

SEP 2 1994

Don O'Shaughnessy, Ph.D.
Riverside/Terra Corporation
600 Fourth Street
Sioux City, IA 51101

Dear Dr. O'Shaughnessy:

Subject: Revised Labeling - Add New Uses ✓
Chlorothalonil 4L
EPA Registration No. 9779-270
Your Submission Dated August 1, 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. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:

- Modify the Statements of Practical Treatment section to read as follows:

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

If in eyes: Call a physician. Hold eyelids open and flush with a steady gentle stream of water for 15 minutes.

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 on skin: Wash thoroughly with soap and water. Get medical attention.

3. 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,

(S)

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

Enclosure

Jacob F. 11/15

R'

CHLOROTHALONIL 4L

ACTIVE INGREDIENT

Chlorothalonil (tetrachloroisophthalonitrile) 40.4%

INERT INGREDIENTS 59.6%

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: Contact your local poison control center, hospital, or physician. If the patient is unconscious, maintain breathing and heartbeat (cardiopulmonary resuscitation).

IF INHALED: Remove victim to fresh air, and apply respiration if indicated.

IF ON SKIN: Remove contaminated clothing and wash with soap and water.

IF IN EYES: Flush with plenty of water for 15 minutes. Get medical attention immediately.

is not highly toxic without respiration. properly should be treated. Get Medical Attention

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. 3779-

ACCEPTED
with COMMENTS
EPA Letter Dated:

SEP 2 1994

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

NET CONTENTS
GALLONS

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USER SAFETY RECOMMENDATIONS

Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

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 rinseate 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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Dosage rates on this label indicate pints of CHLOROTHALONIL 4L per acre unless otherwise stated. Under conditions favoring disease development the high rate specified and shortest application interval should be used. Applications should be made in sufficient water to obtain adequate coverage of foliage. Gallonage to be used will vary with crop and amount of plant growth. Spray volume usually will range from 20 to 150 gallons (approximately 80 to 600 liters) per acre for dilute sprays and 5 to 10 gallons (approximately 20 to 40 liters) per acre for concentrate ground sprays and aircraft applications. Both ground and aircraft methods of application are recommended unless specific directions for ground application only are given for a crop. Application through sprinkler irrigation systems is not recommended unless specific directions are given for a crop. See application and calibration instructions below.

APPLICATION AND CALIBRATION TECHNIQUES FOR SPRINKLER IRRIGATION

Apply this product only through the following types of irrigation systems. Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water. If you have questions about calibration, you should contact State Experiment Station specialists, equipment manufacturers, or other experts. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

- A. Center Pivot, Traveler, Big Gun, Motorized Lateral Move, End Tow, and Side (Wheel) Roll Irrigation Equipment: Operate system and injection equipment at normal pressures recommended by the manufacturer of injection equipment used. Fill tank of injection equipment with water. Operate system for one complete circle for center pivot or one complete run for the other recommended equipment, measuring time required, amount of water injected, and acreage contained in circle or run. Mix recommended amount of CHLOROTHALONIL 4L for acreage to be covered into same amount of water used during calibration and inject into system continuously for one revolution or run, but continue to operate irrigation system until CHLOROTHALONIL 4L has been cleared from last sprinkler head. Spray mixture in the chemical supply tank must be agitated at all times, otherwise settling and uneven application may occur.
- B. Solid Set and Hand Move Irrigation Equipment: Determine acreage covered by sprinkler. Fill tank of injection equipment with water and adjust flow to use contents over a thirty to forty-five minute period. Mix desired amount of CHLOROTHALONIL 4L for acreage to be covered into quantity of water used during calibration and operate entire system at normal pressures recommended by the manufacturer of injection equipment used for amount of time established during calibration. Provide constant mechanical agitation in the mix tank to insure that CHLOROTHALONIL 4L will remain in suspension during the injection cycle. CHLOROTHALONIL 4L can be injected at the beginning or end of the irrigation cycle or as a separate application. Stop injection equipment after treatment is completed and continue to operate irrigation system until CHLOROTHALONIL 4L is cleared from last sprinkler head.

SAFETY DEVICES

(1) The systems designated above must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. (2) All pesticide injection pipelines must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. (3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. (4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. (5) The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. (6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. (7) Do not apply when wind speed favors drift beyond the area intended for treatment.

SYSTEMS CONNECTED TO PUBLIC WATER SOURCES

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

For additional instructions on safety precautions, refer to statements (2), (3), (4), (6), and (7) in the section on SAFETY DEVICES.

CROP	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
Beans (Snap)	Rust	2 to 4 pints	Use in sufficient water to obtain adequate coverage. Begin applications during early bloom stage or when disease first threatens and repeat at weekly intervals 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.
	Botrytis Blight (gray mold)	4 1/4 pints	
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 1/4 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 1/4 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 1/2 to 2 3/4 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 1/3 pints	Use 1 1/2 to 2 1/2 pints per acre on a 3 to 5 day spray schedule or 3 to 4 1/4 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 1/4 pints	
	Pink rot (Suppression)	4 1/4 pints	
	Early blight Late blight	2 1/4 to 2 3/4 pints/100 gal.	
Corn (Sweet), Corn grown for seed	Helminthosporium leaf blights, Rust	1 1/2 to 1 3/4 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 apply to sweet corn to be processed. 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
Cucumber	Target spot, Anthracnose, Downy mildew	2 1/4 to 2 3/4 pints	Use sufficient water to obtain adequate coverage. Begin applications when plants are in first 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	
	Fruit belly rot (Rhizoctonia solani)	12 pints	
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, Leak, Shallot, Onion grown for seed	Botrytis leaf blight (blast), Purple blotch, Downy mildew (suppression)	2 to 4 1/4 pints	

CROP	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
Papaya	Alternaria fruit spot, Anthracnose, Stem end rot	3 to 5 $\frac{1}{3}$ pints	Apply with ground equipment only in sufficient water to obtain adequate coverage of fruit and leaves. Begin treatment when conditions favor development 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.
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 or when conditions are favorable for infection. Continue applications on a 7 to 10 day schedule. Do not apply more than 4 times per season or within 10 days of harvest. Do not feed treated plant parts to livestock.
Passion Fruit (Hawaii only)	Alternaria fruit and leaf spot (passion fruit brown spot)	2 $\frac{1}{2}$ 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 $\frac{1}{2}$ to 2 $\frac{1}{3}$ 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 $\frac{1}{2}$ 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 $\frac{1}{2}$ 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 $\frac{1}{2}$ pints	
Potato	Early blight, Late blight, Botrytis vine rot (Botrytis spp.)	1 $\frac{1}{2}$ to 2 $\frac{1}{2}$ 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 $\frac{1}{2}$ 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 $\frac{1}{3}$ to 2 $\frac{1}{3}$ pints	

CROP	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
Soybean	Anthrachnose, Diaporthe pod and stem blight, Frogeye leaf spot (Cercospora sojina), Purple seed stain (Cercospora kikuchii), Septoria brown spot	2 to 3½ pints or 1½ to 2¼ pints	<p>Apply CHLOROTHALONIL 4L at 2 to 3½ pints per acre if two applications are scheduled or 1½ to 2¼ pints per acre if three applications are scheduled. Use the three application program in areas having a history of moderate to severe disease intensity. 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.</p> <p>Determinate (southern) soybean varieties: Two application program--make the first application at early pod set (R3 stage, when majority of pods are $\frac{1}{2}$ to $\frac{3}{8}$ 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).</p> <p>Indeterminate (northern) soybean varieties: Two application program--make the first application when the largest pods are 1 to 1½ 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 1½ pints of CHLOROTHALONIL 4L plus 8 ounces of Benlate 50WP per acre. Make the first application when pods near the top of plants are ½ 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	FOLIAGE: (apply every 7 to 10 days): Early blight, Late blight, Gray leaf spot, Gray leaf mold, Septoria leaf spot	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.</p> <p>CHLOROTHALONIL 4L may be applied through sprinkler irrigation equipment (solid set or portable wheel move systems only). See calibration directions preceding this section.</p>
	FRUIT: (apply every 7 to 14 days beginning at fruit set): Anthracnose, Alternaria fruit rot (black mold), Rhizoctonia fruit rot, Botrytis gray mold, Late blight fruit rot	3 to 4 pints	

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SPRAY VOLUME (Gallons Per Acre)

TREE AND ORCHARD CROPS	CROP	Dilute	Concentrate
<p>Apply CHLOROTHALONIL 4L in sufficient water and 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>	Peach, Nectarine, Apricot, Tart Cherry, Plum, Prune	300	20 to 150
	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 cur., 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
Conifers	Swiss needlecast	4 to 8 pints	4 to 8 pints	Single application technique: In Christmas tree plantations or forest stands make one application in the spring when new shoot growth is 1/2 to 2 inches in length.
	Scleroderris canker (pines) Swiss needlecast and Rhabdocline needlecast (Douglas-fir)	2 to 4 pints	2 to 4 pints	Make the first application in 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	
	Lophodermium needlecast	2 to 4 pints	2 to 4 pints	North Central and Northeastern States: Begin applications in mid-July to early August before infection occurs. Make additional applications at 3 to 4 week intervals until conditions no longer favor disease development. For use in nursery beds, apply 4 pints per acre 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 ACRE
Sclerotinia Dollar Spot	7-10 days 14-21 days	4-8 pints 8-14 pints
Helminthosporium Leafspot	7-10 days 14-21 days	8 pints 8-14 pints
Rhizoctonia brown patch	7-14 days	8-14 pints
Anthracoese	7-14 days	6-12 quarts

10/15

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 Thalonil Chlorothalonil 4L through sprinkler irrigation equipment on golf courses.

		RATE Fluid Ounces Per 1,000 Sq. Ft.	
DISEASE	APPLICATION INTERVAL	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.

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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 Thalonil 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.

ORNAMENTALS AND CONIFERS: Apply Thalonil Chlorothalonil 4L at a rate of 2 pints per 100 gallons of water unless other directions are given in the tables below. Begin applications as directed for each species and disease condition cited and repeat on a 7 to 14 day schedule until conditions are no longer favorable for disease development. During periods when conditions favor severe disease incidence, generally cloudy or wet weather, use the higher rate specified and the shortest indicated interval between applications.

Aerial application to conifers is permitted although ground applications generally give better coverage. If application with ground equipment is not feasible, Thalonil Chlorothalonil 4L may be applied aerially to forest stands in 10-20 gallons of water and to Christmas trees in 10-50 gallons of water.

Thalonil Chlorothalonil 4L may be used in greenhouses. Do not use mistblowers or high pressure spray equipment when making applications in greenhouses.

ORNAMENTALS

SPECIES	DISEASES CONTROLLED	SUGGESTED FIRST APPLICATION
BROADLEAF SHRUBS AND TREES:		
Ash (<i>Fraxinus</i>)	<i>Cercospora</i> , <i>Cercosporidium</i> , <i>Cylindrosporium</i> leafspots	Spring bud break
Azalea*	<i>Phytophthora</i> die-back,	New leaf emergence;
Rhododendron*	<i>Ovulinia</i> flower blight	Early bloom
Buckeye, Horsechestnut	Leaf blotch, Anthracnose	Spring bud break
Cherry-Laurel	<i>Cercospora</i> leafspot	Petal fall
Crabapple	Scab, Cedar-apple rust, <i>Sphaeropsis</i> leafspot	Spring bud break
Dogwood	<i>Septoria</i> leafspot	Early bloom
Euonymus	Anthracnose	Spring bud break
Firethorn	Scab	Spring bud break
Flowering almond, Quince, Sand Cherry	<i>Monilinia</i> blossom/branch blight	Early bloom
Hawthorn	Rust, <i>Fabraea</i> leafspot	Prebloom
Holly	<i>Rhizoctonia</i> web blight	Warm, moist conditions
Mountain Laurel	<i>Cercospora</i> leafspot	Spring bud break
Oak (red group only)	<i>Taphrina</i> blister, <i>Actinopelta</i> leafspot, Anthracnose	Dormant budswell
Oregon-Grape (<i>Mahonia</i>)	Rust	Spring bud break
Photinia	<i>Fabraea</i> (<i>Entomosporium</i>) leafspot	Spring bud break
Pieris (<i>Andromeda</i>)	<i>Phytophthora</i> die-back	New leaf emergence
Poplar	<i>Marssonina</i> leafspot	Spring bud break
Privet	<i>Cercospora</i> leafspot	Prolonged wet conditions
Sycamore, Planetree	Anthracnose	Spring bud break
Viburnum	Powdery mildew	Mid-summer

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SPECIES	DISEASES CONTROLLED	SUGGESTED FIRST APPLICATION
BULBS AND FLOWERING PLANTS:		
Carnation	Alternaria leafspot/branch rot	Transplant of cuttings
Chrysanthemum/Daisy	Botrytis flower-blight Mycosphaerella ray blight, Septoria leafspot	Cool, moist conditions Transplant of cuttings
Geranium	Botrytis flower blight (gray mold)	Prebloom
Gladiolus	Botrytis blight, rust Curvularia leaf/flower spot, Botrytis leaf/flower spot	Cool, moist conditions Early propagation
Hollyhock	Rust	Early seeding stage
Hydrangea* (foliage only)	Cercospora and Septoria leafspots, Rust	Early propagation
Iris	Botrytis blossom blight, Didymellina leafspot, Ink spot	Cool, moist conditions
Lily, Crocus, Daffodil, Narcissus, Tulip	Botrytis blight (gray mold, fire, measles), Stagonospora leaf scorch	Prebloom
Petunia*	Phytophthora blight (foliar phase), Botrytis blight	Prebloom
Rose (Use 7/8 lb. per 100 gallons)	Black spot, Botrytis blight	Spring bud break
Statice	Anthracnose, Cercospora, Alternaria, Botrytis leaf blights	Spring bud break
Zinnia	Powdery mildew	First sign of disease

*Discoloration of blooms has been noted on certain varieties when applications are made during flowering.

FOLIAGE PLANTS:

Dracaena	Fusarium leafspot	Pre-transplant
Pachysandra (Use 4 pints per 100 gallons)	Volutella leaf blight	Spring bud break
Leatherleaf fern	Ascochyta blight, Cercospora leafspot, Cylindrocladium leafspot, Rhizoctonia blight	Spring bud break
Parlor palm	Bipolaris (Helminthosporium) leafspot	Cool, moist conditions
Prayer plant (Maranta)	Helminthosporium leafspot	Early propagation
Oyster plant (Rhoeo)	Tan leafspot	Early propagation
Syngonium	Cephalosporium leafspot	Warm, moist conditions
Philodendron	Phytophthora blight, Dactylaria leafspot	Moist conditions

CONIFERS:

DISEASES CONTROLLED	THALONIL 90DF RATE/ACRE	APPLICATION DIRECTIONS
Rhabdochline needlecast (Douglas fir)	2-4 pints	Apply at bud break 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 bud break 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.
Swiss needlecast	2-4 pints	Single application technique: In Christmas tree plantations or forest stands, make one application in the spring when new shoot growth is 1/2 to 2 inches in length.

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CONIFERS:		
DISEASES CONTROLLED	THALONIL 90DF RATE/ACRE	APPLICATION DIRECTIONS
Scleroderris Canker (pines), Swiss Needlecast (Douglas fir)	2-4 pints	Make first application in 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. In nursery beds, apply the highest rate specified on a 3 week schedule.
Sirococcus Tip Blight	3-5 pints	
Rhizosphaera Needlecast (spruces), Scirrhia brown spot (pines)	8 pints	
Cycloneusma and Lophodermium needlecasts (pines)	2-4 pints	Apply in early spring prior to bud break. 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.
Botrytis seedling blight, Phoma twig blight	2-4 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.

NOTICE: Seller warrants that the product conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with directions under normal conditions of use, but neither this warranty nor any other warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of this product contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to Seller, and Buyer assumes the risk of any such use.