9-26-91

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DPBARCODE (RECORD)
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SHAUGHNESSY NO

REVIEW NO.

EEB REVIEW

DATE IN: 08-22-91 OUT:

CASE # : 809333 REREG CASE #: 2405
SUBMISSION # : S401175 LIST B
ID # : 068103-045639

DATE OF SUBMISSION 03-22-91

DATE RECEIVED BY EFED 08-21-91

SRRD/RD REQUESTED COMPLETION DATE 10-29-91

EEB ESTIMATED COMPLETION DATE 10-29-91

SRRD/RD **ACTION** CODE/TYPE OF REVIEW 606 - Data Review

MRID #(S) 418193-02

**DP TYPE** 101 - Phase IV Review

PRODUCT MANAGER, NO. B. Briscoe (51)

PRODUCT NAME(S) MITC (methyl isothiocyanate)

TYPE PRODUCT F R I N H D Soil fumigant/nematicide

COMPANY NAME NOR-AM

SUBMISSION PURPOSE Review data in support of

INCLUDE USE(S) reregistration

COMMON CHEMICAL NAME Methyl isothiocyanate

BRANCH REVIEW

PESTICIDE NAME: MITC

100.0 Submission Purpose:

Submission of a freshwater invertebrate study in support of reregistration.

100.2 Formulation:

95.0% a.i.

100.4 Test Organism:

Daphnia magna

101.4 Adequacy of Toxicity Data:

This study indicates MITC is very highly toxic to Daphnia magna with an $EC_{50}$ of 55 ppb and the NOEC was 14 ppb based on mean measured concentrations. This study does fulfill the requirement in support of registration for a freshwater invertebrate study.

Curtis E. Laird 9-18-91
Curtis E. Laird, Fishery Biologist
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Allen W. Vaughan 9.24.91
Allen Vaughan, Acting Head-Section 2
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Douglas Urban 9/26/91
Douglas Urban, Acting Chief
Ecological Effects Branch
Environmental fate and Effects Division (H7507C)

DATA EVALUATION RECORD

1. Chemical: MITC

2. Test Material: 95.0% a.i.

3. Test Type: 48-Hour $EC_{50}$

Test Species: Daphnia magna

4. Study identification:

Schupner, J.K. (1991) Acute Toxicity of MITC To Daphnia magna In A Flow-Through System; Study No. 500 AF; Prepared By Nor-Am Chemical Company for Nor-Am Chemical Company, Route 2, County Road 1324, Pikeville, NC 27863; Acc. No. 418193-02.

5. Reviewed By:

Curtis E. Laird
Fishery Biologist
EEB/EFED

Signature: Curtis E. Laird
Date: 9-18-91

6. Approved By:

Allen Vaughan, Acting
Supervisory Biologist
EEB/EFED

Signature: Allen W. Vaughan
Date: 9.24.91

7 Conclusions:

This study indicates MITC is very highly toxic to Daphnia magna with an $LC_{50}$ of 55 ppb. This study does fulfill the requirement in support of registration for a freshwater invertebrate.

8. Recommendations: N/A

9. Background:

This study was submitted in support of reregistration.

10. Discussion of Individual Test:

This stock concentration was selected based on previous trials where the loss of MITC from the test system during the dilution cycle was apparent (approximately 30 to 40%). This loss is due to the highly volatile nature on MITC.

11. Material Tested:

A. Test Animals:

Test animals were < 24-hour old daphnids from laboratory stock (Aquatic Resarch Organisms, Hampton, New Hamshire).

B. Test Design:

Daphnids were tested in 250 ml glass beakers; 22 turnovers per day; temperature was 20.5$_0$C; pH was 7.3 ; D.O. was 9.1 mg/L and photoperiod was 16L/8D.

C. Dose:

20 daphnids per dose level; five dosage levels plus both negative and positive controls (0, acetone, 8, 14, 24, 45 and 64 ppb).

D. Statistical Analysis:

Probit Analysis

12. Reported Results:

The study author found the 48-hour $EC_{50}$ to be 55 ppb. The NOEC was 14 ppb.

13. Study Author's Conclusions/QA Measures:

The Quality Assurance Officer stated that "this study was conducted in accordance with the Good Laboratory Practice as defined in 40 CFR, Part 160."

14. Reviewer's Discussion and Interpretation on The Study:

A. Test Procedure:

The test procedure followed the recommended EPA protocal of October 1982.

B. Statistical Analysis:

The statistics were verified with Stephan's Computer Program as 55 ppb.

C. Discussion/Results:

MITC is very highly toxic to Daphnia magna with an $EC_{50}$ of 55 ppb. The NOEC was 14 ppb.

D. Adequacy of Study:

1. Category: Core
2. Rationale: N/A
3. Reparability: N/A

15. Completion of One-Liner for study: Yes

16. CBI Appendix: N/A