

# Chlorothalonil 500 ZN

## Flowable Fungicide

## Specimen Label

<b>ACTIVE INGREDIENT:</b>	<b>BY WEIGHT</b>
Chlorothalonil (tetrachloroisophthalonitrile) . . . . .	38.5%
<b>INERT INGREDIENTS:</b> . . . . .	61.5%
<b>TOTAL</b> . . . . .	100.0%

Contains 4.17 Pounds of Active Ingredient per Gallon (500 grams per liter).

EPA REG. NO. 72167-27-73220 EPA EST. NO. 37429-GA-01

## 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.)

FIRST AID	
<b>IF IN EYES</b>	Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
<b>HOT LINE NUMBER</b>	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. <b>For medical emergencies involving this product, call 1-800-308-5391.</b>	
<b>NOTE TO PHYSICIAN</b>	
Persons having temporary irritation may respond to treatment with antihistamines or steroid creams and/or systemic steroids.	

See inside booklet for complete Precautionary Statements, Directions for Use, and Conditions of Sale and Warranty.

Manufactured for FarmSaver.com, LLC • P.O. Box 21365 • Seattle, WA 98111

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

### WARNING-AVISO

Causes eye irritation. May cause skin irritation. May be a potential skin sensitizer. DO NOT get into eyes. Avoid prolonged contact with skin. Avoid breathing spray mist. DO NOT take internally.

**Note to user:** This product may produce temporary allergic side effects characterized by redness of the eyes, mild bronchial irritation and redness or rash on exposed skin areas. Persons having allergic reactions should contact a physician.

## 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 A on an EPA chemical resistance category selection chart.

For WPS or non-WPS applications made in enclosed areas, such as greenhouses, applicators and other handlers must wear a dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C), or a NIOSH-approved respirator with any N, P, R, or HE filter.

**WPS Uses** (commercial production on farms, forests, nurseries, sodfarms, and in greenhouses):  
Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical resistant gloves, such as nitrile rubber, natural rubber, or butyl rubber
- Shoes plus socks
- Protective eyewear

**Non-WPS Uses** (such as applications to non-residential turf, golf courses, public parks, etc.):  
Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical resistant gloves, such as nitrile rubber, natural rubber, or butyl rubber
- Shoes plus socks
- Protective eyewear

Follow the 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.

## Engineering Control Statements

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

## USER SAFETY RECOMMENDATIONS

Users should:

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

## ENVIRONMENTAL HAZARDS

This product is toxic to aquatic invertebrates and wildlife. DO NOT apply directly water or to areas where surface water is present or to intertidal areas below the mean high-water mark. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. DO NOT contaminate water when disposing of equipment washwater or rinsate.

This chemical is known to leach through soil into groundwater under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

This chemical can contaminate surface water through spray drift. Under some conditions, it may also have a high potential for runoff into surface water for several days to weeks after application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlaying extremely shallow ground water, areas with infield canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas overlaying tile drainage systems that drain to surface water.

## 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, other persons or pets, either directly or through drift. Only protected handlers

# Chlorothalonil 500 ZN

## Specimen Label

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 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:

- Coveralls
- Chemical resistant gloves, such as nitrile rubber, natural rubber, or butyl rubber
- Shoes plus socks
- Protective eyewear

**Special Eye Irritation Provisions:** This product is a severe eye irritant. Although the restricted entry interval expires after 12 hours, for the next 6.5 days, entry is permitted only when the following safety measures are provided:

1. At least one container designed specifically for flushing eyes must be available in operating condition at the WPS-required decontamination site intended for workers entering the treated area.
2. Workers must be informed, in a manner they can understand:
  - That residues in the treated area may be highly irritating to their eyes,
  - That they should take precautions, such as refraining from rubbing their eyes, to keep residues out of their eyes,
  - That if they do get residues in their eyes, they should immediately flush their eyes using the eyeflush container that is located at the decontamination site or using other readily available clean water, and
  - How to operate the eyeflush container.

### 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.

DO NOT enter or allow others to enter the treated area until sprays have dried.

### STORAGE AND DISPOSAL

DO NOT contaminate water, foodstuffs, feed or seed by storage or disposal.

**Pesticide Storage:** Store in a cool place. Protect from excessive heat. Store product in original container only away from water, food or feed. Keep container closed to prevent spills and contamination. Carefully open containers. After partial use, replace lid and close tightly. DO NOT put concentrate or diluted product into food or drink containers.

**Pesticide Disposal:** DO NOT contaminate water, food or feed by disposal. Improper disposal of excess pesticide, pesticide spray or rinsate is a violation of Federal Law. Wastes resulting from the use of this product that cannot be used according to the label instructions or chemically reprocessed may be disposed of on site or at a landfill or waste disposal facility approved for pesticide disposal, or in accordance with all applicable Federal, state, or local regulations. For further guidance, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**Container Disposal:** Empty containers retain vapor and product residues. Follow all labeled safeguards until container is cleaned, reconditioned, or destroyed.

**Disposal of Plastic 1-Way Containers, Bottles and Drums:** DO NOT reuse container. Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Disposal of Refillable Drums, Minibulk and Bulk Containers:** DO NOT reuse container. If not returned to the point of purchase or to an alternate location designated by the registrant at the time of product purchase, triple rinse or pressure rinse the empty container and offer for reconditioning or recycling if available, or dispose of in a manner approved by state and local authorities.

**Refilling of Refillable Drums, Minibulk and Bulk Containers:** When the container containing this product is empty, replace the cap and seal all openings that have been opened during use. DO NOT rinse empty container. Return the container to the point of purchase, or to an alternate refilling location designated by the registrant at the time of product purchase.

**Instructions for Users and Refillers:** The container must only be refilled with this pesticide product. DO NOT reuse the container for any other purpose. DO NOT transport if this container is damaged or leaking. If the container is damaged, leaking, or obsolete, or to obtain information about recycling refillable containers, contact FarmSaver.com, LLC at 800-979-8994 OR your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Cleaning is not necessary prior to refilling with the same product. Clean container before final disposal. Disposal of this container must be in compliance with state and local regulations.

**Instructions For Refillers:** Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transporting. If the container can not be refilled, triple rinse or pressure rinse the empty container and offer for recycling if available.

FarmSaver.com will not be responsible for losses or damages resulting from use of this product in any manner not specifically recommended by FarmSaver.com. User assumes all risks associated with such nonrecommended use.

### APPLICATION INSTRUCTIONS

Quali-Pro Chlorothalonil 500 ZN, a flowable product containing

# Chlorothalonil 500 ZN

# Specimen Label

chlorothalonil, is recommended for use as a spray for the control of many important plant diseases.

Quali-Pro Chlorothalonil 500 ZN is effective for use in programs that attempt to minimize disease resistance to fungicides. Quali-Pro Chlorothalonil 500 ZN has a multi-site mode of action and may be used to delay or prevent the development of resistance to single-site fungicides. Consult with your Federal or State Cooperative Extension Service representatives for guidance on the proper use of Quali-Pro Chlorothalonil 500 ZN in programs that seek to minimize the occurrence of disease resistance to other fungicides.

## GENERAL PRECAUTIONS

Quali-Pro Chlorothalonil 500 ZN can be used effectively in dilute or concentrate sprays. Thorough, uniform coverage is essential for disease control.

DO NOT combine Quali-Pro Chlorothalonil 500 ZN in a spray tank with pesticides, surfactants, or fertilizers, unless your prior use has shown the combination to be physically compatible, effective, and noninjurious under your conditions of use. DO NOT combine Quali-Pro Chlorothalonil 500 ZN with DiPel 4L, Foil®, Triton AG-98, Triton B-1956, or Latron B-1956 as phytotoxicity may result from the combination when applied to crops listed on this label.

**Note:** Prior to pouring, slowly invert container several times to assure uniform mixture.

The required amount of Quali-Pro Chlorothalonil 500 ZN should be added slowly into the spray tank during filling. With concentrate sprays, premix the required amount of Quali-Pro Chlorothalonil 500 ZN 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.

Dosage rates on this label indicate pints of Quali-Pro Chlorothalonil 500 ZN per acre, unless specified otherwise. Under conditions favoring disease development, the high rate specified and shortest application interval should be used.

## APPLICATION PRECAUTIONS AND REQUIREMENTS

This product must not be applied within 150 feet, for aerial and air-blast applications, or 25 feet, for ground applications, of marine/estuarine water bodies unless that there is an untreated buffer area of that width between the area to be treated and the water body.

## SPRAY DRIFT MANAGEMENT

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator and grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements DO NOT apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Excluding helicopters, nozzles must always point backward parallel with the airstream and never be pointed downward more than 45 degrees.

Where states have more stringent regulations, they should be observed. The applicator should be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory Information.

Aerial Drift Reduction Advisory Information:

**INFORMATION ON DROPLET SIZE:** The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage

and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly or under unfavorable conditions (see Wind, Temperature).

## CONTROLLING DROPLET SIZE - General Techniques

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - DO NOT exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

## CONTROLLING DROPLET SIZE – Aircraft

- **Number of nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift potential.

**BOOM HEIGHT:** Setting the boom at the lowest labeled height (if specified) which provides uniform coverage reduces the exposure of droplets to evaporation and wind. For ground equipment, the boom should remain level with the crop and have minimal bounce.

**BOOM LENGTH:** For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

**WIND:** Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **NOTE:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

**TEMPERATURE AND HUMIDITY:** When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

**TEMPERATURE INVERSIONS:** Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

**SHIELDED SPRAYERS:** Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

**AIR ASSISTED (AIR BLAST) FIELD CROP SPRAYERS:** Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a

# Chlorothalonil 500 ZN

# Specimen Label

sprayer is suitable for the intended application, is configured properly, and that drift is not occurring. **NOTE:** Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration.

**AIR ASSISTED (AIR BLAST) TREE AND VINE SPRAYERS:** Air assisted tree and vine sprayers carry droplets into the canopy of trees and vines via a radially or laterally directed air stream. In addition to the general drift management principles already described, the following specific practices will further reduce the potential for drift:

- Adjust deflectors and aiming devices so that spray is only directed into the canopy.
- Block off upward pointed nozzles when there is no overhanging canopy.
- Use only enough air volume to penetrate the canopy and provide good coverage.
- DO NOT allow spray to go beyond the edge of the cultivated area. Spray the outside row only from outside the planting.

## RESTRICTIONS

### Foliar Applications

### CHEMIGATION

Apply this product only through center pivot, motorized lateral move, traveling gun, solid set, and portable (wheel move, side roll, end tow, or hand moved) irrigation system(s). DO NOT apply this product through any other type of irrigation system. Use only on crops specifically designated in the "DIRECTIONS FOR USE."

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service Specialists, equipment manufacturers or other experts.

DO NOT connect an irrigation system (including greenhouse system) 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.

### Specific Instructions for Public Water Systems:

1. 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.
2. 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.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must 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.
5. 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.

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. Always inject Quali-Pro Chlorothalonil 500 ZN into irrigation after it discharges from the irrigation pump and after it passes through the check valve. Never inject pesticides on the intake line on the suction side of the pump.
8. Spray mixture in the chemical supply tank must be agitated at all times, otherwise settling and uneven application may occur.
9. DO NOT apply when wind speed favors drift beyond the area intended for treatment.

### Specific Instructions for Sprinkler Irrigation Systems:

Quali-Pro Chlorothalonil 500 ZN may be used through 2 basic types of sprinkler irrigation systems as outlined in Sections A and B. Determine which type of system is in place, then refer to the appropriate directions provided for each type.

1. The system 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. The pesticide injection pipeline 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.

#### A. Center Pivot, Motorized Lateral Move, and Traveling Gun Irrigation Equipment

For injection of pesticides, these continuously moving systems must use a positive displacement injection pump, of either diaphragm or piston type, constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock and capable of injection at pressures approximately 2 to 3 times those encountered within the irrigation water line. Venturi application units cannot be used on these systems.

Fill chemical supply tank of injection equipment with water. Operate system for one complete revolution or run across the field, measuring time required, amount of water injected, and acreage covered. Thoroughly mix recommended amount of Quali-Pro Chlorothalonil 500 ZN for acreage to be covered into same amount of water used during calibration and inject

# Chlorothalonil 500 ZN

## Specimen Label

into system continuously for 1 revolution or run. Mixture in the chemical supply tank must be continuously agitated during the injection run. Shut off injection equipment after 1 revolution or run, but continue to operate irrigation system until Quali-Pro Chlorothalonil 500 ZN has been cleared from last sprinkler head.

### B. Solid Set and Portable (Wheel Move, Side Roll, End Tow, or Hand Move) Irrigation Equipment

With stationary systems, an effectively designed in-line venturi applicator unit is preferred which is constructed of materials that are compatible with pesticides; however, a positive-displacement pump can also be used.

Determine acreage covered by sprinkler. Fill tank of injection equipment with water and adjust flow to use contents over a 30- to 45-minute period. Mix desired amount of Quali-Pro Chlorothalonil 500 ZN for acreage to be covered with water so that the total mixture of Quali-Pro Chlorothalonil 500 ZN plus water in the injection tank is equal to the 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. No agitation should be required. Quali-Pro Chlorothalonil 500 ZN 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 Quali-Pro Chlorothalonil 500 ZN has been cleared from last sprinkler head.

**DO NOT use on greenhouse grown food crops.**

### **Restrictions on use of treated vegetation:**

- **DO NOT** allow grazing in treated areas or feed treated plant parts to livestock.
- **DO NOT** feed hay or threshings from treated fields.
- **DO NOT** feed vines or processing by-products from treated areas to livestock.

## **TREE CROPS APPLICATION INSTRUCTIONS**

Apply Quali-Pro Chlorothalonil 500 ZN 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, Quali-Pro Chlorothalonil 500 ZN may be applied with aircraft using at least 20 gallons of spray per acre. When concentrate sprays are used or when treating non-bearing or immature trees, the lower rate of Quali-Pro Chlorothalonil 500 ZN 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:

CROP	SPRAY VOLUME (Gallons per Acre)	
Conifers: - Forest Stands - Christmas Trees - Nursery Beds	<b>Dilute</b>	<b>Concentrate</b>
	Not used	10 to 20 (aircraft)
	100	10 to 50 (aircraft or ground equipment)
	100	5 to 10 (ground equipment only)



# Chlorothalonil 500 ZN

## Specimen Label

CROP	DISEASES	QUALI-PRO CHLOROTHALONIL 500 ZN RATE PINTS/ACRE	QUALI-PRO CHLOROTHALONIL 500 ZN RATE PINTS/100 GAL- LONS*	SEASONAL LIMIT PINTS/ ACRE	APPLICATION DIRECTIONS
<b>CONIFERS</b> Pine Spruce	Swiss Needlecast	4.0 to 7.9	4.0 to 7.9	31.6	Single-application technique: In Christmas tree plantations or forest stands, make 1 application in the spring when new shoot growth is 1/2 to 2 inches in length.
	Scleroderris Canker (Pines) Swiss Needlecast	2.2 to 4.0	2.2 to 4.0		Make the first application in spring when new shoot growth is 1/2 to 2 inches in length. Make additional applications at 4-week intervals until conditions no longer favor disease development. For use in nursery beds, apply the highest rate specified on a 4-week schedule.
	Sirococcus Tip Blight	2.8 to 5.0	2.8 to 5.0		
	Rhizosphaera Needlecast (Spruces) Schirrhia Brown Spot (Pines)	7.9	7.9		
	Cyclaneusma and Lophodermium Needlecasts (Pines)	4.0 to 7.9	4.0 to 7.9		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)	2.2 to 4.0	2.2 to 4.0		Apply at budbreak and repeat at 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 4 weeks as specified above. In nursery beds, use the high rate on a 4-week schedule.
	Botrytis Seedling Blight Phoma Twig Blight	2.2 to 4.0	2.2 to 4.0		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 disease favorable conditions persist.
	Autoecious Needle Rust (Weir's Cushion)	7.9	7.9		Begin applications when 10% of buds have broken and twice thereafter at 7- to 10-day intervals for seed beds.

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

## GRASSES: GOLF COURSE FAIRWAYS

For low disease pressure, follow the retreatment intervals and the application rates provided below.

For an extreme disease condition, a single maximum application of 21.6 pints per acre with a minimum retreatment interval of 7 days can be made each year. After making the 21.6 pint per acre application, the low disease regime must be followed for the remainder of the year.

For Quali-Pro Chlorothalonil 500 ZN, no more than 49.8 pints/acre may be applied per year on fairways.

For reentry into treated areas, refer to the **Non-Agricultural Use Requirements** box.

Diseases Controlled	Low Disease Pressure Treatment Regime		Extreme Disease Condition		Maximum Application Rate per Year for Fairways (Pints/acre)
	Retreatment Interval (days)	Application Rate (Pints/acre)	Maximum Single Application Allowed in a Year (Pints/acre)	Minimum Retreatment Interval for the Maximum Single Application (days)	
Dollar spot	7 - 10	3.88 <sup>a</sup> - 7.2	21.6	7	49.8
	14 - 21	7.2 - 13.9			
Leaf Spot,	7 - 10	7.2			
Melting Out, Brown Blight	14 - 21	7.2 - 13.9			
Brown Patch	7 - 14	7.2 - 13.9			
Gray Leaf Spot	7 - 10	7.2 - 13.9			
Red Thread	7 - 10	7.2 - 13.9			
Anthrachnose	7 - 14	11.6 - 13.9			

<sup>a</sup>Low rate is not effective on intensively mowed grasses.

Diseases are caused by some of the following fungi:

Dollar Spot: *Sclerotinia homeocarpa*, *Lanzia* or *Moellerodiscus spp.*

Leaf Spot, Melting out and Brown Blight: *Drechslera spp.*, *Bipolaris spp.*, *Curvularia spp.*

Brown Patch: *Rhizoctonia spp.*

Anthrachnose: *Colletotrichum*.

## GRASSES: GOLF COURSE TEES, GREENS, AND ORNAMENTAL TURF USES

For low disease pressure, follow the retreatment intervals and the application rate provided below. For an extreme disease condition, a single maximum application of 21.6 pints per acre with a minimum retreatment interval of 7 days can be made. For Quali-Pro Chlorothalonil 500 ZN, maximum yearly application limits exist for fairways, greens and other non-residential ornamental turf, such as municipal parks. For reentry after treatment, follow requirements outlined in the **Non-Agricultural Use Requirements** box.

Diseases Controlled	Retreatment Interval (days)	Application Rate (fl. oz. per 1000 sq. ft.)		Maximum Application Rate per Year for Ornamental Turf, Tees and Greens (Fl. oz. per 1000 sq. ft.)
		Low Disease Pressure Regime	High Disease Pressure Regime Single Maximum Application (Fl. oz.) and Retreatment Interval (days)	
Dollar Spot	7 to 14	3.0 - 5	7.9 (14)	18.2 fl. oz. per 1000 sq. ft. (ornamental turf)
Brown Patch	7 to 14	3.0 - 5	7.9 (14)	
Leaf Spot, Melting Out	7 to 10	3.0 - 5	7.9 (14)	
Gray Leaf Spot	7 to 10	3.0 - 5	7.9 (14)	36.5 fl. oz. per 1000 sq. ft. (tees)
Red Thread	7 to 10	3.0 - 5	7.9 (14)	
Anthracnose	7 to 14	3.0 - 5	7.9 (14)	
Copper Spot	7 to 10	3.0 - 5	7.9 (14)	51.4 fl. oz. per 1000 sq. ft. (greens)
Stem Rust (Bluegrass)	7 to 14	3.0 - 5	7.9 (14)	
DICHONDRA: Leaf Spot (CALIFORNIA ONLY)	7 to 14	3.0 - 5	7.9 (14)	

Diseases are caused by some of the following fungi:

Dollar Spot: *Sclerotinia homeocarpa*, *Lanzia* or *Moellerodiscus spp.*

Brown Patch: *Rhizoctonia spp.*

Leaf Spot, Melting out and Brown Blight: *Drechslera spp.*, *Bipolaris spp.*, *Curvularia spp.*

Gray Leaf Spot: *Pyricularia spp.*

Red Thread: *Laetisaria fuciformis*.

Anthracnose: *Colletotrichum spp.*

Copper Spot: *Gloeocercospora spp.*

Stem Rust: *Puccinia spp.*

Dichondra Leaf Spot: *Alternaria spp.*

Gray Snow Mold caused by *Typhula spp.*: Apply in sufficient water to obtain adequate coverage (2.9 to 14.4 gallons per 1000 sq. ft.). Apply a single application of 7.9 fluid ounces of Quali-Pro Chlorothalonil 500 ZN per 1000 sq. ft. of turf area. Application must be made before snow cover in autumn. If snow cover is intermittent or lacking during the winter, reapply at 7.9 fl. oz. per 1000 sq. ft. 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 Quali-Pro Chlorothalonil 500 ZN at 7.9 fl. oz. in combination with products containing iprodione at 2 oz. active ingredient per 1000 sq. ft. of turf area. Read and observe all label directions for products containing this active ingredient. A maximum seasonal limit of 18.2 oz. per 1000 sq. ft. may be applied to ornamental turf, no more than 36.5 oz. per 1000 sq. ft. may be applied to tees, and a maximum seasonal amount of 51.4 oz. per 1000 sq. ft. of

Quali-Pro Chlorothalonil 500 ZN may be applied to greens.

*Fusarium (Gerlachia) Patch*: For control of *Fusarium Patch* only in areas where snow cover is intermittent or lacking during the winter, apply 7.9 fl. oz. of Quali-Pro Chlorothalonil 500 ZN per 1000 sq. ft. Begin applications in autumn and reapply at 21- to 28 day intervals until conditions favorable for *Fusarium Patch* no longer prevail. A maximum seasonal limit of 18.2 oz. per 1000 sq. ft. may be applied to ornamental turf, no more than 36.5 oz. per 1000 sq. ft. may be applied to tees, and a maximum seasonal amount of 51.4 oz. per 1000 sq. ft. of Quali-Pro Chlorothalonil 500 ZN may be applied to greens.

Algae: For prevention of algae on turfgrasses, apply Quali-Pro Chlorothalonil 500 ZN at the rate of 3 to 7.9 fl. oz. per 1000 sq. ft. on



# Chlorothalonil 500 ZN

## Specimen Label

a 7 to 14 day schedule. When algae 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 Quali-Pro Chlorothalonil 500 ZN applications. Several applications may be necessary for turfgrass recovery. Only a preventive spray program with Quali-Pro Chlorothalonil 500 ZN will prevent a recurrence of the algae when environmental conditions are favorable for algal growth. A maximum seasonal limit of 18.2 oz. per 1000 sq. ft. may be applied to ornamental turf, no more than 36.5 oz. per 1000 sq. ft. may be applied to tees, and a maximum seasonal amount of 51.4 oz. per 1000 sq. ft. of Quali-Pro Chlorothalonil 500 ZN may be applied to greens.

### GRASS: SODFARMS

Use of this product on home lawns is prohibited.

Apply Quali-Pro Chlorothalonil 500 ZN 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 using the rates recommended in the following table.

Under severe disease conditions, a single application of 21.6 pints per acre may be made with a 7 day retreatment interval. Subsequent applications must follow the rates and retreatment intervals outlined in the following table for the remainder of the year.

DO NOT mow or water after treatment until spray deposited on grass is thoroughly dry. Quali-Pro Chlorothalonil 500 ZN should always be used in conjunction with good turf management practices.

Sodfarm turf treated with chlorothalonil prior to harvest must be mechanically cut, rolled, and harvested. Follow all provisions outlined in the **Agricultural Use Requirements** box.

Diseases Controlled	Low Disease Pressure Treatment Regime		Extreme Disease Condition		Application Limit per Year for Sodfarms (Pints/acre)
	Retreatment Interval (days)	Application Rate (Pints/acre)	Maximum Single Application Allowed in a Year (Pints/acre)	Minimum Retreatment Interval for the Maximum Single Application (days)	
Dollar spot	7 - 10	3.88 <sup>a</sup> - 7.2	21.6	7	49.8
	14 - 21	7.2 - 13.9			
Leaf Spot,	7 - 10	7.2			
Melting Out, Brown Blight	14 - 21	7.2 - 13.9			
Brown Patch	7 - 14	7.2 - 13.9			
Gray Leaf Spot	7 - 10	7.2 - 13.9			
Red Thread	7 - 10	7.2 - 13.9			
Anthrachnose	7 - 14	11.6 - 13.9			

<sup>a</sup>Low rate is not effective on intensively mowed grasses.

Diseases are caused by some of the following fungi:

Dollar Spot: *Sclerotinia homeocarpa*, *Lanzia* or *Moellerodiscus* spp.

Leaf Spot, Melting out and Brown Blight: *Drechslera* spp., *Bipolaris* spp., *Curvularia* spp.

Brown Patch: *Rhizoctonia* spp.

Anthrachnose: *Colletotrichum*.

### ORNAMENTAL PLANTS

Quali-Pro Chlorothalonil 500 ZN may be used on ornamental plants grown in the field, nurseries, greenhouses and for spot-treatment of ornamentals plants growing in landscapes. Due to the large number of species and varieties of ornamental and nursery plants, and the widely varying growing conditions, it is impossible to test every one for sensitivity to Quali-Pro Chlorothalonil 500 ZN. Prior to commercial use, apply the recommended rates to a small

area of plants in question, i.e. bedding plants, foliage, etc., and observe for 7 to 10 days prior to treatment of a commercial crop.

#### Field-grown ornamentals:

No more than 69.1 pints per acre of Quali-Pro Chlorothalonil 500 ZN may be applied to field-grown ornamentals per year.

For aerial application to field-planted ornamentals, a minimum rate of 10 gals of spray per acre should be used during application. Quali-Pro Chlorothalonil 500 ZN should be applied to plants when both foliage and flowers are dry or nearly dry.

For field-grown roses, apply 2 pints of Quali-Pro Chlorothalonil 500 ZN per acre for a single application. For field-planted pachysandra, apply 5.9 pints per acre of Quali-Pro Chlorothalonil 500 ZN for a single application.

#### Ornamentals grown in nurseries, greenhouses:

# Chlorothalonil 500 ZN

## Specimen Label

DO NOT use mistblowers or high pressure spray equipment when making applications of Quali-Pro Chlorothalonil 500 ZN in green-houses.

Apply Quali-Pro Chlorothalonil 500 ZN at a rate of 1.9 pints per 100 gallons of water unless other directions are given in tables below. Apply in a spray until foliage run-off occurs when conditions are favorable for disease development. Repeat applications at 7- to 14-day intervals until conditions are no longer favorable. During periods when conditions favor severe disease incidence, generally cloudy or wet weather, apply Quali-Pro Chlorothalonil 500 ZN at 7 day intervals. Quali-Pro Chlorothalonil 500 ZN should be applied to plants when both foliage and flowers are dry or nearly dry.

DO NOT combine Quali-Pro Chlorothalonil 500 ZN in the spray tank with pesticides, surfactants or fertilizers unless prior use has shown the combination to be physically compatible, effective and noninjurious under your conditions of use.

### **Spot-treatment of ornamental plants growing in landscapes:**

Apply Quali-Pro Chlorothalonil 500 ZN at a rate of 1.9 teaspoons per 2 gallons of water. Apply in a spray until foliage run-off occurs when conditions are favorable for disease development. Repeat applications at 7- to 14-day intervals until conditions are no longer favorable. During periods when conditions favor severe disease incidence, generally cloudy or wet weather, apply Quali-Pro Chlorothalonil 500 ZN at 7 day intervals. Quali-Pro Chlorothalonil 500 ZN should be applied to plants when both foliage and flowers are dry or nearly dry.

Use of Quali-Pro Chlorothalonil 500 ZN is recommended for control of fungal diseases referred to by numbers in parentheses following each ornamental. Ornamentals listed on this label have been tested and found to tolerate applications of Quali-Pro Chlorothalonil 500 ZN at the recommended rates. The user should test for possible phytotoxic responses, using recommended rates on ornamental plants on a small area prior to commercial treatments. Applications made during bloom may damage flowers and/or fruits.

**NOTE:** Fruits and other treated foliage must not be eaten or fed to livestock.

### **Diseases controlled by Quali-Pro Chlorothalonil 500 ZN:**

#### **1. Leaf Spots/Foliar Blights:**

Actinopelte Leaf Spot  
Alternaria Leaf Spot/Leaf Blight  
Anthracnose Leaf Blotch/Spot  
Anthracnose (Discula) Blight  
Ascochyta Blight  
Bipolaris (Helminthosporium) Leaf Spot  
Botrytis Leaf Spot/Leaf Blight  
Cephalosporium Leaf Spot  
Cercospora Leaf Spot  
Cercosporidium Leaf Spot  
Coryneum Blight (shothole)  
Corynespora Leaf Spot  
Curvularia Leaf Spot  
Cylindrosporium Leaf Spot  
Dactylaria Leaf Spot  
Didymellina Leaf Spot  
Dreschlera Leaf Spot  
Fabraea (Entomosporium) Leaf Spot  
Fusarium Leaf Spot  
Gloeosporium Black Leaf Spot  
Inkspot (Dreschlera)

Marssonina Leaf Spot  
Monilinia Blossom Blight, Twig Blight  
Mycosphaerella Ray Blight  
Myrothecium Leaf Spot/Brown Rot  
Nematostoma Leaf Blight  
Phyllosticta Leaf Spot  
Rhizoctonia Web Blight  
Ramularia Leaf Spot  
Septoria Leaf Spot  
Sphaeropsis Leaf Spot  
Stagonospora Leaf Scorch  
Tan Leaf Spot (Curvularia)  
Volutella Leaf Blight

#### **2. Flower Spots/Blights:**

Botrytis Flower Spot/Flower Blight  
Curvularia Flower Spot  
Monilinia Blossom Blight  
Ovulinia Flower Blight  
Rhizopus Blossom Blight  
Sclerotinia Flower Blight

#### **3. Cylindrocladium Stem Canker**

#### **4. Phytophthora Leaf Blight/Dieback**

#### **5. Powdery Mildews:**

Erysiphe cichoracearum  
Microsphaera spp.

#### **6. Rusts:**

Gymnosporangium spp.  
Puccinia spp.  
Pucciniastrum hydrangeae

#### **7. Taphrina Blister**

#### **8. Scab:**

Venturia inaequalis

# Chlorothalonil 500 ZN

## Specimen Label

Ornamentals recommended for treatment with Quali-Pro Chlorothalonil 500 ZN:

Avoid applications during bloom periods for those plants where flower injury is unacceptable.

For poinsettia, discontinue applications prior to bract formation; phytotoxicity is possible on bracts. For roses, use 1.6 pints per 100 gallons of water.

Plant	Disease(s)	Comments/Instructions:
Aglaonema	1	
Andromeda (Pieris)	4	
Arabian Violet	2	
Areca palm	1	
Artemesia	1	
Ash, Fraxinus	1	
Aspen	1	
Azalea	1,2,4	
Begonia	1	
Boston fern	1	
Buckeye, Horsechestnut	1	
Camellia	2	
Carnation	1,2	
Cherry-laurel	1	
Chrysanthemum	1,2	
Crabapple	1,6,8	
Crocus	1	
Daffodil	1	
Daisy	1	
Daylily	6	
Dogwood	1	
Dumbcane, Dieffenbachia	1	
Dracaena	1	
Eucalyptus	3	
Euonymus	1	
Fatsia (Aralia)	1	
Ficus	1	
Firethorn, Pyracantha	1	
Florida Ruffle Fern	1	
Flowering Almond	1,2	
Flowering Cherry	1,2	
Flowering Peach	1,2	
Flowering Plum	1,2	
Flowering Quince	1,2	
Geranium	1,6	
Gladiolus	1,2	
Hawthorn	1,6	
Holly	1	
Hollyhock	6	
Hydrangea (foliage only)	1,6	
Iris	1,2	
Leatherleaf Fern	1	
Lilac	5	
Lily	1	
Lipstick plant	1	
Magnolia	1	
Maple	1	
Marigold	1	
Ming aralia	1	
Mountain Laurel	1	
Narcissus	1	
Oak (red group only)	1,7	
Oregon Grape (Mahonia)	6	
Oyster plant (Rhoeoe)	1	
Pachysandra	1	
Pansy	1	
Parlor palm (Chamaedorea)	1	
Peperomia	1	
Petunia	1,4	
Philodendron	1,4	

Use 4.3 pints of Quali-Pro Chlorothalonil 500 ZN per 100 gallons of water for greenhouse-grown plants.

# Chlorothalonil 500 ZN

## Specimen Label

Phlox	1
Photinia	1
Poinsettia	1
Poplar	1
Prayer Plant (Maranta)	1
Privet, Ligustrum	1
Rhododendron	1,2,4
Rose	1
Sand Cherry	1,2
Sequoia	1
Spiraea	1
Statice	1
Sycamore, Planetree	1
Syngonium	1
Tulip	1
Viburnum	5
Walnut, Juglans	1
Zebra plant (Aphelandra)	1
Zinna	1,5

Discontinue applications prior to bract formation; phytotoxicity is possible.

Use 1.6 pints per 100 gallons of water for greenhouse grown plants.

The following ornamental plant species which have been tested with Quali-Pro Chlorothalonil 500 ZN at recommended rates (1.9 teaspoons per 2 gallons of water, 7 to 14 day retreatment interval) did not exhibit phytotoxicity:

### Botanical Name:

Aechmea fasciata  
Araucaria heterophylla  
Asplenium nidus  
Bougainvillea spp.  
Caladium spp.  
Calathea makoyana  
Callistephus chinensis  
Carissa grandiflora  
Clerodendron thomsonae  
Codiaeum spp.  
Cordyline terminalis  
Crassula argentea  
Cyrthodium falcatum  
Dionaea muscipula  
Dizygotheca elegantissima  
Epipremnum aureum  
Episcia cupreata  
Fittonia spp.  
Gerbera jamesonii  
Gynura sarmentosa  
Gypsophila paniculata  
Hoya spp.  
Ilex cornuta  
Ilex crenata  
Impatiens spp.  
Pilea cadierei  
Platynerium spp.  
Sansevieria trifasciata "Hahnii"  
Tolmiea menziesii  
Yucca elephantipes  
Zygocactus truncatus

### Common Name:

Aechmea  
Norfolk Island Pine  
Birdnest Fern  
Bougainvillea  
Caladium  
Peacock plant  
Aster  
Natal plum  
Bleeding Heart  
Croton  
Ti Plant  
Jade Plant  
Holly Leaf Fern  
Venus Fly Trap  
False Aralia  
Golden Pothos, Scindapsus  
Flame Violet  
Silver-nerve Plant  
Gerber Daisy  
Purple Passion Vine  
Baby's Breath  
Wax Plant  
Chinese Holly  
Japanese Holly  
Impatiens  
Aluminum Plant  
Staghorn Fern  
Birdsnest Sansevieria  
Piggy-back Plant  
Spineless Yucca  
Christmas Cactus

FarmSaver.com, LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes set forth in the DIRECTIONS FOR USE when it is used in accordance with such directions, subject to the inherent risks mentioned above.

**FARMSAVER.COM, LLC NEITHER MAKES NOR INTENDS, NOR DOES IT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, AND IT EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

**THIS WARRANTY EXTENDS TO, AND THE BUYER SHALL BE SOLELY RESPONSIBLE FOR ANY AND ALL LOSS OR DAMAGE WHICH RESULTS FROM THE USE OF THIS PRODUCT IN ANY MANNER WHICH IS INCONSISTENT WITH THE LABEL DIRECTIONS, WARNINGS, OR CAUTIONS. BUYER'S EXCLUSIVE REMEDY AND MANUFACTURER'S OR SELLER'S EXCLUSIVE LIABILITY FOR ANY AND ALL CLAIMS, LOSSES, DAMAGES, OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER OR NOT BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, SHALL BE LIMITED, AT THE MANUFACTURER'S OPTION TO REPLACEMENT OF, OR THE REPAYMENT OF THE PURCHASE PRICE FOR, THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. IN NO EVENT SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.**

FarmSaver.com, LLC and the seller offer this product, and the buyer and user accept it, subject to the foregoing CONDITIONS OF SALE AND WARRANTY.

Quali-Pro is a trademark of FarmSaver.com, LLC.  
Benlate is a registered trademark of DuPont.  
Copper-N Count is a registered trademark of Mineral Research and Development Corporation.  
DiPel is a registered trademark of Abbott Laboratories.  
Foil is a registered trademark of Ecogen Inc.  
Latron B-1956 is a trademark of Rohm and Haas Company.

**Questions? Call 1-800-979-8994.**

FarmSaver.com, LLC  
PO Box 21365  
Seattle, WA 98111

EPA Notif 021805 (BulkStor&Refill)

Note: DO NOT apply Quali-Pro Chlorothalonil 500 ZN to either green or variegated Pittosporium or to Schefflera, as multiple applications have been demonstrated to cause phytotoxic responses.

### CONDITIONS OF SALE AND WARRANTY

The DIRECTIONS FOR USE of this product are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of FarmSaver.com, LLC or the seller. All such risks shall be assumed by the buyer.