Lecanium) (Magnolia) (Oak kermes) (Oystershell) (Pine needle) (San Jose) (Tea) (White birch)	1/3 fl. oz.	1 fl. oz.	1 qt.	¹ For borers, apply this product to the trunks and lower limbs of trees and shrubs when the adults begin to emerge. Consult your State Agricultural Experiment Station or Extension Service specialist for proper time to treat in your area. Apply uniformly as a coarse low-pressure spray. Pheromone traps aid in detection of adult clearwing moths. ² Apply 1 quart of this product per acre to cranberry girdler larvae infesting Douglas fir seedlings. Direct spray at the lower crown and stems using 50 gals. of water per acre. Irrigate immediately after application for soil penetration of 1-2 inches. Treat after egg laying during the summer. ³ Time applications for control of scale insects when crawlers or first two stages of settled nymphs are present.
Northern pine weevil Pales weevil	1 fl. oz.	3 fl. oz.	3 qts.**	Apply as a cut stump spray or drench in winter or early spring. **Do not exceed 1 quart of this product per acre.
Borers (Cottonwood) (Peachtree) ¹	1 fl. oz.	3 fl. oz.	3 qts.**	¹ For peachtree borers, apply this product in water to flowering trees and shrubs of the genus <i>Prunus</i> as a trunk spray before newly hatched larvae enter the trees. Apply as a coarse low-pressure spray. Thoroughly wet all bark areas from ground level to scaffold limbs. **Do not exceed more than 1 quart of this product per acre.

*Superscripts refer to Specific Directions

(Continued)

PEST*	Amount of Product in Water to Make			Specific Directions
	1 Gallon	3 Gallons	100 Gallons	
Beetles ¹ (Cottonwood leaf) (Elm leaf) (Flea) (Fuller rose) (Native elm bark) ² (Willow leaf)	1 1/3 fl. oz.	4 fl. oz.	1 gal.**	<p>¹For preventative treatment, apply spray to the main trunk of trees in the early spring or when threat of attack exists from nearby infested trees. For remedial treatment, apply the spray to the main trunk of infested trees or logs when damage occurs but before adult beetles begin to emerge.</p> <p>²To prevent native elm bark beetles from overwintering in uninfested trees, apply a dilution of 1 gallon per 100 gals. of water (1 1/3 fl. oz. per gallon) as a spray to the bottom 9 ft. of the trunk. Wet the trunk thoroughly but do not spray to runoff. Care should be taken to apply the spray to the base of the root flare. Applications can be made from spring to early fall. To reduce twig and branch feeding on trees deemed to be of high value, apply as a spray to the tree crown using a dilution of 1 gallon per 100 gals. of water (1 1/3 fl. oz. per gallon). Applications should be made in the spring or early summer using a sprayer that will give thorough coverage to the tree crown.</p> <p>**Do not exceed more than 1 quart of this product per acre.</p>
Beetles ¹ (Ambrosia) (Anobiidae) (Bark) (Black turpentine) (Blister) (European elm bark) (Ips) (Japanese) (June) (Southern pine) (Spruce) Carpenter ants Termites	2 2/3 fl. oz.	8 fl. oz.	2 gals.**	<p>¹For preventative treatment, apply the spray to the main trunk of trees in the early spring or when threat of attack exists from nearby infested trees. For remedial treatment, apply the spray to the main trunk of infested trees or logs or before adult beetles begin to emerge.</p> <p>**Do not exceed more than 1 quart of this product per acre.</p>
Weevils (Such as Northern pine, Pitch eating, Twig)	5 1/3 fl. oz.	16 fl. oz.	4 gals.**	<p>Treat pine seedlings immediately after transplanting. Treat each seedling with enough spray to thoroughly wet the foliage and stem to the point of runoff.</p> <p>For nurseries, do not use more than 6 gals. of spray dilution per acre.</p> <p>**Do not use more than 1 quart of this product per acre.</p>

*Superscripts refer to Specific Directions

TURF, INDUSTRIAL PLANT, AND ROAD MEDIAN OUTDOOR USES

Apply this product to control the pests listed in the following table at the specified dosages and in accordance with the directions given below or as specified by your local Agricultural Extension Service specialist. Dilute this product in water and apply as a coarse, low-pressure spray using suitable application equipment. Except as noted, thoroughly water immediately after treatment to wash the insecticide into the turf. The area to be treated should be moist at the time of treatment. Spray when pests first appear, retreat when needed.

PEST*	Amount of Product per		Specific Directions
	1,000 sq. ft.	Acre	
Ticks ¹ (American dog) (Cattle fever) (Gulf coast) (Lone star)	¼ fl. oz.	1 ½ pts.	¹ For control of ticks, treat soil and other areas likely to serve as harborage sites for ticks that have removed themselves from their host. Spray surfaces to be treated until wet but do not create excessive runoff. Note: This application may be used as a premise spray only. Do not use as a direct spray on livestock or any sites that come in contact with livestock.
Ants (including foraging fire ants) Armyworms (Beet) (Fall) (Yellowstriped) Centipedes Chiggers ¹ Chinch bugs Clover mites Cutworms Crickets Deer ticks ² Earwigs Fiery skipper Fire ants (mounds) ³ Fleas Gnats Grasshoppers Greenbug aphids June beetles Leafhoppers Lucerne moths Millipedes Mites (Clover) (Bermudagrass stunt) (Formula grass) (Winter grain) Pillbugs Sod webworms ⁴ (Lawn moths) Sowbugs Ticks ¹	¾ fl. oz.	1 qt.	¹ Apply this product for area control of ticks and chiggers infesting golf course turf, turf in road medians and industrial plant sites where these pests are present and create a nuisance or a possible public health problem. Do not allow public use of treated areas during application or until spray has dried. Apply this product in water at the rate of ½ pint/acre (equivalent to 1/6 fl. oz. per 1,000 sq. ft.) using a hydraulic sprayer, mist applicator, knap sack sprayer, or other suitable hand- or power-operated spray equipment. Treat low underbrush, grassy areas, weeds, and ground surface and debris using enough spray volume to obtain thorough coverage, usually 40-100 gals./acre. ² Apply this product in water at the rate of 1 quart per acre or ¾ fl. oz. per 1,000 sq. ft. for control of deer ticks. Treat low underbrush, turf, grassy areas, weeds, and ground surface and debris, using enough spray volume to obtain thorough coverage. ³ For individual fire ant mounds, apply this product as a drench, diluted at the rate of 1 fl. oz. per 4 gals. of water. Gently sprinkle a total of 1 gallon of the diluted emulsion over the surface of each mound using a gentle spray (such as a sprinkler can). Thoroughly wet mound and surrounding areas to a 4 ft. diameter (12 sq. ft.). Apply in cool weather (65°F-80°F), or in early morning or late evening hours. Treat new mounds as they appear. Pressurized spray disturb the ants and cause migration, reducing product effectiveness. ⁴ For sod webworms, watering or mowing of the treated area should be delayed for 24 hours after treatment.
European crane fly	1 fl. oz.	1 qt.	
Turfgrass weevil (<i>Hyperodes</i>) ^{5, 6}	1 ½ fl. oz.	1 qt.	¹ Make application to problem areas in mid-April and again in mid-May or as specified by your local Agricultural Extension Service specialist.

*Superscripts refer to Specific Directions

(Continued)

PEST*	Amount of Product per		Specific Directions
	1,000 sq. ft.	Acre	
White grubs ^{5,6} (Black turfgrass ataeinus) (European chafer) (Japanese beetle larvae) (Southern and Northern masked chafer)	1 ½-3 fl. oz.	1 qt.	¹ Spray when white grubs are young and actively feeding near the soil surface, usually during late July and August or as specified by your local Agricultural Extension Service specialist. Immediately after spraying, irrigate the treated area with ½ to 1 inch of water to wash the insecticide deep into the thatch or into the underlying soil.
Billbug adults, such as: (Bluegrass) (Denver) (Hunting)	¾-3 fl. oz.	1 qt.	Spray early in the season when adult billbugs first appear.
Mole Crickets	1 ½ fl. oz.	1 qt.	For mole crickets in golf course turf, turf in road medians, and industrial plant site turfgrass, apply through high-pressure injection or other suitable subsurface placement application equipment. Depending on the application equipment used, follow the manufacturer's instructions for calibration and the volume of spray per acre needed to provide control or as specified by your local Agricultural Extension Service specialist. Apply when young nymphs are active.
Imported Fire Ants in commercial sod		1 qt.	Apply this product as a spray to the area of sod to be cut. Immediately after application, irrigate treated area with at least ½ acre-inch of water or a sufficient volume to thoroughly soak below the cut line. Do not apply a volume or rate of water to cause runoff. Sod can be cut when vegetation has dried and when soil is moist, but not wet.

*Superscripts refer to Specific Directions.

OUTSIDE SURFACES AND AROUND INDUSTRIAL PLANT SITES (SUCH AS AROUND WAREHOUSES, FOOD PROCESSING AND FOOD MANUFACTURING SITES)

Apply this product as a residual spray to and around outside surfaces of nonresidential buildings and structures. Permitted areas are: fences, pre-construction foundations (**Except in Florida**), refuse dumps, outside of walls, and other areas around industrial plant sites where pests congregate or have been seen. Do not allow adults, children or pets to contact treated surfaces until sprays have dried. Keep out of fish pools and other bodies of water. Do not feed treated grass cuttings (hay) or seed screenings to livestock, or use treated hay for livestock bedding. Do not treat vegetable gardens. Repeat treatment as needed to maintain effectiveness. Unless prohibited by a product's label, users, at their own discretion can tank mix pesticides currently labeled for similar use patterns. Always perform a small jar compatibility test using proper proportions to check for physical compatibility prior to tank mixing. Do not tank mix this product with products containing dichlorvos (DDVP).

PEST*	Amount of Product in Water to Make			Specific Directions
	1 Gallon	10 Gallons	50 Gallons	
	For Band Treatment ¹			
Ants Bees Beetles Boxelder bugs (or other true bugs) Carpenter ants Centipedes Clover mites Cockroaches (American) (Asian) (Brownbanded) (German) (Oriental) (Smokey brown)	¼ tsp.	¾ fl. oz.	4 fl. oz.	¹ To help prevent infestation of non-residential buildings, treat a band of soil 6-10 ft. wide around and adjacent to buildings including the building foundation to a height of 2-3 ft. where pests are active and find entrance. Use 4 fl. oz. of this product per 50 gals. of water and apply as a coarse spray at the rate of about 10 gals. of spray mixture per 1,000 sq. ft. to thoroughly and uniformly wet the band area. ² For scorpions, treat or remove accumulations of lumber, firewood, and other materials that serve as insect harborage sites. Make a thorough perimeter treatment around the structure using directions for band treatment above.

PEST*	Amount of Product in Water to Make			Specific Directions
	1 Gallon	10 Gallons	50 Gallons	
	For Band Treatment ¹			
Crickets Earwigs Elm leaf beetles (adults) Firebrats Fleas Flies Hornets Millipedes Pillbugs Scorpions ² Silverfish Sowbugs Spiders Springtails Ticks Wasps Yellowjackets	¼ tsp.	¾ fl. oz.	4 fl. oz.	
	For Outside Surfaces			** Do not exceed 1 quart of this product per acre.
	1 1/3 fl. oz.	13 1/3 fl. oz.	2 qts.**	

*Superscripts refer to Specific Directions.

ANTS AND OTHER LISTED PESTS

PEST*	Amount of Product in Water to Make			Specific Directions
	1 Gallon	3 Gallons	100 Gallons	
Ants Cockroaches (American) (Asian) (Brownbanded) (German) (Oriental) (Smokey brown) (Wood) Fire ants (foraging workers) Fire ants (mounds) ¹ Sowbugs Springtails	1/6 fl. oz.	½ fl. oz.	1 pt.	¹ For fire ant mound treatment, apply as a drench. Dilute 1 fl. oz. per 4 gallons of water. Gently sprinkle 1-2 gallons of the diluted insecticide over the surface of each mound and surrounding areas to a 2-foot diameter. Apply in cool weather (65°F-80°F), or in early morning or late evening hours. Treat new mounds as they appear. Pressurized sprays disturb the ants and cause migration, reducing product effectiveness.
Carpenter ants ²	2 2/3 fl. oz.	8 fl. oz.	2 gals.**	² Locate carpenter ant nests and drench thoroughly. **Do not exceed 1 quart of this product per acre.

*Superscripts refer to Specific Directions.

CONTROL OF WOOD-INFESTING INSECTS

Mix this product with water and apply as a general surface treatment with pressurized sprayers or other equipment suitable for applying insecticides to localized areas. Avoid contact with treated surfaces until spray has dried. Do not apply where electrical short circuits could occur. Permitted areas of use are: exposed wood surfaces, exposed junctions between wood and foundation, and gaps between wooden members. Not for use on wood in residential areas.

Mixing Directions: To make a 0.5% water based spray, mix 1 1/3 fl. oz. of this product per each gallon of spray mixture. A stable emulsion can be formed by first adding approximately one-half of the required amount of water to a spray tank followed by adding the proper amount of this product, then the remaining water. Close the tank and shake vigorously for 5 to 10 minutes.

Tank Mixing: Unless prohibited by a product's label, users, at their own discretion can tank mix pesticides currently labeled for similar use patterns. Always perform a small jar compatibility test using proper proportions to check for physical compatibility prior to tank mixing. Do not tank mix this product with products containing dichlorvos (DDVP).

Application Methods: Apply this product either by brushing onto targeted surfaces or as a coarse spray. Equipment capable of delivering a coarse, low-pressure (about 25 psi) spray is necessary for treatment of large or overhead areas. Use sufficient amount of spray dilution to cover the area to the point of wetness but avoid spraying to the point of runoff.

PEST*	Specific Directions
Beetles ¹ (Anobiidae) (Bostrichidae) (Cerambycidae) (Lyctidae) Carpenter ants ² (and other wood infesting ants) Carpenter bees Termites ³	¹ To control beetles, apply to exposed wood surfaces and in spaces between wooden members of a structure, and junctions between wood and foundations. Use the following guidelines to determine appropriate rates of application: New wood (typically less than 10 years of age), apply at about 1 gallon of dilution per 150 sq. ft. Old wood (typically greater than 10 years of age), apply at about 1 gallon of dilution per 100 sq. ft. ² Control wood-infesting ants by applying spray mixture around doors and windows, cracks or crevices, or other areas where ants enter, crawl, or hide. Primary colonies are typically found outside through an exterior inspection. Make corrections of sanitation and structural deficiencies or landscape modifications for effective control. ³ This product will kill workers and/or winged reproductive forms of termites present at the time of application only. Application of this product will not provide structural protection nor substitute for mechanical alteration, soil or foundation treatment with termiticide. This product is not to be used as sole protection against termites, as it is not intended for use for elimination of termite infestations nor for protection against future infestations. A professional inspection is encouraged.

*Superscripts refer to Specific Directions.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in original container in a secure dry storage area.

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

CONTAINER DISPOSAL:

Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. 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. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

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