KS-974
TXR-393

922

003939

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: September 19, 1977

SUBJECT: Data Review on the Compound Zinc Phosphide for Inclusion into Product File

FROM: Toxicology Branch, R/D
C. Frick C. Frick Branch 9/25/77

TO: Mr. Miller, PM #11

Submitting Source: Bell Laboratories

Toxicity: Acute Dermal Toxicity Study in Rabbits
Study performed by Hazleton Laboratories America and submitted to U. S. Dept. of the Interior Denver, Colorado, 3/7/77. Project No. 419-134.

Compound: Zinc Phosphide - 94%

Protocol: The rabbits were divided into four groups of four rabbits. 2 males and 2 females. The test compound was applied to the dry, intact, and abraded skin of an initial group of rabbits at a dosage level of 250 mg/Kg at 24 hours postdosing, the rabbits were observed for toxicity and mortality and a second dose of 1000 mg/Kg was tested. Subsequent dosage levels of 2000 and 5000 mg/Kg was tested. The trunk of each rabbit was wrapped with 5-ply gauze, butcher paper and tape, the animals were set up with harnesses to preclude ingestion of the test material. Dermal responses were graded according to Draize at 24 and 72 hours, and 7, 10 and 14 days. Necropsies were performed on all animals that died during the study and all animals sacrificed at termination.

Results: The following was noted in the test animals: Substantial body weight losses were noted in all of the animals treated at the 1000 and 5000 mg/Kg dose levels, and in one male and one female at the 2000 mg/Kg level. Anorexia, listlessness, eye discharge was noted among test animals.

No gross Pathology findings were noted in any of the animals treated at the 250 and 1000 mg/Kg levels. Alterations of the liver and kidneys were noted in animals treated at the 2000 and 5000 mg/Kg dose levels.

The acute dermal LD_{50} was estimated to be between 2000 and 5000 mg/Kg.

Category III
Core Minimum

Primary Skin Irritation Study in Rabbits
Study performed by Hazelton Laboratories America, Inc., and submitted to U. S. Department of Interior. 2/8/77. Project No. 419-134.

Protocol: (Six Rabbits) The back of each animal was clipped free of hair. The skin of one site was abraded; the other test site was left intact. Each application site was treated with 0.5 gm of the test material in the powder form. Twenty-four hours following application, the binders and

1 of 2

patches were removed and the test sites were wiped free of compound with gauze pads -- at 24 and 72 hours post application, observations for skin reactions were made and graded according to Draize.

Results: No signs of dermal irritation were observed at any of the sites of application in any of the animals at 24 or 72 hours.

On the basis of this study, Zinc Phosphide is not considered to be a primary skin irritant in the rabbit when applied as indicated.

Acute Eye Irritation Study in Rabbits:

Test performed by Hazleton Laboratories America, Inc. Submitted to U. S. Department of the Interior, Denver, Colorado 2/21/77 - Project No. 419-134.

Protocol: (Six Rabbits) Twenty-four hours prior to treatment, both eyes of each rabbit were examined following staining with 2.0% sodium fluoresecin - an aliquot of 100 mg of test material was instilled into the conjunctival sac of the left eye of each animal and held closed for one second.

The treated eyes of all rabbits were examined for gross signs of eye irritation at 24, 48 and 72 hours and 7 days - Irritation was graded and scored according to Draize.

Results: Signs of eye irritation included slight conjunctival redness, chemosis, and discharge. At 24 hours postinstillation, slight conjunctival redness was noted in the treated eyes of all six animals and persisted through 72 hours; slight conjunctival chemosis was noted in five animals and persisted through 72 hours in three animals; a slight discharge was noted in one. Fluoresecin staining revealed no corneal damage in any of the animals at the periods of observation.

Category III
Core Guideline