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

1. **CHEMICAL:** Cloquintocet-mexyl PC Code No.: 999999

2. **TEST MATERIAL:** ~~*Daphnia magna*~~ CGA-185072 Purity: 91.6 %

3. **CITATION**

Authors:	H.Rufli, F.Lanter, and A.de Morsier
Title:	Report on the Test for Acute Toxicity of CGA-185072 technical to *Daphnia magna*
Study Completion Date:	October 3, 1988
Laboratory:	Ciba-Geigy, Ltd. CH-4002 Basle, Switzerland
Sponsor:	Novartis Crop Protection, Inc. P.O. Box 18300 Greensboro, NC 27419
Laboratory Report ID:	871681
MRID No:	443874-12

4. **REVIEWED BY:** Stephen Carey, Biologist, EFED, ERBIII

Signature: Stephen Carey **Date:** 12/10/98

5. **APPROVED BY:** Harry Craven, EFED, ERBIII

Signature: Harry T. Craven **Date:** 12/10/98

6. **STUDY PARAMETERS**

Scientific Name of Test Organism:	*Daphnia magna*
Age of Test Organism:	0 - 24 hours old
Definitive Test Duration:	48 hours
Study Method:	Static
Type of Concentrations:	Measured

7. **CONCLUSIONS:**

Results Synopsis

LC_{50}: >79.6 mg ai/L 95% C.I.: N/A

NOEL: 7.94 mg ai/L Probit Slope: N/A

8. ADEQUACY OF THE STUDY

A. Classification: Supplemental

B. Rationale: Despite the presence of precipitates in test solutions, solution samples were not filtered or centrifuged before chemical analysis.

C. Repairability: No

9. Guideline Deviations

1. A slight deposit was formed at concentration greater than 10 mg/l nominal during exposure.

2. The solvent, Alkylphenol-polyglycolether, is not from one of EFED's solvent recommendation for study purposes. The test organism in the solvent control level survived, not affecting the category of the study.

3. Hardness at 240 mg/L as $CaCO_3$ exceeded the recommended range of 40 - 48 ppm.

10. SUBMISSION PURPOSE:

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?	Not Reported
Life Stage Daphnids: 1st instar (<24 h). Amphipods, stoneflies, and mayflies: 2nd instar. Midges: 2nd & 3th instar.	1st instar
Supplier	Ciba-Geigy, Ltd. CH-4002 Basle, Switzerland

Guideline Criteria	Reported Information
Supplier	Ciba-Geigy, Ltd. CH-4002 Basle, Switzerland
All organisms from the same source?	Not Reported

B. Source/Acclimation

Guideline Criteria	Reported Information
Acclimation Period Minimum 7 days	0 days (breeding conditions were equal to test conditions)
Wild caught organisms were quarantined for 7 days?	N/A
Were there signs of disease or injury?	No
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 stopped 24 hours before test
Pretest Mortality No more than 3% mortality 48 hours prior to testing.	0% mortality prior to testing

C. Test System:

Guideline Criteria	Reported Information
Source of dilution water Soft reconstituted water or water from a natural source, **not** dechlorinated tap water.	Reconstituted water
Does water support test animals without observable signs of stress?	Yes

Guideline Criteria	Reported Information
Water Temperature Daphnia: 20°C Amphipods and mayflies: 17°C Midges and mayflies: 22°C Stoneflies: 12°C	20 ± 1°C
pH Prefer 7.2 to 7.6.	7.3 - 8.3 pH (7.7 pH mean)
Dissolved Oxygen Static: ≥ 60% during 1st 48 h and ≥ 40% during 2nd 48 h, flow-through: ≥ 60%.	1st analysis at 0 hr: 92% 2nd analysis at 48 hr: 93%
Total Hardness Prefer 40 to 48 mg/L as $CaCO_3$.	240 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.	250 ml beakers covered with watch glasses Fill volume: unknown
Type of Dilution System Must provide reproducible supply of toxicant.	N/A
Flow Rate Consistent flow rate of 5-10 vol/24 hours, meter systems calibrated before study and checked twice daily during test period.	N/A
Biomass Loading Rate Static: ≤ 0.8 g/L at ≤ 17°C, ≤ 0.5 g/L at > 17°C; flow-through: ≤ 1 g/L/day.	Not Reported
Photoperiod 16 hours light, 8 hours dark.	16-hr light, 8-hr dark

Guideline Criteria	Reported Information
Solvents Not to exceed 0.5 ml/L for static tests or 0.1 ml/L for flow-through tests.	4 mg Alkylphenol-polyglycolether/L (.0038 ml/L) Note: water solubility is 0.8 ppm

D. Test Design:

Guideline Criteria	Reported Information
Range Finding Test If EC_{50} >100 mg/L, then no definitive test is required.	EC_{50} >100 mg/L
Nominal Concentrations of Definitive Test Control & 5 treatment levels; a geometric series with each concentration being at least 60% of the next higher one.	Blank and vehicle control and 5 treatment levels at 10, 18, 32, 58, 100 mg/L (~~Vehicle is not used as a nominal concentration~~)
Number of Test Organisms Minimum 20/level, may be divided among containers.	20 per concentration, 2 replicates of 10 each
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 ever 48 h in the high, medium, and low doses and in the control.	Temperature, oxygen, and pH were measured at the beginning and at the end of the test. Temperature was continuously monitored in the test tanks using min/max thermometers.
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	Samples collected from each test vessel at 0-hr and 48-hr were analyzed by HPLC.

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 Percent of nominal: Analytical capability: Limit of quantitation (LOQ):	 59-102% 98 - 99% Not reported
Raw data included?	Yes

Mortality

Concentration (ppm)			Number of Organisms	Cumulative Number Dead			
				Hour of Study			
Nominal	0-hour Measured	48-hour Measured		3	6	24	48
Control	nd	nd	20	0	0	0	0
Solvent Control	nd	nd	20	-	-	-	-
10	9.46	7.94	20	0	0	0	0
18	18.4	10.6	20	0	0	0	1
32	32.4	27.2	20	0	0	0	3
58	57.4	52.3	20	1	1	1	4
100	101	79.6	20	3	3	3	5

Other Significant Results: N/A

B. Statistical Results

Method:

48-hr LC_{50}: >100 mg ai/L 95% C.I.: N/A

Probit Slope: N/A NOEC: 10 mg ai/L

13. VERIFICATION OF STATISTICAL RESULTS

Parameter	Result
Probit LC_{50} (95% C.I.)	217.6 (92.2 - 25911) ppm ai
Probit Slope	1.4
NOEC	10 ppm ai

14. REVIEWER'S COMMENTS: Based on the report, the study is scientifically sound and does not fulfills the section 158 requirements. The study partially conforms to the procedures of the subdivision E guideline requirements for an acute toxicity test using Daphnia magna. Based on initial concentrations, the 48-hour EC50 was >79.6 mg ai/L, which classifies CGA-185072 as practically non-toxic to the magna. The NOEC was determined to be 7.94 mg ai/L.

It is important to note that the guideline deviations of the experiment included a slight deposit being formed at concentration greater than 10 mg/l during exposure. The solvent, alkylphenol-polyglykol-ether, is acceptable since no morality occurred in the solvent control. Hardness at 240 mg/l exceed the recommended protocol requirement. The ASTM guidebook defines hardness of 40 - 48 ppm.

Data on the test organisms' size and weight, and loading rate are not reported in the study. However, since 1st instars were used, it is assumed the test organisms are of approximately the same size. This study is classified as **supplemental**.