DATA EVALUATION RECORD
§ 72-2 -- ACUTE LC_{50} TEST WITH A FRESHWATER INVERTEBRATE

6/12/1995

1. **CHEMICAL:** RPA 201772 (Isoxaflutole) PC Code No.: 123000

2. **TEST MATERIAL:** Batch No. 21 ADM 93 Purity: 98.7%

3. **CITATION**

Authors:	Putt, A.E.
Title:	RPA 201772 - Acute Toxicity to Daphnids (*Daphnia magna*) Under Flow-Through Conditions
Study Completion Date:	October 6, 1993
Laboratory:	Springborn Laboratories, Inc.
Sponsor:	Rhone-Poulenc Ag Company
Laboratory Report ID:	SLI Report No. 93-7-4873; SLI Study # 10566.0493.6285.115
MRID No.:	435732-37
DP Barcode:	D213874

4. **REVIEWED BY:** Michael Davy, Agronomist, ERCB, EFED

Signature: Michael Davy **Date:** 6-8-95

5. **PEER REVIEWER:** Andrew Bryceland, Fishery Biologist, ERCB/EFED

Signature: **Date:** 6-12-95

6. **STUDY PARAMETERS**
Age of Test Organism: <24 HR
Definitive Test Duration: 48 hours
Study Method: Flow-through
Type of Concentrations: Mean measured

7. **CONCLUSIONS:** The study is scientifically sound and meets the guidelines for an Aquatic Invertebrate Toxicity study. It is not possible to classify, precisely, the toxicity of RPA 201772 based on this study, since no LC_{50} was derived. However, based on this study, it is possible to state that RPA 201772 is probably no more than moderately toxic to aquatic invertebrates.

Results Synopsis: 48-hr LC_{50}>1.5 ppm ai, NOEC>1.5 ppm ai

8. **ADEQUACY OF THE STUDY**

A. Classification: Core
B. Rationale: despite guideline deviations, the reviewer feels that the study is sound enough to be a core study.
C. Repairability: n/a

3. There was no reported holding period prior to testing nor any pretest mortality.

4. Biomass loading rate was not reported.

5. Solvent amount in flow-through test exceeded 0.1 ml/L.

6. Undissolved chemical observed at highest dose level

7. Percent recovery of chemical ranged from 109% to 143% when 48 hour measured compares with nominal and 175% to 209% when 48 hour measured compared with the 0 hour measured.

10. SUBMISSION PURPOSE: EUP

11. MATERIALS AND METHODS

A. Test Organisms

Guideline Criteria	Reported Information
Species Preferred species is *Daphnia magna*	*Daphnia magna*
All organisms are approximately the same size and weight?	Yes
Life Stage Daphnids: 1st instar (<24 h)	1st instar
Supplier	Springborn Lab
All organisms from the same source?	Yes

B. Source/Acclimation

Guideline Criteria	Reported Information
Acclimation Period Minimum 7 days	not reported
Wild caught organisms were quarantined for 7 days?	not wild organisms
Were there signs of disease or injury?	N/A

Guideline Criteria	Reported Information
If treated for disease, was there no sign of the disease remaining during the 48 hours prior to testing?	N/A
Feeding No feeding during the study.	feeding was prior to iniation of study
Pretest Mortality No more than 3% mortality 48 hours prior to testing.	not reported

C. **Test System:**

Guideline Criteria	Reported Information
Source of dilution water Soft reconstituted water or water from a natural source, **not** dechlorinated tap water.	well water
Does water support test animals without observable signs of stress?	Yes
Water Temperature Daphnia: 20°C	21 °C
pH: Prefer 7.2 to 7.6.	8.4 to 8.7
Dissolved Oxygen: flow-through: ≥ 60%.	94% saturation at 48 hr
Total Hardness Prefer 40 to 48 mg/L as $CaCO_3$.	160 to 170 mg/L as $CaCO_3$
Test Aquaria 1. Material: Glass or stainless steel. 2. Size: 250 ml (daphnids and midges) or 3.9 L (1 gal). 3. Fill volume: 200 ml (daphnids and midges) or 2-3 L.	1.6-L Glass battery jar with 1.4-L solution in depth of 15 cm

Guideline Criteria	Reported Information
Type of Dilution System Must provide reproducible supply of toxicant.	intermittent-flow proportional diluter
Flow Rate Consistent flow rate of 5-10 vol/24 hours, meter systems calibrated before study and checked twice daily during test period.	6 vol/24 hours (167 cycle x 50 ml test solution into 1.4 L solution volumn)
Biomass Loading Rate flow-through: ≤ 1 g/L/day.	not reported
Photoperiod 16 hours light, 8 hours dark.	16 hours light, 8 hours dark.
Solvents Not to exceed 0.5 ml/L for static tests or 0.1 ml/L for flow-through tests.	0.5 ml/L acetone due to solubility of 0.3 ppm

D. Test Design:

Guideline Criteria	Reported Information
Range Finding Test If LC_{50} >100 mg/L, then no definitive test is required.	1st range upto 100 ppm ai with no immobilization observed. 2nd range upto 2.5 ppm ai with no immobilization observed.
Nominal Concentrations of Definitive Test Control & 5 treatment levels; a geometric series with each concentration being at least 60% of the next higher one.	control, solvent control, 0.32, 0.54, 0.90, 1.5, and 2.5 ppm ai.
Number of Test Organisms Minimum 20/level, may be divided among containers.	10/vessel with 2 vessels/rep
Test organisms randomly or impartially assigned to test vessels?	Yes

Water Parameter Measurements 1. Temperature Measured continuously or, if water baths are used, every 6 h, may not vary > 1°C. 2. DO and pH Measured at beginning of test and every 48 h in the high, medium, and low doses and in the control.	temperature measured continously, DO and pH measured at 0, 24, and 48 hr. These measurements were made at all dose levels and controls.
Chemical Analysis Needed if solutions were aerated, if chemical was volatile, insoluble, or known to absorb, if precipitate formed, if containers were not steel or glass, or if flow-through system was used	analysis made at iniation and at 48 hr.

12. REPORTED RESULTS:

Guideline Criteria	Reported Information
Quality assurance and GLP compliance statements were included in the report?	Yes
Control Mortality Static: ≤10% Flow-through: ≤5%	0%
Percent Recovery of Chemical	109 - 143% compared w/ nominal 175 - 209% compared w/ 0-HR
Raw data included?	Yes

Mortality

Concentration (ppm)		Number of Organ-isms	Cumulative Number Dead			
			Hour of Study			
Nominal	Mean Measured		24	48	72	96
Control	0	20	0	0		
Solvent Control	0	20	0	0		

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Concentration (ppm)		Number of Organ-isms	Cumulative Number Dead			
			Hour of Study			
Nominal	Mean Measured		24	48	72	96
0.32	0.20	20	0	0		
0.54	0.41	20	1	1		
0.90	0.53	20	0	0		
1.5	0.91	20	0	0		
2.5	1.5	20	0	0		

Other Significant Results: Four mobile daphnids found on surface of 0.41 ppm ai measured conc. and were pushed below surface on hourly basis using drop of test solution. Undissolved material noted at all concentration levels at 48 hr.

B. Statistical Results Method: observed

48-hr LC_{50}: >1.5 ppm ai NOEC: >1.5 ppm ai

13. VERIFICATION OF STATISTICAL RESULTS

48-hr LC_{50}: >1.5 ppm ai NOEC: >1.5 ppm ai

14. REVIEWER'S COMMENTS:

Isoxaflutole Review) 123000

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