

Shaughnessy No.: 128897

Date Out of EFGWB:

APR - 2 1990

TO: G. LaRocca
Product Manager # 15
Registration Division (H7505C)

FROM:

Paul Mastradone, Section Chief *PM*
Environmental Chemistry Review Section #1
Environmental Fate and Groundwater Branch

THRU:

Henry Jacoby
Henry Jacoby, Chief
Environmental Fate and Groundwater Branch
Environmental Fate and Groundwater Division (H7507C)

Attached please find the EFGWB review of:

Reg./File # : 59-EGE, 9F3770

Chemical Name: PP321 (Lambdacyhalothrin)

Product Type : Insecticide

Product Name : Saber Pour-on Insecticide

Company Name : Coopers Animal Health Inc.

Purpose : New Pesticide Product Registration

Date Received: 6/23/89

Action Code: 181, 230

Date Completed: 3/21/90

EFGWB No. 90661-662

Total Reviewing Time (decimal days): 2.5

Deferrals to: _____ Ecological Effects Branch, EFED
_____ Science Integration & Policy Staff, EFED
_____ Non-Dietary Exposure Branch, HED
_____ Dietary Exposure Branch
_____ Toxicology Branch, HED

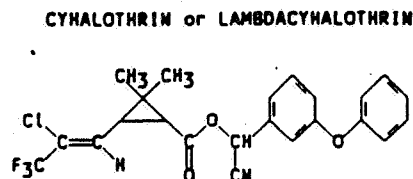
1.0 CHEMICAL:

Common name: Lambdacyhalothrin

Chemical name: [1 alpha-(S),3 alpha (Z)]-(+)-
cyano-(3-phenoxyphenyl) methyl 3-(2-
chloro-3,3,3-trifluoro-1-propenyl)-2,2-
dimethylcyclopropanecarboxylate

Trade Name: Saber Pour-on Insecticide

Chemical Structure:



2.0 TEST MATERIAL:

No material submitted.

3.0 STUDY/ACTION TYPE:

1. Permanent tolerance petition with respect to lambdacyhalothrin and Saber Pour-on Insecticide which contains lambdacyhalothrin.

2. Application for New Pesticide Product Registration for Saber Pour-on Insecticide on beef and non-lactating dairy cattle.

4.0 STUDY IDENTIFICATION:

Petition from Coopers Animal Health Inc. for Permanent Tolerance for Lambdacyhalothrin to Support Product Registrations Allowing for Use on Cattle.

5.0 REVIEWED BY:

George Tompkins
Entomologist, Review Section 1
EFGWB/EFED

Signature: *George Tompkins*
Date: APR - 2 1990

6.0 APPROVED BY:

Paul Mastradone
Section Chief, Review Section 1
EFGWB/EFED

Signature: *Paul Mastradone*
Date: APR - 2 1990

7.0 CONCLUSIONS:

Under 40 CFR 158, the use of cyhalothrin for ear tags for beef cattle and non-lactating dairy cattle for control of hornflies and lice is considered to be indoor general use pattern for which there is no environmental fate data requirements. Data requirements for the registration of PP321 on cotton that have been previously submitted have been considered in the past to be sufficient to define the fate of PP321 in the environment regarding the concerns of groundwater.

The establishment of tolerances is to be deferred to HED.

8.0 RECOMMENDATIONS:

No environmental fate data are required for the indoor use of this product.

Recommend that the request for establishment of tolerances in cattle be sent to HED.

9.0 BACKGROUND:

Coopers Animal Health, Inc. has submitted a registration application for products containing the active ingredient lambdacyhalothrin (PP321) or [1 alpha-(S), 3 alpha (Z)]-(+)-cyano-(3-phenoxyphenyl) methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate, for use on beef cattle and non-lactating dairy cattle to control hornflies and lice.

Registration data on the active ingredient are owned by ICI Americas Inc. and EPA Reg. No. 10182-96 KARATE Insecticide and EPA Reg. No. 10182-131 for PP321 Technical Insecticide have been granted. ICI has authorized EPA to utilize all data on the active ingredient contained or referenced in ICI's registration files for KARATE Insecticide and PP321 Technical Insecticide to support registration of the following products and use patterns:

SABER POUR-ON INSECTICIDE - 1% lambdacyhalothrin
SABER II INSECTICIDE EAR TAG - 10% lambdacyhalothrin
SABER PLUS INSECTICIDE EAR TAG - 10% lambdacyhalothrin
SABER EXTRA INSECTICIDE EAR TAG - 10% lambdacyhalothrin

10.0 DISCUSSION OF INDIVIDUAL STUDIES: N/A

11.0 COMPLETION OF ONE-LINER: N/A

12.0 CBI APPENDIX: N/A

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Pages _____ through _____ are not included in this copy.

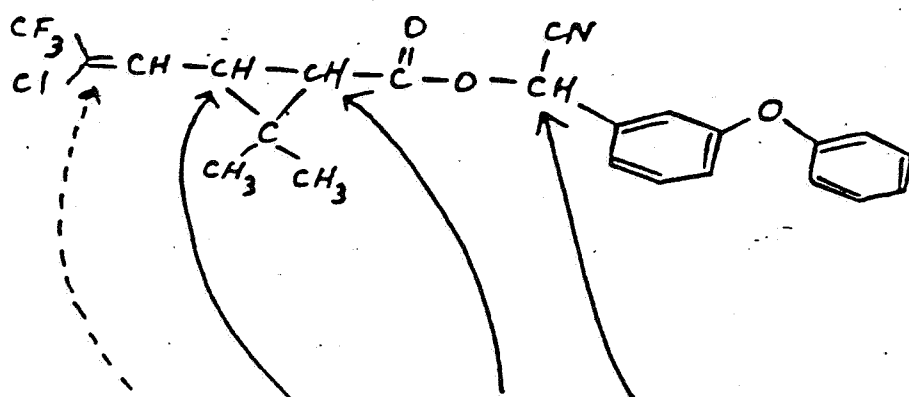
The material not included contains the following type of information:

- ☐ Identity of product inert ingredients.
 - ☐ Identity of product impurities.
 - ☐ Description of the product manufacturing process.
 - ☐ Description of quality control procedures.
 - ☐ Identity of the source of product ingredients.
 - ☐ Sales or other commercial/financial information.
 - ☐ A draft product label.
 - ☐ The product confidential statement of formula.
 - ☐ Information about a pending registration action.
 - ☒ FIFRA registration data.
 - ☐ The document is a duplicate of page(s) _____.
 - ☐ The document is not responsive to the request.
-

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.

E413 # 80084
dated 1/27

①



C-3 C-1 ∞ 3 asymmetric centers

$2^3 = 8$ optical isomers

2 geometric isomers

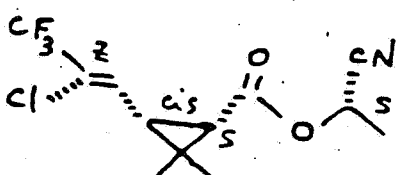
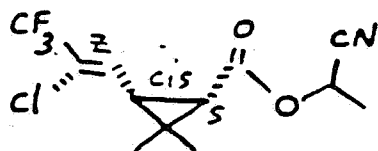
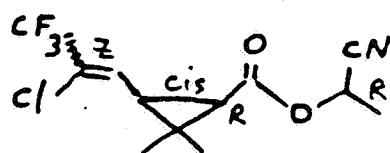
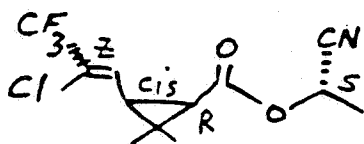
Z- & E- isomers

4 cis- &

4 trans- isomers

total 16 isomers theoretically possible

cyhalothrin consists of 4 cis Z isomers only



PP321 (pair B)

(pair A)

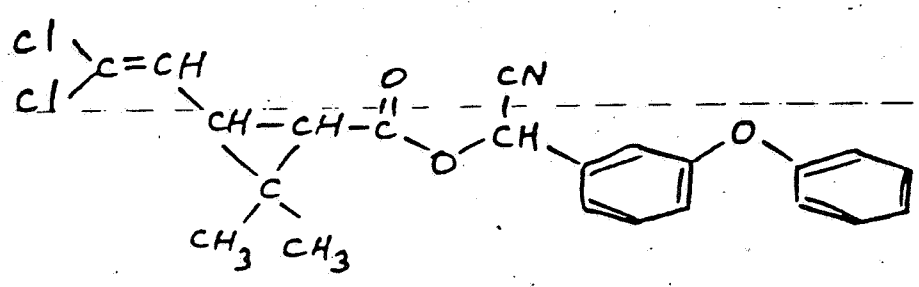
cyhalothrin

PP321 consists of 2 cis Z isomers only

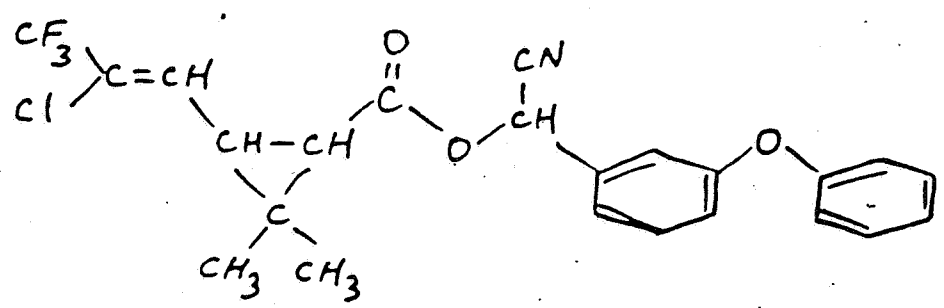
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(2)

ICI pyrethroid esters

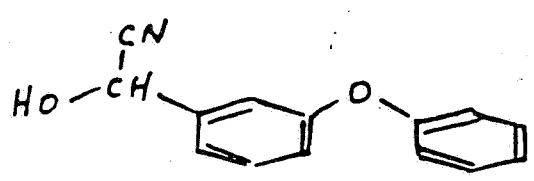


cypermethrin



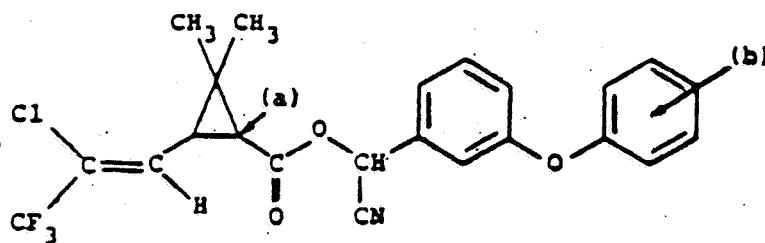
cyhalothrin (x PP321)

NOTE
Common alcohol



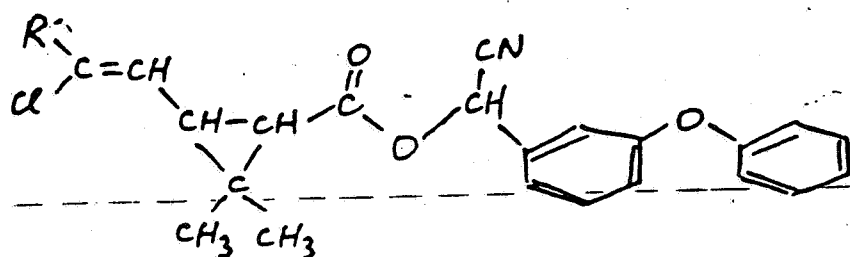
3-phenoxybenzal cyanhydrin

FIGURE 1 : Position of Radiolabelling in ^{14}C -PP321 Samples



- (a) position of radiolabelling in ^{14}C -cyclopropane labelled PP321
- (b) position of radiolabelling in ^{14}C -[U]-phenyl labelled PP321

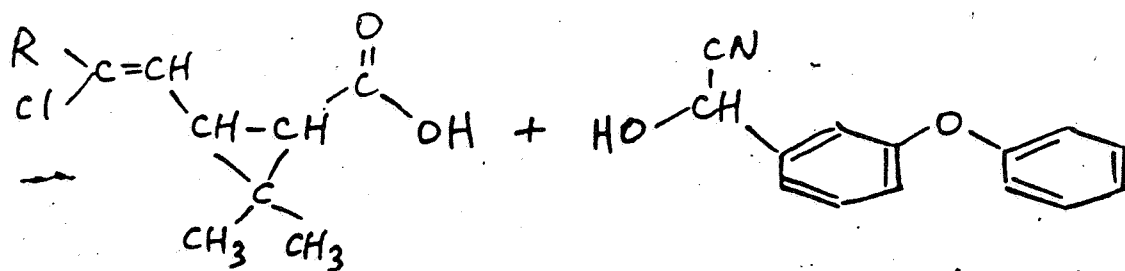
(4)



$R = Cl \equiv$ cypermethrin

$R = CF_3 \equiv$ cyhalothrin [PP321]

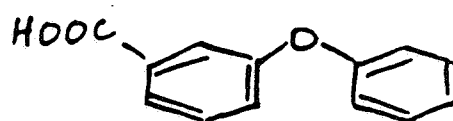
↓ ester cleavage



cyclopropane
carboxylic
acid

cyanhydrin

↓



3-phenoxybenzoic acid