30Oct85 10-3-85

DATA EVALUATION RECORD

1. Chemical: Methamidophos (Monitor®)
O,S-Dimethyl phosphoramidothioate

2. Test Material: Monitor 4®; 4 lbs ai/gallon; 40% w/w.

3. Study Type: Static, 96-hour EC_{50}: (Crassostrea virginica), Eastern oyster; shell deposition

4. Study ID: Biospherics, Inc. (1985) Shell Deposition in Eastern Oyster (Crassostrea virginica) Exposed to Monitor 4® in a Static Test System. Submitted by Mobay Chemical Corporation, Stillwell, KS; February 1985. EPA Registration No. 239-2452; EPA Accession No. 258108.

5. Reviewed by: Margaret Rostker
EEB/HED
Signature: Margaret Rostker
Date: 30 Oct 1985

6. Approved by: Harry Craven
EEB/HED
Signature: H. Craven
Date: 10/3/85

7. Conclusions:

The study does not fulfill guideline requirements, nor can the results be used in a hazard assessment.

8. Recommendations:

Study must be re-done, according to guidelines.

9. Background:

Required test under Registration Standard.

10. Discussion of Individual Tests:

N/A

11. Materials and Methods:

a. Test Animals: Crassostrea virginica (Eastern oyster) obtained from Chesapeake Bay Oyster Culture, Shady Side, MD. Mean length (N = 120) = 53.1 mm; age ~ 2 years.

Test System: Static; 37.7-liter glass tanks with 30 liters dilution water (reconstituted salt water). Eight cups(with 2 to 3 oysters per cup) suspended in each tank, to equal 20 oysters per tank.

b. Dose: Static; no solvent.

c. Design: Twenty oysters per dose; 5 dose levels: 100 ppm, 50 ppm, 25 ppm, 12.5 ppm, 6.25 ppm, 0 ppm for control.

d. Stastics: Log growth ratio; linear regression.

12. Reported Results:

The study authors reported a 96-hour EC_{50} = 2.6 ppm for methamidophos toxicity to the Eastern oyster. The reported NOEL < 1.8 ppm. Results are reportedly based on analyzed concentrations of the active ingredient.

13. Study Authors' Conclusions/QA Measures:

96-hour EC_{50} = 2.6 ppm

Statement of QA Inspection provided in report.

14. Reviewer's Discussion and Interpretation of Study:

a. Test Procedures: This study had major deviations from protocols recommended in the guidelines. The most obvious deviation is that this study was a static test, while the guidelines specify a flow-through design. Other major design problems were use of too large of oysters; test oysters were too crowded in the tanks and minimal growth rates were not obtained for the controls. The failure to test specified size oysters, in a flow-through design, at specified biological loading limits resulted in too little growth and hence, an invalid control. The invalid control obscured any real growth effect the test doses may have had.

b. Statistical Analysis: Not examined in detail because test design is invalid.

c. Discussion/Results: This test failed to obtain minimum shell growth for the control oysters. Comparisons of growth obtained in test dose levels to that of the controls is invalid because of the lack of growth in controls.

d. Adequacy of Study:

1. Classification: Invalid
2. Rationale: Refer to 14.a.
3. Repairability: not repairable

15. Completion of One-liner for Study:

September 9, 1985

16. CBI Appendix:

N/A