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AB-79-077

DATA EVALUATION RECORD

1. CHEMICAL: Acetochlor.
Shaughnessey No: 121601.

2. TEST MATERIAL: CP 55097; Acetochlor; lot # XHK-119; Purity, 91.3% Active Ingredient; a brown liquid.

3. STUDY TYPE: Freshwater Fish Static Acute Toxicity Test.
Species Tested: Oncorhyncus mykiss.

4. CITATION: Forbis, A.D. and C.M. Thompson. 1979. Acute Toxicity of CP 55097 (AB-79-077) to Rainbow Trout (Salmo gairdneri). Conducted by Analytical Biochemistry Laboratories, Inc. (ABC), Columbia, Missouri, ABC Study No. 24016. Submitted by Monsanto Chemical Company, St. Louis, Missouri. Monsanto Study No. AB-79-077.

5. REVIEWED BY:

G. Scott Ward
Manager
Aquatic Toxicology Laboratory
Toxikon Environmental Sciences

Signature:

Date:

6. APPROVED BY:

Michael L. Whitten, M.S.
Staff Toxicologist
KBN Engineering and
Applied Sciences, Inc.

Signature:

Date: Cynthia Martin 10-29-90

Henry T. Craven, M.S.
Supervisor, EEB/HED
USEPA

Signature: Henry T. Craven

Date: 10/30/90

7. CONCLUSIONS: The study is scientifically sound and meets the guideline requirements for a freshwater fish static acute toxicity test. With a 96-hour LC50 of 0.42 mg/L based on nominal concentrations, CP 55097 is considered to be highly toxic to Oncorhyncus mykiss under the conditions described. The NOEC could not be determined, due to mortality at all treatment concentrations.

8. RECOMMENDATIONS: N/A.

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9. BACKGROUND:

10. DISCUSSION OF INDIVIDUAL TESTS: N/A.

11. MATERIALS AND METHODS:

A. Test Animals: This test was conducted using rainbow trout (Oncorhyncus mykiss) obtained from Spring Creek Hatchery in Lewistown, Montana. Fish had a mean weight of 0.49 grams and mean standard length of 34.8 mm. Fish were held in culture tanks on a 16 hour light/8 hour dark photoperiod for at least 14 days prior to testing. During this holding period fish were fed a standard commercial fish food daily. At 48 hours prior to testing, feeding was discontinued.

B. Test System: The test was conducted in 5-gallon glass containers holding 15 liters of soft reconstituted freshwater with the following characteristics: dissolved oxygen, 8.9 mg/L; pH, 7.4; total hardness, 45 mg/L as $CaCO_3$; total alkalinity, 35 mg/L as $CaCO_3$. Additional water quality measurements on the well water source for this dilution water are presented in Table 1 (attached). Test containers were held in a water bath at 12 $\pm$ 1.0|C.

C. Dosage: This was a 96-hour static, acute toxicity test.

D. Design: Based on the results of a range-finding test, nominal CP 55097 test concentrations were 0.32, 0.56, 1.0, 1.8, and 3.2 mg/L. Test concentrations were not measured. A solvent (acetone) control was maintained concurrently with test concentrations with a solvent concentration of 213 μL/L. Ten fish were exposed to each treatment. Fish were added to each treatment within 30 minutes of the addition of test material.

E. Statistics: LC50 values and their 95% confidence limits were calculated by the Litchfield and Wilcoxon (1949) or Stephan (1977) method.

12. REPORTED RESULTS: The reported 96-hour LC50 and 95% confidence limits were 0.45 (0.36-0.57) mg CP 55097/L (Table 2, attached). Water quality measurements were reported for the solvent control, and the 0.32 and 3.2 mg/L treatments at 0 hour, and for the solvent control, and the 0.32 and 0.56 mg/L treatments at 48 and 96 hours (Table 3, attached). The

limited water quality measurements indicated that water quality remained within acceptable guidelines.

13. STUDY AUTHOR'S CONCLUSIONS/QUALITY ASSURANCE MEASURES: The authors did not present any conclusions.

The QAU reported a final inspection of all data and records on July 24, 1979, and indicated that the report accurately reflected study conduct.

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

A. Test Procedure: The test procedures were in accordance with protocols recommended by the SEP, except for the following deviations:

- o No dilution water control was maintained in this study. Only a solvent (acetone) control was maintained.
- o Water quality measurements should have been taken from the control, high, medium, and low concentrations. In this study, measurements were not taken at initiation in the medium (1.0 mg/L) concentration.
- o No photoperiod or light/dark transition period was reported for the test.
- o No observations of sublethal effects were reported.
- o The slope of the dose-response curve was not reported.
- o Each designated treatment group was exposed to a concentration of toxicant that is approximately 56% of the next highest concentration. The SEP recommends 60% of the next highest concentration.

B. Statistical Analysis: The reviewer recalculated the 96-hour LC50 using EEB's Toxanal computer program. The result (attached) was similar to that performed by the authors.

C. Discussion/Results: No observations of sublethal effects were reported by the author. Based on a review of the raw data sheets, it appears that no abnormal effects were observed.

With a 96-hour LC50 value of 0.42 mg/L (95% C.L. = 0.35 and 0.52 mg/L), CP 55097 is considered to be highly toxic to rainbow trout. The NOEC could not be determined, due to mortality at all treatment concentrations.

The study is scientifically sound and meets the guideline requirements. A dilution water control was not maintained, however since no mortality occurred in the solvent control, a dilution control is not a critical element that deters from the results of the study.

D. Adequacy of the Study:

(1) Classification: CORE.

(2) Rationale: Discrepancies noted did not deter from the information gained from the study.

(3) Repairability: N/A

15. COMPLETION OF ONE-LINER: Yes. June 11, 1990.

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ACETOCHLOR

Page_____ is not included in this copy.

Pages 5 through 7 are not included.

The material not included contains the following type of information:

____ Identity of product inert ingredients.

____ Identity of product impurities.

____ Description of the product manufacturing process.

____ Description of quality control procedures.

____ Identity of the source of product ingredients.

____ Sales or other commercial/financial information.

____ A draft product label.

____ The product confidential statement of formula.

____ Information about a pending registration action.

X FIFRA registration data.

____ The document is a duplicate of page(s) _____.

____ The document is not responsive to the request.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

SCOTT WARD ACETOCHLOR SALMO GAIRDNERI 06-10-90

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB. (PERCENT)
3.2	10	10	100	9.765625E-02
1.8	10	10	100	9.765625E-02
1	10	10	100	9.765625E-02
.56	10	9	90	1.074219
.32	10	1	10	1.074219

THE BINOMIAL TEST SHOWS THAT .32 AND .56 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 .4233202

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
2	.167754	.4233202	.3075271	.5194954

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
6	.3382985	1	.9999978

SLOPE = 10.55236

95 PERCENT CONFIDENCE LIMITS = 4.414747 AND 16.68998

LC50 = .4232973

95 PERCENT CONFIDENCE LIMITS = .3460859 AND .5172717

LC10 = .3208435

95 PERCENT CONFIDENCE LIMITS = .2028489 AND .3819128

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   Shaughnessey No: 121601.

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3. **STUDY TYPE:** Freshwater Fish Static Acute Toxicity Test.
   Species Tested: Salmo gairdneri.

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5. **REVIEWED BY:**

   G. Scott Ward
   Manager
   Aquatic Toxicology Laboratory
   Toxikon Environmental Sciences

   Signature: P. Kosalwat for G. Scott Ward
   Date: 6/20/90

6. **APPROVED BY:**

   Michael L. Whitten, M.S.
   Staff Toxicologist
   KBN Engineering and
   Applied Sciences, Inc.

   Signature: Michael L. Whitten
   Date: 6-15-90

   Henry T. Craven, M.S.
   Supervisor, EEB/HED
   USEPA

   Signature:
   Date:

7. **CONCLUSIONS:** The study is scientifically sound but does not meet the guideline requirements for a freshwater fish static acute toxicity test. With a 96-hour LC50 of 0.42 mg/L based on nominal concentrations, CP 55097 is considered to be highly toxic to Salmo gairdneri under the conditions described. The NOEC could not be determined, due to mortality at all treatment concentrations.

8. **RECOMMENDATIONS:** N/A.