

US EPA ARCHIVE DOCUMENT

UNDATED

DATA EVALUATION RECORD

1. **CHEMICAL:** Molinate.
Shaughnessey No. 041402.
2. **TEST MATERIAL:** Ordram 8E; 90.3% active ingredient w/w; Lot No. NH1-0821; an ambe formulated product.
3. **STUDY TYPE:** Marine Shrimp Static Acute Toxicity Test. Species Tested: Mysidopsi
4. **CITATION:** Williams, T.D., J.F. Tapp, S.A. Sankey, and P.A. Johnson. 1990. Mol Determination of Acute Toxicity of the Formulation Ordram 8E to Mysid Shrimp (My). Report No. BL3802/B. Prepared by ICI PLC, Brixham, Devon, UK. Submit Agrochemicals, Haslemere, Surrey, UK. EPA MRID No. 416136-09.
5. **REVIEWED BY:**

Mark A. Mossler, M.S. **Signature:**
Associate Scientist
KBN Engineering and **Date:**
Applied Sciences, Inc.
6. **APPROVED BY:**

Louis M. Rifici, M.S. **Signature:**
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Applied Sciences, Inc.

Henry T. Craven, M.S. **Signature:**
Supervisor, EEB/HED
USEPA **Date:**
7. **CONCLUSIONS:** This study is scientifically sound and satisfies the guideline requ static acute toxicity test for marine shrimp. The 96-hour LC₅₀ of Ordram 8E f was 3.4 mg/L (based on mean measured concentrations). Therefore, Ordram 8E is c moderately toxic to mysid shrimp. The NOEC, based on the lack of mortality effects, was estimated as 1.7 mg/L.
8. **RECOMMENDATIONS:** N/A.
9. **BACKGROUND:**
10. **DISCUSSION OF INDIVIDUAL TESTS:** N/A.
11. **MATERIALS AND METHODS:**

A. **Test Animals:** Less than 24 hour-old mysid shrimp (Mysidopsis bahia) were r in-house. The parental shrimp originally came from Sea Plantations, Inc This supplier stated that the original cultures came from the USEPA L Narragansett, RI. The shrimp were maintained in culture tanks under the t throughout rearing. The shrimp were fed newly hatched brine shrimp daily

good condition at test initiation.

- B. Test System:** Vessels used in the test were covered glass beakers with loos containing 1000 mL of water (control) or test solution. The vessels positioned in a temperature-controlled room (25 ±1°C) with a 16-hr lig photoperiod. The dilution water was natural seawater from Tor Bay, Devo diluted with distilled water to adjust the salinity to 20 ±2% parts per t water was filtered (1 ?m) prior to use. The test concentrations were pre appropriate amounts of stock solution (100 mg/L) directly to the test chamb
- The shrimp were fed 10-20 brine shrimp nauplii per mysid per day during the
- C. Dosage:** Ninety-six-hour static test. Seven nominal concentrations (0.56, 5.6, 10, and 18 mg/L) and a dilution water control were used. The concen were based on total product.
- D. Design:** Ten mysids were randomly allocated to a single vessel for each tes concentration and dilution water control. All chambers were observed o hours for mortality, which was considered the absence of life when viewed shrimp were removed at the daily observations. Samples of the test soluti at 0, 48, and 96 hours for chemical analysis of molinate.
- E. Statistics:** The 96-hour median lethal concentration (LC₅₀) and associated confidence interval (C.I.) was calculated using the moving average test.
12. **REPORTED RESULTS:** The mean measured values for the formulation ranged from 94 to of nominal values in the test vessels (Table 1, attached). The mortality respo shrimp are given in Table 2 (attached). The 96-hour LC₅₀, based on mean concentrations, was 3.4 mg/L (95% C.I. = 2.5-4.8 mg/L). The no-observed-effect (NOEC), based on the lack of mortality and abnormal effects, was 1.7 mg/L after 9
- The initial pH was 8.0 to 8.18 and the final pH was between 7.98 and 8.0. The d was 7.4 mg/L (89% of saturation) at test initiation and 7.2-7.5 (87-90% of s termination. Salinity ranged from 19.9-20.3 ppt throughout the test. Temp between 24.0-25.0°C throughout the test.
13. **STUDY AUTHOR'S CONCLUSIONS/QUALITY ASSURANCE MEASURES:**
The authors presented no conclusions.
- Quality Assurance and Good Laboratory Practice Compliance Statements were inclu report, indicating that the study was conducted in accordance with FIFRA Goo Practice Standards set forth in 40 CFR Part 160.
14. **REVIEWER'S DISCUSSION AND INTERPRETATION OF STUDY RESULTS:**
- A. Test Procedure:** The test procedures were generally in accordance with prot recommended by the guidelines, but deviated from the SEP as follows:
- A 30-minute dawn and dusk simulation period is recommended in the transition period was not used in the study.
- Each selected nominal concentration was between 56% and 57% of th highest concentration. The SEP recommends that each concentration b the next highest concentration.
- The report did not state the time period between test solution pre

shrimp addition.

No weight, length, or loading for the shrimp was stated in the report

The salinity and pH of the test solutions were 19.9-20.3 ppt and respectively. The recommended values for salinity and pH are 30-38.0-8.3 or 10-17 ppt and 7.7-8.0, respectively.

The test temperature (24.0-25.9°C) was higher than recommended (22°C)

B. **Statistical Analysis:** The reviewer used EPA's Toxanal program to calculate the LC₅₀ value and obtained similar values to the authors' (see printout). The slope of the probit analysis was 5.4.

C. **Discussion/Results:** Although the weight, length and loading were not reported, it was stated that the mysid shrimp used were less than 2. Therefore, the maximum loading rate of 0.5 g was probably not reached

This study is scientifically sound and satisfies the guideline requirement static acute toxicity test. The 96-hour LC₅₀ of 3.4 mg/L (based on measured concentrations) classifies Ordram 8E as moderately toxic to shrimp. The NOEC can be estimated as 1.7 mg/L.

D. **Adequacy of the Study:**

(1) **Classification:** Core.

(2) **Rationale:** N/A.

(3) **Repairability:** N/A.

15. **COMPLETION OF ONE-LINER FOR STUDY:** Yes, 6-12-91.