

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: February 9, 1978

SUBJECT: Orthocide 4 Flowable EPA Registration#239-2347
Caswell#159 Shaughnessy#081301

FROM: William Greear *W. Greear*
Toxicology Branch *E 2/14/78*

TO: Dr. Wilson
Product Manager #21

CASWELL FILE

Recommendations

The acute oral LD₅₀, dermal LD₅₀, eye and skin irritation studies are acceptable and designated Core-Minimum Data. The label changes proposed by the registrant (with regards to precautionary labeling) are inadequate. The following label changes are recommended:

DANGER: Keep Out of Reach of Children. Corrosive. Causes eye damage. May cause allergic skin reactions. Do not get in eyes, on skin or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful if inhaled or absorbed through the skin. Avoid inhalation of vapors or spray mists. Avoid contamination of food.

First Aid: In case of eye contact, immediately flush eyes with fresh water for 15 minutes; for skin wash with plenty of soap and water. For eyes call a physician. Remove and wash contaminated clothing before reuse.

Emergency Information - call (415) 233-3737

The registrant should be informed that a data gap exists with respect to the acute inhalation LC₅₀ study on the formulation and that the data could influence the recommended precautionary labeling with respect to the inhalatory route of exposure. In addition the data on which the "skin sensitization" labeling is based should be submitted.

Note: This formulation is a candidate for Restricted Use, both for domestic as well as non-domestic applications. Captan is on the RPAR candidate list - see memo of 8/26/77.

*No RPAR criteria have been exceeded.

Review

1. The Acute Oral Toxicity of Orthocide 4 Flowable (CC 7791) in Rats - *K*
(Environmental Health & Toxicology, Report #S-1097, 8/19/77,
submitted by Ortho on 12/15/77, Acc.#232498)

5 male Sprague-Dawley rats were administered 5.0 g/kg of the test material, by gavage. 30 female rats were divided into 6 groups of 5 animals each and administered 3.3, 5.0, 5.0, 7.4, 7.4 or 11.0 g/kg of the test material by gavage. The animals were weighed on days 0.7 and 14. Necropsies were performed.

Results

LD₅₀ (male) > 5.0 g/kg
LD₅₀ (female) = 8.1(4.7-13.9) g/kg slope = 1.7(0.89-3.4)
Toxic Signs: depression, reduced food consumption; survivors chewed their paws.
Necropsy: unremarkable
TOX Category: IV
Classification: Core-Minimum Data
(1) food consumption and body weight data were not recorded daily.

2. The Acute Dermal Toxicity of Ortho Orthocide 4 Flowable (CC 7791) in Rabbits - (Environmental Health & Toxicology, Report#S-1098 8/19/77, submitted by Ortho on 12/15/77, Acc#232498)

5 g/kg of the test material was applied to the clipped skin of the back of each of 6 New Zealand white rabbits, weighing 2.54-2.99 kg. Three of the animals were further prepared by abrading the skin. The test material was allowed to remain in contact with the skin under an occlusive wrapping for a period of 24 hours. Following the 24 hours exposure period the wrappings and any residual test material were removed. The animals were observed for 14 days and then sacrificed and necropsied.

Results

LD₅₀ > 5.0 g/kg (no death occurred)
Toxic Signs: none observed
Necropsy: unremarkable
TOX Category: III
Classification: Core-Minimum Data
(1) food consumption and body weights were not determined daily.

3. The Eye Irritation Potential of Ortho Orthocide 4 Flowable (CC 7791) - (Environmental Health & Toxicology, Report#S-1099, 8/19/77, submitted by Ortho on 12/15/77, Acc#232498)

0.1 ml of the test material was placed in the conjunctival sac of one eye of each of 6 New Zealand white rabbits. The eyes were graded at 1 hr., 1, 2, 3, 7, 10 and 14 days, using a modification of the scoring system of Draize.

Results

Slight to moderate corneal opacity was observed in most eyes during the 1, 2 and 3-day readings. Slight or dense corneal opacity accompanied by slight to severe pannus was present in most eyes at 7 days and in some up to 14 days.

TOX Category: I

Classification: Core-Minimum Data

(1) an eye wash study was not performed.

4. The Skin Irritation Potential of Ortho Orthocide 4 Flowable (CC 7791)
- (Environmental Health & Toxicology, Report#S-1100, 8/19/77,
submitted by Ortho on 12/15/77, Acc#232498)

0.5 ml of the test material was applied to an intact and an abraded area on the clipped skin of the back of each 6 New Zealand white rabbits. The test material was allowed to remain in contact with the skin under an occlusive wrapping for a period of 24 hrs., after which the wrapping and any residual test material were removed. Irritation was scored at 24, 48 and 72 hrs. and 7 days, using a modification of the scoring system of Draize.

Results

P. I. ~~2~~ 0.3/8.0 (readings on erythema could not be made at 24 hours)

TOX Category: IV

Classification: Core-Minimum Data

(1) readings were not made on 2 intact and 2 abraded skin sites.

Typists: TH

COPY A

CAUTION: May cause eye irritation and skin sensitization. Avoid contact with eyes and skin. Avoid inhalation of vapors or spray mists. Wash thoroughly after using. Remove and wash contaminated clothing before reuse. In case of eye contact immediately flush eyes with fresh water for 15 minutes; for skin wash with plenty of soap and water. Get medical attention if irritation persists.

Note to Physicians: Emergency Information - call (415) 233-3737.

Avoid contamination of feed or foodstuffs. Dispose of container promptly when empty. Do not reuse. Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.

This product is toxic to fish. Keep out of lakes, streams or ponds. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from areas treated. Do not contaminate water by cleaning of equipment or disposal of wastes. Apply this product only as specified on this label.

COPY B

Foliage injury may at times occur to Red Delicious, Winesap and other sensitive varieties of apples in early season sprays.

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ORTHO[®] 4 Flowable



ORTHO

ORTHOCIDE[®] 4 FLOWABLE (FUNGICIDE)

By Wt. 38%
62%
Ingredients: N-(trichloromethylthio)-4-cyclohexene-1,2-dicarboximide
4 lbs. Captan per gallon.

Registered for use or export outside of the United States, its territories and possessions, Canada or Mexico.

CAUTION: KEEP OUT OF REACH OF CHILDREN.

1. CONTAINER IS EMPTY, IMMEDIATELY WASH THOROUGHLY AND DESTROY. NEVER RE-USE.
2. IN COOL, DRY PLACE, BUT PROTECT FROM TEMPERATURES BELOW 0° F.
3. KEEP FROM EXCESSIVE HEAT.

4. ENTIRE LABEL, USE STRICTLY IN ACCORDANCE WITH DIRECTIONS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

5. PESTICIDE IN ORIGINAL CONTAINER. DO NOT PUT CONCENTRATE OR DILUTE INTO FOOD OR DRINK CONTAINERS.

ORTHOCIDE 4 Flowable is an aqueous suspension for use in water spray for the control of certain fungus diseases in fruit and vegetables.

DIRECTIONS: Before using, mix contents thoroughly, then pour recommended amount of this material into spray container. When half-full, add balance of water. Maintain agitation while filling and spraying operations. Do not allow mixture to settle. Use a screen not finer than 50 mesh in the entire system.

USE: Primary Scab Infection—1 qt. per 100 gals. water. Bitter Rot, Botrytis, Black Rot, Black Spot, Bull's Eye Rot, Botrytis Rot, and 1 or 2 preharvest applications. ORTHOCIDE 4 Flowable may not be used in combination with or closely following or in combination with wettable sulfur products on sulfur sensitive varieties such as Red Delicious, Stayman, Baldwin, King, etc., as foliage injury and defoliation may occur.

ORTHO 4: Brown Rot (Twig Blight), Jacket Rot—1 qt. per 100 gals. Apply at bloom red bud stage and repeat at 75 per cent fall.

ORTHO 4: Brown Rot, Shot Hole, Scab, Leaf Blight—1 to 1½ qts. per 100 gals. water. Apply at popcorn, bloom, petal fall stages.

NET CONTENTS

1 GALLON

and up to 5 weeks after petal fall. May be used up to 12 days of harvest if hulls are not fed to dairy animals or animals being finished for slaughter.

ASPARAGUS: Preplanting Root Dip-Stimulation of shoot growth—1½ qts. to 100 gals. water. Dip root sections for 1 minute, drain and plant.

GRAPES: Downy Mildew, Black Rot—1 qt. in 100 gals. water. Apply just before bloom, repeat immediately after bloom. Depending upon susceptibility of grape variety, from 1 to 3 more sprays may be needed at 7 to 10-day intervals. For late season control of foliage, use ORTHO Copper 53 Fungicide. Dead Arm Disease (Northeast)—1 qt. per 100 gals. water. Make first application when new growth is 4" to 6" long, repeat when growth is 8 to 10 inches long.

PEACHES, NECTARINES: Brown Rot, Scab, Coryneum (Shot Hole)—1 qt. per 100 gals. water. Apply at pink bud, full bloom and petal fall stages. Repeat at 10 to 14-day intervals after petal fall. Also make late fall applications for Coryneum Blight.

CHERRIES: (Western Areas)—Cherry Leaf Spot, Brown Rot, Botrytis Rot—1 qt. per 100 gals. water. Spray at prebloom, bloom, petal fall. For severe infection, use 2 qts. Repeat in cover sprays.

RASPBERRIES: Spur Blight, Anthracnose—1 qt. to 100 gals. water. Apply when blossoms are in bud (young canes are 8 to 10 inches long). Make second application 2 weeks later. Apply a fall spray after old canes are removed. Thorough coverage is essential. Fruit Rot—1 qt. to 100 gals. water. Make 3 applications as follows: First—3 to 5 days before harvest starts; Second—At mid-harvest; Third—8 to 10 days after second application.

STRAWBERRIES: Botrytis Rot—1½ qts. to 100 gals. water. (200 diluted gals. per acre equivalent of 2 to 3 qts. per acre in water to cover). Apply when new growth starts in spring before fruit starts to form. Repeat weekly. Severe Infection—Continue through harvest period, treating immediately after each picking.



READ THE LABEL

CAUTION: Harmful if Swallowed. Avoid inhalation of dust or spray mist. Avoid contact with skin.

Note to Physicians: Emergency Information—call (415) 233-3737. Do not store or transport near feed or food. Foliage injury may at times occur to Red Delicious, Winesap and other sensitive varieties of apples in early season sprays. Do not apply under con-

POTATOES: Early and Late Blight—1 qt. per 100 gals. water. Apply 1½ to 2 qts. per acre in water to cover. Apply at first sign of disease. Repeat at 5 to 7-day intervals or as necessary to keep disease under control. Severe infection conditions, use 2 qts. per 100 gals. or apply 2½ to 3 qts. per acre in sufficient water for good coverage.

POTATOES (seed pieces):—Seed Rot, Damp-Off—Use 1" per 100 gals. water. Dip seed pieces in the solution before planting. Cut pieces should be treated within 6 hours of cutting. If planting is to be delayed more than 1 or 2 days the treated pieces should be stored for 2 days in open crates before bagging.

PRUNES, PLUMS: Brown Rot—1 qt. per 100 gals. water. Apply at Red Bud or popcorn stage. Repeat at bloom and 75% petal fall stages. Also repeat later in season as necessary.

TOMATOES: Early Blight, Late Blight, Gray Leaf Spot, Anthracnose, Septoria Leaf Spot—1 qt. per 100 gals. water or apply 2 to 3 qts. per acre in water to cover. Severe Infection—2 qts. per 100 gals. water or apply 3 to 4 qts. per acre in water to cover. Apply at first sign of disease. Repeat at 5 to 7-day intervals or as necessary to keep diseases under control.

CANTALOUPE, CUCUMBERS, SUMMER AND WINTER SQUASH, WATERMELONS, PUMPKINS: Anthracnose, Downy Mildew—1 qt. per 100 gals. water or apply 2 qts. per acre in water to cover. Apply at first sign of disease. Repeat at 5 to 7-day intervals or as necessary.

LEMONS, LIMES, ORANGES, GRAPEFRUIT: Brown Rot (Phytophthora)—1 to 2 qts. to 100 gals. water. Apply as a skirt spray prior to winter rains, thoroughly wetting tree to heights of 3 to 4 feet. Re-treat 10 weeks after first application. Do not feed raw citrus by-products bearing capton residues to dairy animals or animals being finished for slaughter.

BEANS, PEAS: Damp-Off on Beans; Root Rot on Beans caused by-products bearing capton residues to dairy animals or animals being finished for slaughter. Broadcast 5 to 6 qts. per acre. Work into upper 3 or 4 inches of soil or apply 2½ to 3 qts. per acre in row at planting time.

GOOSEBERRIES: Leaf Spot—1½ qts. to 100 gals. water. Apply before fruit forms. Repeat as necessary.

COMPATIBILITY: ORTHOCIDE 4 Flowable may be combined with most commonly used insecticides, adjuvants and fungicides with the exception of strongly alkaline material such as hydrated lime which reduces the fungicidal activity. ORTHOCIDE 4 Flowable should not be used in combination with or closely following other sprays or with solvent formulations of Parathion products.

CONDITIONS OF SALE: 1. Chevron Chemical Company (Chevron) warrants that this material conforms to the chemical description on the label and is reasonably fit for use as directed hereon. Chevron neither makes, nor authorizes any agent or representative to make, any other warranty of FITNESS or of MERCHANTABILITY, guarantee or representation, express or implied, concerning this material.

2. Critical and unforeseeable factors beyond Chevron's control prevent it from eliminating all risks in connection with the