8-4-82

Memorandum

Date: 4 August 1982

Subject: EPA Reg. No. 876-76 CHLORDANE 4 EC 002144
Caswell #174

From: B. T. Backus
IRB/TSS

To: Mr. George LaRocca
Product Manager 15

Registrant: Velsicol Chemical Corp.
341 East Ohio St.
Chicago, IL 60611

Active Ingredient:
Technical Chlordane.....45.3%
Petroleum Distillate.....49.7%
Inert Ingredients:.....5.0%

Background:

The registrant has submitted an acute dermal LD50, primary eye, and acute innalation LC50 studies on this formulation.

Comments and Recommendations:

1. The acute dermal LD50, primary eye irritation, and inhalation LC50 studies received 5-13-82 are acceptable and adequate in defining the potential short-term hazards by these exposure routes.

2. In the acute inhalation LC50 study, we have recalculated the 95% confidence limits in the female LC50 value to 0.485-0.649 mg/L. We are also puzzled as to why the initial stage of the cascade impactor was 9.2 µm, and stages 1 and 2 were 18.0 and 11.0 µm respectively.

3. Recommended revisions in precautionary and statement of practical treatment labeling are indicated below.

Labeling:

1. The statement of practical treatment for eye exposure can be revised to something like:

If in eyes: Flush with water 15 minutes. Contact a physician if irritation persists.

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2. The Hazards to Humans and Domestic Animals statement should include something like:

   Avoid contact with eyes or clothing.

3. In the Environmental Hazard statement: "Keep out of lakes, streams or ponds." should be revised to "Do not apply directly to water."

Review:

The following studies were conducted on the registered product by Raltech Scientific Services, P.O. Box 7545, Madison, WI 53707. Studies were received at EPA 5-13-82 and are in Acc. 247573.

1. Acute Dermal LD50 - Rabbit. RT Lab No. 850315; reported 5-27-81.

   Procedure: A group of 5M, 5F NZ rabbits with abraded skin received a 24-hr occluded exposure to a dosage level of 2 g/kg, with subsequent 14-day observation.

   Results: No mortalities. Considerable erythema, edema at some exposure sites, in some case persisting through day 14. Subjects, on average, lost weights days 0-7. Diarrhea in some females days 4-6. Post sacrifice necropsies unremarkable. Dermal LD50 above 2 g/kg.

   Study Classification: Core Minimum Data

   Product Classification: Tox. Cat. III

2. Primary Eye Irritation - Rabbit. RT Lab No; 850315; reported 5-27-81.

   Procedure: 9 rabbits received 0.1 ml in conjunctival sac of one eye, with 6 eyes remaining unwashed, 3 eyes being flushed for one minute with water starting 30 seconds after instillation.

   Results: No signs of corneal involvement. Conjunctival irritation in 6/6 unwashed, 3/3 washed eyes at 24 hrs. All eyes clear by 7 days.

   Study Classification: Core Guidelines Data

   Product Classification: Tox. Cat. III

3. Acute Inhalation LC50 - Rat. RT Lab No. 851533; dated 11-2-81 with an addendum of 12-30-81. In Acc. 247574.

   Procedure: Following a range-finding study, groups of 10M, 10F SD rats were exposed for 4 hrs 11 minutes (additional 11 minutes to allow for equilibration) to gravimetrically determined concentrations of 0 (controls), 0.171, 0.54, 0.58, 1.5 and 3.2 mg/L. Particle size distributions were measured 4 times during each exposure. There was a 14-day observation period.

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Results:

Measured Conc. (mg/L)	Nominal Conc. (mg/L)	Mortalities/Rats Exposed M	F
0	0	0/9	0/11
0.171	0.866	0/10	0/10
0.54	2.81	2/10	5/10
0.58	3.6	5/10	5/10
1.5	7.2	8/10	10/10
3.2	12.5	10/10	10/10

Most deaths occurred 1-5 days after exposure.
Symptoms: Labored breathing, hunched posture, urine and/or diarrhea stains on abdomen. Except for 0.171 mg/kg group, survivors appeared unkempt at termination.
Necropsies (mortalities): Renal lesions (mild to moderate degeneration, mild to severe necrosis of distal tubules), hepatic lesions, pulmonary lesions. A few animals had signs of hemorrhage in thymus.
Post-sacrifice necropsies (survivors): mild to moderate fatty changes in liver.
Most subjects (16/20), at the 0.171 mg/L exposure level were unremarkable.

4-hr inhalation LC50 (M) = 0.914 (0.653-1.349) mg/L
4-hr inhalation LC50 (F) = 0.561 with 95% confidence limits given as 0.535-0.566 mg/L; recalculated as 0.485-0.649 mg/L.

No mass median aerodynamic diameter equivalent given, but generally 50% or more of the mass was composed of particles 4.3 um or smaller.

Study Classification: Core Minimum Data

Product Classification: Tox. Cat. III

Byron T Backus 09/04/82

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