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CASWELL FILE
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20001
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: January 31, 1978

SUBJECT: Vorlex Soil Fumigant EPA Registration #2139-55
Caswell #573 (methylisothiocyanate)

FROM: William Dykstra, Ph.D.
Toxicology Branch

TO: Eugene M. Wilson
Product Manager #21

1/31/78 WGD
E MMB 2/6/78
Action Type: Resubmission with DATA

Product Manager: Eugene M. Wilson #21

Recommendations:

1. The toxicology studies indicate that the correct label signal word is DANGER (based on eye irritation of both technical and formula). The label should be amended to include the correct signal word (DANGER, not warning as now appears) and the "precautionary statements" Corrosive. Causes severe eye damage. Wear goggles or face shield and rubber gloves when handling.
* No RPAR Criteria have been exceeded.

Review

1. Vorlex Acute Inhalation toxicity: one hour LC₅₀ in Rats
(Huntingdon Research Center, Huntingdon England, 8/22/77;
submitted by Agricultural Products, Inc. 12/7/77)

Test Material: Vorlex

Four groups of Sprague-Dawley Rats (5M & 5F) were used in this study. The rats were exposed to 0, 4.7, 9.6, 12.9, and 19.7 gm/m³ of test material for one hour in an inhalation chamber and observed for 14 days.

Results: LC₅₀ = 11.0 gm/m³

Toxic Signs: Eye irritation, vasodilation, labored breathing and hypoactivity

Necropsy: Moderate lung congestion, areas of lung hemorrhage, distended gas-filled stomach

Classification: Core-Minimum DATA

TOX Category: III CAUTION

2. Methylisothiocyanate Acute Inhalation toxicity 1 hour LC₅₀ in Rats.
(Huntingdon Research Center, 7/4/77; submitted by Agricultural Products Inc, 12/7/77)

Test Substance: Methylisothiocyanate

Five groups of Sprague-Dawley rats (5M & 5F) were exposed continuously for 1 hour to the vapour at concentrations of 0, 0.6, 1.5, 2.2, 2.5 and 3.1 gm/m³ of test material in an inhalation chamber observed for 14 days.

Results: LC₅₀ - 1.9 gm/M³ or 1.9 mg/L

Toxic Signs: Eye irritation, labored breathing, hypoactivity.

Necropsy: Moderate lung congestion, areas of lung hemorrhage, distended gas-filled stomach

Classification: Core-Minimum DATA

TOX Category: II WARNING

- ✓ 3. Irritant Effects of Vorlex on Rabbit Eye Mucosa (Huntingdon Research Center, 12/23/76; submitted by Agricultural Products Inc, 12/7/77)

Test Material: Vorlex

The procedure employed was that prescribed by the Consumer Product Safety Commission of the U.S.A. in the CFR, Title 16, Section 1500.42.

0.1 mg of test material was instilled into the eyes of two rabbits. Observations were made for two days and due to the severity of the reaction both animals were sacrificed on day 2.

Results: Corneal opacities involving the complete corneal surface were observed in both animals. Severe iritis was seen in both animals. Considerable conjunctival swelling, with the eyes about half closed was observed in both animals. This was accompanied by a diffuse crimson red coloration of the conjunctiva.

Classification: Core-Minimum DATA

TOX Category: I DANGER

- ✓ 4. Irritant effects of methylisothiocyanate on rabbit eye mucosa
(Huntingdon Research Center, 12/23/76; submitted by Agricultural Products, Inc., 12/7/77)

Test Material: methylisothiocyanate

The procedure employed was that prescribed by the Consumer Product Safety Commission of the U.S.A. in the CFR, title 16, Section 1500.42

0.1 mg of test material was instilled into the eyes of two rabbits. Observations were made for two days and due to the severity of the reactions both animals were sacrificed on day 2.

Results: Corneal opacities involving the complete corneal surface were observed in both animals. Severe iritis was seen in both animals. Considerable conjunctival swelling, with the eyes of one animal completely closed, was observed. These reactions were accompanied by a diffuse crimson red coloration of the conjunctiva~~2~~.

Classification: Core-Minimum DATA

TOX Category: I DANGER

Typists: TH