

US EPA ARCHIVE DOCUMENT

DATA EVALUATION RECORD

1. CHEMICAL: Naphthaleneacetic Acid
2. FORMULATION: Technical (98% active)
3. CITATION: Sousa, J.V., and G.A. LeBlanc. (1981) Acute Toxicity of NAA to Bluegill (Lepomis macrochirus). Unpublished report prepared by EG&G, Bionomic, Aquatic Toxicology Laboratory for the Union Carbide Company. [Acc. No. 246079]
4. REVIEWED BY: Leslie Touart
Fisheries Biologist
EEB/HED
5. DATE REVIEWED: 12/29/81
6. TEST TYPE: Fish 96-hour Acute Toxicity (warmwater)
 - A. TEST SPECIES: Bluegill Sunfish
7. REPORTED RESULTS: The 96-hour LC₅₀ (and 95% confidence interval) for bluegill exposed to NAA, estimated by binomial probably, was 82 (68-100) mg a.i./l.
8. REVIEWERS CONCLUSIONS: The study is not scientifically sound and does not fulfill the requirement for an acceptable acute toxicity study with technical material on a warm-water fish.



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Materials/Methods

Test Procedures

Protocol generally followed the recommended test procedures of the EPA proposed guidelines of July, 1978.

Statistical Analysis

Mortality data were analyzed with the Stephan program.

Discussion/Results

Nominal Concentration (mg/l)	Percentage Mortality			
	(24 hr)	(48 hr)	(72 hr)	(96 hr)
150	100	100	100	100
100	80	100	100	100
68	0	0	0	0
46	0	0	0	0
32	0	0	0	0
solvent control	0	0	0	0
control	0	0	0	0

96-hr LC₅₀ = 82 (68-100) mg/l

All test solutions of NAA contained undissolved chemical throughout the study period.

Reviewer's Evaluation

A. Test Procedures

Protocol generally followed the recommended procedures in the EPA proposed guidelines of 1978. However, adequate steps were not taken to insure maximum solubilization of the test material. A different solvent (e.g., acetone) or method (e.g., homogenation) could have allowed all the test material to enter solution.

B. Statistical Analysis

Appropriate for the data generated.

C. Discussion/Results

The reported conclusions are unacceptable due to the uncertainty of the actual test concentrations. The solubility of NAA in water is greater than 300 ppm, and in optimal conditions a precipitate should not occur in test solutions containing less than 300 ppm. In test solutions where a precipitate occurs, the actual exposure level is unknown unless chemical analysis of the solution is made.

D. Conclusions

1. Category: Invalid.
2. Rationale: Test solutions contained undissolved chemical.
3. Repairability: None.