

MICRO FLO

ACCEPTED

JUN - 9 1992

Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
as amended, for the pesticide
registered under
EPA Reg. No. 51036-154

Chlorpyrifos 4-E Insecticide

Controls Numerous Pests of Households, Turf and Ornamental Plants.

Also recommended for Mosquito Control and Area Control of Ticks and Chiggers

To be applied only by or under the supervision of Pest Control Operators, Public Health Organizations, Mosquito Abatement Districts, and other trained personnel responsible for Insect Control Programs

ACTIVE INGREDIENT:

Chlorpyrifos [0,0-diethyl 0-(3,5,6-trichloro-2-pyridyl) phosphorothioate] 44.70%

INERT INGREDIENTS 55.30%

TOTAL 100.00%

Contains 4 pounds of chlorpyrifos per gallon

KEEP OUT OF REACH OF CHILDREN

WARNING AVISO

PRECAUCION AL USUARIO: Si usted no lee ingles, no use este producto hasta que la etiqueta haya sido explicado ampliamente

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Do not induce vomiting. Contains xylene range aromatic solvent. Call a physician immediately.

IF ON SKIN: In case of contact, remove contaminated clothing and immediately wash skin with soap and water.

IF IN EYES: Flush eyes with plenty of water for 15 minutes. Call a physician.

NOTE TO PHYSICIAN: Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. Atropine only by injection is an antidote.

See Side Panels For Additional Precautionary Statements

PRECAUTIONARY STATEMENTS

Hazards To Humans and Domestic Animals

WARNING

May be fatal if swallowed. May be fatal if absorbed through skin or clothing. Avoid breathing of vapors. Wash thoroughly after handling. Do not wear contaminated clothing. Keep away from food, feedstuffs and water supplies.

ENVIRONMENTAL HAZARDS

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

PHYSICAL AND CHEMICAL HAZARDS

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

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 residue 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.

DIRECTIONS FOR USE

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

CHEMIGATION PROHIBITION

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

PEST INDOORS

General Information: Use Chlorpyrifos 4E to control the pests indicated in the areas listed below by application as a 0.25% or 0.5% chlorpyrifos spray. Use the 0.25% spray to control light infestations and the 0.5% spray to quickly reduce heavy infestations or as directed. To prepare the spray, dilute chlorpyrifos 4E with water or with a suitable base oil* as shown in the following Spray Dilution Chart. Repeat the treatment as needed.

*Use only deodorized kerosene for oil-based sprays to be applied in food handling establishments.

NOTE: Where quick "knockdown" and/or "flushing action" is desired, dichlorvos (DDVP) or pyrethrins may be added to the spray mixture containing Chlorpyrifos 4E. For best results, use dichlorvos at a concentration of 0.25% in both water and oil-base sprays. Consult labeling for the dichlorvos or pyrethrins product used to determine the amount needed to give the desired spray concentration. Also read and observe all use and handling precautions for these products. Do not use Chlorpyrifos 4E in combination with dichlorvos (DDVP) or pyrethrins for treatment of food areas of food handling establishments.

SPRAY DILUTION CHART

Gallons of Spray Mixture Desired	Fluid ounces* of Chlorpyrifos 4E To Use	
	0.25% spray	0.50% spray
Water base spray		
1	2 $\frac{3}{4}$	1 $\frac{1}{2}$
3	2	4
5	3 $\frac{1}{2}$	6 $\frac{1}{2}$
10	6 $\frac{1}{2}$	13 $\frac{1}{2}$
Oil-based spray**		
1	-	1
3	1 $\frac{1}{2}$	3
5	2 $\frac{1}{2}$	5
10	5	10 $\frac{1}{2}$

*Note: 1 fluid ounce = 2 tablespoons = 6 teaspoons

**Calculated on basis of deodorized kerosene

Approx. Wt. 6.68 lbs./gal.

Application within food handling establishments (places other than private residences in which food is held, processed, prepared or served) including, but not limited to restaurants, grocery stores, bakeries, bottling plants, canneries and grain mills: Use as a spot treatment in and around both food and nonfood areas to control cockroaches (including strains resistant to other insecticides), ants, crickets, firebrats, silverfish, spiders and stored product insects such as confused flour beetles, saw-toothed grain beetles, Indian meal moths, rice weevils, Mediterranean flour moths and red flour beetles. Apply as a coarse, low pressure (20 psi or less) spray to localized or entering. Apply only enough spray to thoroughly cover the surfaces treated using special care to avoid unnecessary runoff. Do not introduce the spray into the air or allow the spray to contact food or food-contacting surfaces. Areas treated may include dark corners of rooms and closets, along and behind baseboards, beneath and behind stoves, refrigeration units and similar food preparation areas and equipment, floor drains and around plumbing and other utility installations.

For ants, apply to ant trails and wherever these pests may find entrance. Spot treatment may encompass crack and crevice treatment 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 insecticide should be used. Repeat treatment as needed but not more 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), Chlorpyrifos 4E 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.

Application within residential buildings including home and apartment buildings and within nonfood areas of industrial, institutional and commercial buildings including hospitals, stores, manufacturing plants and warehouses.

For Spot Treatment Only: Apply as a coarse spray or with a paint brush to localized areas where cockroaches (including strains resistant to certain other insecticides), ants, clover mites, crickets, firebrats, silverfish, and spiders are found or normally occur including dark corners of rooms and closets, cracks and crevices in walls, along and behind baseboards, beneath and behind sinks, stoves, refrigerators and cabinets, around plumbing and other utility installations.

For ants, apply to ant trails, also around doors and windows and wherever else these pests may find entrance.

For clover mites, use a 0.5% spray only.

NOTE: A period of 4 to 7 days is normally required for maximum effect on cockroaches.

For control of carpet beetles, thoroughly apply a 0.5% 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.

For control of brown dog ticks, thoroughly apply a 0.5% spray as a spot treatment to infested areas such as pet beds and resting quarters, nearby cracks and crevices, along and behind baseboards, window and door frames and localized areas of floor and floor covering where these pests may be present. Old bedding of pets should be removed and replaced with clean, fresh bedding after treatment. **DO NOT TREAT PETS WITH THIS PRODUCT.**

Attention (Pest Indoors): Do not apply water-base 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-base 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 use in poultry houses or other animal buildings. Do not apply spray to contact food, feedstuffs, and 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 sprays have dried. Remove pets and cover fish bowls (tanks) before spraying.

PESTS OUT-OF-DOORS

General Information: Use Chlorpyrifos 4E for control of certain pests on outside surfaces of buildings and on lawns and ornamental plants, for area control of ticks and chiggers and for mosquito control. Consult the following directions for dosage and application details to control the pests listed.

Pests On Outside Surfaces of Buildings: Use Chlorpyrifos 4E at the rate of 1½ fluid ounces per one gallon of water (0.5% chlorpyrifos emulsion) to control ants, clover mites, cockroaches, crickets, earwigs, fleas, flies, millipedes, mosquitoes, sowbugs, spiders and ticks by application as a residual spray or with a paint brush to outside surfaces of buildings including porches, screens, window frames, eaves, patios, garages, refuse dumps and other areas where these pests congregate or have been seen. Do not treat or allow the spray to contact plants (lawns, flowering plants, shrubs, trees, evergreens, etc.) because of possible injury. Repeat treatment as needed to maintain effectiveness.

NOTE: To help prevent infestation of building by ants, crickets, earwigs, millipedes and sowbugs (pillbugs), 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 8 ounces of Chlorpyrifos 4E per 100 gallons of water and apply as a coarse spray at the rate of about 10 gallons spray mixture per 1000 sq. ft. to thoroughly and uniformly wet the band area.

Pests of Lawns and Other Ornamental and Recreational Turf Grass Areas: Use Chlorpyrifos 4E to control pests listed in the following table by application at the recommended dosages and in accordance with the directions given below. Dilute Chlorpyrifos 4E in enough water to obtain complete and uniform coverage of pest-infested areas 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.

Pests of Ornamentals: Use Chlorpyrifos 4E to treat flowers, shrubs, vines, shade and flowering trees, and evergreens found to be infested with pests listed in the following table. Dilute Chlorpyrifos 4E with water according to directions given in the table and apply using suitable hand or power spray equipment in a manner to provide complete and uniform coverage. For best results apply a wetting spray to 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. **NOTE: DO NOT USE** on azaleas, camellias, poinsettias, rose bushes, or variegated ivy because of possible injury to these plants.

Wood Boring Insects, Infesting Shrubs and Trees such as Dogwood Borer, Lilac Borer, Ash Borer and Rhododendron Borer: Apply Chlorpyrifos 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 in your area. Mix at the rate of one quart of Chlorpyrifos 4E in 100 gallons of water and apply uniformly as a coarse, low pressure spray.

DOSAGES AND DIRECTIONS FOR USE ON TURF

ANTS, ARMYWORMS, CHIGGERS, CHINCH BUGS, CLOVER MITES, CRICKETS, CUTWORMS, EAGWIGS, FLEAS, GRASSHOPPERS, SOD WEBWORMS, TICKS: ¼ fl. oz. per 1000 sq. ft., ¾ fl. oz. per 5000 sq. ft., 1½ pint per 10,700 sq. ft., 1 quart per acre. Spray when pests first appear. Repeat when needed. For sod webworms delay watering or mowing the treated area for 12 to 24 hours after treatment.

TURFGRASS (HYPERODES) WEEVIL: 1½ fl. oz. per 1000 sq. ft. Spray suspected problem areas in mid-April and again in mid-May or as recommended by your local Agricultural Extension Service specialist in your area.

WHITE GRUBS (Including European Chafer, Southern Masked Chafer, and Japanese Beetle Larvae): 1½ to 3 fl. oz. 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 in your area. Immediately

after spraying, irrigate the treated area with ½ to 1 inch of water to wash the insecticide in the underlying soil.

BLUEGRASS BILLBUG: 1½ to 3 fl. oz. Spray early in the season when adults first appear. Repeat when needed.

PEACH TREE BORER: Apply Chlorpyrifos 4E to flowering trees and shrubs of the Genus Prunus in water 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. Consult your State Agricultural Experiment Station or Extension Service specialist for proper time to treat your area. Mix at the rate of 3 quarts per 100 gallons of water.

NOTE: Mosquitoes coming to rest on areas treated for control of turf and ornamental plant pests will be killed for varying periods of time after treatment, depending on exposure of treated areas to weathering conditions.

Attention (Lawn and Ornamental Plant Pests): Keep children and pets off treated areas until spray has dried. Keep out of lawn and garden fishpools and other bodies of water.

Native Elm Bark Beetle: Prevention of Overwintering: To prevent the adult beetle from overwintering in uninfested trees and to reduce beetle populations in disease free areas, apply Chlorpyrifos 4E as a 0.5% mixture of chlorpyrifos in water 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 with either a back pack mist blower or a hydraulic pressure sprayer from spring through to the early fall.

Prevention of Branch and Twig Feeding on High Value Elm Trees: To reduce the twig and branch feeding on uninfested trees deemed to be high in value, apply a 0.5% chlorpyrifos 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.

Area Control of Ticks and Chiggers: Use Chlorpyrifos 4E to control 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 possible public health problem. Apply Chlorpyrifos 4E in water at the rate of ½ pt. 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 spray equipment. Treat low underbrush, spray volume to obtain thorough coverage, usually 40 to 100 gallons per acre.

Attention (Area Control of Ticks and Chiggers): Do not allow public use of treated areas during application or until spray has dried.

IMPORTED FIRE ANT: Treatment of potted, containerized and balled and burlapped nursery stock. Use Chlorpyrifos 4E 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 4E diluted at the rate of 4 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. Wear rubber gloves, boots and apron during this operation. An alternate treatment to submerging potted plants is to apply a solution containing Chlorpyrifos 4E (4 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.

Treatment of Fire Ant Mounds: Apply Chlorpyrifos 4E as a drench diluted at the rate of 1 fl. oz. (30cc) per 4 gallons of water. Gently sprinkle a total of 1 gallon of the diluted solution over the surface of each mound using a sprinkler. ~~Get the~~ thoroughly wet mound and surrounding area to a 4 ft. diameter (12 sq. ft.). For best results, apply in cool weather, 65-80 degrees F. or in early morning or late evening hours. Treat new mounds as they appear. ~~Pre-treated~~ sprays may disturb the ants and cause migration, reducing product effectiveness.

DOSAGES AND DILUTIONS FOR USE ON ORNAMENTAL PLANTS
APHIDS, BAGWORMS, EASTERN TENT CATERPILLARS, FALL WEBWORMS, GRASSHOPPERS, MITES, ORANGE STRIPED

OAKWORMS, SPITTLEBUGS, WHITEFLIES, YELLOW NECKED CATERPILLARS: 0.25 fl. oz. per 3 gallons of water, 0.8 fl. oz. per 10 gallons of water, 0.5 pint per 100 gallons of water (equivalent to 4 oz. of chlorpyrifos per 100 gallons)

CUTWORMS, LEAFHOPPERS, MEALYBUGS, MIMOSA WEBWORMS, REDHUMPED CATERPILLARS, THRIPS (EXPOSED): 0.5 fl. oz. per 3 gallons of water, 1.6 fl. oz. per 10 gallons of water, 1 pint per 100 gallons of water (equivalent to 8 oz. of chlorpyrifos per 100 gallons)

ASH BORER, DOGWOOD BORER, LILAC BORER, RHODODENDRON BORER, SCALE CRAWLERS, OAK LECANIUM, PINE NEEDLE TEA, WINTER PEACH: 1.0 fl. oz. per 3 gallons of water, 3.2 fl. oz. per 10 gallons of water, 1 quart per 100 gallons of water (equivalent to 1 lb. of chlorpyrifos per 100 gallons)

PEACH TREE BORER: 2.9 fl. oz. per 3 gallons, 9.6 fl. oz. per 10 gallons of water, 3 quarts per 100 gallons of water (equivalent to 3 lbs. of chlorpyrifos per 100 gallons)

MOSQUITOES: Apply Chlorpyrifos 4E to mosquito infested, non-crop areas according to the conditions and rates shown in the following table. Mix Chlorpyrifos 4E 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 and power ground sprayers, mist applicators, and aerial spray equipment. See Chart.

WARNING (Mosquito Control): Read complete Environmental and Use Precautions and consult your State Fish and Game Department before using this product for mosquito control.

Waste Water (High in Organic Content): Use Chlorpyrifos 4E for control of mosquito larvae in agricultural, industrial and urban waste waters that contain high levels of organic matter, including sewage drains, ponds and lagoons, industrial waste water impoundments, cesspools and septic tanks, catch basins. Consult the following table for dosage and application details.

For use ONLY in logging ponds, standing water, temporary rain pools, intermittently flooded areas, stagnant water and similar non-crop areas that serve as mosquito breeding grounds.

DOSAGE FOR MOSQUITOES IN WASTE WATER

SEWAGE DRAINS, WASTE DISPOSAL PONDS AND LAGOONS, INDUSTRIAL WASTE WATER IMPOUNDMENTS: 1 fl. oz. per 5000 cu. ft. of water or 4.35 fl. oz. per acre foot of water (equivalent to 0.1 part per million of chlorpyrifos in the total volume of water treated). Pour the required amount of undiluted Chlorpyrifos 4E into the inflowing water or apply to the water surface as a coarse, low pressure spray. Treat stagnant waters by diluting Chlorpyrifos 4E with sufficient water or oil to obtain uniform distribution.

CESSPOOLS, SEPTIC TANKS: 1 fl. oz. per 1000 cu. ft. of water. Apply directly or flush the required amount down a toilet.

CATCH BASINS: 0.04 fl. oz. per catch basin. Dilute 2 fl. oz. of Chlorpyrifos 4E with 3 gallons of water to make 0.25% chlorpyrifos spray and apply 1/2 pint of the mixture per catch basin as a coarse, low pressure spray. Uniformly cover the exposed walls (sides) of the basin and the water surface.

CONDITIONS AND RATES TO USE FOR MOSQUITO CONTROL

Condition of Area To Be Treated	Chlorpyrifos 4E (fluid ounces)	Chlorpyrifos pounds	Number of Acres 1 Gallon of Chlorpyrifos 4E Will Treat
Larval Control None to medium vegetative cover	0.4 to 0.8	0.0125 to 0.025	320 to 160
Medium to heavy vegetative cover	0.8 to 1.6*	0.025 to 0.05*	160 to 80
Adult Control Light to medium vegetative cover	0.8	0.025	160
Medium to heavy vegetative cover	1.6	0.05*	80

*The higher dosage will also give faster knockdown and longer residual control where there is little or no vegetative cover.

