DATA EVALUATION RECORD

1. Chemical: HOE-33171 OH ECO36 (emulsifiable concentrate 126)

2. Formulation: 12.5%

3. Citation: Fischer, R. (1982). The Effect of HOE-33171 OH ECO36 on Salmo gairdneri (rainbow trout) in a Static Test. Oekologisches Laboratorium, Pflanzenschutz Forschung Biologie. Frankfurt Hoechst, Federal Republic of Germany. Ref. OEK82/008E. 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} (Rainbow trout)

7. Reported Results: LC_{50} = 3.38 ppm (95% C.L. 3.12-3.66)

8. Reviewer's Conclusions: This study is scientifically sound and indicates that HOE-33171 emulsifiable concentrate (12.5%) is moderately toxic to rainbow trout. The study would fulfill a requirement for a cold water fish acute 96-hour LC_{50} performed on this product.

MATERIALS/METHODS

Test Procedures

Test Animals: Rainbow trout (Salmo gairdneri) obtained from the hatchery of Dr. Mueller, Fredelsloh/Moringen, Federal Republic of Germany. Fish were approximately two months old, had a mean length of 4.56 cm and a mean weight of 1.5 g.

Test Water Quality: Filtered, de-ionized water was reconstituted according to EPA guidelines. The water had a pH of 7.60, a total hardness of 44 mg/l as $CaCo_3$, a total alkalinity of 33 mg/l as $CaCo_3$ and a conductivity of 152 umhos/cm. During testing, fish were maintained at 12°C.

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

Exposure: 10 fish per tank; 10 fish per concentration. 17 concentrations and a control were used.

Date of testing: 3/1/82 - 3/5/82.

Statistical Analysis

LC_{50} values were determined by probit analysis.

Discussion/Results

Percent mortality at 7 of the 17 concentrations tested was as follows (after 96 hours):

ppm: 4.9, 4.2, 3.7, 3.2, 2.8, 2.4, 2.1, control
%: 100, 80, 80, 30, 10, 10, 0, 0

The 96-hour observed no effect level was 1,8 ppm.

The following LC_{50} values were calculated:

24-hour LC_{50} = 6.57 ppm (95% C.L. 6.10-7.09)
48-hour LC_{50} = 4.14 ppm (95% C.L. 3.82-4.48)
72-hour LC_{50} = 3.44 ppm (95% C.L. 3.16-3.74)
96-hour LC_{50} = 3.38 ppm (95% C.L. 3.12-3.66)

Behavioral observations made during the test included: slow reaction, narcotic condition, and occasional surface swimming and dark coloration. In the final 48 hours observations included: equilibrium disturbance and cramps.

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 RAINBOW

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
4.9	10	10	100	.0976563
4.2	10	8	80	5.46875
3.7	10	8	80	5.46875
3.2	10	3	30	17.1875
2.8	10	1	10	1.07422
2.4	10	1	10	1.07422
2.1	10	0	0	.0976563

THE BINOMIAL TEST SHOWS THAT 2.8 AND 4.9 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 3.38726

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
5	.306337	3.39915	3.01906	3.8041

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
4	.149982	1	.67222

SLOPE = 12.0308
95 PERCENT CONFIDENCE LIMITS = 7.37159 AND 16.6901

LC50 = 3.38181
95 PERCENT CONFIDENCE LIMITS = 3.1161 AND 3.67687

LC10 = 2.65208
95 PERCENT CONFIDENCE LIMITS = 2.21894 AND 2.91453

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