DATA EVALUATION RECORD

1. Chemical: HOE-33171 OH AT204

2. Formulation: 96.0%

3. Citation: Fischer, R. (1981). The Effect of HOE-33171 OH AT204 on Lepomis gibbosus (pumpkinseed sunfish) in a Static Test. Oekologisches Laboratorium, Pflanzenschutz Forschung Biologie. Frankfurt Hoechst, Federal Republic of Germany. Ref. OEK81/045E. 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} (pumpkinseed sunfish)

7. Reported Results: LC_{50} = 0.36 ppm (95% C.L. 0.32-0.41)

8. Reviewer's Conclusions: This study is scientifically sound and indicates that HOE-33171 is highly toxic to pumpkinseed sunfish. The study does fulfill the requirements for a warm water fish acute 96-hour LC_{50}.

MATERIALS/METHODS

Test Procedures

Test Animals: Pumpkinseed sunfish (Lepomis gibbosus) obtained from the Zoozentrum Hoechst, Federal Republic of Germany. Fish were approximately 3-4 months old, had a mean length of 5.06 cm and a mean weight of 2.27 g.

Test Water Quality: Filtered, de-ionized water was reconstituted according to EPA guidelines. The water had a pH of 7.90, a total hardness of 46.0 mg/l as $CaCo_3$, a total alkalinity of 31.0 mg/l as $CaCo_3$ and a conductivity of 143 umhos/cm. During testing, fish were maintained at 22°C.

Test Containers: 200 l stainless steel tanks, containing 200 l of water.

Exposure: 10 fish per tank; 10 fish per concentration. 14 concentrations, a control and a solvent control (acetone) were used.

Date of testing: 7/24/81 - 7/28/1981.

Statistical Analysis

LC_{50} values were determined by probit analysis.

Discussion/Results

Percent mortality at 5 of the 14 concentrations tested was as follows (after 96 hours):

ppm:	0.56,	0.42,	0.32,	0.24,	0.18,	control,	solvent control
%:	100,	80,	10,	10,	0,	0,	0

The 96-hour observed no effect level was 0.18 ppm.

The following LC_{50} values were calculated:

24-hour LC_{50} = 0.92 ppm (95% C.L.0.82-1.09)
48-hour LC_{50} = 0.52 ppm (95% C.L.0.45-0.60)
72-hour LC_{50} = 0.39 ppm (95% C.L.0.35-0.44)
96-hour LC_{50} = 0.36 ppm (95% C.L.0.32-0.41)

Behavioral observations made during the test included: slow respiration, slow reaction, and narcotic condition.

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

2. Rationale: N/A

3. Repairability: N/A

NATELLA HOE-33171 PUMPKINSEED

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
.56	10	10	100	.0976563
.42	10	8	80	5.46875
.32	10	1	10	1.07422
.24	10	1	10	1.07422
.18	10	0	0	.0976563

THE BINOMIAL TEST SHOWS THAT .32 AND .56 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 .375337

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
4	.121833	.359196	.316074	.421934

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
6	.244213	1	.260674

SLOPE = 10.7985
95 PERCENT CONFIDENCE LIMITS = 5.46208 AND 16.1348

LC50 = .362467
95 PERCENT CONFIDENCE LIMITS = .318548 AND .413002

LC10 = .276477
95 PERCENT CONFIDENCE LIMITS = .203739 AND .315375

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