



U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (7505C)
401 "M" St., S.W.
Washington, D.C. 20460

EPA Reg. Number:
67760-6

Date of Issuance:
MAY 08 1996

NOTICE OF PESTICIDE:
 Registration
 Reregistration

Term of Issuance: Until
Reregistration

Name of Pesticide Product:
Cheminova Chlorpyrifos
2E

(under FIFRA, as amended).

Name and Address of Registrant (include ZIP Code):

Cheminova, Inc.
1700 Route 23, Suite 210
Wayne, New Jersey 07470

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.
2. Make the following label change before you release the product for shipment:
 - a. Revise the EPA Registration Number to read, "EPA Reg. No. 67760-6".
 - b. Delete the phrases Mosquito Control and Mosquito Abatement Districts from the first page of the labeling.
 - c. Add the phrase "May pose an aspiration pneumonia hazard" to the Note to Physician section.

Signature of Approving Official:

Dennis H. Edwards, Jr.
Product Manager 19
Insecticide-Rodenticide Branch
Registration Division (7505C)

Date:

MAY 08 1996

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- d. Add the phrase "Do not give anything by mouth to an unconscious person. Avoid alcohol" to "If Swallowed" under Statements of Practical Treatment, and "Get medical attention" to "If on Skin" section.
- e. Add the phrases "preferably mouth-to-mouth" to apply artificial respiration, and "Hold eyelids open and flush with steady, gentle stream for 15 minutes" to "If In Eyes" section.
- f. Clarify the time interval on dosage and directions for use on turf, i.e. ...12 to ? after treatment.
- g. Add the phrase "Keep children and pets off treated areas until spray has dried" to the section "Attention (Lawn and Ornamental Plant Pests)" on page 10.
- h. Add the phrase "Do not allow public use of treated areas during application or until spray has dried" to the section "Area Control of Ticks and Chiggers" on page 10.
- i. The statement "To be applied...Programs" on page one should be a separate stand alone paragraph.

Submit one (1) copy of the final printed labeling for the record before you release the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

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

Sincerely,

DHE

Dennis H. Edwards, Jr.
Product Manager (19)
Insecticide-Rodenticide Branch
Registration Division (7505C)

Enclosure

3913

CHA 7143
CHEMINOVA CHLORPYRIFOS 2E
ORGANOPHOSPHATE

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-pyridinyl) phosphorothioate)	24.66%
INERT INGREDIENTS:	75.34%
TOTAL	100.00%

Contains 2 pounds of chlorpyrifos per gallon.

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: 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. Call a physician.

IF INHALED: Remove victim to fresh air. Apply artificial respiration if indicated. 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.

See Additional Precautionary Statements Elsewhere On Label

EPA ACCEPTED 67760 -
with COMMENTS
in EPA Letter Dated

EPA Est. No. 51036-GA-1

MAY 08 1996

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

67760-6

Manufactured By
CHEMINOVA, INC.
1700 ROUTE 23, SUITE 210
WAYNE, NJ 07470

IN CASE OF A MEDICAL EMERGENCY, CALL TOLL FREE, DAY OR NIGHT, AREA CODE 800-228-5635, EXT. 153

4913

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. 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.

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USER SAFETY RECOMENDATIONS

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

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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.

PEST INDOORS

General Information:

Use Chlorpyrifos 2E 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 2E 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 2E. 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

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products. Do not use Chlorpyrifos 2E 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 2E to Use	
	0.25% spray	0.50% spray
Water-base spray		
1	1 1/3	2 2/3
3	4	8
5	6 2/3	13 1/3
10	13 1/3	26 2/3
Oil-based spray**		
1	1	2
3	3	6
5	5	10
10	10	21

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

**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 non food 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 areas where the above pests have been seen or are suspected of hiding 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

delivery 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 2E 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 (Pests 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

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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 allow 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. Remove pets and cover fish bowls (tanks) before spraying.

PESTS OUT-OF-DOORS

General Information:

Use Chlorpyrifos 2E 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 2E at the rate of 1 1/3 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. Repeat treatment as needed to maintain effectiveness.

NOTE: To help prevent infestation of buildings 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 1 pint of Chlorpyrifos 2E 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 2E to control pests listed in the following table by application at the recommended dosages and in accordance with the directions given below. Dilute Chlorpyrifos 2E 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.

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DOSAGE AND DIRECTIONS FOR USE ON TURF

PEST	DOSAGE PER 1,000 sq. ft.	REMARKS
Ants Armyworms Chiggers Chinch bugs Clover mites Crickets Cutworms Earwigs Fleas Grasshoppers Sod Webworms Ticks	1 1/2 fl. oz.	Spray when pests first appear, retreat when needed. For sod webworms delay watering or mowing the treated areas for 12 to hours after treatment.
Turfgrass weevil (Hyperodes)	3 fl. oz.	Spray suspected problem areas in mid-April and again in mid-May or as recommended by your local Agricultural Extension Service Agent.
White Grubs (European chafer) (Southern masked chafer) (Japanese Beetle larvae)	3 to 6 fl. oz.	For white grubs spray when grubs are young and are actively feeding near the soil surface, usually during late July and August or as recommended by your local Agricultural Extension Service Agent.
Bluegrass billbug	3 to 6 fl. oz.	Spray early in the season when adults first appear. Retreat when needed.

ORNAMENTAL USES

Use Chlorpyrifos 2E to treat flowers, shrubs, vines, shade and flowering trees, and evergreens found to be infested with pests listed in the following table. Dilute Chlorpyrifos 2E 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.

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DOSAGES AND DILUTIONS FOR USE ON
ORNAMENTAL PLANTS

Pests controlled		Ounces of Chlorpyrifos 2E in water to make:		
		3 gals.	10 gals.	100 gals.
Aphids	Mites	1/2	1.6	16
Bagworms	Orangestriped			
Eastern tent	oakworm			
caterpillar	Spittlebugs			
Fall webworm	Whiteflies			
Grasshoppers	Yellownecked			
	caterpillar			
Cutworms	Mimosa	1	3.2	32
Leafhoppers	webworm			(1 qt.)
Mealybugs	Redhumped			
	caterpillar			
	Thrips (exposed)			
Ash borer	Scale crawlers	2	6.4	64
Lilac borer	Oak lecanium			(2 qts.)
Dogwood	Pine needle			
borer	Tea			
Rhododendron	White peach			
borer				
Peach Tree Borer		5.8	19.2	192
				(6 qts.)

Wood Boring Insects, Infesting Shrubs and Trees such as Dogwood Borer, Lilac Borer, Ash Borer and Rhododendron Borer:

Apply Chlorpyrifos 2E 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 two quarts of Chlorpyrifos 2E in 100 gallons of water and apply uniformly as a coarse, low pressure spray.

Peach Tree Borer:

Apply Chlorpyrifos 2E 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.

Native Elm Bark Beetle: (Prevention of Overwintering)

To prevent the adult beetle from overwintering in uninfected trees

and to reduce beetle populations in disease free areas, apply Chlorpyrifos 2E 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 uninfected 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.

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 out of lawn and garden fishpools and other bodies of water.

Area Control of Ticks and Chiggers:
Use Chlorpyrifos 2E 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 2E in water at the rate of 1 pt. per acre (equivalent to 1 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.

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.

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Treatment of Fire Ant Mounds:

Apply Chlorpyrifos 2E as a drench diluted at the rate of 1 fl. oz. (30cc) per 2 gallons of water. Gently sprinkle a total of 1 gallon of the diluted solution over the surface of each mound using a sprinkler can. Thoroughly wet mound and surrounding area to a 4 ft. diameter (12 sq. ft.). For best results apply in cool weather, 65-80 deg. 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.

NOTICE

Because Cheminova Inc. has no control over storage, handling and conditions of use which are of critical importance, Cheminova Inc. makes no representation or warranty, either express or implied, concerning this product, due to misuse, improper handling or storage of this material. Nor does Cheminova Inc. assume any responsibility for injury to persons, animals, soil or property arising out of misuse, improper handling or storage of this material.

ATTENTION - Do not use in any manner other than recommended on this label.



U.S. ENVIRONMENTAL PROTECTION AGENCY
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Term of Issuance: **Until Reregistration**

Name of Pesticide Product:
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(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

**Cheminova, Inc.
1700 Route 23, Suite 210
Wayne, New Jersey 07470**

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- c. Add the phrase "May pose an aspiration pneumonia hazard" to the Note to Physician section.

Signature of Approving Official:

**Dennis H. Edwards, Jr.
Product Manager 19
Insecticide-Rodenticide Branch
Registration Division (7505C)**

Date:

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- e. Add the phrases "preferably mouth-to-mouth" to apply artificial respiration, and "Hold eyelids open and flush with steady, gentle stream for 15 minutes" to "If In Eyes" section.
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Sincerely,

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Dennis H. Edwards, Jr.
Product Manager (19)
Insecticide-Rodenticide Branch
Registration Division (7505C)

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CHEMINOVA CHLORPYRIFOS 2E
ORGANOPHOSPHATE

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-pyridinyl) phosphorothioate)	24.66%
INERT INGREDIENTS:	75.34%
TOTAL	100.00%

Contains 2 pounds of chlorpyrifos per gallon.

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: 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. Call a physician.

IF INHALED: Remove victim to fresh air. Apply artificial respiration if indicated. 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.

See Additional Precautionary Statements Elsewhere On Label

EPA ACCEPTED 67760 -
with COMMENTS
in EPA Letter Dated

EPA Est. No. 51036-GA-1

MAY 08 1996

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

67760-6

Manufactured By
CHEMINOVA, INC.
1700 ROUTE 23, SUITE 210
WAYNE, NJ 07470

IN CASE OF A MEDICAL EMERGENCY, CALL TOLL FREE, DAY OR NIGHT, AREA CODE 800-228-5635, EXT. 153

4913

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. 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

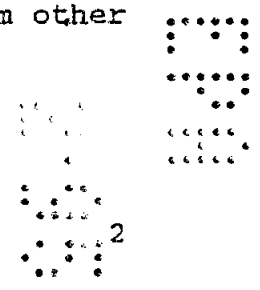
Exception: Applicator's who submerge containerized or balled/burlapped plants in tanks must wear:

- 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.



products. Do not use Chlorpyrifos 2E in combination with dichlorvos (DDVP) or pyrethrins for treatment of food areas of food handling establishments.

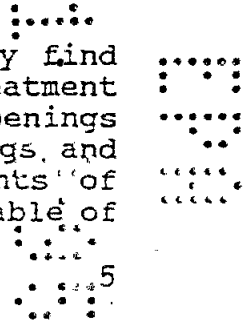
SPRAY DILUTION CHART

Gallons of Spray Mixture Desired	Fluid Ounces* of Chlorpyrifos 2E to Use	
	0.25% spray	0.50% spray
Water-base spray		
1	1 1/3	2 2/3
3	4	8
5	6 2/3	13 1/3
10	13 1/3	26 2/3
Oil-based spray**		
1	1	2
3	3	6
5	5	10
10	10	21

*Note: 1 fluid ounce = 2 tablespoonfuls = 6 teaspoonfuls
 **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 non food 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 areas where the above pests have been seen or are suspected of hiding 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



delivery 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 2E 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 paintbrush 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.

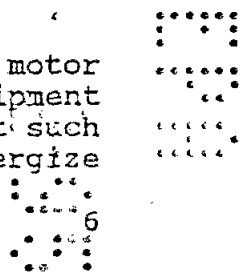
Note: A period of 4 to 7 days is normally required for maximum effect on cockroaches.

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 (Pests 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 allow 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. Remove pets and cover fish bowls (tanks) before spraying.

PESTS OUT-OF-DOORS

General Information:

Use Chlorpyrifos 2E 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 2E at the rate of 1 1/3 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. Repeat treatment as needed to maintain effectiveness.

NOTE: To help prevent infestation of buildings 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 1 pint of Chlorpyrifos 2E 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 2E to control pests listed in the following table by application at the recommended dosages and in accordance with the directions given below. Dilute Chlorpyrifos 2E 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.



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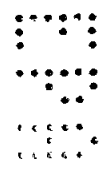
DOSAGE AND DIRECTIONS FOR USE ON TURF

PEST	DOSAGE PER 1,000 sq. ft.	REMARKS
Ants	1 1/2 fl. oz.	Spray when pests first appear, retreat when needed. For sod webworms delay watering or mowing the treated areas for 12 to hours after treatment.
Armyworms		
Chiggers		
Chinch bugs		
Clover mites		
Crickets		
Cutworms		
Earwigs		
Fleas		
Grasshoppers		
Sod Webworms		
Ticks		
Turfgrass weevil (Hyperodes)	3 fl. oz.	Spray suspected problem areas in mid-April and again in mid-May or as recommended by your local Agricultural Extension Service Agent.
White Grubs (European chafer) (Southern masked chafer) (Japanese Beetle larvae)	3 to 6 fl. oz.	For white grubs spray when grubs are young and are actively feeding near the soil surface, usually during late July and August or as recommended by your local Agricultural Extension Service Agent.
Bluegrass billbug	3 to 6 fl. oz.	Spray early in the season when adults first appear. Retreat when needed.

ORNAMENTAL USES

Use Chlorpyrifos 2E to treat flowers, shrubs, vines, shade and flowering trees, and evergreens found to be infested with pests listed in the following table. Dilute Chlorpyrifos 2E 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.



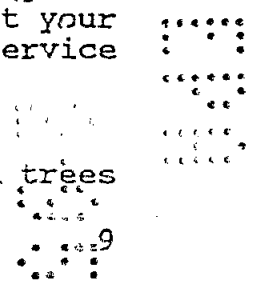
DOSAGES AND DILUTIONS FOR USE ON
ORNAMENTAL PLANTS

Pests controlled		Ounces of Chlorpyrifos 2E in water to make:		
		3 gals.	10 gals.	100 gals.
Aphids	Mites	1/2	1.6	16
Bagworms	Orangestriped			
Eastern tent	oakworm			
caterpillar	Spittlebugs			
Fall webworm	Whiteflies			
Grasshoppers	Yellownecked			
	caterpillar			
Cutworms	Mimosa	1	3.2	32
Leafhoppers	webworm			(1 qt.)
Mealybugs	Redhumped			
	caterpillar			
	Thrips (exposed)			
Ash borer	Scale crawlers	2	6.4	64
Lilac borer	Oak lecanium			(2 qts.)
Dogwood	Pine needle			
borer	Tea			
Rhododendron	White peach			
borer				
Peach Tree Borer		5.8	19.2	192 (6 qts.)

Wood Boring Insects, Infesting Shrubs and Trees such as Dogwood Borer, Lilac Borer, Ash Borer and Rhododendron Borer:
Apply Chlorpyrifos 2E 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 two quarts of Chlorpyrifos 2E in 100 gallons of water and apply uniformly as a coarse, low pressure spray.

Peach Tree Borer:
Apply Chlorpyrifos 2E 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.

Native Elm Bark Beetle: (Prevention of Overwintering)
To prevent the adult beetle from overwintering in uninfected trees



and to reduce beetle populations in disease free areas, apply Chlorpyrifos 2E 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 uninfected 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.

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 out of lawn and garden fishpools and other bodies of water.

Area Control of Ticks and Chiggers: Use Chlorpyrifos 2E 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 2E in water at the rate of 1 pt. per acre (equivalent to 1 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.

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.



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Treatment of Fire Ant Mounds:

Apply Chlorpyrifos 2E as a drench diluted at the rate of 1 fl. oz. (30cc) per 2 gallons of water. Gently sprinkle a total of 1 gallon of the diluted solution over the surface of each mound using a sprinkler can. Thoroughly wet mound and surrounding area to a 4 ft. diameter (12 sq. ft.). For best results apply in cool weather, 65-80 deg. 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.

NOTICE

Because Cheminova Inc. has no control over storage, handling and conditions of use which are of critical importance, Cheminova Inc. makes no representation or warranty, either express or implied, concerning this product, due to misuse, improper handling or storage of this material. Nor does Cheminova Inc. assume any responsibility for injury to persons, animals, soil or property arising out of misuse, improper handling or storage of this material.

ATTENTION - Do not use in any manner other than recommended on this label.

