101101
SHAUGHNESSY NO.

REVIEW NO.

EEB BRANCH REVIEW

DATE: IN 8-8-85 OUT 9-16-85

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PETITION OR EXP. PERMIT NO.

DATE OF SUBMISSION 5-3-85

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RD ACTION CODE/TYPE OF REVIEW 660/Reg. Std. Follow-up

TYPE PRODUCT(S): I, D, H, F, N, R, S Herbicide

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. R. Taylor (25)

PRODUCT NAME(S) Sencor

COMPANY NAME Mobay Chemical Corporation

SUBMISSION PURPOSE Submission of data relating to Registration Standard

SHAUGHNESSY NO.	CHEMICAL & FORMULATION	% A.I.
101101	Metribuzin	93.2

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

SEP 19 1985

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: EEB Evaluation of Acute Toxicity Data on Freshwater Fish Submitted to Support the Registration of Metribuzin. (EPA Accession No. 257920)

FROM: Elizabeth E. Zucker
Wildlife Biologist
Ecological Effects Branch
Hazard Evaluation Division (TS-769)

TO: Robert Taylor
Product Manager (25)
Registration Division (TS-767)

THRU: David Coppage
Section Head (3)
Ecological Effects Branch
Hazard Evaluation Division (TS-769)

and

Michael Slimak
Branch Chief
Ecological Effects Branch
Hazard Evaluation Division (TS-769)

Mobay Chemical Corporation submitted 96-hour LC_{50} data on rainbow trout exposed to technical metribuzin. EEB has evaluated the test report and concludes:

Study Identification:

Herman, N. May 6, 1982. Fish Toxicity. Bayer Report. Dr. He No. FF-137. Mobay AgChem No. 80970. Prepared by Bayer Ag for Mobay Chemical Corp. Kansas, City, Missouri. EPA Accession No. 257920.

2

Conclusions:

The study may not be used to fulfill a guidelines requirement for an acute toxicity test on a coldwater fish species. This is mainly because the test system was aerated. Volatilization of toxicant may have occurred, thus fish may not have been exposed to nominally designated concentrations. Also, test temperature was 4 °C higher than recommended, only four toxicant concentrations were used, the amount of solvent utilized was not reported, and acclimation procedures and method of monitoring temperature were not described.

The guidelines requirement for an acute toxicity study on a coldwater fish species using the technical product was previously fulfilled by data reviewed under the Registration Standard process for metribuzin (Citation: Lamb 1972).

DATA EVALUATION RECORD

1. Chemical: Metribuzin

2. Test Material: 93.2% active ingredient

3. Study Type: Acute toxicity study on a coldwater fish species. Species tested: Rainbow trout (*Salmo gairdneri*)

4. Study ID: Hermann. May 6, 1982. Fish Toxicity. Bayer Report Dr. He No. FF-137. Mobay AgChem No. 80970. Prepared by Bayer Ag for Mobay Chemical Corp. Kansas City, Missouri. EPA Accession No. 257920.

5. Reviewed by: Elizabeth E. Zucker, Wildlife Biologist, EEB/HED — Signature: Date:

6. Approved by: David Coppage, Supervisory Biologist, EEB/HED — Signature: Date:

7. Conclusions:

This study may not be used to fulfill a guidelines requirement for an acute toxicity test on a coldwater fish species. This is mainly because the test system was aerated. Volatilization of toxicant may have occurred, thus fish may not have been exposed to nominally designated concentrations. Also, the test temperature was 4 °C higher than recommended, only four toxicant concentrations were used, amount of solvent utilized was not reported, and acclimation procedures and method of monitoring temperature were not described.

8. Recommendations: N/A

9. Background:

This study was submitted to support the registration of Metribuzin.

10. Discussion of Individual Test: N/A

11. Materials and Methods:

a. Test Procedures: Rectangular glass containers holding 15 liters of test medium were utilized. Fish were 3 to 4.5 cm long and weighed approximately 0.75 grams. There were 10 fish per aquarium. Test material was dissolved in acetone at test concentrations of 0, 43, 57, 75, 100 mg/l.

Tap water was filtered through activated carbon and adjusted to a hardness of 273 ppm ($CaCO_3$). The test system was aerated. Food was withheld for 24 hours prior to testing and throughout the test. Symptoms of toxicity were noted daily.

b. Statistical Analysis: The results were analyzed according to Fink et al. Drug Res. 15:29 (1965).

12. Reported Results:

	Results (no. died/no. with symptoms/no. tested)			
Conc (mg/l)	24 hrs	48 hrs	72 hrs	96 hrs
Solvent Control	0/0/20	0/0/20	0/0/20	0/0/20
43	0/10/10	0/10/10	0/10/10	0/10/10
57	1/10/10	3/10/10	3/10/10	3/10/10
75	1/10/10	7/10/10	8/10/10	8/10/10
100	8/10/10	10/10/10		

Symptoms: fish on bottom, lying on side

D.O. ranged between 9.9 and 7.3 mg/l.
pH ranged between 7.4 and 7.9.
Water temperature was 16 °C.

13. Study Author's Conclusions:

96-hour LC_{50}: 64(56-72) mg/l
(Confidence interval: P = 5%)

5

14. Reviewer's Discussion and Interpretation of the Study:

a. Test Procedures: This study was performed under conditions that deviated substantially from current testing standards. Notable deviations include:

1. The test system was aerated.
2. Temperature was 4 °C higher than recommended.
3. Only four dosage levels were tested.
4. Amount of solvent utilized was not reported.
5. Acclimation procedures were not reported.
6. Methodology for monitoring temperature was not described.

b. Statistical Analysis: This study is categorized as invalid mainly due to aeration (potential loss of toxicant from volatilization). Analysis was not performed.

c. Discussion/Results: The study is categorized as invalid mainly because the test system was aerated. Volatilization of toxicant may have ocurred, thus fish may not have been exposed to nominally designated concentrations.

d. Adequacy of Study:

1. Classification: Invalid
2. Rationale: The study was categorized invalid mainly because the test system was aerated. However, other factors listed under Section 14 were also considered.
3. Repairability: None