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 Salmo gairdneri (Rainbow trout) in a Static Test. Oekologisches Laboratorium, Pflanzenschutz Forschung Biologie. Frankfurt Hoechst, Federal Republic of Germany. Ref. OEK83/063E. 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} = 6.68 ppm (95% C.L. 6.0-7.5)

8. Reviewer's Conclusions: The study is scientifically sound and indicates that a 9.5% formulated product of HOE 033171 is moderately toxic to rainbow trout. The study does fulfill a requirement for a fish acute 96-hour LC_{50} performed on this formulated 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 one year old, with a mean length and weight of 7.39 cm and 4.42 g.

Test Water Quality: Filtered, deionized water was reconstituted according to EPA guidelines. The water had a pH of 7.81, a total hardness of 40.54 mg/l as $CaCO_3$, a total alkalinity of 29.42 mg/l as $CaCO_3$ and a conductivity of 143 umhos/cm. During testing, fish were maintained at 11.9-13.2 C.

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

Exposure: 5 fish per tank; 10 fish per concentration. 11 concentrations, and a control were used.

Data of testing: 11/10/83 - 11/14/83.

Statistical Analysis

LC_{50} values were determined by probit analysis.

Author's Discussion/Results

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

ppm:	10,	7.5,	5.6,	4.2,	3.2.	control
% :	100,	80,	10,	0,	0,	0

The 96-hour observed no-effect level was 0.75 ppm.

The following LC_{50} values were calculated:

24 hour LC_{50} > 10 ppm
48 hour LC_{50} = *7.5 - 10
72 hour LC_{50} = *5.6 - 7.5
96 hour LC_{50} = 6.68 ppm (95% C.L. 6.0 -7.5)

* Could not be calculated by probit analysis.

Behavioral observations include: slowed reaction, narcotic condition and surface swimming. During the first 48 hours at the 10 and 7.5 ppm levels, observations also included: equilibrium disturbance, head up standing, cramps, and horizontal turns.

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.

C. Conclusions

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

NATELLA WHIP EC RAINBOW

CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
10	10	10	100	.0976563
7.5	10	8	80	5.46875
5.6	10	1	10	1.07422
4.2	10	0	0	.0976563
3.2	10	0	0	.0976563

THE BINOMIAL TEST SHOWS THAT 5.6 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 6.6467

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
3	.113441	6.66245	5.95234	7.51025

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
9	.346591	1	.999241

SLOPE = 17.0523
95 PERCENT CONFIDENCE LIMITS = 7.01328 AND 27.0913

LC50 = 6.67563
95 PERCENT CONFIDENCE LIMITS = 5.9561 AND 7.46831

LC10 = 5.62362
95 PERCENT CONFIDENCE LIMITS = 4.23056 AND 6.22047