File No. 128850

DATA EVALUATION RECORD

1. CHEMICAL: Monoammonium-2-amino-4-(hydroxymethyl phosphinyl) butanate

2. FORMULATION: (HOE 39866) technical; 97.4% a.i.

3. CITATION: R. Fischer, 1982. The effect of HOE 39866 on Salmo gairdneri (Rainbow Trout) in a static test. Performed By Hoechst AG, Frankfurt, FRG; submitted by American Hoechst Corp., Somerville, NJ; Registration No. 8340-EUP-RN. Accession No. 072967.

4. REVIEWED BY: John J. Bascietto
Wildlife Biologist
Ecological Effects Branch/HED

5. DATE REVIEWED: November 27, 1984

6. TEST TYPE: Freshwater Fish LC_{50} (96-HR)

A. Rainbow trout, Salmo gairdneri

7. REPORTED RESULTS: 96-hr. LC_{50} > 320 mg/l

8. REVIEWER'S CONCLUSIONS: The study is scientifically sound . ~~However~~, we are unable at this time to validate the LC_{50} estimate of > 320 mg/l. The study does ~~not~~ satisfy a guidelines requirement because data was ~~not~~ provided, ~~nor~~ methodology discussed, on the preparation of stock and working toxicant solutions. ~~Analytical chemistry determinations are needed because excessively large (300 L) test chambers were used.~~ The study can be reconsidered if the following is provided:

a. amounts of toxicant and volumes used to prepare the toxicant solutions (stock and working),

This upgraded to fully acceptable 4-29-85 - John Bascietto

b. analytical chemistry and actual concentrations of toxicant in each vessel at beginning, and middle, and end of the study, not required

c. temperature in each vessel at 0, 24, 72, 96 hours. ✓

9. MATERIALS/METHODS:

A. Test Procedures:

Trout stock were obtained from a hatchery. Fish were kept at 12°C. Mortality over 5 weeks was 0.1%. At time of test fish were 4 months old; mean length 6.06 cm; mean weight 3.48 g (n = 10).

Test water was laboratory supply (tap) filtered by ultrafiltration and deionization unit of charcoal filters before use in tests. Water was reconstituted to EPA "soft": pH = 7.46; total hardness = 45.9 mg/l as $CaCO_3$; total alkalinity = 31.3 mg/l as $CaCO_3$; conductivity = 142 umhos / cm. Instrumentation used was from Wissenschaftlich Technische Werk Staatten Weilheim, Fed. Rep. Germany.

Test used three (3) concentrations: 320, 180 and 100 mg/l, plus a negative control. Replicate concentrations were not used. Fresh stock solutions of test substance were prepared with precision to 0.1 mg and diluted to volume in volumetric glass with dilution water.

Test chambers were 300 L stainless steel tanks containing 150 L of test solution. Fish were randomly introduced into these chambers, to which the toxicant solutions had already been added and mixed. Fish had acclimated to test conditions for 72 hours and had been fasted for 96 hours prior to test (no mortality observed during acclimation period). Ten individuals were placed in each tank; ten fish per concentration (no replicates). Biological Loading was 0.23 g/l.

D.O. and pH were determined initially and at 24-hour intervals for the control and each test vessel. Temperature was recorded continuously. Observations of behavior were made at 24-hour intervals. Death was established by "no visible movements of their gills." Test temperature was 12.2 - 12.8°C.

B. Statistical Analysis:

None.

10. RESULTS:

No mortailty was observed in any control or test vessel. The 96-hr LC_{50} was estimated at > 320 mg/l. No signs of intoxication of any fish were observed.

Water Chemistry

Initial

Dilution H_2O: Reconstituted EPA "soft"

Total Hardness: 45.9 mg/l as $CaCO_3$

Total Alkalinity: 31.2 mg/l as $CaCO_3$

Conductivity: 142 umhos/cm

$\overline{X}$ pH: 7.38

$\overline{X}$ temperature: 12.7°C

End of Test

pH: 7.8

Total hardness: 44.9 mg/l as $CaCO_3$

Total alkalinity: 31.1 mg/l as $CaCO_3$

Conductivity: 144 umhos/cm

D.O. did not fall below 7.36 ppm in any vessel during the test, but most fell in the 8-9 ppm range.

pH fell to 6.8 in the test vessels at 24 hrs, but was recorded at 7.2 - 7.8 in test vessels and controls at 48, 72 and 96-hour readings.

11. REVIEWER'S EVALUATION:

A. Procedures:

Mostly followed EPA Pesticide Assessment Guidelines except for the following deviations:

- Did not report temperature in individual vessels,

- Tests carried out in 300 l. vessels with 150 l. test solutions. EPA protocols are 19 l. vessels with 15 l. test solution. The larger volumes used would be acceptable if the actual (analytical) concentrations of toxicant were determined at the beginning, middle, and end of the study on each test chamber.

- Did not report the actual amounts of chemicals used in preparation of the test toxicant solutions.

B. Statistical Analysis:

None necessary; no mortality

C. Results:

The LC_{50} estimate is to be used cautiously in hazard assessment because EEB is unable, at this time, to validate the exposure.

D. Conclusions

1. Category: ~~Supplemental~~ CORE.

2. Rationale: The test did not report the actual preparation of the toxicant solutions (amounts and volumes used) and used excessively large volume test chambers and test solutions (10X recommended volumes) without reporting the analytical determinations of actual pesticide concentrations in the chambers during the test, nor the temperature data for each vessel.

3. Repair: Provide the missing data. ✓ OK

This had been ~~pro~~ replaced by Acc. No. 256761 Tab C2:3

John Barrett 4/29/85

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a. amounts of toxicant and volumes used to prepare the toxicant solutions (stock and working),

b. analytical chemistry and actual concentrations of toxicant in each vessel at beginning, and middle, and end of the study,

c. temperature in each vessel at 0, 24, 72, 96 hours.

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B. Statistical Analysis:

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