

US EPA ARCHIVE DOCUMENT

Shaughnessey Number: 125401

Date out of EFGWB: JUL -2 1990

TO: Cool/Pemberton
Product Manager #41
Registration Division (H7505C)

FROM: Paul Mastradone Ph.D., Chief *PM*
Environmental Chemistry, Review Section 1
Environmental Fate and Ground Water Branch
Environmental Fate and Effects Division (H7507C)

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

Attached, Please find the EFGWB review of:

Reg./File No: 90-WI-10

Chemical Name: 2(2-chlorophenyl)methyl-4,4-dimethyl-
isoxazolidinone

Common Name: Dimethazone

Type Product: Herbicide

Product Name: _____

Company Name: FMC Corporation

Purpose: Indicate if there is a groundwater concern

Date Received: 4/4/90 Action Code: 510

Date Completed: 6/18/90 EFGWB #: 90-0490

Monitoring study Requested: _____ Total Review Time: 1.0 Day

Deferrals to:

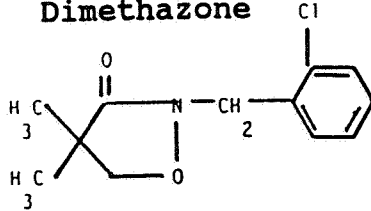
_____ Ecological Effects Branch, EFED
_____ Science Integration & Policy Staff, EFED
_____ Non-Dietary Exposure Branch, HED
_____ Dietary Exposure Branch, HED
_____ Toxicology Branch I&II, HED

1.0 CHEMICAL:

Chemical Name: 2(2-chlorophenyl)methyl-4,4-dimethyl-
isoxazolidinone

Common Name: Dimethazone

Structure:



Physical/Chemical Properties of Active Ingredient:

Empirical Formula: $C_{12}H_{15}NO_2Cl$

Molecular Weight: 240.70

Vapor Pressure (Torr): $1.44E 4$

2.0 TEST MATERIAL:

N.A.

3.0 STUDY /ACTION TYPE:

To determine if there is a ground water concern for dimethazone.

4.0 STUDY IDENTIFICATION:

N.A.

5.0 REVIEWED BY:

Elizabeth A. Resek, Chemist
Environmental Chemistry, Review Section 1
OPP/EFED/EFGWB

Signature: *Elizabeth A. Resek*

Date: 7/1/90

6.0 APPROVED BY:

Paul Mastradone Ph.D., Chief
Environmental Chemistry, Review Section 1
OPP/EFED/EFGWB

Signature: *Paul Mastradone*

Date: JUL -2 1990

7.0 CONCLUSIONS/RECOMMENDATIONS:

All environmental fate data requirements have been satisfied at this time with the exception of additional volatility data requested by EFGWB (the volatility data is presently unreviewed).

Dimethazone is stable to hydrolysis, soil photolysis, and has an aqueous photodegradation half-life of 87 days (under natural sunlight). The compound readily degrades under anaerobic conditions and degrades aerobically with an estimated half-life of 56 to 173 days, depending on soil type. Mobility studies show that dimethazone is mobile with adsorption coefficients ranging from 1.54 in sand to 6.85 in silt loam soils. Dimethazone dissipates under field conditions with a half-life range of 24 - 82 days depending on soil type and method of application (pre-emergence and preplant incorporated application). Dimethazone was detected in rotational crops planted 10 months after chemical application. The reported bioaccumulation factor was 40X for whole fish.

- 7.1 EFGWB concludes that dimethazone is both mobile and persistent in soil. Subsequently, it appears to have the characteristics to leach to ground water.

EFGWB also notes that the dimethazone chemical file contains seven Section 18 actions.

8.0 BACKGROUND:

Registration Division has requested EFGWB indicate any ground water concern for dimethazone.

9.0 DISCUSSION OF INDIVIDUAL STUDIES:

N.A.

10.0 COMPLETION OF ONE-LINER:

The EFGWB one-liner has been verified as accurate and updated. (updated last 9/22/89).

11.0 CBI APPENDIX:

N.A.