Shaughnessy No: ~~128829~~ 128821

Date Out of EAB: MAY 01 1985

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

From: Samuel M. Creeger, Chief
Environmental Chemistry Review Section 1
Exposure Assessment Branch
Hazard Evaluation Division TS-769c

COPY

Attached, please find the EAB review of:

Reg./File # : 241-273

Chemical Name: CL 243, 997 or AC 243,997

Type Product : Herbicide

Product Name : ARSENAL Herbicide

Company Name : American Cyanamid

Purpose : Registration for use on noncropland as a herbicide, resubmission

Action Code : 400

Date Received : 2/15/85

Date Completed: 4/25/85

EAB #(s) : 5366

TAIS Code: 32

Reviewing Time: 1.0 days

Deferrals to:

_____ Ecological Effects Branch

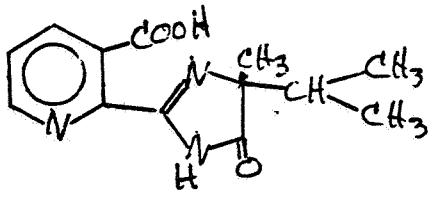
_____ Residue Chemistry Branch

_____ Toxicology Branch

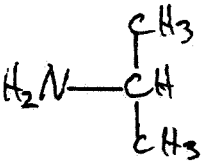
1. CHEMICAL: 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2yl]-3-pyridinecarboxylic acid with 2-propanamine (1:1) salt, 27.6% ai.

Common Name- CL 243,997, AC 243,997 (free acid)
AC 252,925 (2-propanamine/isopropylamine salt)

Chemical Structure-



free acid



2-propanamine

2. TEST MATERIAL: Not applicable. No new data submitted.

3. STUDY/ACTION TYPE: Response by American Cyanamid to EAB comments of a previous review (11/21/84) concerning the waiver of data requirements for 2-propanamine on the grounds that their proposed use would be only a small portion of the amount applied by others. EAB suggested the open scientific literature be consulted for the fate of 2-propanamine (isopropylamine, IPA) in soil.

4. STUDY IDENTIFICATION: Not applicable. No new data submitted.

5. REVIEWED BY:

Herbert L. Manning, Ph.D.
Microbiologist
EAB/HED

Signature: Herbert L. Manning
Date: 25 April 1985

6. APPROVED BY:

Samuel M. Creeger
Chief, Section 1
EAB/HED

Signature: Samuel M Creeger
Date: MAY 01 1985

7. CONCLUSIONS:

American Cyanamid provided a reference (attached) on the degradation of IPA that shows it to be deaminated by a soil bacteria and then metabolized through $C_2 + C_1$ cleavage.

This reference satisfies the information we asked for on the environmental fate of IPA and allows American Cyanamid to waive any further data requirements for IPA.

The following is a brief summary of the data in our files on ARSENAL:

- Hydrolysis- The free acid (CL or AC 243,997) is stable to hydrolysis at environmental pH and temperature. Data requirement is satisfied.

- Aerobic soil metabolism- ^{14}C-carboxyl labeled acid has a half-life of about 17 months. CO_2 was the only degradate. Further study is needed (see RECOMMENDATION).

- Leaching- Data indicates the acid has a potential for leaching. Data requirement is satisfied.

- Photodegradation (aqueous)- Free acid degrades with half-life of 1.3-2.7 days. Data requirement is satisfied.

- Field dissipation (soil)- Not adequately defined.

- Fish accumulation- No data in file.

8. RECOMMENDATION:

EAB finds the reference outlining the fate in soil of IPA to support the waiver of the data requirements.

Certain data in our files are deficient or lacking for the registration of ARSENAL:

- Aerobic soil metabolism- a study is needed using ^{14}C-labeling in another portion of the molecule to better define and identify degradation products.

- Field dissipation (soil)- another study is needed giving adequate sampling (define degradation) at sufficient depth (define extent of leaching).

- Fish accumulation- a study is needed, or justification for a waiver. EAB notes that octanol-water partition coefficient is 1.3.

9. BACKGROUND:

A. Introduction

See Section 3 of this review.

B. Directions for Use

See attached label.

10. DISCUSSION OF INDIVIDUAL TESTS OR STUDIES:

A. Study Identification

Not applicable. No new data submitted.

11. COMPLETION OF ONE-LINER:

No new data submitted.

12. CONFIDENTIAL APPENDIX:

No CBI was included in this submission.