9-24-81

DATA EVALUATION RECORD

1. CHEMICAL: Cuprous oxide plus triphenyltin hydroxide

2. FORMULATION: Rabamarine, which is a mixture of 2 formulated products and contains 36.5% cuprous oxide and 8.7% triphenyltin hydroxide.

3. CITATION: Sousa, J. (1981) Acute Toxicity of Kansai Rabamarine to Bluegill Sunfish; received 7/21/81 under 46197-1; unpublished report prepared by E G & G Bionomics for M & T Chemicals, Inc, Rahway, New Jersey (in Acc # 245649).

4. REVIEWED BY: Stephen M Hopkins
Plant Physiologist
EEB/HED

5. DATE REVIEWED: 9/24/81

6. TEST TYPE: Fish acute LC_{50} -- Bluegill sunfish

7. REPORTED RESULTS: The testing laboratory demonstrated that the 96hr LC_{50} of Rabamarine to the bluegill sunfish is 290 ppb product, with 95% confidence limits of 210-310 ppb. This 290 ppb of product contains approximately 106 ppb of cuprous oxide and 25 ppb of triphenyltin hydroxide.

8. REVIEWER'S CONCLUSIONS: This study is scientifically sound, and meets EPA requirements for a fish acute LC_{50} study using the formulated product.

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Testing Laboratory Report

A. Test Procedure

The procedure generally followed the EPA proposed guidelines of July 10, 1978. Some specifics of note include:

Weight of fish - 0.44 g average
Number of fish - 10 per treatment level
Test vessel size - 20 liter glass jars containing 15 liters each
Temperature - 22 ± 1°C
Loading - 0.3g/liter
Dilution water - Reconstituted deionized water
Treatment levels - 170, 280, 470, 780, and 1300 ppb plus untreated and N,N-dimethylformamide controls
Test initiation - March 9, 1981
Test material - The test material was a mixture containing:
16 parts of solution A (57% cuprous oxide), and
9 parts of solution B (23.8% triphenyltin hydroxide).
The final mixture contained 36.5% cuprous oxide and 8.7% triphenyltin hydroxide.

B. Statistical Analysis

Mortality was analyzed by the moving average angle method.

C. Results

Concentration	Mortality at 96hrs
1300 ppb product	100%
780	100
470	100
280	20
170	10
controls	0

At the end of the 96hr study all of the remaining fish at the 170 and 280 ppb level displayed toxicity symptoms, so the no effect level is less than 170 ppb. The author calculated that the 96hr LC_{50} of Rabamarine to the bluegill sunfish is 290 ppb product, with 95% confidence limits of 210-380 ppb.

Reviewer's Evaluation

A. Test Procedure

The procedure generally complied with the 1978 EPA guidelines.

B. Statistical Analysis

Mortality was analyzed by the moving average method, the results of which agreed with the findings of the testing laboratory.

C. Results/Discussion

The testing laboratory demonstrated that the 96hr LC_{50} of Rabamarine to the bluegill sunfish is 290 ppb product, with 95% confidence limits of 210-380 ppb. This 290 ppb of product contains approximately 106 ppb of cuprous oxide and 25 ppb of triphenyltin hydroxide.

D. Conclusion

1. Category: Core for formulated product
2. Rationale: NA
3. Repairability: NA