Shaughnessy No.: 121601

Date out of EFGWB MAY 1 1 1990

TO: R. Taylor/V. Walters
Product Manager #25
Registration Division (H7507C)

FROM: Emil Regelman, Supervisory Chemist
Chemistry Review Section #2
Environmental Fate and Ground Water Branch

THRU: Hank Jacoby, Chief
Environmental Fate and Ground Water Branch
Environmental Fate and Effects Division (H7507C)

Attached, please find the EFGWB review of ...

Reg./File #: 5F3272/6F3381

Chemical Name: 4-(dichloroacetyl)-1-oxa-4-azaspiro[4.5]decane

Type Product: Herbicide safener

Common Name: MON-4660, CP-103626

Company Name: Monsanto Company/ Monsanto Agricultural Products Co.

Purpose: Review of terrestrial field dissipation addendum

Date Received: 8 May 1990 Date Completed: 10 May 1990

Action Code: 231

EFGWB #(s): 90-0771

Total Reviewing Time: 1.5 days

Deferrals to: ___Ecological Effects Branch, EFED

___Science Integration and Policy Staff, EFED

___Non-Dietary Exposure Branch, HED

___Dietary Exposure Branch, HED

___Toxicology Branch

(1)

1. CHEMICAL:

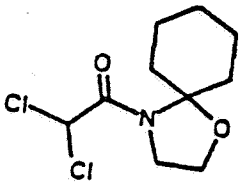
Chemical name: 4-(dichloroacetyl)-1-oxa-4-azaspiro[4.5]decane

CAS no.: 71526-07-3

Common name: MON-4660, CP-103626

Trade name: MON-8460

Chemical structure:



Molecular formula: $C_{10}H_5NO_2Cl_2$

Molecular weight: 252.13

Physical/Chemical properties of active ingredient:

Physical characteristics: Odor of cyclohexanone

Vapor Pressure: 3.79×10^{-5} mm Hg

Solubility: 393 mg/L at 24°C/535 mg/L at 25°C

Octanol/water partition coefficient: 175

2. TEST MATERIAL:

None

3. STUDY/ACTION TYPE:

Review of response to terrestrial field dissipation study review.

4. STUDY IDENTIFICATION:

Gustafson, D.I., Lauer, R. Horner, L.M. TERRESTRIAL FIELD DISSIPATION OF MON 4660 WHEN APPLIED AS MON 8460 TO FIELD CORN. Submitted and Performed by Monsanto Agricultural Company, St. Louis, MO under Lab. project no. MSL-8024; Study completed November 1988; Received by EPA 9 May 1989.

5. REVIEWED BY:

Gail Maske
Chemist, Review section #2
OPP/EFED/EFGWB

Signature:

Date:

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6. APPROVED BY:

Emil Regelman
Supervisory Chemist
Review section #2
OPP/EFED/EFGWB

Signature: [signature]

Date: MAY 1 1 1990

7. CONCLUSIONS:

The review of the terrestrial field dissipation study is being postponed until an acceptable aerobic and anaerobic soil metabolism study is obtained at which time the validity of the terrestrial field dissipation can be determined. This terrestrial field dissipation study will be retained in the file and reviewed at that time.

8. RECOMMENDATIONS:

The registrant should be informed of the following:

a. The review of the terrestrial field dissipation study is being postponed until an acceptable aerobic and anaerobic soil metabolism study is obtained at which time the validity of the terrrestrial field dissipation study can be determined.

b. The status of the Environmental Fate Data Requirements for registration of MON 4660 for terrestrial food use is as follows:

Environmental Fate Data Requirements	Status of Data Requirement	MRID No.
Degradation Studies-Lab		
161-1 Hydrolysis	Not Fulfilled (DE;11/05/86)	00148307
161-2 Photodegradation in water	Fulfilled (DE;11/05/86) (MIR;05/10/90)	00148307 40068501
161-3 Photodegradation on soil	Not Fulfilled (DE;11/05/86) (MIR;05/10/90)	00147307 40068501
161-4 Photodegradation in air	Deferred to 163-2	
Metabolism Studies-Lab		
162-1 Aerobic (Soil)	Not Fulfilled (DE;11/05/86) (MIR;05/10/90)	00147307
162-2 Anaerobic (Soil)	Not Fulfilled (DE;11/05/86) (MIR;05/10/90)	00147307

Mobility Studies			
163-1	Leaching, Adsorption/ Desorption	Not Fulfilled (DE;11/05/86)	00147307
163-2	Volatility-lab	Not Submitted	
163-3	Volatility-field	Deferred to 163-2	
Dissipation Studies-Field			
164-1	Terrestrial	Not Fulfilled (DE;11/05/86)	00147308
164-5	Soil, long-term	Deferred to 164-1	
Accumulation Studies			
165-1	Rotational crops-confined	Not Submitted	
165-2	Rotational crops-field	Deferred to 165-2	
165-4	In fish	Not Submitted	

9. BACKGROUND:

Monsanto Company/Monsanto Agricultural Company is submitting environmental fate data for MON 4660, a safener used in acetochlor, as part of a petition (5F3272) to obtain an exemption for the tolerance requirement when used with acetochlor.

Acetochlor, a chloroacetamide, is applied preemergent as a selective herbicide at 1.5 to 4 lb/A in combination with the safener at 1/10X the herbicide rate used to control yellow nutsedge, many annual grass and broadleaf weed species on corn, soybean, peanuts, and sunflowers.

Acetochlor is applied either as a surface application after planting or shallowly incorporated prior to planting to blend the acetochlor into the upper 1 to 2 inches of soil. The seedbed should be fine, firm, and free of clods and thrash. Harness is not applied to coarse textured soils or to medium and fine textured soils which have less than 1.5% organic matter content. When applied to coarse textured or to medium and fine textured soils which have less than 1.5% organic matter content, acetochlor may cause damage to the crop. The broadcast rate varies according to the organic matter content and type of soil to be treated.

10. DISCUSSION:

See individual DER's.

11: COMPLETION OF ONE-LINER:

None

12: CBI APPENDIX:

The information is considered to be CBI by the registrant, and should be treated as such.