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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

JUL 3 1986

MEMORANDUM

SUBJECT: EPA File Symbol 51036-IE NW
Micro-Flo Copper 3 FL

E 7/9/86

FROM: Mary L. Waller
Technical Support Section
Fungicide-Herbicide Branch
Registration Division (TS-767C)

TO: Henry M. Jacoby, PM 21
Fungicide-Herbicide Branch
Registration Division (TS-767C)

APPLICANT: Micro-Flo Company
Route 1, Box 190
Sparks, GA 31647

ACTIVE INGREDIENT:
Copper (expressed as metallic) 23.08%
INERT INGREDIENTS: 76.92%

BACKGROUND:

The applicant has submitted a primary eye irritation study, dermal sensitization study, acute oral toxicity study, acute dermal toxicity study, primary dermal irritation study, and an acute inhalation toxicity study. The studies were conducted by Cosmopolitan Safety Evaluation, Inc. The data Accession Number is 261263. The method of support was not indicated.

RECOMMENDATION:

FHB/TSS finds the primary eye irritation study, the dermal sensitization study, acute dermal toxicity study, primary dermal irritation study, and the acute inhalation toxicity study acceptable to support registration. The signal word is "WARNING" based on the primary eye irritation study.

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FHB/TSS finds the acute oral toxicity study in which 50 percent of the animals died unacceptable and the study is classified as supplementary. The applicant should be informed that according to the Agency's proposed testing guidelines, a limit test (one dose level) is acceptable if no compound-related mortalities occur. The applicant must submit another acute oral toxicity study using three dose levels spaced appropriately to produce test groups with a range of toxic effects and mortality rates. The data should be sufficient to produce a dose response curve and, where possible, permit an acceptable determination of the LD_{50} for each sex.

LABELING:

1. The signal word must be changed to "WARNING."

2. Add the following phrase to the Statements of Practical Treatment:

   If inhaled, remove victim to fresh air. If not breathing, give artificial respiration. Get medical attention.

3. The signal word "CAUTION" must be removed from the paragraph under the precautionary statements and placed on a separate line below the subtitle "Hazards to Humans and Domestic Animals."

4. The precautionary statements should read as follows:

   Causes substantial but temporary eye injury. Do not get in eyes, on skin, or on clothing. Wear goggles, face shield, or safety glasses. Harmful if swallowed or inhaled. Avoid breathing dust. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

5. Additional labeling may be required upon submission of acceptable acute oral data.

REVIEW:

(1) Primary Eye Irritation Study: Cosmopolitan Safety Evaluation, Inc.; Study No. 1143D; October 3, 1984.

PROCEDURE:

Six albino rabbits were examined using sodium ophthalmic solution to insure that the animals were free from ocular injury. Twenty-four hours after examination, each animal

received 0.1 ml of test material which was placed inside the lower lid of one eye. The eyelid was held shut for 1 second. The other eye served as a control. Eye irritation was observed and scored at 1, 24, 48, and 72 hours and on days 4, 7, and 10 after dosing. Animal eyes were examined using fluorescein stain at 24 and 72 hours and on days 7 and 10.

RESULTS:

Eye irritation was scored as follos: at 24 hours, corneal opacity (2/6 = 10), iris irritation (5/6 = 1), conjunctivae redness (6/6 = 1), chemosis (1/6 = 2, 4/6 = 1), fluorescein retention (5/6 - positive), and vascularization (2/6); at 7 days, corneal opacity (1/6 = 5), conjunctivae redness (1/6 = 1), and vascularization (2/6); and at 10 days, all irritation had cleared.

STUDY CLASSIFICATION: Core Guideline Data.

TOXICITY CATEGORY: Category II - WARNING.

(2) Dermal Sensitization Study: Cosmopolitan Safety Evaluation, Inc.; Study No. 1143F; November 5, 1984.

PROCEDURE:

Ten male albino guinea pigs each received induction treatments once a week for 3 weeks consisting of 0.5 ml of test material under occlusive wrap for 6-hour exposures. Two weeks after the last induction treatment, each animal received a challenge dose identical to an induction treatment applied to the previously treated site and a new virgin site. Skin irritation was scored 24 and 48 hours after each treatment.

RESULTS:

Skin irritation after induction treatments was scored as follows: at 24 hours after first treatment, 2/6 animals exhibited very slight erythema; at 24 hours after the second treatment, 2/6 animals exhibited very slight erythema; at 24 hours after the third treatment, 4/6 animals exhibited very slight erythema; and all irritation had cleared by 48 hours of each treatment. At 24 hours after challenge treatment, 4/6 animals exhibited very slight erythema on the previously treated site and 2/6 animals exhibited very slight erythema on the virgin site. All irritation had cleared by 48 hours.

STUDY CLASSIFICATION: Core Guideline Data.

TOXICITY CATEGORY: Nonsensitizer.

(3) Acute Oral Toxicity Study: Cosmopolitan Safety Evaluation, Inc.; Study No. 1143A; October 29, 1984.

PROCEDURE:

Five male and five female Sprague-Dawley rats were each administered a single oral dose of 5.0 g of test material by gavage. Animals were weighed prior to dosing and on days 7 and 14. Animals were observed frequently during the first 5 hours after dosing and twice daily (except weekends) thereafter for 14 days. All animals underwent gross necropsy at study conclusion.

RESULTS:

Three out of five males and two out of five females died. The LD_{50} was reported to be approximately 5.0 g/kg. Toxic symptoms observed were chromorhinorrhea, diarrhea, perineal staining, decreased activity, and ataxia. Gross necropsy revealed stomach and intestines congested with bloody fluid, mottled livers, pale kidneys, and reduced body fat.

STUDY CLASSIFICATION:

Supplementary - See comments under Recommendation.

(4) Acute Dermal Toxicity Study: Cosmopolitan Safety Evaluation, Inc.; Study No. 1143B; October 26, 1984.

PROCEDURE:

Five male and five female albino rabbits were clipped free of hair on the trunk, and 24 hours later, each animal received a topical application of 2000 mg of test material applied to a test site on the clipped area. The test site was covered with occlusive wrap for a 24-hour exposure period. After exposure, the wrap was removed and the test site was cleaned using paper towels and tap water to remove the remaining test material. Animals were weighed prior to exposure and at 7 and 14 days. Animals were observed daily for 14 days and necropsied at study conclusion.

RESULTS:

No deaths occurred. The LD_{50} was reported to be > 2000 mg/kg. Toxic symptoms observed were decreased activity, weight loss, diarrhea, and erythema (grade 1) at test site which subsided by day 7. Gross necropsy revealed pale liver and kidneys and lack of abdominal fat in one male. All other animals appeared normal.

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STUDY CLASSIFICATION: Core Guideline Data.

TOXICITY CATEGORY: Category III - CAUTION.

(5) Primary Dermal Irritation Study: Cosmopolitan Safety Evaluation, Inc.; Study No. 1143E; October 3, 1984.

PROCEDURE:

Six albino rabbits each received a dose of 0.5 ml of test material applied to a previously shaven test site. Each test site was covered with occlusive wrap for a 4-hour exposure period. After exposure, the wrap was removed and the skin wiped clean with a moistened paper towel. Skin irritation was scored at 30 to 60 minutes and at 24, 48, and 72 hours after removal of wrap.

RESULTS:

Skin irritation was scored as follows: at approximately 1 hour, 4/6 animals exhibited very slight erythema; at 24 hours, 2/6 animals exhibited very slight erythema; at 48 hours, 1/6 animals exhibited very slight erythema; and at 72 hours, all irritation had cleared.

STUDY CLASSIFICATION: Core Guideline Data.

TOXICITY CATEGORY: Category IV - CAUTION.

(6) Acute Inhalation Toxicity Study: Cosmopolitan Safety Evaluation, Inc.; Study No. 1143C; November 5, 1984.

PROCEDURE:

Five male and five female Sprague-Dawley rats were exposed for 4 hours in an inhalation chamber to a gravimetrically measured concentration ranging between 2.30 mg/L and 2.36 mg/L (maximum attainable concentration) of test material diluted with distilled water (diluted concentration reported to equal 0.58 mg/L of undiluted test material). A control group of five males and five females were exposed to air under similar conditions. Body weights were recorded prior to dosing and on days 2, 3, 4, 7, and 14. Animals were observed hourly during exposure, immediately, 1, 3, and 5 hours after exposure and once daily thereafter for 14 days. All animals were necropsied at study conclusion.

RESULTS:

No deaths occurred. The LC_{50} was reported to be > 0.58 mg/L. No toxic symptoms were observed other than the deposition of test material on animals during exposure. No abnormalities were noted at gross necropsy.

STUDY CLASSIFICATION: Core Guideline Data.

TOXICITY CATEGORY: Category III - CAUTION.

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