DATA EVALUATION RECORD

1. Chemical: HOE-33171 OH EC036 (emulsifiable concentrate 126)

2. Formulation: 12.5%

3. Citation: Fischer, R. (1982). The Effect of HOE-33171 OH EC036 on Pimephales promelas (fathead minnow) in a Static Test. Oekologisches Laboratorium, Pflanzenschutz Forschung Biologie. Frankfurt Hoechst, Federal Republic of Germany. Ref. OEK82/015E. Acc. # 071796.

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

5. Data Reviewed: October 13, 1983

6. Test Type: Fish acute 96-hour LC_{50} (fathead minnow)

7. Reported Results: LC_{50} = 7.12 ppm (95% C.L. 6.51-7.82)

8. Reviewer's Conclusions: This study is scientifically sound and indicates that HOE-33171 emulsifiable concentrate (12.5%) is moderately toxic to fathead minnows. The study would fulfill a requirement for a warm water fish acute LC_{50} performed on this product.

MATERIALS/METHODS

Test Procedures

Test Animals: Fathead Minnow (Pimephales promelas), bred in the laboratories of Pharma Toxicology of Hoechst AG. Fish were approximately 4-6 months old, had a mean length of 6.4 cm and a mean weight of 2.7 g.

Test Water Quality: Filtered, deionized water was reconstituted according to EPA guidelines. The water had a pH of 6.97, a total hardness of 44 mg/l as $CaCo_3$, a total alkalinity of 32 mg/l as $CaCo_3$ and a conductivity of 150.0 umhos/cm. During testing, fish were maintained at 22°C.

Test Containers: 50 l stainless steel tanks, containing 50 l of water.

Exposure: 10 fish per tank; 10 fish per concentration. 23 concentrations and a control were used.

Date of testing: 4/2/82 - 4/6/82.

Statistical Analysis

LC_{50} values were determined by probit analysis.

Discussion/Results

Percent mortality at 8 of the 23 concentrations tested was as follows (after 96 hours):

ppm: 10.0, 8.7, 7.5, 6.5, 5.6, 4.9, 4.2, 3.7, control
%: 100, 80, 30, 40, 20, 0, 10, 0, 0

The 96-hour observed no effect level was 3.7 ppm.

The following LC_{50} values were calculated:

24-hour LC_{50} = 8.67 ppm (95% C.L. 7.45-____)
48-hour LC_{50} = 8.36 ppm (95% C.L. 6.91-17.61)
72-hour LC_{50} = 8.17 ppm (95% C.L. 6.79-15.64)
96-hour LC_{50} = 8.17 ppm (95% C.L. 6.79-15.64)

Behavioral observations made during the test included: erratic swimming, slow reaction, and surface swimming. At the 4.9 ppm level, all fish were observed to be nervous, and were swimming erratically with the head down.

REVIEWER'S EVALUATION

A. Test Procedure

The test procedure complies with U.S. EPA protocol.

B. Statistical Analysis

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

C. Conclusions:

1. Category: Core, should a study on this formulation be required.

2. Rationale: N/A

3. Repairability: N/A

NATELLA HOE-33171 FATHEAD MINNOOWW

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
10	10	10	100	.0976563
8.7	10	8	80	5.46875
7.5	10	3	30	17.1875
6.5	10	4	40	37.6953
5.6	10	2	20	5.46875
4.9	10	0	0	.0976563
4.2	10	1	10	1.07422
3.7	10	0	0	.0976563

THE BINOMIAL TEST SHOWS THAT 4.9 AND 10 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 7.94897

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
5	.107775	7.21101	6.69246	7.82725

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
4	.144075	1	.218761

SLOPE = 8.77949
95 PERCENT CONFIDENCE LIMITS = 5.44704 AND 12.1119

LC50 = 7.18739
95 PERCENT CONFIDENCE LIMITS = 6.53189 AND 8.02927

LC10 = 5.15129
95 PERCENT CONFIDENCE LIMITS = 4.16916 AND 5.77639

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