3-28-84

DATA EVALUATION RECORD

1. Chemical: HOE-033171 emulsifiable concentrate 90 g/l

2. Formulation: 9.50%

3. Citation: Fischer, R. (1983). The Effect of HOE-033171 OH EC10 A714 on Lepomis macrochirus (Bluegill sunfish) in a static test. Oekologisches Laboratorium, Pflanzenschutz Forschung Biologie. Frankfurt Hoechst, Federal Republic of Germany. Ref. OEK83/065E. Acc. #072310.

4. Reviewed by: Carol M. Natella
Wildlife Biologist
EEB/HED

5. Date Reviewed: March 28, 1984

6. Test Type: Fish acute 96-hour LC_{50}

7. Reported Results: 96-hour LC_{50} = 2.86 ppm (95% C.L. 2.4 - 3.2)

8. Reviewer's Conclusion: The study is scientifically sound and indicates that a 9.5% formulated product of HOE-033171 is moderately toxic to bluegill sunfish. The study does fulfill a requirement for a fish acute 96-hour LC_{50} performed on this formulated product.

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Materials/Methods

Test Procedures

Test Animals: Bluegill sunfish (Lepomis macrochirus), obtained from Osage catfisheries, Osage Beach, Missouri. Fish were approximately four month old, with a
mean length
and weight of 3.65 cm and 0.82 g.

Test Water Quality: Filtered, deionized water was reconstituted according to EPA guideline. The water had a pH of 7.94, a total hardness of 41.54 mgl as $CaCO_3$ and a conductivity of 149 umhos/cm. During testing, fish were maintained at 21.6-23.0°C.

Test Containers: 50 liter stainles steel tanks, containing 50 l of test water.

Exposure: 5 fish per tank; 10 fish per concentration. 15 concentrations and a control were used.

Date of testing: 11-18-83 through 11-22-83.

Statistical Analysis

LC_{50} values were determined by probit analysis.

Author's Discussion/Results

Percent mortality at five of the 15 concentrations tested was as follows (after 96 hours):

ppm:	5.6,	4.2,	3.2,	2.4,	1.8,	control
% :	100,	100,	90,	0,	0,	0

The following LC_{50} values were calculated:

24 hour LC_{50} = *5.6 - 7.5 ppm
48 hour LC_{50} = 3.87 - (95% C.L. 3.5-4.4)
72 and 96 hour LC_{50} = *2.4 - 3.2 ppm

* Could not be calculated by probit analysis.

Behavioral observations made during the test include: slowed reaction, narcotic condition, and, at the 5.6 and 4.2 ppm levels, surface swimming.

Reviewer's Evaluation

A. Test Procedure

The test procedure complies with US EPA protocol.

B. Statistical Analysis

The LC_{50} value was verified with Stephan's computer program. The binomial 2

test gave an approximate LC_{50} of 2.86 ppm.

C. Conclusions

1. Category: Core, for the formulated product.
2. Rationale: N/A
3. Repairability: N/A

NATELLA WHIP EC BLUEGILL

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
5.6	10	10	100	.0976563
4.2	10	10	100	.0976563
3.2	10	9	90	1.07422
2.4	10	0	0	.0976563
1.8	10	0	0	.0976563

THE BINOMIAL TEST SHOWS THAT 2.4 AND 3.2 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 2.85665

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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