

PM 04

51036-152

12/8/98

PS 1) 25

Editor's Note: Draft submitted for amendment on 8/14/97 which includes language from DowElanco's Dursban PRO (EPA Reg.No. 62719-166) 10/16/96 stamped label and deletions from the current Micro Flo Chlorpyrifos 2E (EPA Reg.No. 51036-152) 8/23/96 stamped label.

MICRO FLO  
CHLORPYRIFOS 2E  
INSECTICIDE  
ORGANOPHOSPHATE

For control of various pests in and around residential and nonresidential buildings and structures, on various modes of transport, and on turf and ornamental plants. Also for use on fruit, nut, and citrus trees not grown for sale or commercial production. To be applied only by or under the supervision of Pest Control Operators, Public Health Organizations, and other trained personnel responsible for Insect Control Programs.

ACTIVE INGREDIENT:

Chlorpyrifos (0,0-diethyl 0-(3,5,6-trichloro-2-pyridinyl) phosphorothioate) .....	24.66%
INERT INGREDIENTS: .....	75.34%
TOTAL .....	100.00%

Contains 2 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.)

STATEMENT OF PRACTICAL TREATMENT

Organophosphate

IF SWALLOWED: Call a doctor or get medical attention. Do not induce vomiting. Do not give anything by mouth to an unconscious person. Avoid alcohol.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

IF IN EYES: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

IF INHALED: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

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. May pose an aspiration pneumonia hazard.

See Additional Precautionary Statements Elsewhere On Label

EPA Reg. No. 51036-152

EPA Est. No. 51036-GA-1

DEC 8 1998

51036-152

Manufactured By  
MICRO FLO CO.  
P.O. BOX 5948  
LAKELAND, FLORIDA 33807

PRECAUTIONARY STATEMENTS  
Hazards To Humans And Domestic Animals

WARNING

May be fatal if swallowed. Harmful if absorbed through skin or inhaled. Wash thoroughly with soap and water after handling. Causes substantial but temporary eye injury. Avoid contact with skin, eyes or clothing. Avoid breathing of vapors or spray mists. Do not get in eyes or on clothing. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals. Keep away from food, feedstuffs and water supplies.

PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category G on an EPA chemical resistance category selection 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, only agricultural-plant uses are covered -- must wear:

1. Coveralls over short-sleeved shirt and short pants
2. Chemical-resistant gloves, such as barrier laminate or viton
3. Chemical-resistant footwear plus socks
4. Protective eyewear

Exception: Applicator's who submerge containerized or balled/burlapped plants in tanks must wear:

1. Coveralls over short-sleeved shirt and short pants
2. Chemical-resistant gloves, such as barrier laminate or viton
3. Chemical-resistant footwear plus socks
4. Chemical resistant apron
5. Protective eyewear

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 -- must wear:

1. Long-sleeved shirt and long pants
2. Chemical-resistant gloves, such as barrier laminate or viton
3. Shoes plus socks
4. Protective eyewear

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 and 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:

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

#### ENVIRONMENTAL HAZARDS

This pesticide is extremely toxic to fish, birds, and other wildlife. 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 by cleaning of equipment or disposal of equipment washwaters.

#### 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.

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment and restricted-entry intervals. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

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.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

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

1. Coveralls over short-sleeved shirt and short pants
2. Chemical-resistant gloves, such as barrier laminate or viton
3. Chemical-resistant footwear plus socks
4. Protective eyewear

#### 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.

Keep children, pets and other unprotected persons out of the treated area until sprays have dried.

#### STORAGE AND DISPOSAL

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

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

#### CHEMIGATION PROHIBITION

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

#### GENERAL PEST CONTROL - INDOORS

##### Directions for General Use Indoors:

Chlorpyrifos 2E is intended to be mixed with water and applied as crack and crevice and spot treatments with pressurized sprayers or other equipment suitable for applying insecticides to localized areas. The active ingredient in this product can provide effective residual control of pests listed on this label. To minimize airborne particles spray pressure should not exceed 30 psi at the nozzle tip.

##### Precautions for General Use Indoors:

Before spraying, remove pets and cover aquaria, i.e., fish bowls, and turn off air pump. Do not apply where electrical short circuits could occur. Do not use indoors as a space spray or in fogging equipment.

##### Treatment Sites:

When used in accordance with label directions Chlorpyrifos 2E may be applied in and around residential and nonresidential buildings and structures including residential kitchens and all types of food handling establishments and vehicles. This product can be applied to walls, floors, ceilings, in and around cabinets, between, behind and beneath equipment and appliances, around floor drains, window and door frames, around plumbing, sinks and other possible pest harborage sites. Permitted areas of use include but are not limited to:

apartment buildings  
bakeries  
bottling facilities  
breweries  
cafeterias  
crawl spaces  
food manufacturing plants  
kitchens  
laboratories  
mausoleums  
mobile and motor homes  
offices  
restaurants

food processing plants  
food service establishments  
granaries and grain mills  
hospitals  
hotels  
houses  
industrial buildings  
schools  
stores  
warehouses  
wineries  
vehicles

#### Dosage Rates:

Applications of 0.25% to 0.5% Chlorpyrifos 2E can be made depending on pest species and conditions of premises. See "Specific Indoor Use Directions" for additional information.

#### Mixing Directions:

To prepare the spray, dilute Chlorpyrifos 2E with water or a suitable base oil as shown in the following "Spray Dilution Chart". Use only deodorized kerosene for oil-based sprays to be applied in food handling establishments. A stable emulsion of Chlorpyrifos 2E can be formed by first adding approximately one-half the water or suitable base oil to a spray tank followed by adding the proper amount of Chlorpyrifos 2E. Close the tank and shake vigorously for 5 to 10 seconds. To avoid excess foam, slowly add the remaining water or suitable base oil.

Spray Dilution Chart

Type of Spray Mixture	Fluid Ounces* of Chlorpyrifos 2E to Use Per Gallon of Finished Spray	
	0.25% spray	0.50% spray
Water-base spray	1 1/3 fl.oz.	2 2/3 fl.oz.
Oil-based spray**	1 fl.oz.	2 fl.oz.

\*Note: 1 fluid ounce = 2 tablespoonfuls = 6 teaspoonfuls

\*\*Calculated on basis of deodorized kerosene

#### Tank Mixing:

Unless prohibited by a product's label, users, at their own discretion, can tank mix pesticides currently labeled for similar use patterns. 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. Do not tank mix this product with products containing dichlorvos (DDVP).

#### Application Methods:

This product may be applied indoors as crack and crevice and spot treatments. Indoor broadcast applications are prohibited. Treat where pests are found or normally occur. Except as noted under "Food Handling Establishments", applications can be made in 7 day intervals. If necessary, Chlorpyrifos 2E may be applied after 2 days from last treatment (call back treatments), but such use should be limited to once per month.

#### Crack and Crevice Applications:

Use a low pressure system with a pinpoint or variable pattern nozzle to apply the spray mixture to areas such as: floors, cracks, and crevices in and around baseboards, walls, expansion joints,

areas around water and sewer pipes, and voids formed by equipment or appliances.

#### Spot Applications:

Use a low pressure system with fan type nozzle to uniformly apply spot treatments to areas such as: baseboards, in and around cupboards and between, beneath and behind equipment or appliances. Note: Thoroughly ventilating treated areas following application can reduce potential odors and speed drying. Ventilation in buildings with closed air circulating systems can be improved by adjusting ventilation systems to include outside air.

#### Cabinet Interiors:

When treating interiors of cabinets containing food or food utensils, remove or otherwise protect such items from contact with spray. Allow spray to dry before returning food or food utensils to treated cabinets. Prevent the above items from directly contacting treated surfaces. Shelf liners or similar material can provide adequate protection from treated surfaces. Thoroughly wash dishes, food utensils or food-contacting surfaces with soap and water if they are directly exposed to this product.

#### Food Handling Establishments:

Chlorpyrifos 2E may be applied in both food and nonfood areas of all types of food-handling establishments, i.e. food service, food processing and food manufacturing establishments. This includes, but is not limited to, restaurants, grocery stores, bakeries, bottling plants, canneries, and grain mills. See "Treatment Sites" for a more complete but not exhaustive listing. Note: For oil based sprays to be applied in food handling establishments, use only deodorized kerosene. Note: Applications of this product within food handling areas are limited to spot and crack and crevice treatments. Applications can be applied in 7 day intervals in restaurants and similar food service establishments and applied in 14 day intervals in other types of food handling establishments. If necessary, Chlorpyrifos 2E may be applied after 2 days from last treatment (call back treatments), but such use should be limited to once per month.

#### Indoor Pests Controlled by Chlorpyrifos 2E:

Ants (1)	Firebrats
Beetles	Fleas (5)
Boxelder bugs	Flies (6)
(or other true bugs)	Flour beetles
Brown dog ticks (2)	(Confused)
Carpet beetles (3)	(Red)
Centipedes	(Sawtoothed)
Clover mites	Indian meal moths
Cockroaches (4)	Mediterranean flour moths
(American)	Millipedes
(Asian)	Rice weevils

(Brownbanded)	Silverfish
(German)	Scorpions
(Oriental)	Sowbugs
(Smokybrown)	Spiders
Crickets	Ticks
Earwigs	and other insect pests

Numbers refer to "Specific Indoor Use Directions."

Specific Indoor Use Directions:

1. Ants may be controlled by treating ant trails and wherever else these pests may find entrance; for example, around doors and windows.
2. For the control of brown dog ticks, apply as a crack and crevice treatment to infested areas, along baseboards, windows and door frames, and areas of floor and floor coverings where these pests may be present. Old bedding should be replaced or thoroughly washed. DO NOT TREAT PETS WITH THIS PRODUCT. Humans or pets must not contact treated surfaces until the spray has dried.
3. For the control of carpet beetles, apply as a spot or crack and crevice treatment to rugs, carpets, 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. Humans or pets must not contact treated surfaces until spray has dried.
4. Cockroaches can be controlled by making crack and crevice, and spot treatments. Treat where insects are found or normally occur including, but not limited to floors, cracks and crevices in walls, along and behind baseboards, around plumbing, floor drains and other utility installations, beneath and behind sinks, cabinets or other fixtures.
5. Fleas: Apply as a spot or crack and crevice treatment only to infested areas, such as rugs and carpets. Prior to treatment, carpets should be vacuumed thoroughly and vacuum cleaner bag discarded in an outdoor trash container. Humans or pets must not contact treated surfaces until the spray has dried. Old pet bedding should be replaced or thoroughly washed. DO NOT TREAT PETS WITH THIS PRODUCT. To control the source of flea infestations, pets inhabiting the treated premises should be treated with a flea-control product registered for application to animals.
6. To control flies in livestock housing structures (including poultry houses) and pet kennels, apply Chlorpyrifos 2E spray to ceilings, walls, light fixtures, window frames and other fly resting areas. Product application must be restricted to surfaces inaccessible to direct contact with animals. Surfaces directly in contact with animals should not be sprayed within six feet of the floor. Timing and frequency of application should be based on nuisance levels of flies, but should not be more frequent than once every 7 days. Do not make interior applications of Chlorpyrifos 2E while animals are present. Keep animals out of treated area until spray has dried. Do not make



applications to animals, feedstuffs or watering equipment. Do not apply in milk storage rooms. Do not contaminate milking or milk handling equipment.

#### GENERAL PEST CONTROL - PERIMETER TREATMENTS

##### Directions for Perimeter Treatments:

Chlorpyrifos 2E is intended to be mixed with water and applied outdoors with pressurized sprayers as a general surface spray.

##### Precautions for Perimeter Treatments:

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, nor use treated hay for livestock bedding.

##### Treatment Sites:

When used in accordance with label directions Chlorpyrifos 2E may be applied to and around outside surfaces of residential and nonresidential buildings and structures. Permitted areas of use include but are not limited to:

crawl spaces

decks

driveways

eaves

fences

foundations

garages

patios

refuse dumps

walkways

walls

window and door frames

Note: Phytotoxicity: Environmental factors and varietal differences may affect phytotoxic expression. In situations where phytotoxicity potential is of concern, it is recommended that a small group of plants be sprayed and observed for 7 to 10 days to determine phytotoxic potential before treating large numbers of those plants.

##### Dosage Rates:

Applications of 0.03% to 0.5% Chlorpyrifos 2E can be made depending on pest species and method of application. See "Application Methods" for additional information.

##### Mixing Directions:

To make a 0.03% water based spray, add 1 2/3 fl oz Chlorpyrifos 2E per 10 gallons of spray. To make a 0.5% water based spray add 2 2/3 fl oz Chlorpyrifos 2E per each gallon of spray.

A stable emulsion of Chlorpyrifos 2E can be formed by first adding approximately one-half the water to the spray tank followed by adding the proper amount of Chlorpyrifos 2E. Close the tank and agitate for 5 to 10 seconds. Add remaining water slowly to avoid excess foam.

#### Tank Mixing:

Unless prohibited by a product's label, users, at their own discretion, can tank mix pesticides currently labeled for similar use patterns. 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. Do not tank mix this product with products containing dichlorvos (DDVP).

#### Application Methods:

This product may be applied outdoors as a general surface spray. Treat where pests are found or normally occur.

#### Low Volume Directed Sprays:

Application of low volume, high concentration (about 0.5%) sprays can quickly reduce localized heavy pest infestations on outside surfaces. Use a low pressure system with a pinpoint or variable pattern nozzle, such as a 1 gallon hand pump sprayer, and apply the spray mixture to specific areas such as cracks and crevices along walkways, patios, windows and door frames or other areas where insects may congregate or can gain entrance to the structure.

#### High Volume Broadcast Sprays:

Application of high volume, low concentration (0.03%-0.12%) sprays, such as with power spraying equipment, can help prevent infestation of buildings by reducing pests in outdoor areas. Longer residual is achieved at the higher rates (about 0.12%). To make a 0.03% water based spray, mix 8 fl oz of Chlorpyrifos 2E per 50 gallons. To make a 0.12% dilution, mix 32 fl oz of Chlorpyrifos 2E per 50 gallons of water. This type of treatment provides more thorough coverage over large areas than low volume directed sprays. Treat by applying spray mixture directly to areas such as junctions of soil and structural walls, along base of fences, and under eaves. To help prevent infestation 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. Apply as a coarse spray at the rate of about 10 gallons spray mixture per 1000 square feet. Thoroughly and uniformly wet the treated area.

#### Pests Controlled by Perimeter Treatments of Chlorpyrifos 2E:

Ants	Elm leaf beetles
Bees	(adults)
Beetles	Fire ants (1)
Boxelder bugs	Fleas
(or other true bugs)	Flies
Carpenter ants	Hornets
Centipedes	Millipedes
Clover mites	Mosquitoes
Cockroaches	Pillbugs
(American)	Scorpions (2)

(Asian)	Sowbugs
(Brownbanded)	Spiders
(German)	Springtails
(Oriental)	Ticks
(Smokybrown)	Wasps
Crickets	Yellowjackets
Earwigs	and other outdoor insects

Numbers refer to "Specific Outdoor Use Directions."

#### Specific Use Directions for Perimeter Treatments:

1. Fire ant mounds may be controlled by applying Chlorpyrifos 2E as a drench. Dilute 2 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 to 80F, 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.
2. Scorpions may be controlled by removing accumulations of lumber, firewood and other materials serving as harborage sites. Before stacking firewood or lumber, apply Chlorpyrifos 2E as a localized spray to surfaces immediately below such materials. Broadcast sprays outdoors may assist in reducing pests migrating from surrounding areas.

#### GENERAL CONTROL OF WOOD-INFESTING INSECTS

##### Directions for General Use to Control Wood-Infesting Insects:

Chlorpyrifos 2E is intended to be mixed with water and applied as a general surface or localized injection treatment with pressurized sprayers or other equipment suitable for applying insecticides to localized areas.

##### Precautions for Control of Wood-Infesting Insects:

Cover or remove exposed foods before treatment. Before spraying remove pets and cover aquaria, i.e., fishbowls, and turn off air pump. Do not apply where electrical short circuits could occur. Do not use in structures housing animals which are intended for or which produce products to be used for food purposes, i.e., poultry houses. Thoroughly ventilating treated areas following broadcast treatments can reduce potential odors and speed drying. Ventilation in buildings with closed air circulating systems can be improved by adjusting ventilation systems to include outside air.

##### Treatment Sites:

When used according to label directions Chlorpyrifos 2E can be applied to residential and nonresidential buildings and structures for control of wood-infesting insects. Permitted areas of use include but are not limited to:

wood surfaces

voids and channels in damaged wood  
gaps between wooden members  
wall voids  
junctions between wood and foundation

**Dosage Rates:**

Applications of 0.5% to 1.0% Chlorpyrifos 2E can be made depending on pest species and method of application. Expect increased residual control at higher rates. See "Specific Use Directions For Control of Wood-Infesting Insects" for additional information.

**Mixing Directions:**

To make a 0.5% water based spray mix 2 2/3 fl oz of Chlorpyrifos 2E per each gallon of spray mixture. To make a 1.0% water based spray mix 5 1/3 fl oz of Chlorpyrifos 2E per each gallon of spray mixture.

A stable emulsion of Chlorpyrifos 2E can be formed by first adding approximately one-half the water to a spray tank followed by adding the proper amount of Chlorpyrifos 2E. Close the tank and shake vigorously for 5 to 10 seconds. To avoid excess foam, slowly add the remaining water.

**Tank Mixing:**

Unless prohibited by a product's label, users, at their own discretion, can tank mix pesticides currently labeled for similar use patterns. 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. Do not tank mix this product with products containing dichlorvos (DDVP).

**Application Methods:**

This product may be applied either as a coarse spray or by brushing onto targeted surfaces. Equipment capable of delivering a coarse, low pressure (about 20 psi) spray is recommended for treatment of large or overhead areas. Inaccessible areas such as wall voids can be treated by injecting the spray mixture under low pressure (about 20 psi) through drilled openings. Use sufficient amount of spray dilution to cover the area to the point of wetness but avoid applying to the point of runoff.

**Overhead Areas:**

It is recommended that, when spraying overhead interior living areas of residential buildings, surfaces below areas being treated be covered with plastic sheeting or other material which could be disposed of by placing in trash.

**Wood-Infesting Insects Controlled by Chlorpyrifos 2E:**

Beetles (1)  
(Anobiidae)

(Bostrichidae)

(Cerambycidae)

(Lyctidae)

Carpenter ants and other wood-infesting ants (2)

Carpenter bees

Termites (3)

Numbers refer to "Specific Use Directions for Control of Wood-Infesting Insects."

#### Specific Use Directions for Control of Wood-Infesting Insects:

1. Beetles may be controlled by applying spray mixture to infested areas, or areas where infestations are likely to occur. This includes but is not limited to wood surfaces, voids, and channels in damaged wood, 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 square feet.  
 Old Wood (typically greater than 10 years of age), apply at about 1 gallon of dilution per 100 square feet.
2. Wood-Infesting ants may be controlled by applying spray mixture around doors and windows, cracks or crevices, or other areas where ants may enter, crawl, or hide. Primary colonies are typically found outside through an exterior inspection. Corrections of sanitation and structural deficiencies or landscape modifications may be necessary for effective control.
3. Termites can be treated by applying spray mixture to infested areas, or areas where infestations are likely to occur. This includes but is not limited to wood surfaces, voids and channels in damaged wood, in spaces between wooden members of a structure, and junctions between wood and foundations. This treatment is intended to kill localized infestations of workers and winged reproductive forms of termites and to prevent infestation for a temporary period. This application is not intended as a substitute for soil treatments.

#### GENERAL PEST CONTROL - TURF, ORNAMENTALS, AND FRUIT, NUT AND CITRUS TREES

##### General Information:

Chlorpyrifos 2E 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. Chlorpyrifos 2E 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.

Precautions for Turf, Ornamental, and Fruit, Nut, and Citrus Tree Use:

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.

Fruit, nut, and citrus trees: see precautionary statements and restrictions in this section of the label. 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.

Turf and Other Outdoor Uses:

Use Chlorpyrifos 2E to control the pests listed in the following table by application at the recommended dosages. Dilute Chlorpyrifos 2E in water and apply using suitable application equipment. For best results, turf should be moist at time of treatment.

Pest	Amount of Chlorpyrifos 2E per	
	1000 sq. ft.	Acre
Ants 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)	1 1/2 fl. oz.	2 qt.
Billbug adults (Such as: Bluegrass, Denver, Hunting) (6)	1 1/2 - 3 fl. oz.	2 - 4 qt.
Annual bluegrass weevil (Hyperodes) (7) Black turfgrass ataenius adults (8) Mole crickets (9)	3 fl. oz.	4 qt.
Mole crickets (10)	3 - 4 1/2 fl. oz.	4 - 6 qt.
White grubs (Such as: Black turfgrass ataenius, European chafer, Japanese beetle larvae, and Northern and Southern masked chafers) (11)	3 - 6 fl. oz.	4 - 8 qt.

## Specific Directions:

1. Use Chlorpyrifos 2E for area control of ticks and chiggers infesting non-cropland areas such as turf and grassy areas, 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 Chlorpyrifos 2E insecticide in water at the rate of 1 pint per acre ( 1/3 fl oz per 1000 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 Chlorpyrifos 2E in water at the rate of 2 quarts per acre or 1 1/2 fl oz per 1000 square feet. 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 Chlorpyrifos 2E as a drench. Dilute 2 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, 65-80F, 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.
6. 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.
7. 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.
8. 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.
9. To control mole crickets in turfgrass, apply Chlorpyrifos 2E 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.
10. To control mole crickets in turfgrass, apply Chlorpyrifos 2E using broadcast or suitable hand-held application equipment.

Application should be in a minimum of 50 gallons of water per acre. Turf must be irrigated within 24 hours after treatment to wash the insecticide into the area of insect activity. Apply when early stage nymphs are active. Effectiveness may be enhanced by spraying late in the afternoon or early evening and irrigating the turf within 24 hours prior to and following application to move mole crickets near the soil surface and wash the insecticide into the zone of insect activity.

11. 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 areas with 1/2 to 1 inch of water to wash the insecticide deep into the thatch or underlying soil.

#### Ornamentals (Outdoor):

Use Chlorpyrifos 2E 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 Chlorpyrifos 2E 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. 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 may affect phytotoxic expression. In situations where phytotoxicity potential is of concern, it is recommended that a small group of plants be sprayed and observed for 7 to 10 days to determine phytotoxic potential before treating large numbers of those plants.



## Sucking Insects and Mites

Pest	Amount of Chlorpyrifos 2E per	
	1 gallon	100 gallons
Adelgids (Such as: Cooley and Eastern spruce galls, Pine bark) Aphids (Such as: Apple, Balsam twig, Black pecan, Chrysanthemum, Cottonwood, Grape 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	1/6 - 1/3 fl.oz.	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)	1/3 fl.oz.	1 qt.
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)	2/3 fl.oz.	2 qt.

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

## 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 Chlorpyrifos 2E per	
	1 gallon	100 gallons
Weevils (Such as: Black vine (1), Cranberry girdler (2), Pine reproduction, Yellow poplar)	1/3 fl.oz.	1 qt.
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 appletree, Twolined chestnut) (3) Pales weevil adults Zimmerman pine moth	2/3 fl.oz.	2 qt.
Northern pine weevil (4) Pales weevil (4)	2 fl.oz.	6 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)	5 1/3 fl.oz.	4 gal.
Weevils (Such as: Northern pine, Pitch eating, Twig) (7)	10 2/3 fl.oz.	8 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 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 may 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 2 gal per 100 gallons of water (2 2/3 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 2 gal per 100 gallons of water (2 2/3 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.
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.

#### Ants, Termites, and Miscellaneous Pests

Pest	Amount of Chlorpyrifos 2E per	
	1 gallon	100 gallons
Ants Cockroaches (Such as: American, Asian, Brownbanded, German, Oriental, Smokybrown, Wood) Fire ants (foraging workers) Fire ants (mounds) (1) Sowbugs Springtails	1/3 fl.oz.	1 qt.
Carpenter ants (2) Termites	5 1/3 fl.oz.	4 gal.

#### Specific Directions:

1. For individual fire ant mounds apply Chlorpyrifos 2E as a drench. Dilute 2 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, 65-80F, 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.
2. If possible, locate carpenter ant nests and drench thoroughly.

#### Imported Fire Ant:

Treatment of potted, containerized and balled burlapped nursery stock: Use Chlorpyrifos 2E to control imported fire ants in soil attached to roots of these plants by completely submerging the ball of soil in a tank containing Chlorpyrifos 2E diluted at the rate of 8 fl. oz. per 100 gallons of water. 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. An alternate treatment to submerging potted plants is to apply a solution containing Chlorpyrifos 2E (8 oz per 100 gallons of water) as a substitute for plain water during routine watering activities. This solution should be applied to the point of run-off on a twice daily schedule for three consecutive days. Do not remove burlap wrap or container from plants prior to treatment. Application should be made in a well-ventilated area.

#### Ornamentals (Dormant Spray of Tree Pests):

Use Chlorpyrifos 2E as a dormant or delayed dormant spray at the rates indicated to control the listed insects. While Chlorpyrifos 2E 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 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 Chlorpyrifos 2E 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 Chlorpyrifos 2E plus oil to infuse trees resulting in bud damage or drop, do not apply until rain or irrigation have replenished soil moisture such that bark and twigs are not desiccated.

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

22725

Pest	Amount of Chlorpyrifos 2E per	
	1 gallon	100 gallons
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)	1/6 - 1/3 fl.oz.	1 pt. - 1 qt.

#### Fruit, Nut, and Citrus Trees:

Use Chlorpyrifos 2E to treat almond, apple, cherry, filbert, nectarine, peach, pecan, plum, walnut and citrus trees or tree fruit (such as: grapefruit, lemon, orange) not grown for commercial consumption of fruit 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 Chlorpyrifos 2E plus spray oil. Do not apply Chlorpyrifos 2E in combination with oil to walnuts. Dry or cold conditions may cause Chlorpyrifos 2E plus oil to infuse trees resulting in bud damage or drop; do not apply until rain or irrigation have replenished soil moisture such that bark and twigs are not desiccated. Do not apply when trees are stressed by drought.

#### Restrictions:

Almonds, Filberts, Walnuts: Make only one dormant/delayed dormant spray application and no more than three foliar spray applications on almonds per season, one dormant/delayed dormant spray application and no more than two foliar spray applications on walnuts per season, and no more than three foliar spray applications on filberts per season. Do not apply within 14 days of harvest.

Apples: Rate applied must not exceed 2/3 fl oz per gallon or 2 qt per 100 gallons. Make no more than 8 applications per season. Do not apply last treatment within 28 days before harvest or apply last two treatments closer than 21 days apart.

Citrus (Such as: Grapefruit, Lemon, Orange): Rate applied must not exceed  $\frac{1}{3}$  fl oz per gallon or 1 qt per 100 gallons. Do not apply to flowering trees. Do not apply when temperature exceeds 95F. Do not apply more than 2 applications per fruit year. Do not make a second application within 30 days of the first application. Do not pick fruit for consumption until 21 days after application.

Nectarines, Peaches (trunk sprays only): Do not allow spray to contact fruit. Make only one application per season. Do not apply within 14 days of harvest.

Pecans: Rate applied must not exceed  $\frac{2}{3}$  fl oz per gallon or 2 qt per 100 gallons. Make no more than 5 applications per season. Do not apply within 28 days of harvest.

Sour cherries: Make no more than 8 applications per season. Do not apply within 14 days of harvest.

Sweet cherries (trunk and lower limb sprays only): Rate applied must not exceed  $\frac{2}{3}$  fl oz per gallon or 2 qt per 100 gallons. Avoid spray contact with foliage (leaves) since premature leaf drop may result. Make only three applications per year. Do not apply within 6 days of harvest.





3. Time applications for control of scale insects when crawlers or first two stages of settled nymphs are present.

MICRO FLO WARRANTS THAT THIS PRODUCT CONFORMS TO THE CHEMICAL DESCRIPTION ON THE LABEL THEREOF AND IS REASONABLY FIT FOR THE PURPOSE STATED ON SUCH LABEL ONLY WHEN USED IN ACCORDANCE WITH THE DIRECTIONS FOR USE. IT IS IMPOSSIBLE TO ELIMINATE ALL RISKS INHERENTLY ASSOCIATED WITH THE USE OF THIS PRODUCT. CROP INJURY, INEFFECTIVENESS, OR OTHER UNINTENDED CONSEQUENCES MAY RESULT BECAUSE OF SUCH FACTORS AS WEATHER CONDITIONS, PRESENCE OF OTHER MATERIALS, OR THE MANNER OF USE OR APPLICATION, ALL OF WHICH ARE BEYOND THE CONTROL OF MICRO FLO. IN NO CASE SHALL MICRO FLO BE LIABLE FOR THE CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. ALL SUCH RISKS SHALL BE ASSUMED BY THE BUYER.

EXCEPT AS EXPRESSLY PROVIDED HEREIN, MICRO FLO MAKES NO WARRANTIES, GUARANTEES, OR REPRESENTATIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED, OR BY USAGE OF TRADE, STATUTORY OR OTHERWISE, WITH REGARD TO THE PRODUCT SOLD, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, USE OR ELIGIBILITY OF THE PRODUCT FOR ANY PARTICULAR TRADE USAGE.