ANY

DATA EVALUATION RECORD PAGE 1 OF

CASE: GS0333 FENAMIPHOS

CONT-CAT: 01 GUIDELINES:

MRID: 25960

Nelson, D.L.; Burke, M.A. (1977) Acute Toxicity of Nemacur Technical to Daphnia magna: Report No. 54047. (Unpublished study received March 28, 1979 under 3125-236; submitted by Mobay Chemical Corp., Kansas City, MO; CDL:237905-G).

REVIEW RESULTS:

VALID____ INVALID X INCOMPLETE____

GUIDELINE: SATISFIED ___ PARTIALLY SATISFIED ___ NOT SATISFIED X

DIRECT RVW TIME = START DATE: END DATE:

REVIEWED BY: Richard W. Felthousen

TITLE: Wildlife Biologist

ORG: EEB/HED

LOC/TEL: 557-1392

SIGNATURE: DATE: 12/03/86

APPROVED BY: O. Gutenson

TITLE: Acting Registration Standard Coordinator

ORG: EEB/HED

LOC/TEL:

SIGNATURE: DATE: 12/21/87

The study is scientifically sound; however, it does not fulfill the data requirement for an acute aquatic invertebrate LC_{50} study because it does not follow EPA proposed guidelines. Study deficiencies include number of animals/dose and 2nd instars were used as well as 1st instars.

5 pages

DATA EVALUATION RECORD

1. CHEMICAL: Nemacur

2. FORMULATION: 88% Technical

3. CITATION: Nelson, D.L. and M.A. Burke (1977) Acute Toxicity of Nemacur Technical to Daphnia magna. Unpublished report No. 54047 submitted by Mobay Chemical Corporation, Kansas City, MO.

4. REVIEWED BY: L.W. Touart, Fisheries Biologist
Fisheries Biologist
EEB/HED

5. DATE REVIEWED: 12/17/79

6. TEST TYPE: 48 hr Aquatic Invertebrate LC_{50}

A. TEST SPECIES: Daphnia magna

7. REPORTED RESULTS: Under the conditions of this study, the 48 hr LC_{50} of Nemacur Technical to Daphnia was determined to be 1.6 ppb with 95% confidence limits of 1.3 to 1.9 ppb.

8. REVIEWERS CONCLUSIONS: The study is scientifically sound but does not follow the recommended protocol in EPA proposed guidelines of July 1978. The study does not fulfill the requirements for an acute Aquatic Invertebrate LC_{50} study on Daphnia.

Materials/Methods

Daphnia magna in the 1st and 2nd instar were used in this test. The testing vessels were pint jars filled with 300 mls of reconstituted medium hard water. Ten Daphnia were exposed to each concentration. Test levels included concentrations of 1.0, 1.47, 2.16, 3.18, 4.67 and 6.86 ppb with a negative contol. The water in the test vessels was at a temperature of 75° F. The test animals were not fed during the 48 hr. testing period. The LC_{50} was calculated by the method of Carol S. Weil, Biometrics Vol. 8, No. 3.

Discussion/Results

Concentration (ppb)	Mortality No. of Deaths/No. Tested	Time
Control	0/10	48 hrs.
1.0	0/10	
1.47	5/10	
2.16	8/10	
3.18	9/10	
4.67	10/10	
6.86	10/10	

A 48 hr. LC_{50} for Daphnia magna exposed to Nemacur Technical was determined to be 1.6 ppb with 95% confidence limits of 1.3 - 1.9 ppb. Irregular swimming and immobility were observed as signs of toxicity and mortality was recorded when all movements ceased. At the 1 ppb level 80% of the test animals exhibited signs of toxicity.

Reviewers Evaluation

A. Test Procedures

The test protocol did not follow the recommended EPA 1978 protocol. Test animals should be entirely in the 1st instar. Additionally, all environmental conditions should be reported for Aquatic Invertebrate Tests.

B. Statistical Analysis

The reported LC_{50} value was verified with the probit method. See attached.

C. Discussion/Results

The computed LC_{50} was 1.67 ppb with 95% confidence limits of 1.35 and 2.02 ppb.

D. Conclusions

1. Category: Supplemental

2. Rationale: Test animals not in appropriate instar.

3. Repairability: No.

```
RUN COMPLETE.

IDLE.
9000 DATA 6
9001 DATA 6.86,4.67,3.18,2.16,1.47,1.0
9002 DATA 10,10,10,10,10,10
9003 DATA 10,10,9,8,5,0
RUN

 79/12/17.  12.07.50.
BASIC     PROGRAM   S79LC50

**********************************************************************
CONC.          NUMBER          NUMBER          PERCENT         BINOMIAL
               EXPOSED         DEAD            DEAD            PROB.(PERCEN
 6.86           10              10              100             9.76563E-2
 4.67           10              10              100             9.76563E-2
 3.18           10              9               90.             1.07422
 2.16           10              8               80.             5.46875
 1.47           10              5               50              62.3047
 1              10              0               0               9.76563E-2

THE BINOMIAL TEST SHOWS THAT  1  AND  3.18  CAN BE
USED AS STATISTICALLY SOUND CONSERVATIVE 95 PERCENT
CONFIDENCE LIMITS SINCE THE ACTUAL CONFIDENCE LEVEL
ASSOCIATED WITH THESE LIMITS IS GREATER THAN 95 PERCENT.


AN APPROXIMATE LC50 FOR THIS SET OF DATA IS  1.47


---------RESULTS CALCULATED USING THE MOVING AVERAGE METHOD
SPAN            G               LC50            95 PERCENT CONFIDENCE LIMIT
 3               .167735         1.66737         1.35202         2.00193


---------RESULTS CALCULATED USING THE PROBIT METHOD
ITERATIONS      G               H               GOODNESS OF FIT PROBABILITY
 6               .224037         1               .607085

SLOPE  =         6.22477
95 PERCENT CONFIDENCE LIMITS = 3.27843    AND    9.17112

LC50  =          1.66911
95 PERCENT CONFIDENCE LIMITS  =   1.35006    AND    2.02356
**********************************************************************


SRU      1.303 UNTS.

RUN COMPLETE.


BYE

ZZZ6944   LOG OFF    12.09.41.
ABKI033   SRU      2.655 UNTS.
```

54047
Daphnia magna
48 hr LC50