

US EPA ARCHIVE DOCUMENT

DATA EVALUATION RECORD

1. Chemical: HOE 039866 (Ignite)
2. Test Material: 16.22% ai
[soluble concentrate 200 (g/L)]
3. Study Type: Freshwater Fish Acute Toxicity
Species Tested: Bluegill sunfish
4. Citation: Fischer, R. (1985) The Effect of HOE 039866 Soluble Concentrate, Identification Code: HOE-039866 OH SL18 A505 to Lepomis macrochirus (Bluegill sunfish) in a Static-Acute Toxicity Test (Lm 14/C, Method EPA). Prepared by Ecological Laboratory, Hoechst AG, Frankfurt Hoechst, Federal Republic of Germany. Submitted by American Hoechst Corp. EPA File Symbol 8340-EUP-RN. Accession No. 263027.
5. Reviewed By: Carol M. Natella
Wildlife Biologist
EEB/HED
Signature: *Carol M. Natella*
Date: 11-20-86
6. Approved By: Harry Craven
Supervisory Biologist
EEB/HED
Signature: *Henry J. Craven*
Date: 11/26/86
7. Conclusions:

The study is scientifically sound. With a 96-hour LC₅₀ of 65 ppm (95% C.L. 56 and 75) a 16.22% ai formulation of HOE 039866 is slightly toxic to bluegill sunfish.

The study would fulfill a Guidelines requirement for an acute toxicity determination for a warmwater fish with the formulated product.
8. Recommendations: N/A.
9. Background: N/A.
10. Discussion of Individual Tests: N/A.

11. Materials and Methods:

- a. Test Animals: Bluegill sunfish (Lepomis macrochirus) obtained from the Osage Catfisheries, Osage Beach, MO. Fish were approximately 6 months old, had a mean weight of 2.0 g and mean length of 4.3 cm.
- b. Test System: 50 L chemically inert stainless steel tanks holding 50 L of dilution water. Dilution water was deionized and then reconstituted to the desired hardness and pH. It was characterized as having a pH of 8.49, a total hardness of 46.19 mg/L as CaCO₃, a total alkalinity of 34.43 mg/L as CaCO₃, and a conductivity of 160 micro mhos/cm. Test temperature was held between 21.0 and 22.3 °C.
- c. Dosing: Static bioassay.
- d. Design: Ten fish per tank, ten fish per concentration, nine concentrations plus an untreated control were tested.
- e. Statistics: Due to the absence of mortality other than 100 and 0%, LC values could not be calculated for the exposure periods.

12. Reported Results:

Nominal Concentration (mg/L)	Percent Mortality			
	24 Hrs	48 Hrs	72 Hrs	96 Hrs
Control	0	0	0	0
100	100	100	100	100
75	100	100	100	100
56	0	0	0	0
42	0	0	0	0
32	0	0	0	0
24	0	0	0	0
18	0	0	0	0
13.5	0	0	0	0
10	0	0	0	0

"Intoxication symptoms: no symptoms were noticed during the times of estimation."

13. Study Author's Conclusions:

"The values of LC₀₅, LC₅₀, and LC₉₅ . . . in a static-acute toxicity test after 24, 48, 72, and 96 hours test duration lie between 56 and 75 mg/L."

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14. Reviewer's Discussion and Interpretation of the Study:

- a. Test Procedures: The procedures were in accordance with protocols recommended by the Guidelines.
- b. Statistical Analysis: The 96-hour LC₅₀ value was calculated using Stephan's computer program. The binomial test gave an LC₅₀ of 65 ppm.
- c. Discussion/Results: With a 96-hour LC₅₀ of 65 ppm (95% C.L. 56 and 75), a 16.22% ai formulation of HOE 039866 is slightly toxic to bluegill sunfish.
- d. Adequacy of Study:
 - (1) Classification: Core, for the formulated product.
 - (2) Rationale: N/A.
 - (3) Reparability: N/A.

15. Completion of One-Liner:

Yes, October 21, 1986.

NATELLA HOE 039866 BLUEGILL

CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB. (PERCENT)
100	10	10	100	.0976563
75	10	10	100	.0976563
56	10	0	0	.0976563
42	10	0	0	.0976563
32	10	0	0	.0976563
24	10	0	0	.0976563

THE BINOMIAL TEST SHOWS THAT 56 AND 75 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 64.8074

WHEN THERE ARE LESS THAN TWO CONCENTRATIONS AT WHICH THE PERCENT DEAD IS BETWEEN 0 AND 100, NEITHER THE MOVING AVERAGE NOR THE PROBIT METHOD CAN GIVE ANY STATISTICALLY SOUND RESULTS.

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