

P.Y. 19 62719-11  
MAY 30 1991

Dr. Jeffrey Pinkham  
DowElanco  
Suite IV, 9002 Purdue Road  
Indianapolis, Indiana 46268-1189

Subject: Revised Labeling  
Dursban 4E Insecticide  
EPA Registration Number 62719-11  
Your Application Dated March 26, 1991

Dear Dr. Pinkham:

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable provided that you make the labeling change given below before you release the product for shipment bearing the amended labeling.

On Page 5, in the section, "Pest Control on Outside Surfaces and Around Buildings," add a footnote for cockroaches:

Controls American and smokey brown cockroaches

Submit five (5) copies of your final printed labeling before you release the product for shipment.

A stamped copy of the labeling is enclosed for your records.

Sincerely yours,

Dennis H. Edwards, Jr.  
Product Manager (12)  
Insecticide Rodenticide Branch  
Registration Division (H7505C)

Enclosure

# Specimen Label

ACCEPTED  
with COMMENTS  
in EPA Letter Dated

MAY 30 1991

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.

62719-11

# Dursban\* 4E Insecticide

To Be Applied Only by or Under the Direct Supervision of Commercial Applicators Responsible for Insect Control Programs. Sale to or Use by Persons Owning or Occupying a Dwelling is Strictly Prohibited.

**Active Ingredient(s):**

Chlorpyrifos [O,O-diethyl O-(3,5,6-trichloro-2-pyridinyl)phosphorothioate] ..... 44.9%  
Inert Ingredients ..... 55.1%

Contains 4 pounds of chlorpyrifos per gallon.

Contains xylene range aromatic solvents.

E.P.A. Registration No. 62719-11

E.P.A. Est. 464-MI-1

**KEEP OUT OF REACH OF CHILDREN**

## WARNING

### AVISO:

### PRECAUCION AL USUARIO:

Si usted no lee inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

### PRECAUTIONARY STATEMENTS

**Hazards to Humans and Domestic Animals**

**MAY BE FATAL IF SWALLOWED**

- ABSORPTION THROUGH SKIN MAY BE FATAL • CAUSES SUBSTANTIAL BUT TEMPORARY EYE INJURY
- CAUSES SKIN IRRITATION

**Do Not Get In Eyes, On Skin Or Clothing**

- Avoid Breathing Vapors And Spray Mist
- Handle Concentrate In A Ventilated Area
- When Handling Concentrate Wear Eye Protection And Protective Clothing Such As Long-Sleeved Shirt, Long-Legged Pants, Rubber Gloves And Footwear, i.e. Neoprene Or Nitrile Butadiene Rubber, Resistant to Aromatic Solvents • Wash Thoroughly With Soap And Water After Handling And Before Eating Or Smoking • Remove Contaminated Clothing And Wash Before Reuse • Keep Away From Food, Feedstuffs And Water Supplies

### STATEMENTS OF PRACTICAL TREATMENT:

**If Swallowed:** Call a physician or Poison Control Center immediately. Do not induce vomiting. Contains an aromatic petroleum solvent. Do not give anything by mouth to an unconscious person. **If On Skin:** Immediately wash with plenty of soap and water. Get medical attention. **If In Eye:** Flush with plenty of water for 15 minutes. Get medical attention. **If Inhaled:** Remove to fresh air if symptoms of cholinesterase inhibition appear and get medical attention immediately.

**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.

### Physical or Chemical Hazards

**COMBUSTIBLE • Do Not Use or Store Near Heat or Open Flame. • Do Not Cut or Weld Container.**

### Environmental Hazards

This pesticide is toxic to birds and wildlife and extremely toxic to fish and aquatic organisms. Do not apply directly to water. 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 on blooming crops or weeds if bees are visiting the treatment area.

**Dursban\* 4E**

## NOTICE

Read and understand the entire label before using. Use only according to label directions.

Before buying or using this product, read "WARRANTY LIMITATIONS AND DISCLAIMER" elsewhere on this label. If terms are not acceptable, return unopened package at once to seller for full refund of purchase price paid. Otherwise, use by the buyer or any other user constitutes acceptance of the terms under WARRANTY LIMITATIONS AND DISCLAIMER.

**Do Not Ship or Store with Food, Feeds, Drugs, or Clothing**

## IN CASE OF AN EMERGENCY

endangering life or property involving this product, call collect 517-636-4400

## 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 through any type of irrigation system.

Do not formulate this product into other end-use products.

## GENERAL INFORMATION

DURSBAN 4E insecticide is an emulsifiable concentrate designed for use as a spray to control various pests injurious to trees, turf and ornamental plants. The pests controlled are listed in the accompanying tables. DURSBAN 4E is compatible with insecticides, miticides, and fungicides commonly recommended except for alkaline materials such as Bordeaux mixture and lime. A small amount of spray mixture should be prepared to check for compatibility before a large volume of spray is mixed.

**Attention:** Do not allow adults, children or pets on treated areas until spray has dried. Keep out of fishpools 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 nor use hay for livestock bedding. Do not use in poultry houses.

## Pest Control Indoors

Use DURSBAN 4E insecticide to control pests listed in the following table by applying at the recommended usages. Use a 0.25% spray to control light infestations and a 0.5% spray to quickly reduce heavy infestations or as directed. To prepare the spray, dilute DURSBAN 4E insecticide with water or with a suitable base oil. Use only deodorized kerosene for oil-based sprays in food handling establishments.

Applications may be made within residential buildings, including homes and apartment buildings. Applications may also be made within mausoleums and nonfood areas of industrial, institutional, and commercial buildings, including hospitals, stores, manufacturing plants, and warehouses. Applications may be made within food handling establishments. This includes, but is not limited to, restaurants, grocery stores, bakeries, bottling plants, canneries, and grain mills.

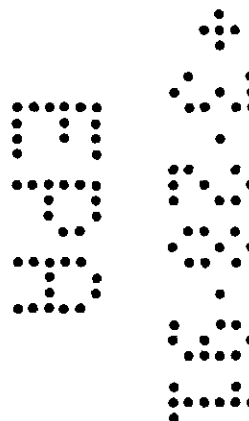
Apply as a coarse, low pressure spray (20 psi or less) or with a paint brush to localized areas in and around both food and non-food areas. Treat where insects are found or normally occur, including dark corners of rooms and closets; floor drains; cracks and crevices in walls; along and behind baseboards; beneath and behind sinks, stoves, refrigerators, refrigerator units, and cabinets; and around plumbing and other utility installations.

In food-handling establishments use only as a spot treatment. Spot treatment may encompass crack and crevice treatments by applying small amounts of material directly into openings leading to voids and hollow spaces in walls, equipment legs and bases, or which occur at points between different elements of construction, or between equipment and floors. Equipment capable of delivering a pinstream of spray should be used. Repeat treatment as needed, but not more often than once every 7 days in restaurants and similar food service establishments, or more often than once every 14 days in other types of food-handling establishments. In case of emergency (call back), DURSBAN 4E insecticide may be applied after 2 days from last treatment, but emergency use should be limited to once per month. Applications of this product in food-handling establishments other than as a spot and/or crack and crevice treatment are not permitted.

**NOTE:** Where quick "knockdown" and/or "flushing action" is desired, diazinon (DDAP) or pyrethrins may be added to the spray mixture containing DURSBAN 4E insecticide. For best results, use diazinon at a concentration of 0.25% in both water- and oil-based sprays; use pyrethrins at 0.25% in water-based sprays and 0.05% in oil-based sprays. Consult labeling for diazinon or pyrethrin products used to determine the amount needed to give the desired spray concentration. Also read and observe all use and handling precautions for these products. Mixture of DURSBAN 4E insecticide and diazinon (DDVP) should not be sprayed on carpets.

Do not apply water-based sprays of this product in conduits, motor housings, junction and switch boxes, or other electrical equipment because of possible shock hazard. If there is need to treat such areas, use only oil-based sprays. Prior to application, de-energize electrical equipment. After application allow time for oil to evaporate before starting motors or placing switches in the "on" position.

Do not allow spray to contact food, feedstuffs, or water supplies. Thoroughly wash dishes and food-handling utensils with soap and water if they become contaminated by application of this product. Do not allow children or pets to contact treated surfaces until spray has dried. Remove pets and cover fish bowls (tanks) before spraying. Do not introduce the spray into the air or allow the spray to contact food or food-contacting surfaces.



Use DURSBAN 4E insecticide to control the pests listed below by application at a 0.25% or 0.5% spray.

Pest	Amount of DURSBAN 4E to Make:								Specific Directions
	1 Gallon of Water-Based Spray				1 Gallon of Oil-Based Spray				
	0.25% Spray		0.5% Spray		0.25% Spray		0.5% Spray		
	fl. oz.	ml.	fl. oz.	ml.	fl. oz.	ml.	fl. oz.	ml.	
Ants(1) Cockroaches (Such as American, Brownbanded, German, Oriental, Smoky brown)(2) Confused flour beetles Crickets Earwigs Firebrats Indian meal moths Mediterranean flour moths Millipedes Red flour beetles Rice weevils Saw-toothed grain beetles Silverfish Spiders	¼	20	1½	40	½	15	1	30	Use the low rate (0.25%) to control light infestations and the high rate (0.5%) to quickly reduce heavy infestations or for extended residual control. 1. For ants, apply to ant trails and around doors and windows and wherever else the pest may find entrance. 2. A period of 4 to 7 days is normally required for maximum effect on cockroaches.
Brown dog ticks(1) Carpet beetles(2) Clover mites			1½	40			1	30	1. For the control of brown dog ticks, thoroughly apply the spray as a spot treatment to infested areas, such as pet beds and resting quarters; nearby cracks and crevices; along baseboards, windows and door frames, and localized areas of floor and floor coverings where these pests may be present. Old bedding should be removed and replaced with clean, fresh bedding after treatment. Do not treat pets with this product. 2. For the control of carpet beetles, thoroughly apply the spray as a spot treatment along baseboards and edges of carpeting, under carpeting, rugs and furniture, in closets and on shelving, and wherever else these insects are seen or suspected.

(Numbers in parentheses refer to Specific Directions.

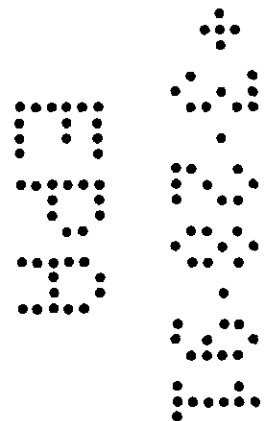
### Turf and Other Outdoor Uses

Use DURSBAN 4E to control the pests listed in the following table by applying at the recommended dosages and in accordance with the directions given below. Dilute DURSBAN 4E in water and apply as a coarse, low-pressure spray using suitable application equipment. Thoroughly water immediately after treatment to wash the insecticide into the turf, except as noted. For best results, the lawn should be moist at time of treatment. Spray when pests first appear; re-treat when needed.

Pest	Amount of DURSBAN 4E in Water to Make:		Specific Directions
	1 gal.	100 gals.	
Ticks (Such as, American dog, Cattle fever, Gulf coast, lone star) (1)	¼ fl. oz.	1½ pt.	1. For control of ticks infesting corrals, stockyards, holding pens and other outdoor livestock areas. Treat soil in corrals and pens, especially in corners, under and around fences, grassy areas, protected areas under feeders and shelters 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 is intended as a pre-mist spray only. Do not use as a direct spray on livestock. Take care to avoid creating mist or drift which may come into contact with feed, water or livestock. Livestock should not be allowed in treated areas until spray deposits have dried.

Pest†	Amount of DURSBAN 4E per		Specific Directions
	1000 sq. ft.	acre	
Ants (including foraging fire ants) Armyworms (Such as: Beet, Fall, Yellowstriped) Centipedes Chiggers (1) Chinch bugs Clover mites Cutworms Crickets Earwigs Fiery skipper Fire ants (mounds)(2) Fleas Gnats Grasshoppers Greenbugs June beetles Leafhoppers Lucerne moths Millipedes Mites (Such as: Clover, Formula grass, Winter grain) Mosquitoes(3) Sod webworms(4) (lawn moths) Sowbugs Springtails Ticks(1)	½ fl. oz.	1 qt.	<ol style="list-style-type: none"> <li>Use DURSBAN 4E insecticide for area control of ticks and chiggers infesting non-cropland areas such as roadsides, footpaths and trails, picnic and camping sites, parks and other recreational areas 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 in water at the rate of ½ pint per acre (equivalent to ½ fl. oz. per 2,700 sq. ft.) using a hydraulic sprayer, mist applicator, knapsack 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 to 100 gallons per acre.</li> <li>For individual fire ant mounds, apply DURSBAN 4E as a drench, diluted at the rate of 1 fl. oz. (30 ml) per 4 gallons 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.). 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.</li> <li>Mosquitoes coming to rest on areas treated for control of turf pests will be killed for varying periods of time after treatment, depending on exposure of treated areas to weathering conditions.</li> <li>For sod webworms delay watering and mowing the treated area for 12 to 24 hours after treatment.</li> </ol>
European crane fly	1 fl. oz.	1½ qt.	
Turfgrass weevil ( <i>Hyperodes</i> ) (1)	1½ fl. oz.	2 qt.	<ol style="list-style-type: none"> <li>Spray suspected problem areas in mid-April and again in mid-May or as recommended by your Local Agricultural Extension Service specialist.</li> </ol>
White grubs (Such as: Black turfgrass ateenuus, European chafer Southern, masked chafer and Japanese beetle larvae) (1)	1½ to 3 fl. oz.	2 qt. to 1 gal.	<ol style="list-style-type: none"> <li>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. Immediately after spraying, irrigate the treated area with ½ to 1 inch of water to wash the insecticide into the underlying soil.</li> </ol>
Bluegrass billbugs(1)	¾ to 3 fl. oz.	1 qt. to 1 gal.	<ol style="list-style-type: none"> <li>For bluegrass billbugs, spray early in the season when adults first appear. Re-treat as needed.</li> </ol>

†Numbers in parentheses refer to Specific Directions.



## Residential Citrus

Use DURSSEAN 4E insecticide to treat grapefruit, lemon, orange and other citrus trees or tree fruit in residential areas. Use lower rates for light infestations, higher rates for heavy infestations. Treat when insects become a problem or in accordance with the local spray schedule recommended by your State Extension Service Specialist. Do not apply to citrus if temperature exceeds 95°F. DURSSEAN 4E is highly toxic to bees if exposed to direct treatment. Do not apply to drought, heat stressed, or flowering trees.

**Restrictions:** Do not make more than two applications per year. Do not make a second application until 30 days of the first application. Do not pick fruit for consumption until 21 days after application.

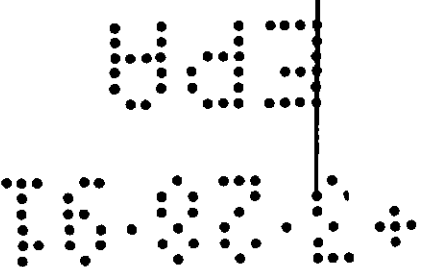
Pest	Amount of DURSSEAN 4E in Water to Make			Specific Directions
	1 gallon	3 gallons	100 gallons	
Aphids	1/10 to 1/5 oz.	1/4 to 1/2 oz.	1/2 to 1 pint	Use directions apply in all states.
Katydid				
Lepidopterous larvae				Use directions apply in Florida only. In California, apply as outside foliage coverage for citrus thrips and mealy bug, through coverage of entire tree for scale insects.
Citrus thrips	1/10 to 1/5 oz.	1/4 to 1/2 oz.	1/2 to 1 pint	
Mealy Bugs.				Use directions apply in Florida only.
Scale insects Black, Brown soft, California red, Snow Chaff				
Citrus rust mite	1/10 to 1/5 oz.	1/4 to 1/2 oz.	1/2 to 1 pint	

## Pest Control on Outside Surfaces and Around Buildings

Apply DURSSEAN 4E as a residual spray to outside surfaces of buildings including porches, window frames, eaves, patios, garages, refuse dumps and other areas where pests congregate or have been seen. Repeat treatment as needed to maintain effectiveness.

Pest	Amount of DURSSEAN 4E in Water to Make:			Specific Directions
	1 gal	10 gal	50 gal	
	For Band Treatment (1)			
	1/2 fl. oz.	1/4 fl. oz.	4 fl. oz.	1. To help prevent reinfestation of buildings, treat a band of soil 6 to 10 feet wide around and adjacent to buildings, also the building foundation to a height of 2 to 3 feet, where pests are active and may find entrance. Use 4 fluid ounces of DURSSEAN 4E per 50 gallons of water and apply as a coarse spray at the rate of about 10 gallons spray mixture per 1,000 sq. ft. to thoroughly and uniformly wet the band area.
	For Outside Surfaces			
	1 1/2 fl. oz.	13 1/2 fl. oz.	2 qt.	2. For scorpions, treat or remove accumulations of lumber, firewood, and other materials which serve as insect harborage sites.

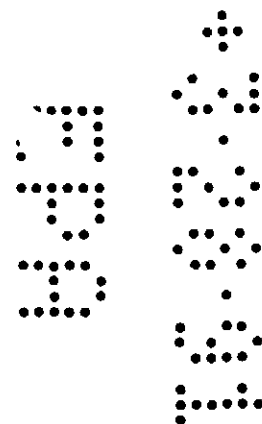
(Numbers in Parenthesis refer to Specific Directions.)



## Ornamentals (Soil Treatment)

Use DURSIBAN 4E insecticide to treat potted, containerized, and balled and burlapped nursery stock to control the insects in the soil attached to the roots of these plants. Completely submerge the ball of soil in a tank containing diluted DURSIBAN 4E insecticide. Do not remove burlap wrap or plastic containers with drain holes prior to submerging. Keep soil submerged until complete saturation has occurred, normally about 30 seconds. Note: Wear chemically resistant gloves, boots, and apron during this operation. Application should be made in a well-ventilated area. Note: Environmental factors significantly affect phytotoxicity. DURSIBAN 4E 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.

Pest(s)	Amount of DURSIBAN 4E in Water to Make:		Specific Directions
	1 gal.	100 gal.	
Fire ants(1)	¼ fl. oz.	4 fl. oz.	1. An alternate treatment to submerging potted plants is to dilute 4 oz. of DURSIBAN 4E insecticide in 100 gals. of water. This dilution should be applied 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.
Grubs Weevils	⅓ fl. oz.	2 qt.	



## Ornamentals (Outdoor and Nursery)

Use DURSBAN 4E insecticide to treat flowers, shrubs, evergreens, vines, shade and flowering trees found to be infested with pests listed in the following table. Dilute DURSBAN 4E with water according to directions given in the table and apply using suitable hand- or power-operated spray equipment in a manner to provide complete and uniform coverage. For best results, 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 overspraying to the point of excessive runoff. Treat when pests appear and repeat 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.

Note: Ornamentals: Environmental factors have significant effects on phytotoxic expression. DURSBAN 4E has been tested on numerous ornamental plants without causing serious phytotoxicity. However, do not use on azaleas, camellias, poinsettias, rose bushes, or variegated ivy because of possible injury to these plants.

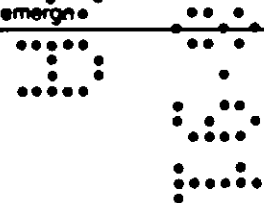
Pest	Amount of DURSBAN 4E in Water to Make:			Specific Directions
	1 gallon	3 gallons	100 gallons	
Adelgids (Such as: Cooley and Eastern spruce galls, Pine bark) Ants (including foraging fire ants) Aphids (Such as: Apple, Chrysanthemum, Cottonwood, Elm leaf, Peach, Rose, Spruce, Woolly) Armyworms (Such as: Fall, Yellowstriped) Bagworms(1) Boxelder bugs Cankerworms Catalpa sphinx Chiggers Citrus mealybugs Cockroaches (Such as: American, Brownbanded, German, Oriental, Smokey brown) Elm spanworms Fall webworms Grasshoppers Green fruitworms Hornworms Jackpine budworms Juniper webworms Katydid Lace bugs Leafhoppers Leafrollers(2) Maple leafcutters(3) Mites (Such as: Clover, Red spider, Southern red)(4) Oleander caterpillars Orange tortrix Periodical cicada Plant bugs Poplar tentmaker Psyllids Puss caterpillars Rose chafers Sawflies, exposed (Such as: Pine, Pin oak, Redheaded) Sowbugs Spittlebugs Spring elm caterpillars Springtails Spruce budworms Tent caterpillars (Such as: Eastern, Forest, Western) Thornbug Walnut caterpillars Western spruce budworms Whiteflies Yellownecked caterpillars	1/2 fl. oz.	1/4 fl. oz.	8 fl. oz.	1. For bagworms, treat when insects are in the crawler stage. 2. For effective control of leafrollers, spray should be applied before leaves are tightly rolled. 3. For effective control of maple leaf-cutter on maple trees, apply spray to larvae as cases are being formed. Do not treat sugar maple trees intended for maple syrup production. 4. 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.

†Numbers in parentheses refer to Specific Directions



Pest†	Amount of DURSBAN 4E in Water to Make:			Specific Directions
	1 gallon	3 gallons	100 gallons	
Armyworms (Beet) Beetles (Fuller rose, Native elm bark)(1) Cutworms Leafhoppers Mahogany webworms Mealybugs Mimosa webworms Moths (Such as: 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 (Such as: California, Orangesriped, Redhumped) Redhumped caterpillars Thrips (exposed) Weevils (Such as: Blackvine(3), Yellow Poplar, Pine reproduction)	1/8 fl. oz.	1/8 fl. oz.	1 pt.	1. To reduce twig and branch feeding by bark beetles, applications should be made in the spring or early summer. 2. To kill migrating and invading gypsy moth larvae, treat trunks and foliage. 3. Blackvine weevils are night feeders. Late afternoon spraying will give control in some areas.
Beetles (Such as: Cottonwood leaf(1), Elm leaf, Flea, Willow leaf)	1/8 to 1/2 fl. oz.	1/8 to 1 fl. oz.	1 pt. to 1 qt.	1. For cottonwood . . . of beetles, use DURSBAN 4E in water to control larvae and adults infesting cottonwoods. Make the treatment when field counts indicate damaging beetle populations are developing or present.
Borers(1): Clearwing moths (Such as: Ash, Dogwood, Lesser peachtree, Lilac, Oak, Rhododendron), Metallic wood (Such as: Bronze birch, Flatheaded appletree, Twolined chestnut), Longhorned beetles (Such as: Locust, Red oak) Leafminers Needleminers (Such as: Jeffrey pine, Lodgepole pine, Spruce) Scale crawlers (Such as: Cottonycushion, Cottony maple, Euonymus, Fletcher, Florida wax, Golden oak, Hemispherical, Lecanium, Magnolia, Oak kermes, Oystershell, Pine needle, San Jose, Tea, White birch)	1/8 fl. oz.	1 fl. oz.	1 qt.	1. For borers, apply DURSBAN 4E 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
Borers (Such as: Cottonwood, Peachtree)(1)	1 fl. oz.	3 fl. oz.	3 qt.	1. For peachtree borers, apply DURSBAN 4E 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
Beetles (Such as: Ambrosia, Anobidae, Black turpentine, Cottonwood leaf, Elm leaf, European elm bark, Flea, Fuller rose, Japanese, June, Native elm bark, Southern pine, Willow leaf)(1)	2 1/2 fl. oz.	8 fl. oz.	2 gal.	1. For preventive 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.

†Numbers in parentheses refer to Specific Directions



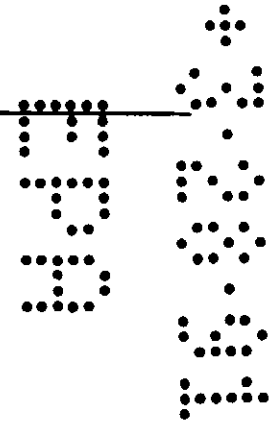
## Tree and Forest Pests (Nurseries, Plantations, and Felled Trees)

Use DURSBAN 4E insecticide to treat shade and flowering trees, plantation trees, transplant trees, and evergreens found to be infested with pests listed in the following table. Felled trees, such as elms, should be treated as necessary. Dilute DURSBAN 4E with water according to directions given in the table and apply using suitable hand- or power-operated spray equipment in a manner to provide complete and uniform coverage. For best results, apply a coarse spray to thoroughly wet both 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. Attention: For felled trees, treat after cutting; do not handle until spray has dried or wear suitable protective clothing. Do not treat bearing fruit and nut trees with DURSBAN 4E except as indicated in the Dormant Spray section. Treat when pests appear and repeat 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.

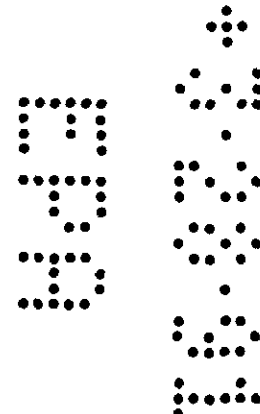
Pest†	Amount of DURSBAN 4E in Water to Make:			Specific Directions
	1 gallon	3 gallons	100 gallons	
Adeleids (Such as: Cooley and Eastern spruce gall, Pine bark) Aphids (Such as: Apple, Chrysanthemum, Cottonwood, Elm leaf, Peach, Rose, Spruce, Woolly) Bagworms(1) Boxelder bugs Cankerworms Catalpa sphinx Citrus mealybugs Elm spanworms Fall webworms Greenstriped mapleworms Jackpine budworms Juniper webworms Katydid Lace bugs Leafhoppers Leafrollers(2) Maple leafcutters(3) Mites (Such as: Clover, Red spider, Southern red)(4) Oak skeletonizers Poplar tentmakers Puss caterpillars Sawflies, exposed (Such as: Pine, Pin oak) Spring elm caterpillars Spruce budworms Tent caterpillars (Such as: Eastern, Forest, Western) Walnut caterpillars Western spruce budworms Yellownecked caterpillars	½ fl. oz.	¼ fl. oz.	8 fl. oz.	<ol style="list-style-type: none"> <li>1. For bagworms, treat when insects are in the crawler stage.</li> <li>2. For effective control of leafrollers, spray should be applied before leaves are tightly rolled.</li> <li>3. 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.</li> <li>4. For effective control of spider mites, when large numbers of eggs are present, apply a second spray after 3 to 5 days in the South or 7 to 10 days in the North after initial treatment to control newly-hatched nymphs.</li> </ol>

†Numbers in parentheses refer to Specific Directions.



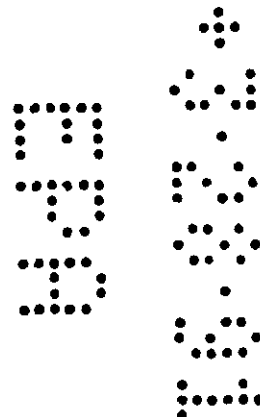
Pest†	Amount of DURSBAN 4E in Water to Make:			Specific Directions
	1 gallon	3 gallons	100 gallons	
Beetles (Faller rose, Native elm bark)(1) Leafhoppers Mahogany webworms Mealybugs Mimosa webworms Moths (Such as: Browntail, Cypress tip, Douglas fir tussock, European pine shoot, Gypsy(2), Holly bud, Nantucket pine tip, Pandora, Pitch pine tip, Subtropical pine tip, Tussock) Oakworms (Such as: California, Orangespined, Redhumped) Redhumped caterpillars Thrips (exposed) Weevils (Such as: Blackvine(3), Yellow poplar, Pine reproduction)	¼ fl. oz.	½ fl. oz.	1 pt.	1. To reduce twig and branch feeding by bark beetles, applications should be made 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 give control in some areas.
Beetles (Such as: Cottonwood leaf(1), Elm leaf, Flea, Willow leaf)	¼ to ½ fl. oz.	½ to 1 fl. oz.	1 pt. to 1 qt.	1. For cottonwood leaf beetles, use DURSBAN 4E in water to control larvae and adults infesting cottonwoods. Make the treatment when field counts indicate damaging beetle populations are developing or present. For seedlings use 8 to 20 gallons of spray volume per acre.
Borers(1): Clearwing moths (Such as: Ash, Dogwood, Lesser peachtree, Lilac, Oak, Rhododendron), Metallic wood (Such as: Bronze birch, Flatheaded appletree, Twolined chestnut), Longhorned beetles (Such as: Locust, Red oak) Cranberry girdler larvae(2) Leafminers Needleminers (Such as: Jeffrey pine, Lodgepole pine, Spruce) Scale crawlers (Such as: Cottonycushion, Cottonymaple, Euonymus, Fletcher, Florida wax, Golden oak, Hemispherical, Lecanium, Magnolia, Oak kermes, Oystershell, Pine needle, San Jose, Tea, White birch)	½ fl. oz.	1 fl. oz.	1 qt.	1. For borers, apply DURSBAN 4E to the trunks and lower limbs of trees and shrubs when the adults begin to emerge. Consult your local State Agricultural Experimental Station or Extension Service specialist for proper time to treat. Apply uniformly as a coarse low-pressure spray 2. For cranberry girdler larvae, infesting Douglas fir seedlings apply 1 quart of DURSBAN 4E per acre. Direct spray at the lower crown and stems 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.
Borers (Such as: Cottonwood, Peachtree)(1)	1 fl. oz.	3 fl. oz.	3 qt.	1. For peach tree borers, apply DURSBAN 4E 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.

†Numbers in parentheses refer to Specific Directions



Pest†	Amount of DURSBAN 4E in Water to Make:			Specific Directions
	1 gallon	3 gallons	100 gallons	
Beetles(1) (Such as: Cottonwood leaf, Elm leaf, Flea, Fuller rose, Native elm bark(2), Willow leaf)	1 1/2 fl. oz.	4 fl. oz.	1 gal.	<ol style="list-style-type: none"> <li>1. For preventive 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 when damage occurs but before adult beetles begin to emerge. For plantation trees, apply to individual trees using suitable hand- or power-operated spray equipment.</li> <li>2. To prevent native elm bark beetles from overwintering in uninfested trees, apply DURSBAN 4E in water to the bottom 9 feet 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 to early fall. To reduce the twig and branch feeding on uninfested trees deemed to be of high value, apply a water spray to the tree crown. Application should be made in the spring or early summer using a sprayer that will give thorough coverage to the tree crown.</li> </ol>
Beetles (Such as: Ambrosia, Anobiidae, Black turpentine, Blister, European elm bark, Japanese, June, Southern pine, Spruce)(1) Carpenter ants Termites	2 1/2 fl. oz.	8 fl. oz.	2 gal.	<ol style="list-style-type: none"> <li>1. For preventive 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 when damage occurs or before adult beetles begin to emerge. For plantation trees, apply to individual trees using suitable hand- or power-operated spray equipment.</li> </ol>
Weevils (Such as: Northern pine, Pales, Pitch-eating, Twig)(1)	5 1/2 fl. oz.	1 pt.	4 gal.	<ol style="list-style-type: none"> <li>1. For Southern pine seedlings, treat immediately after transplanting. Treat each seedling with enough spray to thoroughly wet the foliage and stems to the point of runoff but do not use more than 6 gallons of spray dilution per acre.</li> </ol>

†Numbers in parentheses refer to Specific Directions.



## Dormant Spray (Tree and Forest Pests)

Use DURSBAN 4E insecticide as a dormant or delayed dormant spray at the rates indicated to control the listed insects. Spray the entire tree to runoff using suitable ground spray equipment. Use the higher dosage of DURSBAN 4E insecticide for severe infestations. Use oil as recommended by your State Agricultural Experiment Station or Extension Service specialist.

**Restrictions:** Make only one application during the dormant season. Do not allow meat or dairy animals to graze in treated areas.

Pest	Amount of DURSBAN 4E in Water to Make:			Specific Directions
	1 gallon	3 gallons	100 gallons	
Aphids (Such as: Mealy plum, Rosy apple, Woolly apple) Borers (Such as: Peach twig) Cutworms (Such as: Climbing) Leafrollers (Such as: Pandemus) Pear psylla adults Plant bugs Scale (Such as: San Jose)	1/2 to 1/2 fl. oz.	1/4 to 1/2 fl. oz.	1/2 to 1 pt.	Tank mix with 1 to 2 gallons of a petroleum spray oil recommended for dormant use in 100 gallons of water

## Mosquitoes

Apply DURSBAN 4E insecticide to mosquito infested, non-crop areas according to the conditions and rates shown in the following table. Mix DURSBAN 4E insecticide with either water or oil, such as kerosene or No. 2 fuel oil, using sufficient spray volume to give uniform coverage of area treated. Apply the spray using suitable application equipment, such as hand- or power ground sprayers, mist applicators, and aerial spray equipment.

**WARNING:** Read complete Environmental and Use Precaution sections and consult your State Fish and Game Department before using this product for mosquito control.

Pest	Condition of Area to be Treated	Amount to Use Per Acre		Number of Acres 1 Gallon of DURSBAN 4E Will Treat	Specific Directions
		DURSBAN 4E (Fluid Ounces)	Chlorpyrifos (Pounds)		
Mosquito adults	Light to medium vegetative cover	0.8	0.025	160	The higher dose will also give faster knockdown and longer residual control where there is little or no vegetative cover
	Medium to heavy vegetative cover	1.6	0.05	80	

## STORAGE AND DISPOSAL

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

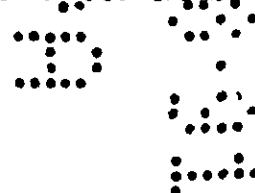
**Storage:** Store in original container in secured dry storage area. Prevent cross-contamination with other pesticides and fertilizers. Do not store above 100°F for extended periods of time. Storage below 20°F may result in formation of crystals. If product crystallizes, store at 50 to 70°F and agitate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

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

**Container Disposal (PLASTIC):** 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.

**Container Disposal (REUSABLE PORTABLE CONTAINERS):** Do not rinse or put any other material into container. When returning reusable portable container seal all openings and return to The Dow Chemical Company.



## WARRANTY LIMITATIONS AND DISCLAIMER

DowElanco 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 thereon under normal conditions of use. THIS IS THE ONLY WARRANTY MADE ON THIS PRODUCT. NO OTHER EXPRESS AND NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE OUTSIDE OF THIS LABEL. Therefore, neither this warranty nor any other warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of this product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), under abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes, etc.) or under conditions not reasonably foreseeable to or beyond the control of seller.

When buyer or user suffers losses or damages resulting from the use or handling of this product (including claims based on contract, negligence, strict liability, or other legal theories), buyer or user must promptly notify in writing DowElanco of any claims to be eligible to receive either remedy given below. The EXCLUSIVE REMEDY OF THE BUYER OR USER and the LIMIT OF LIABILITY of DowElanco or any other seller will be one of the following, at the election of DowElanco:

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

The seller will not be liable for consequential or incidental damages or losses.

The terms of this Warranty Limitations And Disclaimer cannot be varied by any written or verbal statements or agreements. Any employee or sales agent of the seller is not authorized to vary or exceed the terms of this Warranty Limitations And Disclaimer in any manner.

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