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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 24 1990

OFFICE OF
PESTICIDES AND TOXIC
SUBSTANCES

MEMORANDUM

SUBJECT: Product Chemistry Reviews of Fyfanon Technical (EPA Reg. No. 4787-5) and Fyfanon ULV (EPA Reg. No. 4787-8)

FROM: Alfred Smith, Chemist
Product Chemistry Review Section
Registration Support Branch
Registration Division (H7505C)

Alfred Smith

TO: William H. Miller, PM 16
Insecticide-Rodenticide Branch
Registration Division (H7505C)

THRU: Donald R. Stubbs, Acting Chief
PCRS/RSB/RD (H7505C)

Donald R. Stubbs

Registrant: Cheminova

EPA Reg. Nos: 4787-5 (Tech.); 4787-8 (EP)

MRID Nos: 409666-03

CAS No: 121-75-5

Product Names: Fyfanon Technical; Fyfanon ULV (EP)

Chemical Name: O,O-Dimethyl phosphorodithioate of diethyl mercaptosuccinate

Common Name: Malathion

Use: Insecticide

Introduction

The registrant has submitted product chemistry data in support of reregistration of the products Fyfanon Technical and Fyfanon ULV (Applications dated 1/5/89, EPA Form 8570-1, OPP I.D. Nos. 113705 and 113706). The PM has requested that RSB review the Physical/Chemical Characteristics data (Series 63), the labels, and the Confidential Statements of Formula (CSF, EPA Form 8570-4) for the two products.

The CSFs (Guideline Reference Number, GRN, 61-1) are discussed in Confidential Appendix A.

The data in the CSFs are not adequate. Values should be submitted for the Nominal category as stated in 40 CFR 158.155.

The labeling for the Fyfanon products meet the requirements under 40 CFR 156.10.

Physical and Chemical Characteristics

The technical and the EP are reported as identical in content, and one set of characteristics is reported in support of both products and is summarized below (MRID 409666-03).

<u>GRN and Property</u>	<u>Description</u>
63-2: Color	Colorless to pale yellow
63-3: Physical State	Liquid
63-4: Odor	Slightly aromatic
63-5: Melting Point	Liquid at room temperature: M.P. is 2.85 °C.
63-6: Boiling Point	156-157 °C at 0.7 mm Hg.
63-7: Density	20/20 °C 1.23 ± 0.01 g/ml
63-8: Solubility	Solubility at 20-23 °C Benzene Miscible Xylene Miscible Ethanol Miscible Acetone Miscible Kerosine 4.3 g/100 ml n-Hexane 6.2 g/100 ml Distilled Water 145 ppm

<u>GRN and Property</u>	<u>Description</u>															
63-9: Vapor Pressure	4×10^{-5} mm Hg at 30 °C.															
63-10: Dissociation Constant	Malathion does not dissociate in water															
63-11: Octonal/Water Partition Coefficient	Approximately 2000 (procedure available p. 6/21, MRID 409666-03)															
63-12: pH	3.7-3.8															
63-13: Stability	<table><thead><tr><th><u>Temp (°C)</u></th><th><u>Storage Period</u></th><th><u>% Loss</u></th></tr></thead><tbody><tr><td>20</td><td>2 yrs</td><td>0.6</td></tr><tr><td>40</td><td>2 yrs</td><td>6.4</td></tr><tr><td>55</td><td>2 mos.</td><td>2.9</td></tr><tr><td>55</td><td>5 mos.</td><td>100</td></tr></tbody></table>	<u>Temp (°C)</u>	<u>Storage Period</u>	<u>% Loss</u>	20	2 yrs	0.6	40	2 yrs	6.4	55	2 mos.	2.9	55	5 mos.	100
<u>Temp (°C)</u>	<u>Storage Period</u>	<u>% Loss</u>														
20	2 yrs	0.6														
40	2 yrs	6.4														
55	2 mos.	2.9														
55	5 mos.	100														

Unstable when heated. Increased temperatures may induce a violent decomposition. Never heat above 55 °C.

Sensitivity to Sunlight

Malathion decomposes upon exposure to ultraviolet radiation. There is a loss of about 50% after 5 hours.

Sensitivity to Metal ions and Metal

No significant loss in presence of metal ions and metal at temperatures of 20-54 °C for 14 days.

63-14: Oxidizing or Reducing Action	None. Malathion contains no oxidizing or reducing groups.
63-15: Flammability	Does not contain combustible liquids.
63-16: Explodability	Does not contain explosive ingredient. Not potentially explosive.

<u>GRN and Property</u>	<u>Description</u>
63-17: Storage Stability	One year storage at 21-23 °C under commercial conditions showed no loss. (A new study is underway and will be submitted when ready.)
63-18: Viscosity	30.0 centipoise at 25 °C 16.4 centipoise at 40 °C
63-19: Miscibility	See under 63-8: Solubility
63-20: Corrosion Characteristics	None noted under commercial storage conditions.
63-21: Dielectric Breakdown Voltage	No information.(*)

(*) Registrant should indicate if EP is intended for use in or around electrical equipment.

Summary of Deficiencies

Section 61

The Confidential Statement of Formula (EPA Form 8570-4) should contain nominal values for the active ingredient and impurities as stated in 40 CFR 158.155.

Section 63

The new storage stability study (GRN 63-17) should be submitted when completed.

The registrant should indicate if the end-use product (EP) is intended for use in or around electrical equipment (GRN 63-21).

Attachment:

Confidential Appendix A

Page ___ is not included in this copy.

Pages 5 through 6 are not included in this copy.

The material not included contains the following type of information:

- Identity of product inert ingredients.
- Identity of product inert 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.
