005-950

DATA EVALUATION RECORD

1. CHEMICAL: Fenarimol

2. FORMULATION: Technical - 97%

3. CITATION: Wilson, B. (1980) The Acute toxicity of compound 56722 to Bluegills in a 96-hour static test with continuous aeration; received 10/19/81 under 1471-EUP-75; unpublished report prepared by EG & G Bionomics for Lilly Research Laboratories, Greenfield, Indiana (in Acc #070429)

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

5. DATE REVIEWED: 12/2/81

6. TEST TYPE: Fish Acute LC_{50} - Bluegill Sunfish

7. REPORTED RESULTS:

   The testing laboratory demonstrated that the 96hr LC_{50} of fenarimol to the bluegill sunfish in an aerated system is 5.7 ppm, with 95% confidence limits of 3.4-9.6 ppm. Results of chemical analysis indicate that the aeration did not significantly effect toxicant concentration.

8. REVEIWER'S CONCLUSIONS:

   This study is scientifically sound, and meets EPA requirements for a fish acute LC_{50} study using a warm-water fish.

Testing Laboratory Report

A. Test Procedure

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

Weight of fish	-	0.89 g ave
Number of fish	-	10 per test vessel
Test vessel size	-	20 liter glass vessels containing 15 liters each
Temperature	-	22 ± 1°C
Loading Factor	-	0.6 g/l
Dilution water	-	Soft reconstituted deionized water
Treatment levels	-	2.1, 3.4, 5.8, 9.6, and 16 ppm plus untreated and acetone controls
Chemical Analysis	-	Actual concentrations of toxicant were determined at the beginning and at the end of the test by GLC.
Test initiation	-	January 4, 1980

B. Statistical Analysis

Mortality was analyzed by the binomial method.

C. Results

Concentration			Mortality at 96 hrs
Nominal	Measured		
	initial	Final	
16 ppm	13.6 ppm	14.1 ppm	100%
9.6	9.0	9.1	100%
5.8	5.6	5.4	40
3.4	3.5	3.1	0
2.1	2.1	1.9	0
Controls	-	-	0

The author calculated that the 96hr LC_{50} of the test material to the bluegill sunfish is 5.7 ppm, with 95% confidence limits of 3.4-9.6 ppm.

Reviewer's Evaluation

A. Test Procedure

The procedure generally complied with the 1978 EPA guidelines, with the exception that the test solutions were aerated.

B. Statistical Analysis

Mortality was analyzed by an the binomial 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 fenarimol to the bluegill sunfish in an aerated system is 5.7 ppm, with 95% confidence limits of 3.4-9.6 ppm. Results of chemical analysis indicate that the aeration did not significantly effect toxicant concentration.

D. Conclusion

1. Category: Core
2. Rationale: N/A
3. Repairability: N/A

STEVE FENARIMOL BLUEGILL AERATED ACUTE LC50

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
16	10	10	100	0.09765625
9.6	10	10	100	0.09765625
5.8	10	4	40	37.69531
3.4	10	0	0	0.09765625
2.1	10	0	0	0.09765625

THE BINOMIAL TEST SHOWS THAT 3.4 AND 9.6 CAN BE USED AS STATISTICALLY SOUND CONSERVATIVE 95 PERCENT CONFIDENCE LIMITS, BECAUSE THE ACTUAL CONFIDENCE LEVEL ASSOCIATED WITH THESE LIMITS IS GREATER THAN 95 PERCENT.

AN APPROXIMATE LC50 FOR THIS SET OF DATA IS 6.182699

WHEN THERE ARE LESS THAN TWO CONCENTRATIONS AT WHICH THE PERCENT DEAD IS BETWEEN 0 AND 100, NEITHER THE MOVING AVERAGE NOR THE PROBIT METHOD CAN GIVE ANY STATISTICALLY SOUND RESULTS.

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