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8-10-87
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

AUG - 5 1987

MEMORANDUM

SUBJECT: EPA Registration No. 1812-288(1)
Kocide 101

EPA Registration No. 1812-297(2)
Kocide Cupric Hydroxide

FROM: Deloris F. Graham *DFF 8/10/87*
Technical Support Section
Fungicide-Herbicide Branch
Registration Division (TS-767C)

E 8/10/87

TO: Richard F. Mountfort, PM 23
Fungicide-Herbicide Branch
Registration Division (TS-767C)

APPLICANT: Griffin Corporation
P.O. Box 1847
Valdosta, GA 31603-1847

ACTIVE INGREDIENT: (1)
Cupric Hydroxide 77%
INERT INGREDIENTS 23%

ACTIVE INGREDIENT: (2)
Cupric Hydroxide 88%
INERT INGREDIENTS 12%

BACKGROUND:

Submitted necessary information to complete review
(see memo by D. Graham dated May 18, 1987). Studies conducted
by Springbor Institute for Bioresearch, Inc. Data under EPA
MRID Nos. 402374-01 and -02. Method of support not indicated.

RECOMMENDATIONS:

1. FHB/TSS finds these study^{IES} acceptable to support conditional registration on product which tested.
2. In the Eye Study, observations must be made for 21 days or until all irritation has subsided whichever comes first.
3. The appropriate signal word is DANGER, based on eye Study, for both products.

LABEL:

The precautionary statements must be revised to include "DANGER. Causes irreversible eye damage. If in eyes flush with plenty of water and get immediate medical attention."

REVIEW:

- (1) Eye Irritation Study on EPA Reg. No. 1812-288: Springborn Institute for Bioresearch, Inc.; Study No. 3159.2; Dec. 19, 1986; EPA MRID No. 402374-01.

PROCEDURE:

Nine rabbits receive 30 mg (\approx 0.1 ml) of the test material in one eye each. The treated eyes of three of the rabbits were washed with physiological saline 30 seconds after treatment. Observations made for 7 days posttreatment.

RESULTS:

At 24 hours posttreatment, 6/6 animals of the unwashed group and 2/3 of the washed group had corneal opacity (1/6 = 20, 2/6 = 30, 1/6 = 40, 1/6 = 60, 1/6 = 80) (1/3 = 10, 1/3 = 15); 6/6 & 1/3 iris irritation (5/6 = 5, 1/6 = 10) (1/3 = 5); 6/6 & 3/3 conjunctive redness (1/6 = 1, 5/6 = 2) (3/3 = 1), 6/6 & 2/3 chemosis (4/6 = 1, 1/6 = 2) (2/3 = 1); 6/6 & 1/3 discharge (4/6 = 2, 2/6 = 3) (1/3 = 1).

At 7 days, 6/6 & 1/3 corneal opacity (1/6 = 10, 3/6 = 20, 1/6 = 30, 1/6 = 40) (1/3 = 5); 2/6 iris irritation (1/6 = 5, 1/6 = 10), redness (1/6 = 1, 1/6 = 2) and chemosis (2/6 = 1). Corneal bulging and vascularization of cornea also noted.

STUDY CLASSIFICATION:

Core Minimum Data. See Item # 2 of Recommendations.

TOXICITY CATEGORY: I - DANGER

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- (2) Eye Irritation Study on EPA Reg. No. 1812-297: Springborn Institute for Bioresarch, Inc.; Study No. 3159.4; Jan. 5, 1987; EPA MRID No. 402374-02.

PROCEDURE:

Nine rabbits received 32 mg (\approx 0.1 ml) of the test material in one eye each. The treated eyes of three of the rabbits were washed with physiological saline 30 seconds after treatment. Observations made for 7 days posttreatment.

RESULTS:

At 24 hours posttreatment, 6/6 rabbits of the unwashed group and 1/3 of the washed group had corneal opacity (1/6 = 30, 4/6 = 40, 1/6 = 80) (1/3 = 10) and iris irritation (6/6 = 5) (1/3 = 5); 6/6 & 3/3 conjunctive redness (6/6 = 2) (3/3 = 1) and chemosis (1/6 = 1, 5/6 = 2) (3/3 = 1); 6/6 & 1/3 discharge (6/6 = 3) (1/3 = 1).

At 7 days, 6/6 corneal opacity (2/6 = 20, 2/6 = 30, 2/6 = 40); 5/6 iris irritation (5/6 = 5), redness (4/6 = 1, 1/6 = 2) and chemosis (5/6 = 1); 2/6 discharge (2/6 = 2). Corneal bulging and vascularization also noted.

STUDY CLASSIFICATION:

Core Minimum Data. See Item # 2 in Recommendation.

TOXICITY CATEGORY: I - DANGER

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KOCIDE CHEMICAL CORPORATION
Houston, Texas 77045

ACCEPTED
NOV 1 1979
Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
as amended, for the pesticide
registered under the pesticide
EPA Reg. No. 8901-12

Kocide[®] Cupric Hydroxide

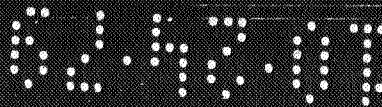
ACTIVE INGREDIENT	
CUPRIC HYDROXIDE	88%
INERT INGREDIENTS	12%
	TOTAL 100%
(METALLIC COPPER	
EQUIVALENT	57.3%)

CAUTION: KEEP OUT OF REACH
OF CHILDREN.
HARMFUL IF
SWALLOWED.
AVOID CONTACT WITH
SKIN, EYES
OR CLOTHING.

EPA REG. NO. 8901-12

FORMULATION
GRADE
AGRICULTURAL
FUNGICIDE
FOR FORMULATING
USE ONLY

50 LBS. NET



SEE BACK PANEL FOR ADDITIONAL CAUTIONS

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BACK LABEL

KOCIDE® Cupric Hydroxide

CAUTION: Avoid contact with skin and eyes. In case of skin contact, remove with washing; for eyes, wash with copious amounts of water and get immediate medical attention. This product is toxic to fish. Keep out of lakes, streams or ponds. Apply this product only as specified on this label.

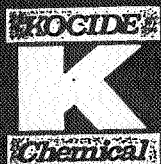
STORAGE AND DISPOSAL: Do not contaminate water, food, or feed by storage or disposal. Pesticide, spray mixture, or rinsate that cannot be used or chemically reprocessed should be disposed of according to procedures approved by Federal, State or Local disposal authorities. Before disposal of container, triple rinse (or equivalent) and dispose of in an approved landfill or bury in a safe place. Consult Federal, State, or Local disposal authorities for approved alternative procedures.

NOTICE: KOCIDE CHEMICAL CORPORATION warrants that this product in its unopened package conforms to the chemical description on the label and is reasonably fit for the purposes set forth on the label when used according to directions under normal use conditions. **THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.** This warranty does not extend to the handling or use of this product contrary to label instructions or under abnormal conditions or under conditions not reasonably foreseeable to seller and buyer assumes all risk of any such use.



KOCIDE CHEMICAL CORPORATION
HOUSTON, TEXAS 77045

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KOCIDE CHEMICAL CORPORATION
Houston, Texas 77045

KOCIDE[®]

ACTIVE INGREDIENT
CUPRIC HYDROXIDE 77%

INERT INGREDIENTS 23%

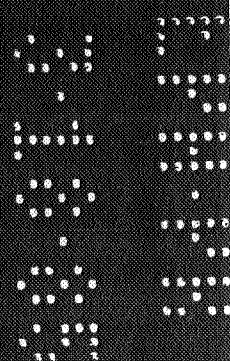
(METALLIC COPPER EQUIVALENT 100%
50%)

CAUTION
KEEP OUT OF REACH OF CHILDREN
SEE BACK PANEL FOR
ADDITIONAL INFORMATION
STATEMENT OF PRACTICAL TREATMENT

U.S. PATENT NO. 3,428,731
EPA REG. NO. 8901-1

WETTABLE POWDER
AGRICULTURAL
FUNGICIDE

20 LBS. NET



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KOCIDE® 101 AGRICULTURAL FUNGICIDEUnder
Fungic
as ame
registe
EPA R**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS****CAUTION**

Harmful if swallowed. Avoid breathing dust. Avoid contact with skin, eyes and clothing. Wash thoroughly with soap and water after handling. Do not apply this product in a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons. Do not enter area without protective clothing until spray has dried.

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Call a physician or Poison Control Center. 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.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention if irritation persists.

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

IF IN EYES: Flush with copious volumes of water. Get medical attention if irritation persists.

ENVIRONMENTAL HAZARDS

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

GENERAL INSTRUCTIONS

Use KOCIDE 101 as noted below. KOCIDE 101 is adaptable to spraying from all types of spray equipment. Depending on the equipment used and the specific crop, the volume applied per acre will differ. For dilute, high volume sprays: use from 25 to 100 gallons of water per acre (GPA) for most vegetable crops; 400 to 800 GPA for fruit orchards and up to 1500 GPA as may be required for large citrus groves. For concentrate ground sprays, apply from 5 to 20 GPA for most vegetable crops and 25 to 100 GPA for fruit and nut crops. For aerial spraying, 3 to 15 GPA are commonly used. No additional surfactants are needed. Add KOCIDE 101 slowly to a spray tank partially filled with water. Spreader-stickers, insecticides, nutrients, etc. should be added last. Observe all cautions and limitations on label of all products used in mixtures.

The following specific instructions are based on general applications. The recommendations of the State Agricultural Extension Services should be closely followed as to timing, frequency and number of sprays per season.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.