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Date Out of EFGWB: FEB 7 1989

TO: R. Taylor/V. Walters, PM 25
Registration Division (TS-769C)

FROM: Emil Regelman, Supervisory Chemist
Environmental Chemistry Review Section #2
Environmental Fate and Ground Water Branch/EFED (TS-769C)

THRU: Hank Jacoby, Chief (acting)
Environmental Fate and Ground Water Branch/EFED (TS-769C)

Attached, please find the EFGWB review of . . .

Reg./File #: 325-270

Chemical Name: **Metribuzin**

Type Product: Herbicide

Product Name: Sencor

Company Name: Mobay Chemical Corp.

Purpose: Request for waiver of fish accumulation study requirement.

Date Received: 11-7-88 Action Code: 650

Date Completed: 2-3-88 EFGWB # (s): 90130

Total Reviewing time (decimal days): 1.0 days

Deferrals to: _____ Ecological Effects Branch, EFED

_____ Science Integration & Policy Staff, EFED

_____ Non-Dietary Exposure Branch, HED

_____ Dietary Exposure Branch, HED

_____ Toxicology Branch, HED

1. CHEMICAL: Common name:

Metribuzin

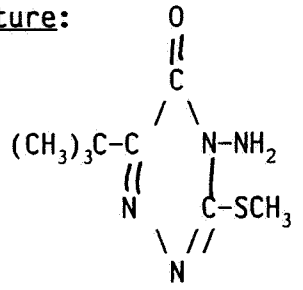
Chemical name:

4-Amino-6-tert-butyl-3(methylthio)-1,2,4-triazin-5(4H)-one.

Trade name(s):

Lexone, Sencor, Sencoral, Sencorex, Bay Dic 1468, Bay 94337.

Structure:



Formulations: Lexone 4L, Lexone DF, Sencor 4, Sencor DF.

Physical/Chemical properties:

Molecular formula:	$C_8H_{14}N_4OS$
Molecular weight:	214.3.
Physical state:	White crystalline solid.
Melting Point:	125-126.5°C.
Solubility:	(20°C): 1.2 g/l water; 820 g/kg acetone; 220 g/kg benzene; 850 g/kg chloroform; 1 kg/kg cyclohexanone; 190 g/kg ethanol; 2 g/kg hexane; 120 g/kg toluene.

2. STUDY/ACTION TYPE:

Request for waiver of fish accumulation study requirement.

3. STUDY IDENTIFICATION:

Letter of G.E. Brussell, Mobay Chem. Corp., to Robert J. Taylor dated June 17, 1986 on the reregistration of Metribuzin Herbicide Products.

4. REVIEWED BY:

A. Reiter, Chemist
Environmental Chemistry Review Section II
EFGWB/EFED/OPP

A. Reiter

Date: February 3, 1989

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5. APPROVED BY:

E. Regelman, Supervisory Chemist
Environmental Chemistry Review Section II
EFGWB/EFED/OPP

Date: FEB 7 1989

6. CONCLUSIONS:

Based upon the submitted information, EFGWB concludes that the registrant's request is justified within the scope of the Environmental Fate Guidelines.

7. RECOMMENDATIONS:

EFGWB recommends the waiver request be granted for the fish accumulation data requirement.

8. BACKGROUND:

A. Introduction:

The Registration Standard for Metribuzin was published in June 1985. In that document a fish accumulation study (Mobay Report No. 33418; EPA Access. Nos. 094868 and 094869) was deemed invalid and a replacement study was required.

In this action Mobay has requested a waiver of the fish accumulation study requirement.

B. Directions for use:

Metribuzin is a selective, triazine herbicide registered for use on a variety of field crop, vegetable crop, turf (bermudagrass), and a terrestrial noncrop (including railroad rights-of-way) sites. Of the total amount of metribuzin applied in the U.S., based on a 1984 estimate, 94% was used on soybeans, with 1.8, 1.5, and 1.2% used on potatoes, wheat, and sugarcane, respectively. Application rates range from 0.13-2.0 lb ai/A on most field and vegetable crops, 2-6 lb ai/A on sugarcane, and 1.0-7.5 lb ai/A on noncrop sites. Metribuzin is only formulated as single active ingredient products. Single active ingredient formulations consist of 50, 70, and 75% WP, and 4 lb/gal FlC. Metribuzin may be applied broadcast or in a band using ground equipment and may also be applied aerially or by sprinkler irrigation systems (potatoes). Metribuzin may be soil incorporated, surface applied, or applied foliarly.

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9. DISCUSSION OF INDIVIDUAL TESTS OR STUDIES:

In an earlier DER, this branch deemed a fish accumulation study submitted by Mobay to be invalid and required a new study. In the current communication (dated June 17, 1986), the registrant requests a waiver for this data requirement, saying that it should never have been required in the first place. They cite the provision in guideline §165.4 that the requirement could be waived if the active ingredient had a relatively low octanol-water partition coefficient (OWPC), i.e., $\leq$1000, and thus presented a relatively low potential for accumulation in fish.

In fact, they reported the OWPC to be 44.9 for metribuzin (citing EPA Accession No. 258448, Report No 86005). Furthermore, although the previously reviewed study was deficient for a number of reasons, it does support this conclusion in that residues were found to have reached a plateau after several days and then rapidly depurated when exposed fish were returned to untreated water.

10. COMPLETION OF ONE-LINER:

No new data were included with this submission. The one-liner was therefore not updated.

11. CBI APPENDIX:

Not applicable to this submission.

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Mobay

Mobay Chemical Corporation

Agricultural Chemicals Division

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June 17, 1986

Mr. Robert J. Taylor
Product Manager (25)
Environmental Protection Agency
Registration Division (TS-767C)
Crystal Mall #2
1921 Jefferson Davis Highway
Arlington, Virginia 2202

Subject: Reregistration of Metribuzin Herbicide Products
SENCOR® Metribuzin Technical, EPA Reg. No. 3125-270
SENCOR 50% Wettable Powder for Repackaging
EPA Reg. No. 3125-305
SENCOR 50% Wettable Powder, EPA Reg. No. 3125-277-AA
SENCOR 70% Wettable Powder, EPA Reg. No. 3125-294
SENCOR 4 Flowable, EPA Reg. No. 3125-314
SENCOR DF 75% Dry Flowable, EPA Reg. No. 3125-325
SENCOR Turf Herbicide, EPA Reg. No. 3125-325

Dear Mr. Taylor:

One of the generic data requirements in the registration standard for metribuzin herbicide is Section 165.4 Laboratory Studies of Pesticide Accumulation in Fish. As set forth in the registration standard document and in the environmental fate data evaluation records, the Agency's reviewers have deemed a previously submitted study (Mobay Report No. 33418 - EPA Accession Nos. 094868 and 094869) to be invalid, and are requiring the submission of a replacement study.

We contend that the fish accumulation study should not be required for metribuzin and we request that the Agency waive this registration standard requirement. While it was our original intention to conduct a new fish accumulation in compliance with the registration standard, we have upon further analysis concluded that the study should not have been required for metribuzin in the first place. Neither the EPA's final Rule on Data Requirements for Pesticide Registration, 40 CFR Part 158, nor the Guidelines for Registering Pesticides in the United States require the submission of a fish accumulation study to support registration of metribuzin herbicide for the reasons given below.

The final rule under 40 CFR Part 158 lists the fish accumulation study as "conditionally required". This rule further states the study is required "...if significant concentrations of the active ingredient and/or its principal degradation products are likely to occur in aquatic environments and may accumulate in aquatic organisms" (emphasis added).

Section 165.4 of the guidelines states that the fish accumulation study will not normally be required if acceptable evidence is provided to the Agency to show that the active ingredient and/or its principal degradation products (1) will not reach water, or (2) will not persist in water (i.e. has a half-life of approximately four days or less), or (3) has a relatively low potential for accumulation in fish as indicated by an octanol/water partition coefficient less than approximately 1000 (emphasis added).

The fish accumulation study should not be required for metribuzin for the following reasons:

(1) The octanol/water partition coefficient for metribuzin is 44.9 (Mobay Report No. 86005 - EPA Accession No. 258448). As noted above, the study is not normally required for compounds with an octanol/water coefficient less than 1000.

(2) Results of the previously submitted fish accumulation study, which admittedly does not meet current guideline requirements, do nevertheless support the conclusion that metribuzin does not accumulate in fish. It is clear from Report No. 33418 that metribuzin was stable during the two 7-day exposure test segments and, therefore, the fish were exposed to the target concentrations throughout the 14-day (total) exposure period. It is also clear in the report that the concentrations of metribuzin and metabolites in fish tissues reached a plateau after only a few days of exposure and that, when the fish were transferred to untreated water, the residues quickly fell below the detectable level within 24 hours. All of this is completely in line with the results of the determination of the octanol/water coefficient for metribuzin.

Based on the foregoing, we request that the Agency reconsider the registration standard requirement for a fish accumulation study on metribuzin. Your early comments on this request would be appreciated.

Yours very truly,

MOBAY CORPORATION
AGRICULTURAL CHEMICALS DIVISION

G. E. Brussell, Manager
Registrations
Research & Development

GEB:RPH:bhd

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