10-8-91

Data Evaluation Record

1. Chemical: F6285 (2-(2,4-dichloro-5-methylsulfonylamidophenyl)-4-difluoromethyl-2,4-dihydro-5-methyl-3H-1,2,4-triazol-3-one) Shaughnessy No.:129081

2. Test Material: F6285, 94.3% a.i., lot #21-89-1403, EF301-72, CAS#122836-35-5, a cream-colored powder.

3. Study type: Freshwater Fish 96-hour Acute Toxicity

Test Species: Bluegill sunfish (Lepomis macrochirus)

4. Study ID: Graves, William C., and Peters, Gregory T. F6285: A 96-hour flow-through acute toxicity test with the bluegill, Lepomis macrochirus. Performed by Wildlife International, 305 Commerce Drive, Easton, MD 21601 for the FMC Corporation. WI study ID #104A-104. FMC Study #A89-3061. **MRID #419116-21.**

5. Reviewed by: Kathryn Valente, Biologist, EEB/EFED — Signature: Kathryn F. Valente Date: 10/7/91

6. Approved by: Allen Vaughan, Acting Head, Section II, EEB/EFED — Signature: Allen W. Vaughan Date: 10.8.91

7. Conclusions: The study is scientifically sound. With an LC_{50} of 93.8 mg/L, the test material is considered to be slightly toxic to freshwater fish. The NOEL could not be determined. The study is classified as core.

8. Recommendations: N/A

9. Background information: This study was submitted in support of an Experimental Use Permit for F6285.

10. Discussion of Individual Tests: N/A

11. Materials and Methods:

a. Test animals: Bluegill were obtained from Delmarva Ecological Labs in Middletown, DE. All bluegill were held for 22 days prior to testing. The test fish were held without food for 48 hours before testing and throughout the test period. The fish were acclimated to the test conditions for 52 hours prior to the test. The control fish had a mean length of 28 mm and a mean weight of 0.442 g, and were believed to be representative of the entire test lot. The biomass loading rate was 0.29 g/L.

b. Test system: Tests were conducted in 25L polyethylene

aquaria. Each aquarium was placed in a water trough with a controlled temperature of 22 +/- 1° C. The temperature of one aquarium was measured continuously throughout the test. The water in the beakers had a mean temperature of 22 +/- 1° C, and pH 8.2. The nominal exposure levels of F6285 were: control, dimethyl formamide control, 15.6, 25.9, 43.2, 72.0 and 120 mg/L.

c. Study design: Five treatments, a control and a solvent control were used, each with two replicates of ten bluegill. Observations for mortality and sublethal effects were made daily throughout the exposure period. Analytical water samples were taken at 0 and 96 hours. Temperature was measured continuously in one of the test beakers. Additional temperature, and pH DO measurements were taken every 24-hr during the test period.

d. Statistics: Data were analyzed for daily LC_{50} and 95% confidence interval values using a computer program, which has three methods available: probit analysis, moving average angle analysis and binomial probability. The binomial method was used to calculate the LC_{50} for this set of data.

12. Reported Results: The mean measured concentrations of F6285 were: 17.2, 29.5, 47.4, 82.4 and 134.0 mg/L. There was one mortality in the negative control, one at the 29.5 mg/L level, 5 (25%) at the 82.4 mg/L level and 20 (100%) at the 134.0 mg/L level. One fish at the 17.2 mg/L level became discolored during the test. One fish at 29.5 mg/L showed abnormal behavior (surfacing, discoloration and loss of equilibrium) beginning at 70 hours.

13. Study Author's Conclusions/Quality Assurance Report: The LC_{50} value was 93.8 mg/l (95% confidence interval of 82.4-134.0). No slope was reported. The NOEL could not be accurately determined due to the observation of sublethal effects at the lowest level tested. Based on these values, F6285 is classified as slightly toxic to bluegill.

Quality Assurance and Good Laboratory Practice statements were included in the report. One exception to GLP was noted: analyses for stability, purity and composition of the test material have been completed, but the results have not yet been reported.

14. Reviewer's Discussion and Interpretation of the Results:
a. Test Procedure: The test design and procedure were in accordance with protocols recommended by the Guidelines. A NOEL could not be accurately determined because of the sublethal effect seen at 17.2 mg/L, the lowest level tested. There were also abnormal effects seen at the next highest

level (29.5 mg/L), but no abnormal effects were seen at 47.4 mg/L.

b. Statistical Analysis: The LC_{50} was calculated using EPA's Toxanal computer program. The binomial method was used to analyze the data. The LC_{50} was determined to be 93.9 mg/L with a 95% confidence interval of 82.4 to 134, which is in agreement with the reported results. The slope of the dose-response curve was determined to be 6.37 using the probit method, but this value is not reliable due to low probability.

c. Discussion/Results: The study is scientifically sound and in accordance with the Guidelines. It is classified as core.

d. Adequacy of the study:
(1) Classification: Core
(2) Rationale: N/A
(3) Repairability: N/A

NOTE: THERE WAS CONTROL MORTALITY, BUT AT LEAST ONE
OF THE LOWER CONCENTRATIONS HAD ZERO MORTALITY.
THEREFORE, ABBOTT'S CORRECTION IS NOT APPLICABLE.

Valente F6285 Bluegill acute

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(PERCENT)
134	20	20	100	9.536742E-05
82.4	20	5	25	2.069473
47.4	20	0	0	9.536742E-05
29.5	20	1	5	2.002716E-03
17.2	20	0	0	9.536742E-05

THE BINOMIAL TEST SHOWS THAT 82.4 AND 134 CAN BE
USED AS STATISTICALLY SOUND CONSERVATIVE 95 PERCENT
CONFIDENCE LIMITS, BECAUSE THE ACTUAL CONFIDENCE LEVEL
ASSOCIATED WITH THESE LIMITS IS GREATER THAN 95 PERCENT.

AN APPROXIMATE LC50 FOR THIS SET OF DATA IS 93.91531

THE MOVING AVERAGE METHOD CANNOT BE USED WITH THIS DATA SET
BECAUSE NO SPAN WHICH PRODUCES MOVING AVERAGE ANGLES THAT
BRACKET 45 DEGREES ALSO USES TWO PERCENT DEAD BETWEEN 0 AND
100 PERCENT.

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
9	5.77038	14.41082	0

A PROBABILITY OF 0 MEANS THAT IT IS LESS THAN 0.001.

SINCE THE PROBABILITY IS LESS THAN 0.05, RESULTS CALCULATED
USING THE PROBIT METHOD PROBABLY SHOULD NOT BE USED.

SLOPE = 6.369852
95 PERCENT CONFIDENCE LIMITS =-8.931562 AND 21.67127

LC50 = 87.70392
95 PERCENT CONFIDENCE LIMITS = 0 AND +INFINITY

LC10 = 55.41692
95 PERCENT CONFIDENCE LIMITS = 0 AND +INFINITY

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