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 Daphnia magna (Waterflea) in a static test. Oekologisches Laboratorium, Pflanzenschutz Forschung Biologie. Frankfurt Hoechst, Federal Republic of Germany. Ref. OEK83/061E. Acc. No. 072310.

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

5. Date Reviewed: 4/2/84

6. Test Type: Aquatic invertebrate 48-hour LC_{50}

7. Reported Results: 48-hour LC_{50} = 26.84 ppm (95% C.L. 21.3 - 33.9)

8. Reviewer's Conclusions: The study is scientifically sound and indicates that a 9.5% formulated product of HOE 033171 is slightly toxic to Daphnia magna. The study does fulfill a requirement for an aquatic invertebrate 48-hour LC_{50} performed on this formulated product.

Materials/Methods

Test Procedure

Test Animals: Daphnia magna, cultured in the fish maintenance room of the Oekologisches Laboratorium of Hoechst AG, Federal Republic of Germany. Daphnia were $\leq$ 24 hours old.

Test Water Quality: Filtered, deionized water was reconstituted according to EPA guidelines. The water had a pH of 7.62, a total hardness of 44.87 mg/l as $CaCO_3$, a total alkalinity of 29.60 mg/l as $CaCO_3$ and a conductivity of 145 umhos/cm. During testing, Daphnia were maintained at 20°C.

Test Containers: 200 ml glass jars with a surface of 64 cm^2.

Exposure: 5 Daphnia per jar; 10 Daphnia per concentration. 13 concentrations and a control were used.

Date of testing: 11/8/83 - 11/10/83.

Statistical Analysis

LC_{50} values were determined by probit analysis.

Discussion/Results

Percent mortality at the six highest test concentrations was as follows (after 48 hours):

ppm:	100,	56,	32,	18,	10,	5.6,	control
% :	100,	100,	70,	10,	0,	0,	0

An additional mortality was noted at 0.32 ppm. However, this mortality was not seen to be concentration related since no other signs of intoxication were seen at any other concentration between 0.1 and 10 ppm.

The following LC_{50} values were calculated:

24 hour LC_{50} = *32 - 56 ppm
48 hour LC_{50} = 26.84 ppm (95% C.L. 21.3 - 33.9)

*Could not be calculated by probit analysis.

Reviewer's Evaluation

A. Test Procedure

The test procedure complies with US EPA protocol.

In the three highest concentrations (100, 56 and 32 ppm) the test material appeared in the water as suspended flakes. However, there is a clear relation between the test material concentration and mortality The reviewer agrees with the conclusions of the author that the test should be considered valid.

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 DAPHNIA

CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
100	10	10	100	.0976563
56	10	10	100	.0976563
32	10	7	70	17.1875
18	10	1	10	1.07422
10	10	0	0	.0976563
5.6	10	0	0	.0976563

THE BINOMIAL TEST SHOWS THAT 18 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 26.7384

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
5	.128905	26.394	19.3494	37.05

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
7	.330503	1	.998486

SLOPE = 7.75451
95 PERCENT CONFIDENCE LIMITS = 3.29649 AND 12.2125

LC50 = 26.8416
95 PERCENT CONFIDENCE LIMITS = 21.2404 AND 33.7963

LC10 = 18.4091
95 PERCENT CONFIDENCE LIMITS = 10.2145 AND 22.7806