BB-1616
TXR-546

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY 000546

DATE: February 23, 1979

SUBJECT: EPA Reg. No. 2749-263
Azinphosmethyl 50WP Crop Insecticide
Water Soluble Pouch, Caswell #374

FROM: Byron T. Backus
Insecticide-Rodenticide Branch/Technical Support Section

TO: Mr. Frank Sanders
Product Manager 12

Registrant: Aceto Chemical Co.
126-02 Northern Blvd.
Flushing, NY 11368

Active Ingredient:
O,O-Dimethyl S-[(4-oxo-1,2,3-benzotriazin
-3(4H)-yl)methyl] phosphorodithioate.....50%
Inert Ingredients:.....50%

BACKGROUND:

The registrant is proposing to package 8 ounce quantities of this product in a water soluble bag. The submission includes an alternate confidential statement of formula which takes into account this packaging as an integral part of the product.

From the standpoint of human safety such packaging would, if properly implemented, reduce the inhalation hazard due to exposure to dust. Since this product is a cholinesterase inhibitor, with the potential for cumulative exposure via dermal and inhalation exposure, this type of packaging should result in a decrease in this hazard as well. Additionally, this would be a means of reducing or eliminating traces of this toxic material in the empty container.

RECOMMENDATIONS:

1. The Oral LD50, Dermal LD50, Dermal Irritation, Eye Irritation, and Inhalation LC50 studies are acceptable and adequate in support of this application for amended registration.

2. This product is in Toxicity Category I on the basis of Inhalation LC50. Normally, the precautionary statement "Do not breathe dust" is required (FR40, #129, July 3, 1975, p. 28280) for pesticides in this category.

3. It is proposed that this product be packaged in units of 0.5 lbs. Directions for use specify quantities such as "3/4," "5/8,""3/4 to 1 1/8" or (cabbage maggots on broccoli etc.) "1/4 to 3/8 lbs" in 50 gallons of water. These directions imply "partial" bags could be used. Directions for use should be revised to specify number of bags OR multiples of 0.5 lbs of pesticide per x gallons of water. Alternatively, the supplemental labeling statement: "Add the required number of unopened pouches..." could be revised to something like:

EPA Form 1320-6 (Rev. 3-76)

"Add the required number of unopened pouches as determined by proportions given in dosage recommendations into the spray tank with agitation."

4. The supplemental labeling statement: "Do not handle the pouches with wet hands or gloves." should be revised to something like: "Do not handle pouches by hand; use only dry rubber gloves."

5. Although this product is a cholinesterase inhibitor, there is no indication on the labeling of the hazards which would be associated with cumulative exposure. It is recommended that an appropriate statement be placed on the label.

6. The statement is made in this application: "Aceto Agricultural Chemicals Corp. will develop protocols for the labeling of Azinphosmethyl 50W in water soluble pouches." No proposed labels are submitted. The alternate Confidential Statement of Formula includes print (from ink used for printing) as part of the product. The question naturally arises that if there is print on the water soluble pouch then what does it say? Alternatively, is the Confidential Statement of Formula in error on this relatively minor point?

7. IRB/TSS has no objection to this application for amended registration, provided the indicated label revisions are made and the slight discrepancy indicated in (6) above is cleared up.

REVIEW:

All studies were conducted at Cannon Laboratories, Inc., P.O. Box 3627, Reading PA 19605; received from Aceto Agricultural Chemicals Corporation February 14, 1979 as EPA Acc. No. 237399.

1. Acute Oral LD50 of Azinphon-methyl 50W (Cotnion-Methyl)50W in Rats; dated July 10, 1978. Lab No. 8E-1730.

   Procedure: Dosage levels of 10, 20, 30, 40 and 50 mg per kg body weight were administered to groups of 5M, 5F Sprague-Dawley derived rats (wt. 200-300 gms). Product was administered as a 1% w/v suspension in corn oil, with a subsequent 14-day observation period.

   Results: No mortalities at 10 mg/kg; 1/5M and 2/5F dead at 20 mg/kg; 3/5M and 2/5F dead at 30 mg/kg; at 40 mg/kg 2/5M, 5/5F; and at 50 mg/kg 5/5M, 4/5F. Signs of toxicity included sedation, piloerection, salivation, tremors, decreased locomotor activity and lacrimation in all groups days 0-5. Nasal discharge, ptosis, breathing abnormalities and dried red material around the eyes were noted in some subjects. Body weights and food consumption of survivors were within normal range. All deaths occurred within 1 day after dosage. Autopsies of animals dying during this period showed congested or irregularly hemorrhagic lungs, with small intestines, ceca and colons distended with gelatinous material. LD50 was 31.9 ± 7.52 mg/kg for males, 31.0 ± 7.32 mg/kg for females.

   Classification: Core Guideline Data. Tox. Cat. I:DANGER:POISON

2. Acute Dermal LD50 of Azinphos-Methyl (Cotnion-Methyl) 50W on New Zealand Albino Rabbits; dated July 27, 1978. Lab No. 8E-1731.

Procedure: Dosage levels of 0.75, 1.25, 1.50, 2.00, 2.50 and 4.00 gm per kg body weight were applied to groups of 2M, 2F rabbits. 1M, 1F in each group had abraded skin. Material was held in contact with rabbit skin for 24 hours, followed by a 14-day observation period. Body weights and individual food consumption recorded daily.

Results: All animals exhibited at least erythema on application site. Symptoms in higher dosage groups included diarrhea, dilated pupils, decreased locomotor activity, salivation, tremors, loss of appetite. Decrease was noted in body weights and food consumption for test animals as compared with controls. Deaths usually occurred on days 1-3, although one animal died on day 4 and one on day 9. No animals died at 0.75 gm/kg; 1/4 died at 1.25; 2/4 at 1.50; 2/4 at 2.00, 3/4 at 2.50, and all at 4.00. Autopsies of dying animals showed dilated hearts, hemorrhagic and/or congested lungs, reduced and hemorrhagic thymus, dilated intestines. Dermal LD50 = 1.78 gm/kg with 95% confidence limits of 0.81 to 3.08 gm/kg body weight.

Classification: Core Guideline Data
Tox. Cat. II:WARNING

3. Primary Dermal Irritation Study of Azinphos-Methyl 50W (Cotnion-Methyl 50W) on Abraded and Nonabraded Skin of New Zealand Albino Rabbits; dated June 12, 1978. Lab No. 8E-1732.

Procedure: 4 test sites, 2 abraded, 2 intact, were prepared on each of 6 New Zealand albino rabbits, wt 2.0-2.5 kg. 0.5 gms test material was placed on each test site and moistened with physiological NaCl with 24-hour exposure.

Results: Two animals died; deaths attributed to circulatory collapse (not surprising, as subjects had been exposed to 2 gms of test material with a dermal LD50 of 1.78 gm/kg; if animals weighed about 2 kg each then they were exposed to 1 gm/kg). Well-defined erythema, with slight edema at 24 hours noted in all; no dermal irritation in survivors at 72 hours. Primary Dermal Irritation Score = 1.50.

Classification: Core Guideline Data. Tox. Cat. IV:CAUTION. Occurrence of death relates to Dermal LD50 of test material, but note each test subject was exposed at 4 sites.

4. Primary Eye Irritation Study of Azinphos-Methyl 50W (Cotnion-Methyl 50W) on New Zealand Albino Rabbits; dated June 13, 1978. Lab No. 8E-1733.

Procedure: 50 mg of the test substance was placed in the conjunctival sac of one eye in each of 9 rabbits; 6 had unwashed eyes, remaining 3 had eyes flushed with lukewarm water for one minute starting no sooner than 20-30 seconds after instillation. Eyes examined at 24, 48, 72 hours and at 4 days.

Results: No corneal opacity. Conjunctival irritation in all rabbits at 24 hours, improving in all, with no irritation in any animals at 4 days.

Classification: Core Guideline Data. Tox. Cat. III:CAUTION

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5. 1-Hour LC50 Inhalation Toxicity Study of Azinphos-Methyl 50W (Cotnion Methyl 50W); dated July 20, 1978. Lab No. 8E-1734.

Procedure: Groups of 5M, 5F rats were exposed to dosage levels of 0.11± 0.02; 0.18 ± 0.02; 0.37±0.08; and 4.00±1.90 mg/liter for one hour. Average particle diameter was 1.41±0.70 . There was a 14-day observation period.

Results: No mortalities in lowest dosage group; all animals appeared normal during and after exposure. At 0.18 mg/liter 6 animals died; at 0.37 mg/liter 9 animals died. Symptoms included nervous tremors, abnormal respiration. All animals at 4.00 mg/liter died within 2 hours of exposure. Symptoms included moderately injected and/or irregularly hemorrhagic lungs. LC50 for male rats was 0.200 (0.120-0.332) mg/liter and for female rats 0.169 (0.117-0.243) mg/liter.

Classification: Core Guideline Data
Tox. Cat. I:DANGER:POISON

Byron T. Backus 2/23/79

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DOA- 2/24/79