3-25-88

DATA EVALUATION RECORD

1. CHEMICAL: fenvalerate (Asana) SN:109301

2. TEST MATERIAL: TGAI 98.6%

3. STUDY/ACTION TYPE: 21-day Chronic Life-cycle Test
species: Daphnia magna

4. STUDY IDENTIFICATION:

Hutton, D.G., 1987. Chronic toxicity of technical Asana insecticide to Daphnia magna. Report number: 589-87, Prepared by E.I. du Pont de Nemours and Company, Inc., Haskell Laboratory, Newark, DE. Submitted by E.I. du Pont de Nemours and Company, Inc. Newark, DE. Assession No: 404440-01.

5. REVIEWED BY:

David Johnson, Fishery Biologist
Ecological Effects Branch

Signature: David Johnson
Date: 8 March 88

6. APPROVED BY:

Otto Gutenson, Acting Head Section
Ecological Effects Branch
Hazard Evaluation Division

Signature: Otto Gutenson
Date: 3/25/88

7. CONCLUSIONS: The study is judged to be scientifically sound, but the deviations in dissolved oxygen are noted to be a significant shortcoming. The NOEL (52 nanograms/L) and the MATC ($\geq$52ng/L & $\leq$79ng/L) indicate that fenvalerate is extremely toxic to daphnids on a chronic basis.

8. RECOMMENDATION: N/A

9. BACKGROUND: N/A

10. DISCUSSION OF INDIVIDUAL STUDIES OR TESTS: N/A

11. METHODS AND MATERIALS:

Species. Daphnia magna

Size/Age/Physical Condition. Daphnids less than 24h in age were selected from an established culture.

Source. The Daphnids were cultured from laboratory stock.

Food during the test. trout chow, yeast, and alfalfa

Test water

Temperature: 20°C

Water source and chemistry: reconstituted hard water

The properties of the water are:
Hardness- 179mg/L $CaCO_3$
pH- 8.5(new solution), 7.6(old solution)
Dissolved Oxygen- 90%(new solution)
48%(old solutions with acetone)
range 3.0-7.1 mg/L

Aeration: Test solutions were not aerated.

Solvent: acetone

Controls: Controls were run concurrent with the test.

Test System.

Vessel Size/Volume: 250ml/200ml of test solution

Vessel Construction: Glass

Photoperiod: 16h-light/8h-dark

Ten 250ml beakers are used for each toxicant concentration: (a) 7 beakers contain 1 daphnid for collection of data on survival, growth, and reproduction; (b) three beakers at each concentration contain five daphnids each for collection of data on survival only.

Test Levels:
nominal: 30, 60, 120, 250, 500, 1000 nanograms/L
measured: 25, 52, 79, 150, 450, 1200 nanograms/L

Toxic signs. variations in survival, growth, and reproduction

Statistical analysis.
For the chronic toxicity test results, the data from each test concentration were compared to the solvent control using Dunett's test.

12. REPORTED RESULTS:

Chemical Parameters of the Test Solutions included

Data
The data were included with the study report.

Analysis of Test Concentrations Chemical analyses of the test concentrations were performed.

13. STUDY AUTHOR'S CONCLUSIONS/QUALITY ASSURANCE MEASURES:
At measured concentrations of 52 ng/L and below, there were no statistically significant differences between control and treatment groups for any measured parameter. At 79 ng/L measured concentration, the total number of young, young/day, and growth, were significantly less than control values. At 150 ng/L all test parameters were significantly different from control values.

NOEL: EC0: 52 nanograms/L 52ng/L $\leq$ MATC $\leq$ 79ng/L

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

A. Test Procedure.
This study was performed under conditions that generally comply with current Guideline standards, with the one exception that Dissolved Oxygen (DO) was low.

B. Statistical Analysis.

EEB agrees with the statistical method. The study author's calculations match the reviewer's.

C. Results/Discussion.

The study is judged to be sound, although DO was low in several test solutions.

D. Adequacy of the Study: Category: core

15. COMPLETION OF ONE LINER 26 February 1988

FENVALERATE Sh # 109301

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____ Identity of product impurities.

____ Description of the product manufacturing process.

____ Description of quality control procedures.

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____ Sales or other commercial/financial information.

____ A draft product label.

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