

100 Pesticide Name:

Glutaraldehyde

100.3 Submission Purpose

Submission of a 96-hour LC₅₀ for fathead minnow

101.0 Chemical and Physical Properties

101.1 Common Name

Glutaraldehyde

103.0 Toxicological Properties

96-hour LC₅₀ for fathead Minnow

105.0 Conclusions

The 96-hour fish study was considered to be slightly toxic with an LC₅₀ of 11.59 ppm. This study does fulfill the requirement in support of registration for a freshwater fish study.

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DATA EVALUATION RECORD

1. CHEMICAL: Glutaraldehyde
2. TEST MATERIAL: 100% (technical a.i.) a clear liquid
3. TEST TYPE: 96-Hour LC₅₀
Test Species: Fathead Minnow (Pimephales promelas)
4. STUDY IDENTIFICATION: Surpenant, D.C. (1989) Acute Toxicity of Ucarcide to Fathead Minnow (Pimephales promelas); Report No. 89-1-2927; Study #565.0988.6132.101; Prepared by Springborn Life Sciences, Inc. for Union Carbide Corporation, Piscataway, New Jersey; Acc. No. 415010-00.
5. REVIEWED BY:
Curtis E. Laird
Fishery Biologist
EEB/EFED
Signature: Curtis E. Laird
Date: 11-28-90
6. APPROVED BY:
Norman J. Cook
Supervisory Biologist
EEB/EFED
Signature: Norman J. Cook
Date: 01-16-91
7. CONCLUSIONS: This study indicates Glutaraldehyde is slightly toxic to bluegill sunfish with an LC₅₀ of 11.59 ppm. This study does fulfill the requirement in support of registration for a freshwater fish study.
8. RECOMMENDATIONS: N/A

9. BACKGROUND:

This study was submitted in support of Glutaraldehyde registration

10. DISCUSSION OF INDIVIDUAL TEST: N/A

11. MATERIAL TESTED:

- A. Test Animals: Test Animals were fathead minnow from laboratory stock; size = 0.48g; SL = 30 mm.
- B. Test Design: Fish were tested in a 18.9L glass aquaria with 15L of test solution; photoperiod was 16L/8D; pH was 7.5; D.O. was 3.4 (37% saturation after 96 hrs exposure) mg/L.
- C. Dose: Twenty fish per dose level; five dosage levels plus negative control (0, 7.8, 13, 22, 36, and 60 ppm).
- D. Statistical Analysis: Probit Analysis

12. Reported Results: The study author found the 96-hour LC₅₀ to be 12 (7.8-22) ppm. The NOEL was 7.8 ppm.

13. STUDY AUTHOR'S CONCLUSION/OA MEASURES: The Quality Assurance Unit inspected the raw data and final report to assure compliance to Good Laboratory Practice Standard Operating Procedures and the pertinent FDA Good Laboratory Practice Regulations.

14. REVIEWER'S DISCUSSION AND INTERPRETATION OF THE STUDY:

- A. TEST PROCEDURE: The test Procedure complied with the recommended EPA protocol of October 1982.
- B. STATISTICAL ANALYSIS: The statistics were verified with Stephan's computer program as 11.59 ppm.
- C. DISCUSSION/RESULT: Glutaraldehyde was considered slightly toxic to fathead minnow with an LC₅₀ of 11.59 ppm.

D. ADEQUACY OF STUDY:

1. Category: Core
2. Rationale: N/A
3. Reparability: N/A

15. Completion of one-liner for study: yes

16. CBI Appendix N/A

Laird Glutaraldehyde 96-Hour LC50 for Fathead Minnow 043901

CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB. (PERCENT)
60	20	20	100	9.536742E-05
36	20	20	100	9.536742E-05
22	20	20	100	9.536742E-05
13	20	14	70	5.765915
7.8	20	0	0	9.536742E-05

THE BINOMIAL TEST SHOWS THAT 7.8 AND 22 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 11.5906

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.
