

2017-7219  
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GUARDSMAN COPPER OXYCHLORIDE 50

WETTABLE POWDER FUNGICIDE

AGRICULTURAL

**GROUP M2 FUNGICIDE**



WARNING POISON

READ THE LABEL BEFORE USING

REGISTRATION NO.13245 PEST CONTROL PRODUCTS ACT

ACTIVE INGREDIENT: Copper, present as Copper Oxchloride.....50%

NET CONTENTS: kg

Univar Canada Ltd.

9800 Van Horne Way

Richmond, BC

V6X 1W5

Tel: 1-866-686-4827

#### PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN. Hazardous if swallowed, inhaled or absorbed through the skin. Avoid breathing dust or spray mist. Avoid contact with the eyes, skin and clothing. After handling, wash thoroughly with soap and water before eating, drinking or smoking and change to clean clothing. Do not apply or allow to drift to area occupied by unprotected persons and animals or to streams, lakes or ponds to protect wildlife. Avoid contamination of feed or food, including such crops on which residue is unsafe. Add Hydrated lime when treating copper sensitive crops.

Wear goggles, long pants, a long-sleeved shirt and shoes plus socks during mixing/loading, application, clean-up and repair. In addition, wear chemical-resistant gloves during mixing/loading, clean-up and repair. Remove personal protective equipment immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing. Remove clothing/personal protective equipment immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Discard

clothing and other absorbent material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them. For cleaning/maintaining personal protective equipment, use detergent and hot water. Keep and wash personal protective equipment separately from other laundry.

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Wash the outside of gloves before removing. **DO NOT** enter or allow worker entry into treated areas during the restricted-entry interval of 48 hours. Post a warning signs at entrances to treated areas notifying workers of the application of the product.

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., visit CropLife Canada's web site at: [www.croplife.ca](http://www.croplife.ca)

## FIRST AID

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

If swallowed: Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

In case of skin or clothing contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

**IF INHALED**, move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

## TOXICOLOGICAL INFORMATION

No specific antidote. Treat symptomatically

## DISPOSAL

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instruction for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with the provincial requirements.

5. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

## DIRECTIONS FOR USE

Rates per 1,000 litres are based on dilute spray mixture. Copper Oxychloride 50 may be used in low volume or concentrate sprays by increasing the dosage to apply the same quantity of Copper Oxychloride 50 per hectare as would normally be applied when spraying dilute mixtures. Apply in sufficient water for thorough coverage of all plant parts; this volume depends on spray equipment and size of plants. The spray tank should be partially filled with water and the required Copper Oxychloride 50 added with the agitator running. Keep agitator running during filling and spraying operations. The use of a surfactant (spreader sticker) according to manufacturer's recommendations will improve coverage of spray. May be used up to 2 days before harvest.

**DO NOT** apply this product in a way that will contact workers or bystanders, either directly or through drift. Only protected handlers may be in the area during application.

**DO NOT** apply this product directly to freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands), estuarine/marine habitats.

**DO NOT** contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

**DO NOT** apply by air.

## BUFFER ZONES

Field sprayer application: **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium classification. Boom height must be 60 cm or less above the crop or ground.

Airblast application: **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** direct spray above plants to be treated. Turn off outward pointing nozzles at row ends and outer rows. **DO NOT** apply when wind speed is greater than 16 km/hr at the application site as measured outside of the treatment area on the upwind side.

Use of the following spray methods or equipment **DO NOT** require a buffer zone: hand-held or backpack sprayer and spot treatment.

The buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands), sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats.

Method of application	Use site		Buffer Zones (meters) Required for the Protection of:				
			Freshwater Habitat of Depths:		Estuarine/Marine Habitats of Depths:		Terrestrial habitat
			Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m	
Field sprayer*	Cranberry		15	5	10	4	0
	Potatoes		40	20	20	10	1
	Squash, pumpkin, melon, cucumbers, onion, celery		20	10	10	5	1
	Tomatoes		45	20	25	10	1
Airblast	Apricots, Peaches (except leaf curl)	Early growth stage	45	35	40	30	0
		Late growth stage	35	30	30	20	0
	Nectarine						
	Peach Nectarine (leaf curl)	Early growth stage	40	30	30	20	0
	Cottoneaster, crabapple, hawthorn, mountain ash, quince	Late growth stage	40	30	35	25	0
	Arborvitae, cedar, fir, juniper, pine, spruce	Early growth stage	55	45	45	40	1
		Late growth stage	45	35	35	30	1
	Raspberries	Early growth stage	55	45	50	40	1
		Late growth stage	45	35	40	30	1
	Sweet and sour cherries	Early growth stage	55	45	45	35	1
		Late growth stage	45	35	35	25	1
	Pear	Early growth stage	60	50	50	40	1
Late growth stage		50	40	40	35	1	
Grapes	Early growth stage	60	55	55	45	2	

Method of application	Use site		Buffer Zones (meters) Required for the Protection of:				
			Freshwater Habitat of Depths:		Estuarine/Marine Habitats of Depths:		Terrestrial habitat
			Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m	
		Late growth stage	50	45	45	35	2
	Sour cherries (brown rot, leaf rot)	Early growth stage	55	45	45	40	1
	Blueberry (highbush)	Early growth stage	55	45	50	40	1
		Late growth stage	45	35	40	30	1
	Filbert/ Hazelnut	Early growth stage	55	50	50	40	1
		Late growth stage	45	40	40	30	1

\* For field sprayer application, buffer zones can be reduced with the use of drift reducing spray shields. When using a spray boom fitted with a full shield (shroud, curtain) that extends to the crop canopy, the labeled buffer zone can be reduced by 70%. When using a spray boom where individual nozzles are fitted with cone-shaped shields that are no more than 30 cm above the crop canopy, the labeled buffer zone can be reduced by 30%.

## ENVIRONMENTAL HAZARDS

TOXIC to birds, small wild mammals, aquatic organisms and non-target terrestrial plants.  
Observe buffer zones specified under DIRECTIONS FOR USE.

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

## RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, please note that Guardsman Copper Oxychloride 50 contains a Group M2 fungicide. Any fungal population may contain individuals naturally resistant to Guardsman Copper Oxychloride 50 and other Group M2 fungicides. A gradual or total loss of pest control may occur over time if these fungicides are used repeatedly in the same fields. Other resistance mechanisms that are not linked to site of action but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay fungicide resistance:

- Where possible, rotate the use of Guardsman Copper Oxychloride 50 or other Group M2 fungicides with different groups that control the same pathogens.
- Use tank mixtures with fungicide from a different group when such use is permitted.
- Fungicide use should be based on an IPM program that includes scouting, historical information related to pesticide use and crop rotation and considers cultural, biological and other chemical control practices.
- Monitor treated fungal populations for resistance development.
- If disease continues to progress after treatment with this product, do not increase the use rate. Discontinue use of this product, and switch to another fungicide with a different target site of action, if available.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for specific crops and pathogens.
- For further information and to report suspected resistance, contact Univar Canada Ltd at [www.univarcana.com](http://www.univarcana.com).

## COMPATABILITY

Copper Oxychloride 50 without lime can be mixed with most insecticides, spreader-stickers and superior oil. Copper Oxychloride 50 with lime cannot be mixed with insecticide wettable powders. When adding oil or an insecticide, observe the cautions and intervals before harvest on edible crops printed on the insecticides label.

## Uses and Rates of Applications

Use site	Disease	Rate and Method	Maximum Single Application Rate (kg Cu <sup>2+</sup> /ha) <sup>1</sup>	Maximum Number of Applications per Year	Minimum Application Interval (day) <sup>2</sup>
<b>Food/Feed Crops</b>					
Apricots, peaches Nectarine (British Columbia only)	Coryneum Blight, Peach Leaf Curl	Apply 9 kg. per hectare in September AFTER the harvest is completed.	4.5	1	n/a
Pear	Fireblight	To reduce blossom infection	1.59	10	5

Use site	Disease	Rate and Method	Maximum Single Application Rate (kg Cu <sup>2+</sup> /ha) <sup>1</sup>	Maximum Number of Applications per Year	Minimum Application Interval (day) <sup>2</sup>
(British Columbia Only)	(see below)	apply 2.25 kg. per hectare when blossoms open. In case of hail damage repeat this treatment after 5 days. Do not apply on Anjou.			
Peach Nectarine	Leaf Curl	Apply 2 kg. in 1000 litres of water in fall after leaves have fallen or in the spring before buds break.	1.0	2	7
Cherries (Sweet/sour)	Bacterial Canker (Pseudomonas sp)	6-9 kg. of product per hectare. Apply by air blast sprayer when 3/4 leaves have fallen. Make a second application in early spring before bud break. Use low rate on small trees, high rate for large trees; apply in 1000 litres of water per hectare; ground spray only. Later applications in the spring may cause injury.	4.5	2	7
Sour cherries	Brown rot, Leaf spot	Use 2 kg. plus 4 kg. hydrated lime per 1000 litres of	1.0	10	7





Use site	Disease	Rate and Method	Maximum Single Application Rate (kg Cu <sup>2+</sup> /ha) <sup>1</sup>	Maximum Number of Applications per Year	Minimum Application Interval (day) <sup>2</sup>
		<p>rate on small trees, and high rate on large trees. Apply product in 1000 L water/ha.</p> <p>Application is needed only from budswell to budbreak (approximately late March to mid May) which is the time that the tissue is susceptible to infection. May be applied up to 2 days before harvest.</p>			
Potatoes	Early & late blight	Use 4 kg. in 1000 litres of water per hectare. Spray to ensure thorough coverage of plants. Start applications when plants are 10-20 cm. high and repeat at 7-10 day intervals.	2.0	10	5
Raspberries	Bacterial Blight	Apply once before Fall rains using 2.5 kg. in 1000 litres per hectare and 3 times using 3 kg. in 1000 litres per hectare beginning with budburst and at 14 and 28 day	2.65	4	14

Use site	Disease	Rate and Method	Maximum Single Application Rate (kg Cu <sup>2+</sup> /ha) <sup>1</sup>	Maximum Number of Applications per Year	Minimum Application Interval (day) <sup>2</sup>
		successive intervals.			
Highbush blueberries	Bacterial Blight	Apply 2-4 kg. in 500-1000 litres of water per hectare once before fall rains, once at 50% leaf fall and once at bud burst, followed by repeat applications at 14 day intervals during wet weather. (Maximum 6 applications per year)  Ground (handgun or tractor-mounted sprayers).	2.0	6	14
Cranberries	Leafblight, Twigblight (Phomopsis/Diaportha Vaccinii), Fruit Rot Fungal Complex	Use 4 kg. in 500 - 1000 litres of water per hectare. Maximum of three applications per year. For twigblight apply at bud break and then at 10-14 day intervals: for fruit rot apply at early bloom and repeat at 10-14 day intervals.	2.0	3	10
Celeries	Early & late blight	Use 4 kg. in 1000 litres of water per hectare. Spray to	2.0	5	5

Use site	Disease	Rate and Method	Maximum Single Application Rate (kg Cu <sup>2+</sup> /ha) <sup>1</sup>	Maximum Number of Applications per Year	Minimum Application Interval (day) <sup>2</sup>
		ensure thorough coverage of plants. Start applications when plants are 5 cm. high and repeat at 7-10 day intervals.			
Cucumbers	Angular leaf spot. Anthracnose, Bacterial wilt, Downy mildew. Alternaria and Septoria leaf spot.	Use 4 kg. in 1000 litres of water per hectare. Spray at weekly intervals. For Bacterial Wilt control it is necessary to control cucumber beetles.	2.0	5	7
Pumpkins, squashes, melons	Angular leaf spot. Anthracnose, Bacterial wilt, Downy mildew. Alternaria and Septoria leaf spot.	Use 3 kg.in 1000 litres of water per hectare. Spray at weekly intervals. For Bacterial Wilt control it is necessary to control cucumber beetles.	1.59	5	5
Onions	Downy mildew	Apply every 10 to 14 days throughout growing season beginning in mid May for over wintered crops and mid June for spring seeded crops. Apply at rate of 3 kg. in 500 litres of water per hectare.	1.5	6	10

Use site	Disease	Rate and Method	Maximum Single Application Rate (kg Cu <sup>2+</sup> /ha) <sup>1</sup>	Maximum Number of Applications per Year	Minimum Application Interval (day) <sup>2</sup>
Tomatoes	Early & late blight Septoria leaf spot, Bacterial canker	Use 4 kg. in 1000 litres of water per hectare. Spray to ensure thorough coverage of plants. Start applications when plants are 10-13 cm. high and repeat at 7-10 day intervals (on green-house tomatoes - use 3 kg. per litres of water).	2.39	10	3
Grapes	Downy Mildew Powdery Mildew	Mix 3 kg. plus 6 kg. of hydrated lime in 1000 litres of dilute spray per hectare. Apply at Pre-bloom at 1500 litres per hectare and at Post-bloom and in cover sprays at 2000 litres per hectare until mid August. Do not apply on SEIBEL varieties.	3.0	7	3
<b>Ornamentals, Forests and Woodlots</b>					
Cottoneaster, crabapple, hawthorn, mountain ash, quince	Fireblight (see below)	Apply 1.25 kg. in 1000 litres of water per hectare. Spray several times during blossoming: also repeat during summer when	0.63	10	7

Use site	Disease	Rate and Method	Maximum Single Application Rate (kg Cu <sup>2+</sup> /ha) <sup>1</sup>	Maximum Number of Applications per Year	Minimum Application Interval (day) <sup>2</sup>
		bacteria spread rapidly in warm, rainy weather.			
Arborvitae, cedar, fir, juniper, pine, spruce	Leafblight, Needlecast, Tipblight, Twigblight	Apply 4 kg. in 1000 litres of water per hectare when new growth starts in spring and repeat 3 to 4 times at 10 day intervals. Further sprays are advisable during prolonged rainy periods	2	5	10

<sup>1</sup> Maximum amount of metallic copper that may be applied to a hectare for each application. Product labels must also include application rates described in liquid units or kilograms of total product.

<sup>2</sup> Minimum number of days between each application.

n/a Not applicable

**FIREBLIGHT** may be spread to healthy plants by insects such as aphids and leafhoppers. It is, therefore, of utmost importance that regular applications with an effective insecticide, such as Thiodan, are made. Diseased twigs which appear to have been "scorched", must be cut off at 15 cm. below the infected part and burned; disinfect pruning shears after each cut in solution of 1 part of "Javex" to 4 parts of water.

#### **NOTICE TO USER**

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the Pest Control Products Act to use this product in a way that is inconsistent with the directions on the label.