

DD-974
TRR-3942

003942

Memorandum

Date: 23 September 1981

Subject: EPA File Symbol: 935-EI ENCAPSULATED ZINC PHOSPHIDE
Caswell #922

From: B. T. Backus
IRB/TSS

To: Mr. William Miller
Product Manager 16

Applicant: Hooker Chemicals and Plastics Corp.
345 Third St.
Niagara Falls, NY 14302

Active Ingredient:
Zinc Phosphide.....89%
Inert Ingredients:.....11%

Background:

This product is zinc phosphide "encapsulated" [redacted] It is proposed for use in formulating rodenticides. The primary intent of having the [redacted] is not to make the product less acutely toxic, but to increase bait acceptance by apparently masking the taste and/or odor.

Comments and Recommendations:

1. As far as acute toxicity hazards are concerned, only an oral LD50 study has been submitted for this material. The appropriate method of support for this application is "cite-all."
2. The protective effect of [redacted] is, at best, short-lived, and the toxicity of this product is then essentially the toxicity of unencapsulated zinc phosphide.
3. IRB/TSS would have no objection, on the basis of hazard to humans and domestic animals, to the conditional registration of this product, for the proposed use under the cite-all method of support with the labeling revisions indicated below.

Labeling:

1. The "Restricted Use Pesticide" should be deleted, but the "For Manufacturing Use Only" should be retained.

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INFORMATION WHICH MAY REVEAL INERT INGREDIENTS IS NOT INCLUDED

2. The Statement of Practical Treatment should be revised to something like the following:

IF SWALLOWED: Call a physician or Poison Control Center. Give 1 or 2 glasses of a 5% sodium bicarbonate solution or water and induce vomiting by touching finger to back of throat. Do not induce vomiting or give anything by mouth to an unconscious or convulsing person.

IF INHALED: Remove to fresh air; apply artificial respiration and/or administer oxygen as needed. Get medical assistance.

IF ON SKIN: Flush with a large amount of water; wash exposed area with soap and water.

IF IN EYES: Flush with copious amounts of water. Get medical attention.

3. The Hazard to Humans and Domestic Animals Statement should be revised to something like the following:

DANGER: Fatal if swallowed or inhaled. Do not breathe vapors or dust. Wear a dust mask when handling. May cause eye irritation. Do not get in eyes, on skin, or on clothing. Wear rubber gloves when handling. Wash hands thoroughly after exposure and before eating or smoking. Avoid contamination of feed and foodstuffs.

4. The Environmental Hazard statement should be something like:

This pesticide is toxic to fish and wildlife. Do not apply directly to water. Do not contaminate water by cleaning of equipment or disposal of wastes.

5. The proposed: "Scrupulously avoid even slightly acidic contacts" should be revised to something like: "Avoid all contact with acids. Even weak acids react with this product to release a poisonous gas."

Review:

The following study was conducted on material identified as zinc phosphide
Additional information in Acc. 245763
indicates that this is encapsulated zinc phosphide

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Insulator which may reveal mercur ingredients is not included

1. Acute Oral LD50 Testing with Zinc Phosphide (4966-78-C). Preliminary Draft. Study conducted at the Center for Environmental Research and Services, Bowling Green, Ohio 43404. Dated 27 July 1981. Received at EPA 8-11-81 and in Acc. 245763.

Procedure: Groups of 2M, 2F "domestic" Norway rats received dosage levels of 7.5, 15, 30, 60 and 120 mg/kg of test material administered as a suspension in propylene glycol, with a group of 5M, 5F serving as controls (receiving the PPG only). Groups of 2M, 2F "wild" Norway rats received dosages of 7.5, 10, 15, 20, 30, 40, 60 and 120 mg/kg of the test material suspended in PPG. Animals were observed for 21 days.

Results:

Mortality:

Dosage (mg/kg)

Domestic Rats

M

F

| | | |
|--------------|-----|-----|
| 120 | 2/2 | 2/2 |
| 60 | 2/2 | 2/2 |
| 30 | 1/2 | 1/2 |
| 15 | 0/2 | 0/2 |
| 7.5 | 0/2 | 0/2 |
| 0 (PPG only) | 0/5 | 0/5 |

Wild rats

M

F

| | | |
|--------------|-----|-----|
| 120 | 2/2 | 2/2 |
| 60 | 2/2 | 2/2 |
| 40 | 2/2 | 2/2 |
| 30 | 1/2 | 2/2 |
| 20 | 1/2 | 1/2 |
| 15 | 0/2 | 1/2 |
| 10 | 0/2 | 0/2 |
| 7.5 | 0/2 | 0/2 |
| 0 (PPG only) | 0/5 | 0/5 |

Deaths occurred within 2 days of dosage.

Acute oral LD50 ("domestic rats") calculated as 30.00 (20.0-44.8) mg/kg.

Acute oral LD50 ("wild rats") calculated as 21.21 (12.99-34.53) mg/kg.

Acute oral LD50 for "wild" rats was calculated only from response at 60.0, 30.0, 15.0 and 7.5 mg/kg dosage levels.

Study Classification: Core Minimum Data (no pathology reports; some weight losses, such as that reported for the first animal in the 15 mg/kg domestic group, and the second in the 15 mg/kg wild group appear to be incredible drops; data do, however, allow product toxicity classification by this exposure route).

Product Classification: Tox. Cat. I

Byron T. Backus - IRB/TSS
9/23/81

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ZINC PHOSPHIDE TOXICOLOGY REVIEWS

Page 4 is not included in this copy.

Pages _____ through _____ 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) _____
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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.
