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

006047

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

JUN - 9 1987

MEMORANDUM

SUBJECT: EPA File Symbol 352-LNI
DuPont Karmex DF Herbicide

FROM: Deloris F. Graham DFG 6/15/87 F. 6/15/87
Technical Support Section
Fungicide-Herbicide Branch
Registration Division (TS-767C)

TO: Robert J. Taylor, PM 25
Fungicide-Herbicide Branch
Registration Division (TS-767C)

APPLICANT: E.I. du Pont de Nemours & Company, Inc.
Agricultural Products Department
Walker's Mill Building
Barley Mill Plaza
Wilmington, DE 19898

ACTIVE INGREDIENT:
Diuron [3-(3,4-dichlorophenyl)-1,1-dimethylurea] . . . 80%
INERT INGREDIENTS: 20%

BACKGROUND:

Submitted Acute Oral, Acute Dermal, Skin Irritation, Skin Sensitization, and Eye Irritation studies to support conditional registration of this product. Studies conducted by DuPont's Haskell Laboratory. Data under EPA MRID Nos. 401241-01 through -05. Method of support not indicated.

RECOMMENDATIONS:

1. FHB/TSS finds these data acceptable to support conditional registration of this product.

2. The appropriate signal word is WARNING.

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3. According to a statement in the data from the applicant, this product is a nondusting, flowable granule, thereby indicating nonrequirement of acute inhalation study. However, the label suggests avoid breathing dust or spray mist. More data are necessary to be certain that exposure via inhalation is not likely (i.e. particle size),

LABEL:

1. The statement "Do not apply . . . being treated must be vacated by unprotected persons" must be deleted from under heading "Precautionary Statements" and placed under the heading "Directions For Use."

2. Additional labeling may be necessary upon submission of acute inhalation data.

REVIEW:

(1) Acute Oral Toxicity Study: Haskell Laboratory; Report No. HLR-649-86; October 3, 1986; EPA MRID No. 401241-01.

PROCEDURE:

Three groups consisting of 10 male rats each received one of the following doses: 2200, 3500, or 5000 mg/kg. Three groups consisting of 10 female rats each received one of the following doses: 2300, 3300, or 5000 mg/kg. Observations made for 14 days postdosing. Three surviving and three dying animals were selected per dose group for necropsy.

RESULTS:

At 2200 mg/kg, 1/10 M died; at 2300 mg/kg, 3/10 F died; at 3300 mg/kg, 7/10 F died; at 3500 mg/kg, 7/10 M died; at 5000 mg/kg, 9/10 M and 10/10 F died. Toxic signs reported included limpness, no righting reflex, clear ocular discharge, lethargy, moderate weight losses. Necropsy report revealed oral cavity - discharge, brown, mild; whole body - autolysis, moderate; stomach contents oily; nasal cavity - discharge, red, slight; periocular - chromodacryorrhea, bilateral, slight; skin - stain, brown, wet, perineum, slight; stomach - thin wall, glandular and nonglandular, severe; lungs - discoloration, bright red; face - stain, yellow; periaural - stain, wet, tan, mild; uterine horns - distended with fluid, bilateral, clear; thymus - foci (1 mm), red, scattered. LD_{50} for males reported to be 3200 mg/kg (with 95% confidence limits between 2500 and 3800 mg/kg). LD_{50} for females reported to be 2700 (2100-3300) mg/kg. LD_{50} for males and females combined reported to be 2900 (2500-3300) mg/kg.

STUDY CLASSIFICATION: Core Guideline Data.

TOXICITY CATEGORY: III - CAUTION.

(2) Acute Dermal Toxicity Study: Haskell Laboratory; Report No. HLR-687-86; October 23, 1986; EPA MRID No. 401241-02.

PROCEDURE:

Five male and five female rabbits with abraded skin each received a single 2000 mg/kg dose of the test material dermally. Treated sites were placed under occlusive wrap for 24-hour exposure period. Observations made for 14 days posttreatment.

RESULTS:

No mortalities reported. Clinical signs reported include slight to moderate weight loss; brown nasal discharge; test material adhered to skin; erythema and edema. LD_{50} reported to be greater than 2000 mg/kg.

STUDY CLASSIFICATION: Core Guideline Data.

TOXICITY CATEGORY: III - CAUTION.

(3) Skin Irritation Study: Haskell Laboratory; Report No. HLR-671-86; October 23, 1986; EPA MRID No. 401241-03.

PROCEDURE:

Six rabbits with two intact and two abraded skin sites each received 0.5 g of the test material under occlusive wrap for 24-hour exposure period. Observations made for 72 hours posttreatment.

RESULTS:

At 24 hours, 6/6 rabbits had slight to well-defined erythema (scores of 1 and 2) and no edema. At 72 hours, 6/6 had slight erythema (score of 1) and 1/6 slight edema (score of 1). Primary Irritation Index reported to range between 0.5 and 1.5.

STUDY CLASSIFICATION: Core Guideline Data.

TOXICITY CATEGORY: IV - CAUTION.

(4) Skin Sensitization Study: Haskell Laboratory; Report No. HLR-672-86; October 24, 1986; EPA MRID No. 401241-04.

PROCEDURE:

Ten guinea pigs received 1 drop of a 60% and 6% (w/v) suspension of the test material in distilled water by lightly rubbing during primary irritation phase. Two days after primary irritation application, four sacral intradermal injections (1 per week) of a 0.1 ml of a 1.0% (w/v) suspension of test material in physiologic saline was applied to the same 10 guinea pigs during induction phase. Two weeks after final induction phase application, a challenge dose was applied. Another group (positive control) of 10 guinea pigs were treated in similar manner as previous group except during primary dermal irritation phase a 30% and 3% (w/w) suspension of p-phenylenediamine in acetone: dimethyl phthalate (1:9 ratio) was used; at induction phase a 1.0% (w/v) suspension used; at challenge, a 30% and 3% (w/v) suspension used. A vehicle control (physiological saline) was applied to 10 guinea pigs in similar manner as test and as positive control groups. Observations made at 24 hours after iduction phase application and at 24 and 48 hours after primary dermal irritation and challenge phase.

RESULTS:

At 48 hours posttreatment with 60% suspension of test material 2/10 guinea pigs had mild erythema during primary dermal irritation phase. Mild erythema noted in 2/10 animals after first injection and in 5/5 after 4 injections. Only five animals observed in vehicle control group after 1st injection due to test material being inadvertently used on other three. Postive control produced strong to mild erythema and edema throughout induction period; necrosis and blanching also noted. At challenge mild to moderate irritation produced in 10/10 animals treated with 60% suspension and 1/10 with 6% suspension of test material at 24 hours posttreatment; at 48 hours, 1/10 at 60% suspension produced mild erythema in test group at challenge mild to severe erthyema and edema reported at 24 and 48 hours postdosing at 30% and 3% suspensions in positive control group. It was concluded that the test material did not produce a skin sensitization reaction.

STUDY CLASSIFICATION: Core Guideline Data.

TOXICITY CATEGORY: Nonsensitizing.

(5) Eye Irritation Study: Haskell Laboratory; Report No. HLR650-86; October 20, 1986; EPA MRID No. 401241-05.

PROCEDURE:

Six rabbits received 0.1 g of the test material in one eye each. Observations made for 14 days posttreatment.

RESULTS:

At 24 hours posttreatment, 6/6 rabbits had corneal opacity (2/6 = 10, 1/6 = 15, 1/6 = 20, 1/6 = 40, 1/6 = 45); conjunctive redness (6/6 = 1) and chemosis (4/6 = 1, 2/6 = 2); 2/6 discharge (1/6 = 1, 1/6 = 3). Corneal opacity and all other irritation had cleared by day 14.

STUDY CLASSIFICATION: Core Guideline Data.

TOXICITY CATEGORY: II - WARNING.

DIURON SCIENTIFIC REVIEWS

Page _____ is not included in this copy.

Pages 6 through 7 are not included in this copy.

The material not included contains the following type of information:

___ Identity of product inert ingredients

___ Identity of product impurities

___ Description of the product manufacturing process

___ Description of product quality control procedures

___ Identity of the source of product ingredients

___ Sales or other commercial/financial information

✓ A draft product label

___ The product confidential statement of formula

___ Information about a pending registration action

___ FIFRA registration data

___ The document is a duplicate of page(s) _____

___ The document is not responsive to the request

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.