

OCT 24 1994

Justit

Glenda Haage
Riverside/Terra Corporation
600 Fourth Street
Sioux City, IA 51101

Dear Ms. Haage:

Subject: Revised Labeling - Add New Uses
Chlorothalonil 4L
EPA Registration No. 9779-270
Your Submission Dated October 7, 1994

The amendment referred to above, submitted in connection with registration under section 3(c)(7)(A) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), is acceptable provided that you:

1. Submit/cite all data required for registration/-reregistration of your product under FIFRA section 3(c)(5) or 4(a) when the Agency requires all registrants of similar products to submit such data.
2. Submit one (1) copy of your final printed labeling 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 section 6(e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

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

Sincerely yours,

JGP

fw Cynthia Giles-Parker
Product Manager (22)
Fungicide-Herbicide Branch
Registration Division (7505C)

Enclosure

2 7 14

R*

CHLOROTHALONIL FULL

ACTIVE INGREDIENT		
Chlorothalonil (tetrachloroisophthalonitrile)		40.4%
INERT INGREDIENTS		<u>59.6%</u>
	Total	100.0%

Contains 4.17 pounds chlorothalonil 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 the label, find someone to explain it to you in detail).

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Call physician or poison control center. Drink one or two glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

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

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

IF IN EYES: Call a physician. Hold eyelids open and flush with a steady gentle stream of water for 15 minutes.

PRECAUTIONARY STATEMENTS

WARNING

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

May be fatal if inhaled. Causes substantial but temporary eye irritation. Harmful if swallowed or absorbed through skin. Do not breath dust or spray mist. Do not get in eyes. Avoid contact with with skin or clothing.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear long-sleeved shirt and long pants, waterproof gloves, shoes plus socks, protective eyewear and a dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C).

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

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240 (d) (4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS.

See side panel for additional PRECAUTIONARY STATEMENTS.

EPA REG. No. 9779-270

EPA Est. No. 9779-

with COMMENTS
In EPA Letter Dated:

OCT 24 1994

Manufactured For
RIVERSIDE/TERRA CORPORATION
P. O. Box 6000, Sioux City, Iowa 51102-6000
Riverside Serves Agriculture. Agriculture Serves Everyone.

NET CONTENTS
GALLONS

3.94-01R

Under the FIFRA Act, this pesticide and its use are approved, for sale and registered under FIFRA No.

9779-270

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USER SAFETY RECOMMENDATIONS

Wash thoroughly with soap and water. Wash your hands and exposed skin after use. Wash your clothes separately. Do not use contaminated clothing. Do not use contaminated equipment. Do not use contaminated tools. Do not use contaminated containers. Do not use contaminated equipment. Do not use contaminated tools. Do not use contaminated containers.

ENVIRONMENTAL HAZARDS

This product is toxic to fish, aquatic invertebrates, and marine/estuarine organisms. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Apply only to areas specified on label. Do not contaminate water when disposing of equipment washwaters.

DIRECTIONS FOR USE

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 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: coveralls, waterproof gloves, shoes plus socks and protective eyewear.

STORAGE AND DISPOSAL

DO NOT CONTAMINATE WATER, FOOD, OR FEED BY STORAGE AND DISPOSAL

STORAGE

Store in a cool place. Protect from excessive heat.

DISPOSAL

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, pesticide spray, 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: Do not reuse empty container. 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.

GENERAL INFORMATION

CHLOROTHALONIL 4L is an excellent fungicide when used according to label directions for control of a broad spectrum of plant diseases. CHLOROTHALONIL 4L can be used effectively in dilute or concentrate sprays. Thorough, uniform coverage is essential for disease control. Do not combine CHLOROTHALONIL 4L in the spray tank with pesticides, surfactants or fertilizers, unless your prior use has shown the combination physically compatible, effective and noninjurious under your conditions of use.

Slowly invert container several times to assure uniform mixture. The required amount of CHLOROTHALONIL 4L should be added slowly into the spray tank during filling. With concentrate sprays, premix the required amount of CHLOROTHALONIL 4L in a clean container and add to the spray tank as it is being filled. Keep agitator running when filling spray tank and during spray operations.

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CROP	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
Beans (Dry)	Blight	4 1/2 pints	Use in sufficient water to obtain adequate coverage. Begin applications when disease threatens and repeat at 7 to 10 day intervals or as necessary to maintain control. Do not apply within 7 days of harvest. Do not graze treated areas or feed treated plant parts to livestock.
	Ecchrysis Blight (gray mold)	4 1/2 pints	Use in sufficient water to obtain adequate coverage. Begin applications when disease threatens and repeat at 7 to 10 day intervals or as necessary to maintain control. Do not apply within 7 days of harvest. Do not graze treated areas or feed treated plant parts to livestock.
Beans (Dry) Navy, Pinto, Kidney, Lima, Blackeye	Rust, Anthracnose, Downy mildew, Cercospora leaf spot (blackeye only)	2 to 3 pints	Use in sufficient water to obtain adequate coverage. Begin applications during early bloom stage and repeat at 7 to 10 day intervals. For use only on beans harvested dry with pods removed. Do not apply within 6 weeks before harvest. Do not allow livestock to graze in treated areas or feed treated plant parts to livestock.
Cabbage, Cauliflower, Broccoli, Brussels sprouts	Alternaria leaf spot, Downy mildew	2 1/2 pints	Use in sufficient water to obtain adequate coverage. Begin applications after transplants are set in field, or shortly after emergence of field-seeded crop, or when conditions favor disease development. Repeat at 7 to 10 day intervals or as necessary to maintain control.
	Ring spot (California only)	2 1/2 pints	For field seeded Brussels sprouts, begin applications at time of early sprout development or when conditions favor disease development. Repeat at 7 to 10 day intervals or as necessary to maintain control.
Carrot	Cercospora (Early) blight, Alternaria (Late) blight	2 1/4 to 2 1/2 pints	Use in sufficient water to obtain adequate coverage. Start applications when disease threatens and repeat at 7 to 10 day intervals or as necessary to maintain control. CHLOROTHALONIL 4L may be applied through sprinkler irrigation equipment (solid set, portable wheel move or center pivot systems only). See calibration directions preceding this section.
Celery	Cercospora (Early) blight Septoria (Late) blight	1 1/2 to 2 1/2 pints	Use 1 1/2 to 2 1/2 pints per acre on a 3 to 5 day spray schedule or 3 to 4 1/2 pints per acre on a 7 day schedule. Start applications when transplants are set in the field. Apply in sufficient water to obtain adequate coverage. CHLOROTHALONIL 4L may be applied through sprinkler irrigation equipment (solid set, portable wheel move or center pivot systems only). See calibration directions preceding this section. Do not apply within 7 days of harvest.
	Basal stalk rot (Rhizoctonia solani)	3 to 4 1/2 pints	
	Pink rot (Suppression)	4 1/2 pints	
	Early blight Late blight	2 1/4 to 2 3/4 pints/100 gal.	For celery seedbeds, apply 125 gallons per acre twice weekly or as needed to maintain control. Start applications shortly after crop emergence. Use the higher rate under severe disease conditions.
Corn (Sweet), Corn grown for seed	Helminthosporium leaf blights, Rust	1 1/2 to 2 1/2 pints	Use in sufficient water to obtain adequate coverage. Begin applications when conditions favor disease development and repeat at 4 to 7 day intervals or as required to maintain control. Under severe disease conditions, use 2 1/4 to 2 3/4 pints per acre. Do not apply within 14 days of harvest. Do not allow livestock to graze in treated fields. Do not ensile treated corn or use as livestock forage.

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CROP	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
Cantaloupe Muskmelon Honeydew melon Watermelon Squash, Pumpkin	Target blight, Anthracnose, Powdery mildew	2 1/4 to 2 3/4 pints	Use sufficient water to obtain adequate coverage. Begin applications when plants are in first true leaf stage or when conditions are favorable for disease development. Repeat applications at 7 day intervals. Under severe disease conditions, shorten spray interval. CHLOROTHALONIL 4L may be applied through sprinkler irrigation equipment (solid set, portable wheel move or center pivot systems only). See calibration directions preceding this section.
	Powdery mildew (except south-western states), Gummy stem blight, Leaf blight, Scab	2 1/4 to 4 1/4 pints	Under severe disease conditions, shorten spray interval. CHLOROTHALONIL 4L may be applied through sprinkler irrigation equipment (solid set, portable wheel move or center pivot systems only). See calibration directions preceding this section.
	Fruit belly rot (Rhizoctonia solani)	12 pints	Use CHLOROTHALONIL 4L in sufficient water to obtain runoff to soil surface. Make a single application when vines begin to form. CHLOROTHALONIL 4L may be applied through sprinkler irrigation equipment as directed above.
Cantaloupe Muskmelon Honeydew melon Watermelon Squash, Pumpkin	Anthracnose Downy mildew	2 1/4 to 2 3/4 pints	Use in sufficient water to obtain adequate coverage. Begin applications when plants are in first true leaf stage or when conditions are favorable for disease development. Repeat applications at 7 day intervals. Under severe disease conditions, shorten spray interval.
	Cercospora leaf spot, Gummy stem blight (black rot), Leaf blight, Scab, Powdery mildew (except south-western states)	2 1/4 to 4 1/4 pints	
Grasses grown for seed	Stem rust, Leaf rust, Stripe rust, Selenophoma (eyespot)	1 1/2 to 2 pints	Use in sufficient water to obtain adequate coverage. Begin applications during stem elongation when conditions favor disease development. Re-apply, at flag (top) leaf emergence and at head emergence. Under severe disease conditions, use the 2 pt. per acre rate and repeat applications at 14 day intervals. Do not apply within 14 days of harvest. Do not allow livestock to graze in treated areas or feed treated plant parts to livestock.
Mint	Rust, Septoria leaf spot	2 pints	Use in sufficient water to obtain adequate coverage, normally 20 to 150 gallons per acre for dilute sprays and 5 to 10 gallons per acre for concentrate ground and aircraft applications. Begin applications when emerging plants are 4-8 inches high. Repeat applications at 7 to 10 day intervals or as necessary to maintain control. Do not apply more than 3 times per season. Do not apply within 80 days of harvest. Do not feed fresh or extracted mint hay from treated fields to livestock. Based on available residue data, use of CHLOROTHALONIL 4L on mint is restricted to Indiana, Michigan and Wisconsin.
Onion (dry bulb)	Botrytis leaf blight (blast), Purple blotch	2 to 3 pints	Apply in sufficient water to obtain adequate coverage. Make the first application at first sign of disease or when dew or rain occurs. Repeat at 7 to 10 day intervals for as long as conditions favor disease. Use the high rate and a 7 day schedule of applications when heavy dew or rain persists. Do not apply within 7 days before harvest of dry bulb onions or garlic. Do not apply more than 3 times per season or within 14 days of harvest on green bunching onions, leeks, or shallots. If additional disease control is needed before harvest, use another registered fungicide.
Onion (green bunching), Garlic, Leek, Shallot, Onion grown for seed	Botrytis leaf blight (blast), Purple blotch, Downy mildew (suppression)	2 to 4 1/4 pints	Apply in sufficient water to obtain adequate coverage. Make the first application at first sign of disease or when dew or rain occurs. Repeat at 7 to 10 day intervals for as long as conditions favor disease. Use the high rate and a 7 day schedule of applications when heavy dew or rain persists. Do not apply within 7 days before harvest of dry bulb onions or garlic. Do not apply more than 3 times per season or within 14 days of harvest on green bunching onions, leeks, or shallots. If additional disease control is needed before harvest, use another registered fungicide.

CROP	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
Parsnip	Alternaria leaf spot, Downy mildew, Anthracnose, Botrytis blight (gray mold), Bottom rot (Rhizoctonia)	2 to 3 pints	Apply in sufficient water to obtain adequate coverage. Make the first application at the first sign of disease and continue treatments at 14 day intervals until weather conditions no longer favor disease development. Do not graze livestock in treated area or feed processing by-products to livestock.
Passion Fruit (Hawaii only)	Alternaria fruit and leaf spot (passion fruit brown spot)	2 1/2 pints	Apply with ground equipment in sufficient water to obtain adequate coverage of fruit and leaves. Begin treatment when fruit spots appear (April to July) and continue treatments at 14 day intervals until weather conditions no longer favor disease development. Do not graze in treated area or feed vines or processing by-product to livestock used for food.
Peanut	Cercospora (early) leaf spot, Cercosporidium (late) leaf spot	1 1/2 to 2 1/2 pints	Apply in sufficient water for coverage when leaf wetness first occurs or 30 to 40 days after planting. Repeat at 10 to 14 day intervals. When conditions favor late leafspot or when rust or web blotch occur, apply 2 1/2 pints per acre at 10 day intervals for the remainder of the season. Do not apply within 14 days of harvest. Do not allow livestock to graze in treated areas. Do not feed hay or threshings from treated fields to livestock. CHLOROTHALONIL 4L may be applied through sprinkler irrigation equipment. Use 2 1/2 pints per acre in solid set, portable wheel move, center pivot or traveling gun sprinkler irrigation equipment. See calibration directions preceding this section.
	Rust, Web blotch	2 1/2 pints	
Potato	Early blight, Late blight, Botrytis vine rot (Botrytis spp.)	1 1/2 to 2 1/2 pints	Use in sufficient water to obtain adequate coverage. Begin applications when plants are 6 to 8 inches high or when disease threatens and continue at 7 to 10 day intervals or as needed to maintain disease control. Under severe disease conditions, use 2 1/2 pints per acre on a 7 day schedule. CHLOROTHALONIL 4L may be applied through sprinkler irrigation equipment (solid set, portable wheel move or center pivot systems only). Do not exceed a 10 day interval between applications when using this technique. See calibration directions preceding this section.
	Dryland culture only: Early blight, Late blight	1 1/2 to 2 1/2 pints	

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CROP	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
Soybean	<p>Anthracnose, Septoria blight (Septoria blight)</p> <p>Anthracnose (soybean), Purple seed stain (Cercospora kikuchii), Septoria brown spot</p>	2 to 3 1/2 pints or 1 1/2 to 2 1/2 pints	<p>Apply CHLOROTHALONIL 4L at 2 to 3 1/2 pints per acre in sufficient water to obtain adequate coverage. Applications should be made at 14 day intervals. Apply in sufficient water to obtain complete coverage. A minimum of five gallons of water per acre should be used for aerial application. CHLOROTHALONIL 4L may be applied through sprinkler irrigation equipment (solid set, portable wheel move or center pivot systems only). Follow application and calibration directions preceding this section. Determinate (southern) soybean varieties: Two application program--make the first application at early pod set (R3 stage, when majority of pods are 1/2 to 1 inch length) and the second at beginning of seed formation (R5) which occurs about 14 days later. Three application program--make the first application at the beginning of flowering (R1), and second at early pod set (R3), and the third at beginning of seed formation (R5). Indeterminate (northern) soybean varieties: Two application program--make the first application when the largest pods are 1 to 1 1/2 inches in length and make the second application 14 days later. Three application program--make the first application one week after the first flowering and continue applications at 14 day intervals. CHLOROTHALONIL 4L may be co- applied with Benlate* 50WP as a tank mix for disease control on indeterminate (northern) soybeans. Use 1 1/2 pints of CHLOROTHALONIL 4L plus 8 ounces of Benlate 50WP per acre. Make the first application when pods near the top of plants are 1/2 to 1 inch in length and a second application 14 days later. Do not apply CHLOROTHALONIL 4L within 6 weeks of harvest. Do not allow livestock to graze treated areas. Do not feed soybean hay or threshings from treated fields to livestock.</p> <p>*Benlate is a registered trademark of E. I. DuPont de Nemours and Co., Inc.</p>
Tomato	<p>FOLIAGE: (apply every 7 to 10 days): Early blight, Late blight, Gray leaf spot, Gray leaf mold, Septoria leaf spot</p>	2 to 3 pints	<p>Apply in sufficient water to obtain adequate coverage. Begin applications when dew or rain occur and disease threatens. Use the highest rate and shortest interval specified when disease conditions are severe. CHLOROTHALONIL 4L may be combined in the spray tank with EPA-registered pesticide products that claim copper as the active ingredient and are labeled for control of bacterial diseases of tomatoes. Check the copper manufacturer's label for specific instructions, precautions and limitations prior to mixing with CHLOROTHALONIL 4L. Do not use with Copper-Count*N in concentrated spray suspensions. CHLOROTHALONIL 4L may be applied through sprinkler irrigation equipment (solid set or portable wheel move systems only). See calibration directions preceding this section.</p>
	<p>FRUIT: (apply every 7 to 14 days beginning at fruit set): Anthracnose, Alternaria fruit rot (black rot), Rhizoctonia fruit rot, Botrytis gray mold, Late blight fruit rot</p>	3 to 4 pints	

SPRAY VOLUME (Gallons Per Acre)

<p>with proper calibration to obtain uniform coverage of tree canopy. Application with ground equipment is preferable to aerial application because ground applications generally give better coverage of the tree canopy. If application with ground equipment is not feasible, CHLOROTHALONIL 4L may be applied with aircraft using at least 20 gallons per acre.</p> <p>When concentrate sprays are used or when treating non-bearing or immature trees, the lower rate of CHLOROTHALONIL 4L listed may be used. Do not allow livestock to graze in treated areas. The following spray volumes are recommended as gallons of spray per acre:</p>	Apricot, Peach, Cherry, Plum, Prune		
	Sweet Cherry	400	20 to 200
	Conifers Forest Stands Christmas Trees Nursery Beds	Not used 100 100	10 to 20 (aircraft) 5 to 10 (ground equipment only) 5 to 10 (ground equipment only)

CHLOROTHALONIL 4L RATE PER

CROP	DISEASES	ACRE	100 GAL*	APPLICATION DIRECTIONS
Peach, Nectarine, Apricot, Cherry, Plum, Prune	Leaf curl, Coryneum blight (shothole)	4 1/2 to 6 pints	1 1/2 to 2 pints	For best control of both diseases apply at leaf fall in late autumn, using sufficient water and proper sprayer calibration to obtain uniform coverage. When conditions favor high disease levels, use the high rate of application and apply once or twice more in mid to late winter before budswell. If the leaf fall application is not practical, application of CHLOROTHALONIL 4L for control of leaf curl may be made at anytime prior to budswell the following spring. Where Coryneum blight (shothole) occurs, also apply at budbreak to protect newly emerging leaves and at shuck-split to prevent fruit infections.
	Brown rot blossom blight	4 1/2 to 8 pints	1 1/2 to 2 pints	Use 6 to 8 pints per acre on trees taller than 20 ft. and 4 1/2 to 6 pints per acre on smaller trees. Make one application at popcorn (pink, red, or early white bud) and a second application at full bloom. If weather conditions favor disease development, make an additional application at petal fall.
	Cherry leaf spot; peach, nectarine, apricot scab	4 1/2 to 6 pints	1 1/2 to 2 pints	In addition to the bloom applications listed above, make one application at shuck-split. Do not apply CHLOROTHALONIL 4L after shuck-split and before harvest. If additional disease control is needed before harvest, use another registered fungicide. For control of cherry leaf spot after harvest, make one application to foliage within 7 days after fruit is removed. In orchards with a history of high leaf spot incidence, make a second application 10-14 days later.

CROP	DISEASES	ACRE	100 GAL*	APPLICATION DIRECTIONS
				Apply at 3 to 4 inches
	Scleroderris canker (pines) Swiss needle-cast and Rhabdocline needlecast (Douglas fir)	2 to 4 pints	2 to 4 pints	Make the first application in early spring when new shoot growth is 1/2 to 2 inches in length. Make additional applications at 3 to 4 week intervals until conditions no longer favor disease development. For use in nursery beds, apply the highest rate specified on a 3 week schedule.
	Sirococcus tip blight	3 to 5 pints	3 to 5 pints	
	Rhizosphaera needlecast (spruces) Scirrhia brown spot (pines)	8 pints	8 pints	
	Cyclaneusma and Lophodermium needlecast (pines)	4 to 8 pints	4 to 8 pints	Apply in early spring prior to budbreak. Repeat applications at approximately 6 to 8 week intervals until spore release ceases in late fall. Apply monthly during periods of frequent rainfall, and where Lophodermium infections occur during dormancy (Pacific Northwest). During drought periods, applications may be suspended, then resumed upon next occurrence of needle wetness.
	Rhabdocline needlecast (Douglas fir)	2 to 4 pints	2 to 4 pints	Apply at budbreak and repeat at 3 to 4 week intervals until needles are fully elongated and conditions no longer favor disease development. In plantations of mixed provenance, or when irregular budbreak occurs, apply weekly until all trees have broken bud, then every 3 to 4 weeks as specified above. In nursery beds, use the high rate on a 3 week schedule.
	Botrytis seedling blight Phoma twig blight	2 to 4 pints	2 to 4 pints	Begin applications in nursery beds when seedlings are 4 inches tall and when cool, moist conditions favor disease development. Make additional applications at 7 to 14 day intervals as long as favorable disease conditions persist.

* Volumetric rates to be used only with full dilute spray volume specified on this label for tree and orchard crops.

USE DIRECTIONS
TURF AND ORNAMENTALS

Chlorothalonil 4L is formulated for use on golf course tees, greens and fairways, ornamental turfgrass and ornamental herbs, shrubs and trees. It is highly effective for the control of a broad spectrum of turf and ornamental plant diseases when it is used according to the directions on this product label. Thorough, uniform coverage of plant surfaces is essential for good disease control.

TURF: Do not mow or water after treatment until spray deposit on turfgrass is thoroughly dry; Chlorothalonil 4L should always be used in conjunction with good turf management practices.

Golf Course Fairways: Apply in 30 to 40 gallons of water per acre. Begin applications when conditions favor disease development and repeat applications as long as these conditions persist. Under severe disease conditions, use the highest rate and shortest interval corresponding with the application schedule selected from the table below.

DISEASE	APPLICATION INTERVAL	APPLICATION RATES PER 1,000 SQ. FT.
Helminthosporium Leafspot	7-10 days 14-21 days	8 pints 8-14 pints
Rhizoctonia brown patch	7-14 days	8-14 pints
Anthracnose	7-14 days	6-12 quarts

Golf Course Tees and Greens and Ornamental Turfgrass: Apply in an adequate amount of water to provide complete coverage. This amount may vary from 2 to 10 gallons per 1,000 square feet. See below for suggested rates and timing. Under severe disease conditions, use the curative rates and spray on a 7 day schedule.

Do not use Chlorothalonil 4L through sprinkler irrigation equipment on golf courses.

DISEASE	APPLICATION INTERVAL	RATE Fluid Ounces Per 1,000 Sq. Ft.	
		Preventive*	Curative**
Anthracnose	7-14 days	5-9	9-11
Copper spot	7-10 days	6-9	6-11
Curvularia leafspot	7-10 days	3-6	6-11
Dollar spot	7-14 days	3-6	6-11
Gray leafspot	7-10 days	3-6	6-11
Helminthosporium leafspot and melting out	7-10 days	3-6	6-11
Large brown patch	7-10 days	3-6	6-11
Red thread	7-10 days	3-9	9-11
Stem rust of bluegrass	7-14 days	6-9	9-11
Dichondra: Alternaria leafspot (California only)	7-14 days	6-9	9-11

- * Recommended rates for preventing disease establishment; use lower rate when disease conditions are light to moderate, higher indicated rates when conditions are severe.
- ** Rates for use on a 7 day schedule when disease is present. Higher indicated rate should be applied under severe conditions.

Turfgrasses - Gray snow mold caused by Typhula spp.: Apply in sufficient water to obtain adequate coverage (2 to 10 gallons per 1,000 square feet). Apply 8-16 fluid ounces of Chlorothalonil 4L per 1,000 square feet of turf area. Application must be made before snow cover in autumn. Use the higher rate if turf layer remains frozen prior to snow cover. If snow cover is intermittent or lacking during the winter, re-apply at 8 fluid ounces per 1,000 square feet at monthly intervals until gray snow mold conditions no longer prevail. In areas where pink snow mold (Gerlachia or Fusarium patch) is likely to occur, apply at 8 fluid ounces per 1,000 square feet in combination with either Tersan* 1991 50WP at 2 ounces per 1,000 square feet or Chipco** 26019 50WP at 4 ounces per 1,000 square feet of turf area.

*Tersan is a registered trademark of E. I. DuPont de Nemours & Company, Inc.
 **Chipco is a registered trademark of Rhone-Poulenc, Inc.

Fusarium (Gerlachia) Patch: For control of Fusarium patch only in areas where snow cover is intermittent or lacking during the winter, apply 8-14 fluid ounces per 1,000 square feet of turf area. Begin applications in late autumn and re-apply at 21 to 28 day intervals until conditions favorable for Fusarium patch no longer prevail.

ALGAL SCUM: For prevention of algal scum on turfgrasses caused by cyanobacteria of the genus Lyngbia, apply Chlorothalonil 4L at the rate of 3 to 6 ounces per 1,000 square feet on a 7 to 14 days schedule. Under severe scum conditions, use the high rate and apply on a 7 day schedule. When algal scum is well established, every attempt should be made to dry out the afflicted area. Once dry, spiking or verticutting should be done to enhance turfgrass recovery in conjunction with Chlorothalonil 4L applications at the rate of 6 to 11 ounces per 1,000 square feet on a 7 to 14 day schedule. Several applications of Chlorothalonil 4L at the high rate may be necessary for turfgrass recovery. Only a preventive spray program with Chlorothalonil 4L will prevent recurrence of the algae when environmental conditions are favorable for algal growth.

ORNAMENTALS

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SPECIES	DISEASES/INJURIES	SUGGESTED TREAT APPLICATION
<p> Azalea* Rhododendron* Buckeye, Horsechestnut Cherry-Laurel Crabapple Dogwood Euonymus Firethorn Flowering almond, Quince, Sand Cherry Hawthorn Holly Mountain Laurel Oak (red group only) Oregon-Grape (Mahonia) Photinia Pieris (Andromeda) Poplar Privet Sycamore, Planetree Viburnum </p>	<p> Cercospora, Cercospora leafspot, Cylindrosporium leafspots Phytophthora die-back, Ovinia flower blight Leaf blotch, Anthracnose Cercospora leafspot Scab, Cedar-apple rust, Sphaeropsis leafspot Septoria leafspot Anthracnose Scab Monilinia blossom/branch blight Rust, Fabraea leafspot Rhizoctonia web blight Cercospora leafspot Taphrina blister, Actinopelte leafspot, Anthracnose Rust Fabrea (Entomosporium) leafspot Phytophthora die-back Marssonina leafspot Cercospora leafspot Anthracnose Powdery mildew </p>	<p> Spring New leaf emergence Early bloom Spring bud break Petal fall Spring bud break Early bloom Spring bud break Spring bud break Early bloom Prebloom Warm, moist conditions Spring bud break Dormant budswell Spring bud break Spring bud break New leaf emergence Spring bud break Prolonged wet conditions Spring bud break Mid-summer </p>
BULBS AND FLOWERING PLANTS:		
<p> Carnation Chrysanthemum/Daisy Geranium Gladiolus Hollyhock Hydrangea* (foliage only) Iris Lily, Crocus, Daffodil, Narcissus, Tulip Petunia* Rose (Use 7/8 lb. per 100 gallons) Statice Zinnia </p>	<p> Alternaria leafspot/branch rot Botrytis flower-blight Mycosphaerella ray blight, Septoria leafspot Botrytis flower blight (gray mold) Botrytis blight, rust Curvularia leaf/flower spot, Botrytis leaf/flower spot Rust Cercospora and Septoria leafspots, Rust Botrytis blossom blight, Didymellina leafspot, Ink spot Botrytis blight (gray mold, fire, measles), Stagonospora leaf scorch Phytophthora blight (foliar phase), Botrytis blight Black spot, Botrytis blight Anthracnose, Cercospora, Alternaria, Botrytis leaf blights Powdery mildew </p>	<p> Transplant of cuttings Cool, moist conditions Transplant of cuttings Prebloom Cool, moist conditions Early propagation Early seedling stage Early propagation Cool, moist conditions Prebloom Prebloom Spring bud break Spring bud break First sign of disease </p>
<p>*Discoloration of blooms has been noted on certain varieties when applications are made during flowering.</p>		

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