UNDATED

420953-03
MRID No.

041402
Shaughnessy No.

Data Evaluation Record

MOLINATE, TG

Addendum to 152320
Estaurine/marine toxicity with a Mysid
Guideline Reg. No. 72-3(c)

1. TEST MATERIAL- Molinate, TG

2. STUDY MATERIAL- S-Ethyl hexahydro-1H-azepine-1-carbothioate 98.8% ai W/W.

3. STUDY TYPE- Estaurine/marine toxicity with a Mysid.

Species tested- Mysid (*Mysidopsis bahia*).

4. STUDY IDENTIFICATION:
Hammer, M. 1991. Addendum to MRID No. 152320. D171855. S407738. Case no. 818845.
Ward, G.S. 1984. Acute toxicity of Ordram technical to Mysid shrimp (*Mysidopsis bahia*). Springborn Bionomics. Pensacola FL 32507. Project No. 723.8002. Report No. BP-84-1. Written by S. Irwin. Registrant's Code No. (?) on the Summary title page, Report No. T-11498, RR 90-341B. MRID 152320. Submitted by ICI Americas, Inc., Agricultural Products, Wilmington, Delaware 19897.

5. REVIEWED BY:
James J. Goodyear Signature:
Biologist, Section 1
Ecological Effects Branch Date:
Environmental Fate and Effects Division (H7507C)

6. APPROVED BY:
Leslie W. Touart Signature:
Head, Section 1
Ecological Effects Branch Date:
Environmental Fate and Effects Division (H7507C)

7. CONCLUSIONS- Core.

8. RECOMMENDATIONS- N/A.

1/3

9. BACKGROUND:
EEB classified the original study "Invalid." ICI is seeking an upgrading of the

classification.

10. DISCUSSION OF INDIVIDUAL TEST- N/A.

11. MATERIALS AND METHODS- The same.

12. REPORTED RESULTS:

ICI discussed several minor points of the original DER. They agreed that the salinity was higher but maintain that it was only slightly higher. ICI admits that they fed the Mysids during the test, but only on Day-0 and Day-2 of the test. They state that EEB's recalculated LC_{50} "may be one valid estimate of the LC_{50}." These were not the reasons that EEB ruled the original Invalid.

ICI answered the questions about the pH and D.O. measurements. "Both pH and D.O. were measured using meters, calibrated immediately prior to use. The pH meter was calibrated against buffers at 7.0 and 10.0 and the D.O. meter is seawater saturated using an airstone. The temperature was measured daily in one of the replicate chambers, the raw data shows the results to be 21, 22, 23, 23 and 23°C at 0, 24, 48, 72 and 96 hours, respectively. ICI considers this to be adequate for this type of static study and the fact that temperature was not measured continuously in one chamber does not in any way invalidate the study."

ICI response to EEB's objection to the use of nominal levels was, "This study was conducted using molinate concentration over the range 0.08 - 1 mg/l. The quoted water solubility of molinate is 880/mg/l, approximately three orders of magnitude above the highest concentration tested. In other static studies using both fresh and saltwater, measured concentrations of molinate have been shown to be very close to nominal (87-112%), confirming the validity of this method."

13. STUDY AUTHORS' CONCLUSIONS/QA MEASURES:

The study should be raised to "Core."

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

A. TEST PROCEDURES:

EEB will accept the pH and D.O. measurements.

EEB admits that it was incorrect about feeding the Mysids during the study. Unlike fish, which should not be fed at all, Mysids must be fed *every day*. ICI's statement that they fed the Mysids only twice reveals a discrepancy.

It is precisely because EEB has contradictory information about Molinate's solubility and degradation that it must require measured levels. That is what measured levels are for, to make certain that we know what the actual concentrations are.

Some chemicals have shown instabliity at very low concentrations though they are stable at higher concentrations. There are no approved studies that support the claims for the stability of Molinate at very low concentrations.

ICI has never addressed the problem of Molinate's history of precipitation in aquatic toxicity testing. Simply stating that it doesn't precipitate carries little weight because of

ICI's history of hiding the precipitation. In a study on the American (=Eastern) oyster (*Crassostrea virginica*) Elizabeth Zucker (1985) found that a precipitate had developed at all test concentrations (7.7 to 100 mg/l) even though they used acetone. In a study on the Sheepshead minnow (*Cyprinodon variegatus*), Zucker (1985) found that, "There was insolubility of test material noted for the two highest test concentrations [60 and 100 mg/l, *jg*]." This was true even though they used acetone to dissolve the Molinate.

The study author did not report the precipatate in the text. Zucker noticed it in the appended raw data. Zucker made this study "Supplemental" but with the comment, "Once the registrant explains the solubility situation, the study should be reevaluated as to its acceptability for fulfilling a guideline requirement." The registrant has never attempted to explain the solubility problem.

B. ADEQUACY OF THE STUDY:

Classification - Invalid.

Rational - The concentrations were not measured and other minor errors.
Repair - N/A.

15. COMPLETION OF ONE-LINER FOR STUDY- Yes.

16. CBI APPENDIX- N/A.