DATA EVALUATION RECORD

1. Chemical: HOE 33171 OH AT 204

2. Formulation: 96.0%

3. Citation: Fischer, R. (1981). The Effect of HOE 33171 OH AT 204 on Salmo trutta (Brown trout) in a Static Test. Oekologisches Laboratorium, Pflanzenschutz Forschung Biologie. Frankfurt Hoechst, Federal Republic of Germany. Ref. OEK81/044E. Acc. # 071796.

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

5. Date Reviewed: October 13, 1983

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

7. Report Results: LC_{50} = 0.48 ppm (95% C.L. 0.45-0.52)

8. Reviewer's Conclusions:

This study is scientifically sound and indicates that HOE-33171 is highly toxic to brown trout. The study does fulfill the requirements for a cold water fish acute 96-hour LC_{50}.

MATERIALS/METHODS

Test Procedures

Test Animals: Brown trout (Salmo trutta), obtained from the hatchery of Dr. Mueller, Fredelsloh/Moringen, Federal Republic of Germany. Fish were approximately three months old, had a mean length of 4.03 cm and a mean weight of 0.75 g.

Test Water Quality: Filtered, de-ionized water was reconstituted according to EPA guidelines. The water had a pH of 8.02, a total hardness of 44.0 mg/l as $CaCO_3$, a total alkalinity of 29.0 mg/l as $CaCO_3$ and a conductivity of 148 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. 22 concentrations, a control and a solvent control (acetone) were used.

Date of testing: 7/14/1981 - 7/18/1981.

Statistical Analysis

LC_{50} values were determined by probit analysis.

Discussion/Results

Percent mortality at 5 of the 22 concentrations tested is as follows (after 96 hours):

ppm:	0.37,	0.42,	0.49,	0.56,	0.65,	control,	solvent control
% :	0,	40,	60,	60,	100,	0 ,	0

The following LC_{50} values were calculated:

24 hours LC_{50} = 0.87 ppm (95% C.L. 0.80 - 0.90)
48 hours LC_{50} = 0.55 ppm (95% C.L. 0.50 - 0.60)
72 hours LC_{50} = 0.49 ppm (95% C.L. 0.46 - 0.53)
96 hours LC_{50} = 0.48 ppm (95% C.L. 0.45 - 0.52)

Behavioral observations made during the test include: swimming on side, inverted swimming, gulping air, paralyzation, narcotic condition, and dark coloration.

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
2. Rationale: N/A
3. Repairability: N/A

NATELLA HOE-33171 BROWN TROUT

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
.65	10	10	100	.0976563
.56	10	6	60	37.6953
.49	10	6	60	37.6953
.42	10	4	40	37.6953
.37	10	0	0	.0976563

THE BINOMIAL TEST SHOWS THAT .37 AND .65 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 .453652

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
4	.118745	.482823	.451458	.514826

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
5	.216774	1	.162441

SLOPE = 11.9248
95 PERCENT CONFIDENCE LIMITS = 6.37275 AND 17.4769

LC50 = .480924
95 PERCENT CONFIDENCE LIMITS = .438834 AND .525835

LC10 = .376336
95 PERCENT CONFIDENCE LIMITS = .295247 AND .41784

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