

US EPA ARCHIVE DOCUMENT

Shaughnessy # 900 497
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DATA EVALUATION RECORD

1. CHEMICAL: Dichlormid CAS 37764-25-3
2. TEST MATERIAL: 97% purity
3. TEST TYPE: Acute Toxicity to Freshwater Fish (LC₅₀)
4. STUDY IDENTIFICATION: Tapp, J.P., "Determination of acute toxicity to rainbow trout (Salmo gairdneri)". Prepared by Imperial Laboratory and Freshwater Quarry. Study for: ICI Americas Inc. MRID NO.: 41561419
5. REVIEWED BY: Carol J. Belew, Biologist *Carol Belew 7/30/91*
 EFED/EEB
6. APPROVED BY: Les Touart, Section Head *Les T 7/30/91*
 EFED/EEB
7. CONCLUSIONS:
 Imperial Chemical Industry Laboratory determined the LC₅₀ to be 103 mg/l with 95% confidence limits and the NOEL to be 17 mg/l. There was one deviation from the EPA's Standard Evaluation Procedure. Dechlorinated tap water was used instead of the recommended reconstituted water and the holding period was only 4 days instead of the recommended 1-2 weeks. The chlorine residue levels were monitored during the test and determined to be low. This deviation should not have caused a significant change in the test results. This study is scientifically sound and meets the EPA requirements for a core study. This study indicates that Dichlormid has practically no effect on rainbow trout.
8. RECOMMENDATIONS: N/A
9. BACKGROUND: N/A
10. DISCUSSION OF INDIVIDUAL TESTS: N/A
11. METHODS AND MATERIALS:
 - A. Test Organisms:
 - Age/stage of maturity- No age was given.
 - Size- .46-.86 grams and 34-41 mm. long
 - Sex- Not reported.
 - Source- Zeals Fish Farm, Wiltshire, UK
 - B. Dosage Form:
 - Solvents/vehicles- N/A
 - Route of administration- In water



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C. Referenced Protocol

Test levels- 0, 10, 17, 34, 58, 103, and 194 mg/l
Number per level- 10
Holding/acclimation- 26 days
Test Vessel - Glass aquarium measuring 360x230x230
Feeding- Promin; Fish were not fed during exposure.
Physical condition- All fish were in excellent condition at the initiation of the study.
Test conditions
Temperature- 11.5- 11.8°C
Dissolved oxygen- 6.6-10.4 mg/l
pH/hardness- pH= 6.9-7.7, Hardness= 51.6-54.6 mg/l
Source of dilution water- Dechlorinated tap water.
Static/Renewal/Flow-through- Static
Loading- No greater than .8 g/L
Aeration- no
Photoperiod- No length given. Artificial and natural light used.
Controls- Dilution water
Measured test levels- 0, 10, 17, 34, 58, 103, 194 mg/l
Observation period- 96 hours
Statistical methods- The LC₅₀ was calculated by using C.E. Stephan's method ("Methods for calculating an LC₅₀ IN: Aquatic Toxicology and Hazard Evaluation. 1977.)

12. REPORTED RESULTS:

LC50 - 103 mg/l
NOEL- 17 mg/l
Dose response data - There were no mortalities in the dilution water control or in the mean measured concentrations of 103mg/l or less during the 96 hour exposure period. However, all fish died at the 194 mg/l concentration level within the first 24 hours. A concentration groups 32-180 showed some effect from the dichlormid. The most common observable effect was dark discoloration.
Observation period- 96 hours
Body weight changes- Not recorded
Toxic signs- discoloration
Temperature- 11.5-11.8
Dissolved oxygen- 6.6-10.4 mg/l
pH/hardness- pH= 6.9-7.7, Hardness= 51.6-54.6 mg/l

13. STUDY AUTHOR'S CONCLUSIONS/QUALITY ASSURANCE MEASURES:

The LC₅₀ was determined to be 103 mg/l and the NOEL was determined to be 17 mg/l. Compliance With Good Laboratory Practice Standards sheet was signed by J. F. Tapp, Study Director on June 25, 1990. The Compliance information states:
This document is not subject to the requirements of 40 CFR Part 160, Final Rule, because the work reported in this study to which provisions of the GLP Standards apply was done prior to October 16, 1989. However, all work was done according to ICIA standard operating procedures and in conformance with the spirits of the FIRFRA Good Laboratory Practice Standards (40 CFR Part 160,

November 29, 1983.)

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

A. Test Procedures: This study is scientifically sound and is generally in accordance with the recommended protocols outlined in the SEP. There were four deviations from the recommended protocols. Dechlorinated tap water held for four days was used in the test. The SEP recommends the use of reconstituted water that is held for one to two weeks. Some fish were slightly below the recommended length of .5 mm (.46). No reference to the age of the fish were given. And the water temperature was slightly under 12°C. However, these deviations should not have caused a significant change in the test results. This study meets the requirements for a core study and indicates that Dichlormid is relatively non-toxic to rainbow trout.

B. Statistical Analysis:

An LC₅₀ can not be determined because there are less than two concentrations that produced mortalities. The approximate LC₅₀ is 141 mg/l. The binomial test shows that 103 and 194 can be used as statistically sound conservative 95 % confidence limits because the actual confidence level associated with these limits is greater than 95 %.

C. Discussion/Results:

D. Adequacy; of Test:

1. Validation Category: This study meets the requirements for a core study.
2. Rationale: This study indicates that Dichlormid is practically non-toxic to Rainbow trout.

15. COMPLETION OF ONE-LINER FOR TEST:

16. CBI APPENDIX: