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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

May 20, 1996

OFFICE OF
PREVENTION, PESTICIDES, AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Review of *Daphnia magna* Life-Cycle Test
(Sha.# 108801, DPBarcode D219942; ID#108801)

FROM: Anthony F. Maciorowski, Chief
Ecological Effects Branch
Environmental Fate and Effects Division (7507C)

TO: Jane Mitchel, (PM 71)
Product Manager
Special Review and Reregistration Division (7508W)

EEB has received and reviewed the *Daphnia magna* Life-Cycle Chronic Toxicity Study submitted by the Ciba-Geigy Corporation to support the reregistration of Metolachlor. The following is a brief summary of the review:

CITATION: Putt, Arthur E., 1995, Metolachlor Technical - The Chronic Toxicity to *Daphnia magna* Under Flow-Through Conditions, performed by Springborn Laboratories, Inc., Wareham, MA, submitted by Ciba-Geigy Corporation, Greensboro, NC, Laboratory Report ID: 95-8-6061, MRID No.: 438026-01.

CONCLUSIONS: This study is scientifically sound but **does not fulfill** the guideline requirements (72-4(b)) for a freshwater invertebrate life-cycle test using *Daphnia magna*. The integrity of this study is questionable since measured concentrations were highly variable at all treatment levels throughout the study. The highest measured concentration was as much as 3.7 times higher than the lowest measured concentration within the same treatment level which exceeded the rejection rate criteria of 1.5 times. The study did not include raw growth data thus the growth data statistics could not be verified. This factor, plus the variability in the measured Metolachlor concentration, resulted in the classification of the study as supplemental. This study is not upgradable but does not need to be repeated at this time contingent upon the registrants acceptance of the NOEC LOEC and MATC values of 3.2, 6.9, and 4.7, respectively, based on growth and reproduction and the lowest measured concentration of each treatment level.

REPAIRABILITY: No

If you have any questions regarding this review, please contact Harry A. Winnik, Biologist, 305-7089

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DATA EVALUATION RECORD
AQUATIC INVERTEBRATE LIFE CYCLE TEST
GUIDELINE 72-4(B)

1. **CHEMICAL:** Metolachlor — PC Code No.: 108801

2. **TEST MATERIAL:** Metolachlor Technical — Purity: 97%

3. **CITATION:**

Authors: Arthur E. Putt
Title: Metolachlor Technical - The Chronic Toxicity to *Daphnia magna* Under Flow-Through Conditions
Study Completion Date: September 22, 1995
Laboratory: Springborn Laboratories, Inc., Wareham, MA
Sponsor: Ciba-Geigy Corporation, Greensboro, NC
Laboratory Report ID: 95-8-6061
MRID No.: 438026-01
DP Barcode: D219942

4. **REVIEWED BY:** Harry A. Winnik, Biologist, EFED/EEB — **Signature:** **Date:** 6/8/96

5. **APPROVED BY:** Henry Craven, Supervisory Biologist, EFED/EEB — **Signature:** **Date:** 6/29/96

6. **STUDY PARAMETERS:**

Age of Test Organism: ≤24 hours
Definitive Test Duration: 21 days
Study Method: Flow-Through
Type of Concentrations: Mean Measured

7. **CONCLUSIONS:** This study is scientifically sound but **does not fulfill** the guideline requirements (72-4(b)) for a freshwater invertebrate life-cycle test using *Daphnia magna*. The integrity of this study is questionable since measured concentrations were highly variable at all treatment levels throughout the study. The highest measured concentration was as much as 3.7 times higher than the lowest measured concentration within the same treatment level which exceeded the rejection rate criteria of 1.5 times. The study did not include raw growth data thus the growth data statistics could not be verified. This factor, plus the variability in the measured Metolachlor concentration, resulted in the classification of the study as supplemental. This study is not upgradable but does not need to be repeated at this time contingent upon the registrants acceptance of the NOEC LOEC and MATC values of 3.2, 6.9, and 4.7 ppm, respectively, based on growth and reproduction and the lowest measured concentration of each treatment level.

Results Synopsis: Based on the lowest measured concentration of each treatment level, the following values will be considered valid for this study:

NOEC: 3.2 ppm **LOEC:** 6.9 ppm **MATC:** 4.7 ppm

8. **ADEQUACY OF THE STUDY:**

A. **Classification:** supplemental

B. **Rationale:** The acceptable values are based on the lowest measured concentration of each treatment level.

C. **Repairability:** No

9. **GUIDELINE DEVIATIONS:** Since there is no EPA's SEP for a flow-through daphnid life-cycle test, the SEP for static renewal tests was used as a general guidance in this data validation.

1. The measured concentrations of test material in the exposure solutions were highly variable at all treatment levels throughout the study. The highest measured concentration was as much as 3.7 times higher than the lowest measured concentration within the same treatment level.

2. Individual growth data were not included in the report; therefore, the reviewer could not verify the author's conclusions.

10 **SUBMISSION PURPOSE:**

11. **MATERIALS AND METHODS:**

A. **Test Organisms/Acclimation:**

Guideline Criteria	Reported Information
Species *Daphnia magna*	*Daphnia magna*
Source	In-house culture