

HELENA CHEMICAL COMPANY



CORPORATE OFFICE

Suite 3200 - Clark Tower
5100 Poplar Avenue
Memphis, Tennessee 38137
Telephone 901/761-0050
Telex 8105911595

HELENA

3.5 LB. LIQUID COPPER FUNGICIDE

ACTIVE INGREDIENT:

* Copper (Expressed as Metallic) 26.12%

INERT INGREDIENTS 73.88%

TOTAL 100.00%

This product contains 3.5 LBS. of Metallic Copper per gallon.

* Copper Source is Tribasic Copper Sulfate

KEEP OUT OF REACH OF CHILDREN
WARNING
SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONS

EPA REG. NO.

NET CONTENTS

EPA EST NO.

MANUFACTURED BY
HELENA CHEMICAL COMPANY
MEMPHIS, TN. 38137

ACCEPTED
SEP 14 1987
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 5905-483

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING

May be fatal if inhaled. Do not breathe spray mist. Do not get in eyes, on skin, or on clothing.

STATEMENT OF PRACTICAL TREATMENT

If swallowed - Drink 1 or 2 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. Get medical attention.

If inhaled - Remove victim to fresh air. Get medical attention.

If on Skin - Wash thoroughly with soap and water.

If in eyes - Wash with large amount of water and get medical attention.

ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not apply directly to water or wetlands. Do not apply where runoff is likely to occur. Do not apply where weather conditions favor drift from areas treated. Do not contaminate water by cleaning of equipment or disposal of wastes.

DIRECTIONS FOR USE

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

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal. Keep in a cool place. Do not store at temperature below 32°F. Open dumping is prohibited. Do not reuse empty container.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities by burning. If burned, stay out of smoke.

MIXING DIRECTIONS AND RECOMMENDATIONS
SHAKE WELL BEFORE USING

BEST AVAILABLE COPY

Fill the spray tank 1/2 full of water and with agitator running, add the required amount of Helena 3.5 LB. Liquid Copper Fungicide. Add water to fill the spray tank 3/4 full and when a spreader sticker is recommended, add the recommended amounts. Fill the spray tank and keep agitator running until spraying is completed.

CONVERSION CHART FOR HELENA 3.5 LB. COPPER

FLUID OUNCES	QUARTS *	GALLONS
4.8	.15	
9.6	.3	
12.8	.4	
19.2	.6	
27.2	.85	
	1.15	
	1.7	
	2.3	
	2.9	
	3.5	
	4.0	1.0
	4.6	1.15
	5.7	1.425
	6.9	1.725
	14.9	3.725

* All rates in the Helena 3.5 LB. Copper are given in quarts unless noted otherwise.

FRUITS AND NUTS

When dosage ranges are given, use lower rate when infection is from low to moderate and higher rate when infection is from moderate to high.

ALMONDS - Brown Rot and Shot Hole - conventional dilute spray - use 1.15 - 1.7 quarts in 100 gallons water and apply 350 to 400 gallons per acre. Bud sprays for control of Brown Rot and Shot Hole should be applied at pink bud through popcorn stage. Do not spray after trees are in leaf. As a dormant spray for control of Brown Rot and Shot Hole, apply December 15 to January 15. Concentrate sprayers - Use 2.9 - 3.5 quarts and apply as above in 25 to 50 gallons water per acre. NOTE: Use 3.5 quarts per acre through swelling buds and 2.9 quarts per acre in popcorn stage. With aerial spray during the dormant season for control of Brown Rot and Shot Hole, apply 4.6 - 6.9 quarts per acre in 20 gallons of water.

APRICOTS - Brown Rot and Shot Hole - conventional dilute spray - Use 1.15 - 1.7 quarts per 100 gallons water. As a dormant spray for control of Shot Hole disease apply November 15 to January 15. Bud sprays for control of Brown Rot should be applied through swelling buds and popcorn stage. Do not spray when trees are in leaf. Concentrate spray - Use 3.5 - 4.0 quarts per acre and

apply as above. NOTE: Use 4.6 quarts per acre through swelling buds and reduce to 3.5 quarts in popcorn stage. When bud blight is a problem, apply the maximum rate shown above after most of leaves have fallen in the fall usually November and December but ahead of fall rains.

AVOCADOS: Anthracnose, Blotch, and Scab - Use 1.15 quarts per 100 gallons water. Begin treatment when blossom buds open. Repeat at 4 week intervals for a total of 5 applications. Do not apply later than 140 days after bloom.

BERRIES: (Blackberries, Boysenberries, Dewberries, Loganberries, Raspberries): Anthracnose - Use 1.15 quarts per 100 gallons of water. Begin spray when leaf buds begin to open. Repeat when flower buds show white and continue at 10 to 14 day intervals. Leaf and Cane Spot and Yellow Rust - in spring sprays use 1.15 quarts per 100 gallons of water and apply when leaf buds begin to open and repeat when flower buds show white. Also make a postharvest spray after pruning, but before fall rains begin to fall use 2.3 quarts per 100 gallons of water.

CHERRIES: (Sour): Brown Rot, Blossom Blight - Use 2.3 - 2.9 Qts. per 100 gallons water. Apply at popcorn and late bloom stages. In late bloom spray add 5 Lbs. hydrated lime per 100 gallons spray. For leaf spot apply 2.3 - 2.9 quarts plus 5 LBS. hydrated lime per 100 gallons applied at petal fall. For Shot Hole - Use 2.3 - 2.9 quarts per 100 gallons water and apply as dormant spray.

CITRUS - Brown Rot - Use .6 quarts per 100 gallons water. Apply at first indication of rain or first appearance of Brown Rot. Repeat as needed to protect during wet weather. For Melanose, Scab, Greasy Spot and Pink Pitting of grapefruit - Use .43 - .85 quarts per 100 gallons water by dilute spray. With aerial or concentrate sprayers apply 5.7 - 14.9 quarts per acre diluted to the proper concentration with water as recommended for the specific type sprayer used; Do not use less than 10 gallons of spray per acre. For Scab control make two applications, one just before trees begin to flush and repeat at 2/3 petal fall. For Melanose control apply 1 to 3 weeks after petal fall. Repeat 4 weeks later if necessary. For Greasy Spot And Pink Pitting Make a summer spray about July 15. Sulfur may be included in sprays for Melanose and Scab. CAUTION: Do not apply in areas where copper injury is know to occur.

GRAPES: Anthracnose, Black Rot, Downy Mildew - dilute spray - Use .6 quarts per 100 gallons water. Make first application when new growth is 1/2 inch long and repeat every 10 to 14 days. Concentrate spray - Use 1.15 - 1.7 quarts per acre in

sufficient water for good coverage and apply as stated above.

OLIVES: Leaf Spot (Peacock Spot) - Use 1.15 - 1/17 Qt. per 100 gallons of water and apply in late October.

NOTE: In areas with 10 inches or less rainfall per year, use only .6 quarts per 100 gallons. Concentrate sprays - Use 3.5 quarts per acre in not less than 40 gallons water. Read and follow above note on rainfall limitation.

PEACHES & NECTARINES: Brown Rot, Peach Blight (Shot Hole) and Leaf Curl - dilute spray - Use 1.15 - 1.7 quarts per 100 gallons. Concentrate spray - Use 3.5 - 4.6 quarts per acre in 25 to 50 gallons water per acre. As a dormant spray for leaf curl and peach blight (Shot Hole) apply November 15 to December 15 before fall rains begin. Bud Sprays for brown rot and peach blight (Shot Hole) should be applied before bud swell and in full pink bud stage. Do not apply after pink bud or after trees are in leaf as injury may occur. **NOTE:** To control Leaf Curl application must be made before the foliage buds swell. Consult your State Agricultural Experiment Station. California only: For Blight and Leaf Curl control, 4.6 - 5.7 Qts. in 20 gallons water may be applied by aircraft to one acre during the dormant season. For Peach Bacterial diseases apply 1.15 Qts. per 100 gallons water and apply during dormant season.

PEARS: Fire Blight - Use 4.8 fluid ounces per 100 gallons water. Apply 400 gallons per acre to give 1/2 LB. metallic copper per acre. Concentrate spray - Use .6 quarts per acre in sufficient water for good coverage. Apply at 10% bloom and repeat at 5 to 7 day intervals during bloom. Do not use on D'Anjou, Comice, or Seckel Varieties.

PLUMS & PRUNES: Brown Rot, Shot Hole - Use 1.15 - 1.7 quarts per 100 gallons water. For Shot Hole control apply as a dormant spray in November or December before heavy fall rains begin. For Brown Rot control apply at early green bud and full popcorn stages. Concentrate spray - Use 3.5 quarts in 25 to 50 gallons water and apply to one acre. California Only: For aircraft spray to control Shot Hole and Brown Rot Blossom Blight apply 4.6 - 5.7 quarts in 20 gallons of water and apply to one acre during dormant season.

WALNUTS: Blight - Use 1.15 - 1.7 quarts per 100 gallons water. Make two treatments, the first in early prebloom (1% pistillate, not catkin, blooms showing) and the second when 10% to 20% pistillate, not catkin, blooms are showing. Repeat applications for blight control 3 or 4 times during growing season if necessary.

STRAWBERRIES: Leaf Spot - Use 1.15 - 1.7 quarts per 100 gallons water. Apply Prebloom and Postbloom.

CAUTION: Overspraying may cause injury to tender foliage of peaches, almonds, apricots and some Japanese plums.

VEGETABLES AND FIELD CROPS

MIXING INSTRUCTIONS: Mix recommended amount of Helena 3.5 LB. Liquid Copper given for one acre in sufficient water for good coverage. With dilute ground sprayer, generally apply 100 to 150 gallons spray per acre. With concentrate sprayer generally apply 20 to 50 Gallons spray per acre. With aerial sprayers generally apply 5 to 10 gallons spray per acre, but do not apply less than 5 gallons spray mixture per acre. Consult the manufacturer for recommended water volumes per acre for a given sprayer.

BEANS (Green and Dry): Angular Leaf Spot, Anthracnose, Bacterial Blight, Downy Mildew - Use .6 - 1.7 quarts per acre. Begin treatment when plants are about 5 inches tall and repeat at 5 to 7 day intervals.

BEETS: Downy Mildew, Leaf Blights, Leaf Spots - Use 1.15 quarts per acre. Begin when disease first appears and repeat every 7 to 10 days.

SUGAR BEETS: Cercospora Leaf Spot - Use 2.3 quarts per acre. Begin when disease first appears and repeat every 7 to 10 days.

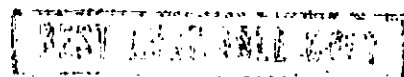
BROCCOLI, CABBAGE, CAULIFLOWER: Downy Mildew, Leaf Spots - Use 1.15 quarts per acre. Begin when plants are above ground in plant bed or before disease normally appears. Repeat at 7 to 10 day intervals in plant bed and field.

CARROTS: Downy Mildew, Cercospora and Alternaria Leaf Blights - Use 1.15 quarts per acre. Begin treatment when disease first appears and repeat at 7 to 10 day intervals.

CELERY: Bacterial Blight, Early and Late Blight - Use 1.15 quarts per acre. Treat every 7 days after emergence.

CUCUMBERS: Downy Mildew, Anthracnose, Angular Leaf Spot - .85 - 1.15 quarts per acre. Begin application before disease appears and repeat at 7 to 10 day intervals.

CUCURBITS: (Cantaloupes, Cucumbers, Melons, Pumpkins, Squash) Angular Leaf Spot, Anthracnose, Alternaria Leaf Spot, Bacterial Wilt, Downy and Powdery Mildews, Gummy Stem Blight, Leaf Spot, Scab - Use 1.15 Quarts per acre. Begin treatment when plants begin to vine and repeat every 7 to 10 days. Since the disease is likely to be more serious in high plant populations (40,000 or more plants per acre) spray every 3 to 4 days to protect fruit at all stages of development. NOTE: A Ground application after planting, but before emergence, may help decrease infections of Angular Leaf Spot, Anthracnose and Alternaria



Leaf Spot. Then follow above schedule after emergence.
NOTE: Some Agricultural Experiment Stations recommend equal amount of hydrated lime when used on Cucurbits. Lime when applied to Cucurbits may cause dwarfing of plants and reduce fruit set due to increased transpiration and defloration under some conditions. Consult your local Experiment Station for specific recommendations.

EGGPLANT: Alternaria Blight, Anthracnose, Phomopsis - Use 1.15 quarts per acre. Begin in plant bed or in field before disease appears. Repeat at 7 to 10 day intervals.

ONION: Purple Blotch (California Only) and Downy Mildew - Use 1.15 quarts per acre. Begin when plants are 4 to 6 inches and repeat at 7 to 10 day intervals.

PEPPERS: Anthracnose, Bacterial Spot, Early Blight, Cercospora Leaf Spot (Frogeye Spot), Downy Mildew - Use 1.15 - 1.7 quarts per acre. Start sprays in seedbed and continue in field at 7 day intervals. Disease control is critical during fruiting.

POTATOES: Early and Late Blights - Use 1.7 - 2.3 quarts per acre. Begin when plants emerge and repeat at 7 to 10 day intervals.

PEANUTS: Cercospora Leaf Spot - Use .85 - 1.7 quarts per acre. Repeat at 10 - 14 day intervals. NOTE: The addition of 2 LBS. flowable sulfur in a tank mix will enhance leaf spot control.

SPINACH: Anthracnose, Cercospora Leaf Spot, Downy Mildew, White Rust - Use 1.15 quarts per acre. Begin when disease first appears. Repeat at 7 to 10 day intervals.

TOMATOES: Anthracnose, Bacterial Spot, Bacterial Canker (Southeastern States Only), Early and Late Blight, Leaf Mold, Nailhead Rust, Septoria and Stemphylium Leaf Spot - Use 1.15-1.7 quarts per acre. Begin in seedbed or field before disease appears. Repeat at 7 to 10 day intervals. NOTE: While the labeled rate is particularly effective against Bacterial Spot, a tank mix with Maneb used at the labeled rates, controls a broad range of tomato diseases. Observe all cautions and limitations on the label of all products used in mixture.

NOTICE OF WARRANTY

Helena Chemical Company warrants that this material conforms to the chemical description on the label and is reasonable fit for the purposes referred to in the Directions for Use and Conditions of Sale, subject to the inherent risks referred to therein.

Helena Chemical Company makes no other express or implied warranty, including any other express or implied warranty of FITNESS or of MERCHANTABILITY, and no agent of Helena Chemical Company is authorized to do so except in writing with a specific reference to this warranty. Any damages arising from a breach of this warranty shall be limited to direct damages, and not include consequential commercial damages such as loss of profit or value, etc.

BEST AVAILABLE COPY