

62719-254

11/7/2001

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A1A / Dursban 4E-N / Amend / 08-29-01  
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## Dursban\* 4E-N

EPA Reg. No. 62719-254

### Registration Notes:

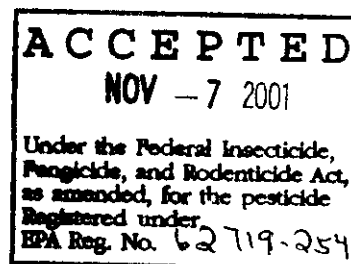
Source label text based on EPA accepted copy dated 11/02/00 with conditions of acceptance.

**Note:** This label meets the requirements of the EPA Chlorpyrifos Memorandum of Agreement dated June 7, 2000.

### Proposed Changes by Amendment:

1. **First aid statements** revised in accordance with PR-Notice 2001-1.
2. **Added** Terms and Conditions of Use section.

\*Trademark of Dow AgroSciences LLC



2719

(Base Label):

**RESTRICTED USE PESTICIDE**

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

(Logo) Dow AgroSciences

**Dursban\* 4E-N****Active Ingredient:**

chlorpyrifos: O,O-diethyl O-	
(3,5,6-trichloro-2-pyridinyl)	
phosphorothioate .....	44.9%
Inert Ingredients .....	55.1%
Total .....	100.0%

Contains 4 pounds of chlorpyrifos per gallon.

Contains xylene range aromatic solvents.

**Precautionary Statements****Hazards to Humans and Domestic Animals****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 the label, find someone to explain it to you in detail.)

**May Be Fatal If Swallowed • Absorption Through Skin May Be Fatal • Causes Substantial But Temporary Eye Injury • Causes Skin Irritation • This Product May Cause Skin Sensitization Reactions In Certain Individuals**

**Do not get in eyes, on skin, or on clothing. Avoid breathing vapors and spray mist. Handle concentrate in a ventilated area. Keep away from food, feedstuffs, and water supplies.**

**Personal Protective Equipment (PPE)**

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

**WPS Uses: Applicators and other handlers who handle this pesticide for any use covered by the Worker Protection Standard (40 CFR Part 170) – in general, agricultural-plant uses are covered – must wear:**

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves such as Barrier Laminate or Viton
- Chemical-resistant footwear plus socks
- Protective eyewear (goggles, face shield, or safety glasses with front, brow, and temple protection)
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, mixing, or loading

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**Non-WPS Uses:** Applicators and other handlers who handle this pesticide for any use NOT covered by the Worker Protection Standard (40 CFR Part 170) – in general, only agricultural-plant uses are covered by the WPS – must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as Barrier Laminate or Viton
- Chemical-resistant footwear plus socks
- Protective eyewear (goggles, face shield, or safety glasses with front, brow, and temple protection)

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

### User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- 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.

### First Aid

#### Organophosphate

**If swallowed:** Call 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 do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

**If on skin or clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call poison control center or doctor for treatment advice.

**If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**If inhaled:** Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

**Note to physician:** Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. If exposed, plasma and red blood cell cholinesterase tests may indicate significance of exposure (baseline data are useful). Atropine, only by injection, is the preferable antidote. Oximes, such as 2-PAM/protopam, may be therapeutic if used early; however, use only in conjunction with atropine. In case of severe acute poisoning, use antidote immediately after establishing an open airway and respiration.

### Environmental Hazards

This pesticide is toxic to birds and wildlife, and extremely toxic to fish and aquatic organisms. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. Cover or incorporate spills. Do not contaminate water when disposing of equipment, washwaters. 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.

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**Physical or Chemical Hazards**

Do not use or store near heat or open flame. Do not cut or weld container.

**Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for requirements about this standard.

Refer to label booklet for Directions for Use including Storage and Disposal.

**Notice:** Read the entire label. Use only according to label directions. **Before buying or using this product, read Warranty Disclaimer and Limitation of Remedies inside label booklet.**

In case of emergency endangering health or the environment involving this product, call collect 517-636-4400.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-254

EPA Est. 464-MI-1

\*Trademark of Dow AgroSciences

Dow AgroSciences • Indianapolis, IN 46268 USA

**Specialty Insecticide**

**Net Contents \_\_ gal**

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(Label Booklet):

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(3,5,6-trichloro-2-pyridinyl)

phosphorothioate ..... 44.9%

Inert Ingredients ..... 55.1%

Total ..... 100.0%

Contains 4 pounds of chlorpyrifos per gallon.

Contains xylene range aromatic solvents.

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**Refer to inside of label booklet for additional precautionary information including Personal Protective Equipment (PPE), User Safety Recommendations, and Directions for Use including Storage and Disposal.**

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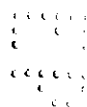
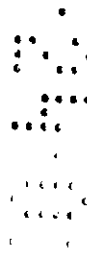
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**Specialty Insecticide**Net Contents      gal.

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**Precautionary Statements**

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- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves such as Barrier Laminate or Viton
- Chemical-resistant footwear plus socks
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**Physical or Chemical Hazards**

**Do not use or store near heat or open flame. Do not cut or weld container.**

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**Directions for Use**

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It is a violation of federal law to use this product in a manner inconsistent with its labeling.  
**Read all Directions for Use carefully before applying.**

**Chemigation: Do not apply this product through any type of irrigation system.**  
**Do not formulate this product into other end-use products.**

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.



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### 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. Certified crop advisors or persons entering under their direct supervision under certain circumstances may be exempt from the early reentry requirements pursuant to 40 CFR Part 170.

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 such as Barrier Laminate or Viton
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

### 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.

- Adults, children, or pets should not contact treated surfaces until the spray has dried.

### Storage And Disposal

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

**Storage:** Store in original container in secured dry storage area. Prevent cross-contamination with other pesticides and fertilizers. Do not store above 100°F for extended periods of time. Storage below 20°F may result in formation of crystals. If product crystallizes, store at 50 to 70°F and agitate to redissolve crystals. If container is damaged or spill occurs, use product immediately or dispose of product and damaged container as indicated below.

**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.

**Metal Container Disposal:** Triple rinse (or equivalent). Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or by other procedures approved by state or local authorities.

**Plastic Container Disposal:** Triple rinse (or equivalent). Then puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Reusable Portable Container Disposal:** Do not rinse or put any other material into container. When returning reusable portable container, seal all openings and return to Dow AgroSciences.

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## General Information

Dursban® 4E-N insecticide is an emulsifiable concentrate for use to control pests injurious to turf, ornamentals, and fruit, nut, and citrus trees. The pests controlled are listed in the accompanying tables. Dursban 4E-N is compatible with insecticides, miticides, and fungicides commonly recommended except for alkaline materials such as Bordeaux mixture and lime. It is always recommended that a small jar compatibility test using proper proportions of chemicals and water be run to check for physical compatibility prior to tank mixing.

**Attention:** Keep out of fish pools and other bodies of water. 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 in poultry houses or greenhouses. Use in outdoor residential areas or vegetable gardens is prohibited.

## Ornamentals in Nurseries

**Use Dursban 4E-N to treat flowers, shrubs, evergreens, vines, shade and flowering trees, and non-bearing fruit, nut and citrus trees found to be infested with the types of pests listed in the following tables.**

Dilute Dursban 4E-N with water according to directions given in the tables and apply using suitable hand- or power-operated spray equipment in a manner to provide complete and uniform coverage. Attempt to penetrate dense foliage, but avoid over-spraying to the point of excessive runoff. When using spray equipment delivering less than 200 gallons of finished spray per acre, use the rate recommended in the per acre column. Uniform coverage is critical for effective insect and mite control.

Consult your State Agricultural Experiment Station or Extension Service Specialist for application timing and other specific use information.

**Note: Phytotoxicity:** Environmental factors and varietal differences have significant effects on phytotoxic expression. Dursban 4E-N insecticide has been tested on numerous ornamental plants without causing serious phytotoxicity at recommended use rates. Some varieties of azaleas, camellias, poinsettias, roses, and variegated ivy have shown varying degrees of phytotoxicity following treatment with Dursban 4E-N insecticide. Before treating large numbers of plants (especially those above), it is recommended that a small block of plants be treated and observed for 7 to 10 days to determine phytotoxic potential. **Note:** The professional user assumes responsibility for determining if Dursban 4E-N is safe to treated plants under commercial growing conditions.

## Sucking Insects and Mites

Pest	Amount of Dursban 4E-N per		
	1 gallon	100 gallons	Acre
Adelgids (Such as: Cooley and Eastern spruce galls, Pine bark) Aphids (Such as: Apple, Balsam twig, Black pecan, Chrysanthemum, Cottonwood, Crape myrtle, Elm leaf, Melon, Peach, Rose, Spirea, White pine, Woolly, Woolly apple, Yellow pecan) Boxelder bugs Lace bugs (Such as: Hawthorn) Periodical cicada Plant bugs Psyllids Spittlebugs Thornbug Whiteflies	1/12 - 1/6 fl oz	8 fl oz - 1 pt	1 pt - 1 qt
Leafhoppers Mealybugs (Such as: Citrus, Taxus) Mites (Such as: Clover, Red spider, Southern red, Spruce spider, Twospotted spider) (1) Thrips (exposed)	1/6 fl oz	1 pt	1 qt

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Scale insects (Such as: Cottony cushion, Cottony maple, Dearness, Euonymus, Fletcher, Florida wax, Golden oak, Hemispherical, Lecanium, Magnolia, Oak kermes, Oak lecanium, Oystershell, Pine needle, San Jose, Tea, White birch) (2)	1/3 fl oz	1 qt	1 - 2 qt
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**Specific Directions:**

1. For effective control of **spider mites** when large numbers of eggs are present, apply a second spray 3 to 5 days in the South or 7 to 10 days in the North after initial treatment to control newly hatched nymphs.
2. Time applications for control of **scale insects** when crawlers or first two stages of settled nymphs are present.

**Defoliators and Leafminers**

Pest		Amount of Dursban 4E-N per		
		1 gallon	100 gallons	Acre
Armyworms (Such as: Fall, Yellowstriped)	Orange tortrix	1/12 - 1/6 fl oz	8 fl oz - 1 pt	1 pt - 1 qt
Bagworms (1)	Poplar tentmaker			
Cankerworms	Puss caterpillars			
Catalpa sphinx	Rose chafers			
Elm spanworms	Sawflies, exposed (Such as: European pine, Pine, Pin oak, Redheaded)			
Fall webworms (2)	Spring elm caterpillars			
Grasshoppers	Springtails			
Greenstriped mapeworms	Spruce budworms (Such as: Eastern, Western)			
Green fruitworms	Tent caterpillars (Such as: Eastern, Forest, Western)			
Hornworms	Walnut caterpillars			
Jackpine budworms	Yellownecked caterpillars			
Juniper webworms				
Katydid				
Leafrollers (3)				
Maple leafcutters (4)				
Oak skeletonizers				
Oleander caterpillars				
Balsam gall midge	Mimosa webworms	1/6 fl oz	1 pt	1 qt
Beet armyworms	Nantucket pine tip moth			
Beetles (Such as: Fuller rose) (5)	Oakworms (Such as: California, Orangestriped, Redhumped)			
Browntail moth	Pandora moth			
Cutworms	Pitch pine tip moth			
Cypress tip moth	Redhumped caterpillars			
Douglas-fir tussock moth	Subtropical pine tip moth			
European pine shoot moth	Tussock moth			
Gypsy moth (6)				
Holly bud moth				
Mahogany webworms				
Beetles (Such as: Cottonwood leaf (7), Elm leaf, Flea, Willow leaf)		1/6 - 1/3 fl oz	1 pt - 1 qt	1 qt
Leafminers		1/3 fl oz	1 qt	1 - 2 qt
Needleminers (Such as: Jeffrey pine, Lodgepole pine, Spruce)				
Pine needle midge				
Rhododendron gall midge				

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**Specific Directions:**

1. For **bagworms**, treat when larvae are small and actively feeding.
2. For effective control of **fall webworms**, direct spray into web and immediately surrounding foliage.
3. For effective control of **leafrollers**, spray should be applied before leaves are tightly rolled.
4. For **maple leafcutter** on maple trees, apply spray to larvae as cases are being formed. Do not treat sugar maple trees intended for maple syrup production.
5. To reduce foliar feeding on twigs and branches by **beetles**, applications should be made in the spring or early summer.
6. To control migrating and invading **gypsy moth larvae**, treat trunks and foliage.
7. For **cottonwood leaf beetles**, spray larvae and adults infesting cottonwoods. Applications should be made when damaging beetle populations are developing or present.

**Borers, Bark Beetles, and Weevils**

Pest		Amount of Dursban 4E-N per		
		1 gallon	100 gallons	Acre
Weevils	(Such as: Black vine (1), Pine reproduction, Yellow poplar)	1/6 fl oz	1 pt	1 - 2 qt
	Cranberry girdler (2)	1/6 fl oz	1 pt	-
Borers: Clearwing moths (Such as: Ash, Dogwood, Lesser peachtree, Lilac, Oak, Peachtree, Rhododendron), Longhorned beetles (Such as: Cottonwood, Locust, Red oak), Metallic wood (Such as: Bronze birch, Flatheaded apple tree, Twolined chestnut) (3)		1/3 fl oz	1 qt	-
Pales weevil adults Zimmerman pine moth				
Northern pine weevil (4) Pales weevil (4)		1 fl oz	3 qt	-
Beetles (5): (Such as: Ambrosia, Anobiidae, Black turpentine, Blister, Cottonwood leaf, Elm leaf, European elm bark, Fuller rose, Japanese, June, Mountain pine, Native elm bark (6), Southern pine, Spruce, Western pine, Willow leaf)		2-2/3 fl oz	2 gal	-
Weevils (Such as: Northern pine, Pitch eating, Twig) (7)		5-1/3 fl oz	4 gal	-

**Specific Directions:**

1. **Black vine weevils** are night feeders. Late afternoon spraying will maximize control.
2. For **cranberry girdler** larvae infesting Douglas-fir seedlings, direct spray at lower crown and stems following egg laying during summer. **For nurseries:** apply a minimum of 50 gallons of dilute spray per acre and irrigate immediately after application to move the insecticide into the top 1 to 2 inches of soil.
3. For **borers**, spray trunks and lower limbs of trees and shrubs when adults begin to emerge. For **peachtree borers**, spray flowering trees and shrubs of the genus *Prunus* as a trunk spray before newly-hatched larvae enter the trees and thoroughly wet all bark areas from ground level to scaffold limbs. Pheromone traps made aid in detection of adult clearwing moths. Consult your State Agricultural Experiment Station or Extension Service Specialist for proper time to treat.
4. For control of **northern pine and pales weevil** larvae, apply as a cut stump spray or drench in winter or early spring.
5. For **preventive treatment**, spray the main trunk of trees in the early spring or when threat of attack exists from nearby infested trees. For **remedial treatment**, spray the main trunk of infested trees or logs before adult beetles begin to emerge.
6. To prevent **native elm bark beetles** from over-wintering in uninfested trees, apply using a dilution of 1 gal per 100 gallons of water (1 1/3 fl oz per gallon) as a spray to the bottom 9 feet of 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. 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 gal per 100 gallons 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.

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7. For pine seedlings, treat immediately after transplanting. Treat each seedling with enough spray to thoroughly wet the foliage and stem to the point of runoff. **For nurseries:** do not use more than 6 gallons of spray dilution per acre.

#### Ants, Termites, and Miscellaneous Pests

Pest	Amount of Dursban 4E-N per		
	1 gallon	100 gallons	Acre
Ants Cockroaches (Such as: American, Asian, Brownbanded, German, Oriental, Smokybrown, Wood) Fire ants (foraging workers) Fire ants (mounds) (1) Sowbugs Springtails	1/6 fl oz	1 pt	1 qt
Carpenter ants (2) Termites	2-2/3 fl oz	2 gal	-

#### Specific Directions:

- For individual **fire ant mounds** apply Dursban 4E-N as a drench. Dilute 1 fl oz per 4 gallons of water. Gently sprinkle 1 to 2 gallons of the diluted insecticide over the surface of each mound and surrounding areas to a 2 foot diameter. For best results, apply in cool weather, 65-80° F, or in early morning or late evening hours. Treat new mounds as they appear. Pressurized sprays may disturb the ants and cause migration, reducing product effectiveness.
- If possible, locate **carpenter ant nests** and drench thoroughly.

#### Dormant Spray for Tree Pests (Nurseries, Road Medians, Industrial Plant Sites, Orchards)

Use Dursban 4E-N as a dormant or delayed dormant spray at the rates indicated to control the listed insects. While Dursban 4E-N may be used without oil, oil is recommended to control additional pests such as 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 recommended for dormant use per 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 Dursban 4E-N as for a dilute spray and apply in a manner that will ensure thorough coverage of the trees. Use oil as recommended by your State Agricultural Experiment Station or Extension Service Specialist.

**Precautions:** Because cold dry conditions may cause Dursban 4E-N plus oil to infuse trees resulting in bud damage or drop, do not apply until rain or irrigation has replenished soil moisture such that bark and twigs are not desiccated. Do not use more than 4 pints of Dursban 4E-N insecticide per acre.

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

Pest	Amount of Dursban 4E-N per	
	1 gallon	100 gallons
Apple ermine moth (1)	1/12 fl oz	1/2 pt
Aphids (Such as: Mealy plum, Rosy apple, Woolly apple) Borers (Such as: Peach twig) Cutworms (Such as: Climbing) Leafrollers (Such as: Obliquebanded, Pandemis) Pear psylla adults Scale insects (Such as: San Jose)	1/12 - 1/6 fl oz	1/2 - 1 pt

#### Specific Directions:

- For control of apple ermine moth on *Malus* species, make 2 applications at a 7 - 14 day interval of Dursban 4E-N insecticide in combination with a petroleum spray oil at the rate of 2 - 4%

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(volume:volume) in a spray to wet application to ensure thorough coverage of all stems and branches. When using tank mixtures, also 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 (Soil Treatment of Containerized or Balled and Burlapped Nursery Stock)

Use Dursban 4E-N insecticide to treat containerized (potted) or balled and burlapped nursery stock to control soil insects.

Pest	Amount of Dursban 4E-N per	
	1 gallon	100 gallons
Fire ants (1)	1/25 fl oz	4 fl oz
Coffee root mealybug (2)	1/6 fl oz	1 pt
Weevils (Such as: Black vine) (2)	2/3 fl oz	2 qt
White grubs (3)		

#### General Use Directions

Completely submerge the container with drain holes or root ball stabilized by burlap in a tank containing diluted Dursban 4E-N insecticide. Do not remove burlap wrap or 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 chemical resistant apron in addition to other PPE listed for applicators and other handlers. Application should be made in a well-ventilated area.

Environmental factors significantly affect phytotoxicity. Dursban 4E-N has tested on numerous ornamental plants without causing serious phytotoxicity. However, because of the numerous varieties grown, it is recommended that a small group of plants be treated at the recommended rate under the anticipated growing conditions and observed for phytotoxic symptoms for at least 7 days, before a large number of plants are treated. **Note:** The professional user assumes responsibility for determining if Dursban 4E-N is safe to treated plants under commercial growing conditions.

#### Specific Directions:

1. An alternative treatment to submerging containerized or balled and burlapped plants is to drench the soil ball or container with the diluted insecticide solution to the point of runoff on a twice-daily schedule for three consecutive days. Do not remove burlap wrap or container from plants prior to treatment.
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 container from plants prior to treatment.
3. An alternate treatment to submerging balled and burlapped plants is to inject Dursban 4E-N insecticide into the root ball. Equally distribute 1 to 3 quarts of the dilute solution of Dursban 4E-N 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. It is recommended that the injection rod be inserted in at least four 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 diameter). Larger root balls may 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 most 30 psi. The application should be made such that splash-back and runoff are minimized.

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## Ornamentals (Pre-Plant Incorporation Treatment of Field Grown Nursery Stock)

### White Grubs and White Fringed Beetles

Apply Dursban 4E-N insecticide to soil and incorporate before transplanting or planting to control white grubs and white fringed beetles during transplant or seedling establishment. Apply to the soil surface as a broadcast spray at a rate of 4 quarts per acre using sufficient water to obtain adequate coverage. Do not aerially apply. On the same day of the 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. Dursban 4E-N insecticide has been evaluated at the above indicated rate on loblolly pine without phytotoxic effects. 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. The following procedure should be used: 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 Dursban 4E-N is safe to treated plants under commercial growing conditions.

### Garden Symphylans

Apply Dursban 4E-N insecticide 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 rate of 2 - 4 quarts 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 or where deeper incorporation is necessary.

**Precaution:** Environmental factors significantly affect phytotoxicity. Dursban 4E-N insecticide has been tested on numerous ornamental plants without causing serious phytotoxicity. However, because of the numerous varieties grown, it is recommended that a small group of plants be treated at the recommended rate under the anticipated growing conditions and observed for phytotoxic symptoms for at least 7 days, before a large number of plants are treated. Do not blend Dursban 4E-N insecticide with dry bulk fertilizer materials. **Note:** The professional user assumes responsibility for determining if Dursban 4E-N is safe to treated plants under commercial growing conditions.

## Non-bearing Fruit, Nut and Citrus Trees in Nurseries

Use Dursban 4E-N to treat non-bearing **almond, apple, cherry, filbert, nectarine, peach, pecan, walnut and citrus trees or tree fruit** (such as: **grapefruit, lemon, orange**) by spraying to the point of runoff. When treating citrus trees only, a petroleum spray oil recommended for use on citrus trees may be added to spray mixtures only at rates of up to 1.8 gallons per 100 gallons of water to improve control of aphids, mealybugs, scale insects, and thrips. Treat when insects become a problem or in accordance with the local spray schedule recommended by your State Extension Service Specialist.

### Precautions:

Do not apply as a foliar spray to **sweet cherries** because contact of spray solution with leaves may result in premature leaf drop. Observe local use directions for tank mix combinations especially with applications of Dursban 4E-N plus spray oil. Do not apply Dursban 4E-N in combination with oil to **walnuts**. Dry or cold conditions may cause Dursban 4E-N plus oil to infuse trees resulting in bud damage or drop; do not apply until rain or irrigation has replenished soil moisture such that bark and twigs are not desiccated. Do not apply when trees are stressed by drought.

Pest	Amount of Dursban 4E-N per		
	1 gallon	100 gallons	Acre

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Aphids (Such as: Apple, Black cherry, Black pecan, Filbert, Rosy apple, Woolly apple, Yellow pecan) Apple maggot Borers (Such as: American plum, Dogwood, Lesser peachtree, Pacific flatheaded, Peach twig, Peachtree, Shothole) Cherry fruit fly Climbing cutworm Codling moth European apple sawfly European corn borer Eyespotted bud moth Fall webworm Filbert worm Grasshoppers (Such as: Lubber) (1) Green fruitworm Hickory shuckworm Katydid Leaf rollers and tiers (Such as: Avocado leafroller, Filbert leafroller, Fruittree leafroller, Obliquebanded leafroller, Omnivorous leaftier, Orange tortrix, Pandemis leafroller, Redbanded leafroller, Variegated leafroller)	Lepidopterous larvae Lesser appleworm Lygus sp. Mealybugs Mineola moth Mites (Such as: Citrus rust, European red, Pecan leaf scorch, Twospotted spider) (2) Navel orangeworm Oriental fruit moth Pecan nut casebearer Pecan weevil Periodical cicada Phylloxera spp. Plum curculio Potato leafhopper Rose chafer Scale insects (Such as: European fruit lecanium, San Jose, Walnut) Spittlebug Spotted tentiform leafminer Stinkbug Tarnished plant bug Thrips (Such as: Citrus) Tufted apple budmoth Walnut husk fly Western tussock moth White apple leafhopper Winter moth	1/6 - 1/3 fl oz †	1 pt - 1 qt †	1 - 2 qt
Scale insects (Such as: Black scale, Brown soft scale, California red scale, Chaff scale, Florida red scale, Long scale, Purple scale, Snow scale) (3)		1/3 - 2/3 fl oz	1 - 2 qt	2 - 4 qt

**Specific Directions:**

1. **Lubber grasshoppers** must be controlled when they are small (less than 1 inch in length) by direct contact with spray.
2. For effective control of **spider mites** when large numbers of eggs are present, apply a second spray 3 to 5 days in the South or 7 to 10 days in the North after initial treatment to control newly hatched nymphs.
3. Time applications for control of **scale insects** when crawlers or first two stages of settled nymphs are present.

**Turf in Golf Courses, Road Medians and Industrial Plant Sites**  
**(Maximum Use Rate of 2 lb (1 lb a.i.)/Acre)**

Labeled turf uses within this section of the label are not within the scope of the WPS. Follow reentry requirements in the "Non-agricultural Use Requirements" box under "Directions for Use".

Use Dursban 4E-N to control the pests listed in the following table by application at the recommended dosages. Dilute Dursban 4E-N in water and apply using suitable application equipment. For best results, turf should be moist at time of treatment.



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Pest	Amount of Dursban 4E-N per	
	1,000 sq. ft.	Acre
Ants	3/4 fl oz	1 qt
Armyworms (Such as: Beet, Fall, Yellowstriped)		
Centipedes		
Chiggers (1)		
Chinch bugs		
Crickets		
Cutworms		
Deer ticks (2)		
Earwigs		
European crane fly larvae		
Fiery skipper		
Fire ants (foraging workers)		
Fire ants (mounds) (3)		
Fleas		
Gnats		
Grasshoppers		
Greenbug aphids		
Green June beetle grubs		
Leafhoppers		
Lucerne moth		
Millipedes		
Mites (Such as: Clover, Bermudagrass stunt, Winter grain)		
Mosquitoes (4)		
Pillbugs		
Sod webworms (lawn moths) (5)		
Sowbugs		
Ticks (1)		

**Specific Directions:**

1. Use Dursban 4E-N for area control of **ticks** and **chiggers** infesting golf courses, 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 Dursban 4E-N insecticide in water at the rate of 1/2 pint per acre (1/6 fl oz per 1,000 sq ft) using a hydraulic sprayer, mist applicator, backpack sprayer, or other suitable hand- or power-operated spray equipment.
2. For control of **deer ticks** apply Dursban 4E-N in water at the rate of 1 quart per acre or 3/4 fl oz per 1,000 sq ft. 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 Dursban 4E-N as a drench. Dilute 1 fl oz per 4 gallons of water. Gently sprinkle 1 to 2 gallons of the diluted insecticide over the surface of each mound and surrounding areas to a 2 foot diameter. For best results, apply in cool weather, 65-80° F, or in early morning or late evening hours. Treat new mounds as they appear. Pressurized sprays may disturb the ants and cause migration, reducing product effectiveness.
4. **Mosquitoes** coming to rest on areas treated for control of turf pests will be controlled for varying periods of time after treatment depending on exposure of treated areas to weathering conditions.
5. For **sod webworms**, watering or mowing of the treated area should be delayed for 12 to 24 hours after treatment.

**Turfgrass Grown for Sod or Seed (Agricultural Use)**

**Agricultural Use Requirements:** When applied in turfgrass grown for seed or in sod farms, follow reentry interval and PPE requirements for early entry in the "Agricultural Use Requirements" box under "Directions for Use".

Use Dursban 4E-N to control the pests listed in the following table by application at the recommended dosages. Dilute Dursban 4E-N in water and apply using suitable application equipment. For best results, turf should be moist at time of treatment.

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Pest	Amount of Dursban 4E-N per	
	1,000 sq. ft.	Acre
Ants Armyworms (Such as: Beet, Fall, Yellowstriped) Centipedes Chiggers Chinch bugs Crickets Cutworms Deer ticks Earwigs European crane fly larvae Fiery skipper Fire ants (foraging workers) Fire ants (mounds) (1) Fleas Gnats	Grasshoppers Greenbug aphids Green June beetle grubs Leafhoppers Lucerne moth Millipedes Mites (Such as: Clover, Bermudagrass stunt, Winter grain) Mosquitoes Pillbugs Sod webworms (lawn moths) (2) Sowbugs Ticks	3/4 fl oz 1 qt
Billbug adults (Such as: Bluegrass, Denver, Hunting) (3)	3/4 - 1 1/2 fl oz	1 - 2 qt
Annual bluegrass weevil ( <i>Hyperodes</i> ) (4)	1 1/2 fl oz	2 qt
Black turfgrass ataenius adults (5)		
Mole crickets (6)		
White grubs (Such as: Black turfgrass ataenius, European chafer, Japanese beetle larvae, and Northern and Southern masked chafers) (7)	1 1/2 - 3 fl oz	2 - 4 qt

**Specific Directions:**

- For individual **fire ant mounds** apply Dursban 4E-N as a drench. Dilute 1 fl oz per 4 gallons of water. Gently sprinkle 1 to 2 gallons of the diluted insecticide over the surface of each mound and surrounding areas to a 2 foot diameter. For best results, apply in cool weather, 65-80° F, or in early morning or late evening hours. Treat new mounds as they appear. Pressurized sprays may disturb the ants and cause migration, reducing product effectiveness.
- For **sod webworms**, watering or mowing of the treated area should be delayed for 12 to 24 hours after treatment.
- For **billbugs**, spray early in the season just prior to or coinciding with first appearance of adults as recommended by your local Agricultural Extension Service Specialist.
- To control **annual bluegrass weevil**, spray suspected problem areas in mid-April and again in Mid-May, or as recommended by your local Agricultural Extension Service Specialist.
- For **black turfgrass ataenius** adults, spray early in the season as recommended by your local Agricultural Extension Service Specialist. A repeat application may be needed 1 to 2 weeks later.
- To control **mole crickets** in turfgrass, apply Dursban 4E-N through high pressure injection or other suitable subsurface placement application equipment. Depending on the application equipment used, follow the manufacturer's recommendation for calibration and the volume of spray per acre needed to provide control or as recommended by your local Agricultural Extension Service Specialist. For best results, apply when young nymphs are active.
- For **white grubs**, spray when grubs are young and actively feeding near the soil surface, usually during late July and August or as recommended by your local Agricultural Extension Service Specialist. For best results, soil should be moist prior to treatment. **For best results, immediately after spraying, irrigate the treated area with 1/2 to 1 inch of water to wash the insecticide deep into the thatch or into the underlying soil.**

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**Terms and Conditions of Use**

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If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. Otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitations of Remedies.

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**Warranty Disclaimer**

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Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. SELLER MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

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**Inherent Risks of Use**

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It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperature, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of the Seller. All such risks shall be assumed by buyer.

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**Limitation of Remedies**

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The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Seller's election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used

Seller shall not be liable for losses or damages resulting from handling or use of this product unless Seller is promptly notified of such loss or damage in writing. In no case shall Seller be liable for consequential or incidental damages or losses.

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