

US EPA ARCHIVE DOCUMENT

Data Evaluation Record
Molinate TG, Ordram^o
Warmwater Acute Toxicity Test
Guideline Ref. No. 72-1(a)

1. TEST MATERIAL: Molinate TG.

2. STUDY MATERIAL:

S-Ethyl hexahydro-1H-azepine-1-carbothioate 97.6% W/W.

3. STUDY TYPE:

Freshwater Fish Acute Toxicity.

Species tested-

Bluegill sunfish

Lepomis macrochirus

4. STUDY IDENTIFICATION:

Miller, J.L. 1982. 96-hour aquatic toxicity study of Ordram^o technical in Bluegill sunfish (*Lepomis macrochirus*). ICI Americas, Aquatic Toxicology Laboratory, Richmond, CA 94804. Final Report No. T-13384, RR90-279B. Submitted by ICI Americas, Inc., Agricultural Products, Wilmington, Delaware 19897.

5. REVIEWED BY:

James J. Goodyear
Biologist, Section 1
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Signature: James J. Goodyear

Date: April 11, 1991

6. APPROVED BY:

Leslie W. Touart
Acting Head, Section 1
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Signature: L. W. Touart

Date: 4/12/91

7. CONCLUSIONS:

The study *cannot* be used to fulfil the requirements for a warmwater fish toxicity test.

8. RECOMMENDATIONS - N/A.

9. BACKGROUND:

The registrant submitted the study as a "Previously submitted, acceptable study." EEB has no record of having reviewed or even received the study. The records of the Registration Division confirm that the study has never been reviewed.

10. DISCUSSION OF INDIVIDUAL TEST - N/A.

11. MATERIALS AND METHODS:

A. TEST CONDITIONS:

Animals - Bluegill sunfish (*Lepomis macrochirus*) with an average weight of 1.6 g.

Containers - 50 l stainless steel tanks (30 x 33 x 44 cm).

Solution - Well water, "A stock solution of Ordram Technical (97.6 wt% a.i.) was prepared with acetone 1:2 v/v to achieve the desired concentration of stock solution."

Temperature - 12.5 to 12.6° C.

Duration - 96 hours.

pH - 7.1 to 7.2 pH units.

Dissolved O₂ - 7.9 to 8.2 mg/l (= 70% of saturation).

Hardness - 300 mg/l CaCO₃/l.

Photoperiod - 8 hours light and 16 hours dark.

B. Dose:

There were five nominal levels: 3, 4, 8, 18, 40, and 91 mg/l, plus one water control. The control level is listed as "0.0" mg/l. Measured levels were 1.8, 6.1, 15.0, 37.0, and 66.0 mg/l with a control of "≥ 0.1" mg/l. No solvent control was run.

C. DESIGN:

20 fish per group, 50 l of water in a 50 l tank, flow-through complete replacement of the water 11.5 times per day, no aeration, no feeding.

D. STATISTICS:

Stephan, 1978.

12. REPORTED RESULTS:

LC₅₀ = 24.7 mg/l (CI 20.7 to 29.2 mg/l).

"Signs of toxicity were observed at ≥ 18.5 mg/l.

NOEL based on mortality was 6.7 mg/l." [sic, Summary]

13. STUDY AUTHORS' CONCLUSIONS/QA MEASURES:

LC₅₀ = 24.7 mg/l (CI 2.7-29.2 mg/l). "Poor appetite was observed in the 2.1 mg/l dose."

"A Quality Assurance review of this report was conducted on 9-29-88 and it is confirmed that the reported results accurately reflect the data collected for the study."

14. REVIEWER'S DISCUSSION AND CONCLUSIONS:

A. TEST PROCEDURES:

The dimensions of the stainless steel tanks (33 x 44 x 30 cm) describe a volume of 43 liters. They would not hold the claimed volume of water (50 liters). Since the concentrations were measured the LC₅₀ can be calculated. The lowest concentrations measured (1.8, 6.1, 15.0, 37.0, and 66.0 mg/l) must be used.

There was no solvent control containing an amount of acetone equal to the amount used in the highest concentration replicate, only a control with >0.1 mg/l Molinate.

B. STATISTICAL ANALYSIS:

EEB recalculated the LC₅₀ using Stephan's computer program (1978) and the lowest measured concentrations. The LC₅₀ = 21.4 mg/l (CI 15 to 37 mg/l).

C. DISCUSSION/RESULTS:

This study was submitted as a previously accepted study for FIFRA '88. Neither EEB or the Registration Division have any record of its having been reviewed.

There was no solvent control, therefore, the study cannot be interpreted and compared to studies done on other chemicals.

D. ADEQUACY OF THE STUDY:

Classification - Invalid.

Rational - The study had no solvent control.

Repair - None.

15. COMPLETION OF ONE-LINER FOR STUDY - No.

16. CBI APPENDIX - N/A.

LITERATURE CITED

Stephan, C.E. 1977. Methods for calculating an LC₅₀ in, Aquatic Toxicology and Hazard Evaluation. ASTM STP 634. F.L. Mayer and J.L. Hamelink, Eds. American Society for Testing and Materials. pp. 65-84.