Shaughnessy #: 109301

Date Out of EAB: APR 25 1986

Signature:

To: George LaRocca
Product Manager #15
Registration Division (TS-767)

From: Emil Regelman, Supervisory Chemist
Review Section #3
Exposure Assessment Branch
Hazard Evaluation Division (TS-769)

Attached, please find the EAB review of...

Reg./File # : 201-401

Chemical Name: FENVALERATE

Type Product : INSECTICIDE

Product Name : PYDRIN

Company Name : SHELL CHEMICAL COMPANY

Purpose : Permission to shorten 12-month root crop rotation restriction to 120 days prior to completion of confined and field studies

Action Code(s): 331

EAB #(s) : 6523

Date Received: 4/14/86

TAIS Code: 65

Date Completed: 4/25/86

Total Reviewing Time: 2.0 day

Monitoring Requested:

Monitoring Voluntarily Done:

Deferrals to:

_____ Ecological Effects Branch

_____ Residue Chemistry Branch

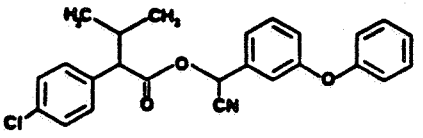
_____ Toxicology Branch

1. CHEMICAL: Common name: Fenvalerate

Chemical name: 4"-Chloro-(2'''-isopropyl)phenylaceto-2-(3'-phenoxy)phenylacetonitrile

Trade name(s): Pydrin, SD 43775 (Shell Chemical Co.); Belmark (Shell International Chemical Co.); Sumicidin, Sumitly, Sumipower (Sumitomo Chemical Co.).

Structure:



Formulations: Pydrin (SD 43775) formulations 2.4 lb ai/gal EC and 4 lb ai/gal ULV concentrate (Shell Chemical Co.).

Physical/Chemical properties:
Emperical formula: $C_{25}H_{22}ClNO_3$
Molecular weight: 419.9
Physical state: Clear viscous yellow or brown liquid at 23°C; mild chemical odor.
Density: 1.17 g/ml at 23°C
Vapor pressure: 1.1×10^{-8} at 25°C
Solubility: in water, <1 mg/l at 20°C
in acetone, chloroform, cyclohexane, ethanol, and xylene, >1 g/kg
in hexane, 155 g/kg at 23°C

Stability: Stable to heat and sunlight
Stable to moisture
More stable in acid (pH 4) than alkaline solution

2. TEST MATERIAL: None

3. STUDY/ACTION TYPE: Request for removal of 12 months crop restriction prior to submission of confined and field rotation data.

4. STUDY IDENTIFICATION:

No new studies submitted; a previous study is referenced:

1) Lee, P.W., S.M. Sterns, and W.R. Powell. 1982. A 30 and 120-day rotation crop study using ^{14}C-SD 4375 following a single soil treatment at a dosage rate of 2 lbs. ai/acre. RIR-22-044-83; Acc. No. 248812.

5. REVIEWED BY:

John H. Jordan, Ph.D.
Microbiologist
EAB/HED/OPP

Signature: John H. Jordan

Date: 4/25/86

6. APPROVED BY:

Emil Regelman, Supervisory Chemist
Review Section #3, EAB/HED/OPP

Signature: E Regelman

Date: APR 25 1986

7. CONCLUSIONS:

The March 26, 1986 registration action (EAB #6283) specified data requirements necessary for resolution of the 12-month root crop rotation issue.

As indicated in the registrant's April 10, 1986 letter, the 2.4 ppm RAC beet (root) residue, in a previous study, was erroneously calculated from lyophilized (freeze-dry) samples. However, the calculated wet-weight residue in the beet sample was 0.30 ppm. Three-tenth parts-per-million (0.30 ppm) is a significant crop residue of concern to the Agency, and, therefore, the field crop residue rotation data requirement was triggered.

Parent and degradates from the ^{14}C confined study must be identified/quantified, and the registrant is now attempting to comply. When the beet residue parent/degradates analysis is successfully completed, the confined data requirement will have been satisfied. Parent/degradates must not only be identified/quantified in the confined study but also in the field study. When the confined and field crop residue data are received and evaluated, the Agency will address the 12-month root-crop rotation restriction issue.

8. RECOMMENDATION:

Until the required confined and field crop rotation (residue) data are available, it is recommended that the 12-month root-crop rotation restriction remain on the label.

9. BACKGROUND:

A. Introduction

The registrant submitted a request for reducing the length of the 12-month rotation crop restriction to 120 days.

B. Directions for Use

Fenvalerate is a contact insecticide for use on a variety of field, vegetable, and orchard crops, ornamentals, forests, terrestrial noncrop sites, and domestic and commerical indoor and outdoor sites. Application rates range from 0.05 to 0.75 lb ai/A. The maximum application rate is 2-lb. ai/Acre/year. Fenvalerate may be formulated with petroleum distillates. Single active ingredient formulations consist of 2.4 lb ai/gal EC, 8.6% impregnated materials, and 0.01% RTU. Fenvalerate is generally surface applied by ground equipment or aircraft. The 2.4 lb ai/gal EC is a restricted use pesticide and applicators must be certified or under the direct supervision of applicators certified to apply fenvalerate. Fenvalerate is highly toxic to bees.

10. DISCUSSION OF INDIVIDUAL TESTS OR STUDIES: None

11. COMPLETION OF ONE-LINER- one liner not initiated to date.

12. CBI APPENDIX: No CBI included.