MEMORANDUM


FROM: Sami Malek, Ph.D., Chemist Tolerance Petition Section III Residue Chemistry Branch Hazard Evaluation Division (TS-769)

TO: Amy S. Rispin, Chief Science Integration Staff Hazard Evaluation Division (TS-769)

and

Jay S. Ellenberger, Ph.D. Insecticide-Rodenticide Branch Registration Division (TS-767)

THRU: Charles L. Trichilo, Ph.D., Chief Residue Chemistry Branch Hazard Evaluation Division (TS-769)

In response to the chlorpyrifos Registration Standard of February 28, 1984, Dow Chemical Company responded on April 3, 1985, by submitting product chemistry data cited in the Standard as data gaps for their manufacturing-use product, chlorpyrifos (Dursban HF Insecticide Concentrate®).

Chlorpyrifos is the common name for the insecticide O,O-diethyl O-(3,5,6-trichloro-2-pyridyl)phosphorothioate. Technical chlorpyrifos is manufactured by Dow Chemical Company. Dow apparently formulates several intermediate products known as manufacturing-use products (MUF's), or end-use products, several of which are registered with the EPA.

Detailed data gaps cited in Table 3 of the Standard, for MUF's comprise all data requirements under Series 61 and 62 of the
Product Chemistry Guidelines, Subdivision D. The Table did not list data requirements under Series 63, because at that time (February 29, 1984), Residue Chemistry Branch did not address the physical and chemical characteristics of the MUP's. Data under Series 63 are now being processed by the Residue Chemistry Branch.

In our discussion below, we will list the data gap required under the corresponding section in the product chemistry requirements of Part III, Pesticide Registration; Data Requirements for Pesticide Registration; Final Rule (40 CFR Part 158, 49FR42956, October 24, 1984) followed by Dow's response and our comments.

Series 61: Product Identity and Composition

§61-1 Product identity and disclosure of ingredients

Dow's Response

Dursban HF Insecticide Concentrate\(^3\) (EPA Registration No. 464-588) is a manufacturing-use product containing 61.5 percent chlorpyrifos, equivalent to 6 lb act/gal. Dursban HF is formulated by Dow from

A copy of the Confidential Statement of Formula is included in p. 1 of the Confidential Appendix, Attachment 2 of this review.

RCB Comments

No additional information is required under §61-1.

§61-2 Description of beginning Materials and Manufacturing Process

Dow's Response

a. Beginning materials: Was reported by Dow in one page, a copy of which is included in p. 2 of the Confidential Appendix, Attachment 2 of this review.

b. Manufacturing process: Was reported by Dow in one page, a copy of which is included in p. 3 of the Confidential Appendix, Attachment 2 of this review.

c. Changes in beginning materials or manufacturing process: No changes in the beginning materials or manufacturing process were reported.

RCB Comments

Dow company complied with data requirements under §61-2 of
the Product Chemistry Guidelines, Subdivision D.
§61-3 Discussion of Formation of Impurities

Dow's Response

Dursban HP is a manufacturing-use product containing 61.5 percent chlorpyrifos (Registration No. 464-588). It is formulated by Dow Company from...

Therefore, we expect that the impurities in both technical materials, Dursban HP and ...

RCB Comments

Dow Chemical Company complied with data requirements under §61-3.

Series 62: Analysis of Certification of Product Ingredients

§62-1 Preliminary Analysis

Dow's Response

The analysis included in this submission is for four randomly selected production batches of the manufacturing-use product, Dursban HP, sampled during 1983. Samples were analyzed for chlorpyrifos per se using Dow's method No. 25076 (QA No. 2148), with a resulting range of...

The analyses included determination of the pyrene range aromatic solvent at...

Although the Guidelines require a minimum of five batch analyses, we consider the data adequate for the present.

RCB Comments

No additional information is required under §62-1.
§62-2 Certification of Limits

Dow's Response

The manufacturer has given the upper and lower certification of limits for chlorpyrifos per sq at [redacted] respectively. The xylene range aromatic solvent with an upper and lower certification limit of [redacted] respectively. The upper certified limit for the impurities associated with the technical Dursban F was given at [redacted].

RCB Comments

No additional information is required under §62-2.

§62-3 Analytical Methods for Enforcement of Limits

Dow Response

The analytical method employed for the determination of chlorpyrifos per sq in the manufacturing-use product, Dursban HP is described in this submission. In this method, Dow's method No. 25076 (QA No. 2148), an

Dow's method No. ML-AM-81 (QA No. 2349) is used for determination of the impurities in

RCB Comments

No additional information is needed under §62-3.
Series 63: Physical and Chemical Characteristics

Dcu's Response

The physical and chemical characteristics for the manufacturing-use product, Dursban HF, required under this series were reported as follows:

- §63-2 Color - straw colored
- §63-3 Physical state - liquid
- §63-4 Odor - Mercaptan and aromatic solvent
- §63-7 Specific gravity - 1.15 at 20 °C
- §63-12 pH - N/A
- §63-14 Oxidizing/Reducing - N/A
- §63-15 Flash point 112 °F
- §63-16 Explosibility - N/A
- §63-17 Storage stability - 3 years at room temp.; several months up to 120 °F
- §63-18 Viscosity - 4.0 cps at 20 °C
- §63-19 Miscibility - N/A
- §63-20 Corrosion - Noncorrosive to stainless steel or aluminum. Corrosive to brass, copper and tin.

RCB Comments

No additional information is required under Sections 63.

Conclusion and Recommendations

1. Product Chemistry data requirements for chlorpyrifos (Dursban HF), EPA Registration No. 464-338, have been satisfied.

2. We recommend that data available for Dursban HF in this review, be added to the chlorpyrifos Registration Standard.

3. An updated copy of product chemistry Table-E is attached.

Attachment - 1: Table E (2-pages)
Attachment - 2: Confidential Appendix (3 pages)
  p. 1 Confidential Statement of Formula
  p. 2 Beginning materials
  p. 3 Manufacturing process

(Copies of Attachment 2 to: R.E., S. Halak, Chlorpyrifos E.F., chlorpyrifos Registration Standard File, Tex., Eilenberger Rm. 612, MD, and RH/IES.

cc: Circo, EAC, RAB.

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### TABLE 3

**PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING CHEMICAL: CHLOROPRIFOS**

*(Chemical NP)* EPA Registration No. 665-380

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<th>Test Substance</th>
<th>Guidelines Status</th>
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**Guideline Citation and Name of Test**

**Physical and Chemical Characteristics**

- 63-7 - Density, Bulk Density, or Specific Gravity
- 63-12 - pH
- 63-14 - Oxidizing or Reducing Action
- 63-15 - Flexibility
- 63-16 - Explosibility
- 63-17 - Storage Stability
- 63-18 - Viscosity
- 63-19 - Miscibility
- 63-20 - Convection Characteristics

**Other Requirements:**

- 54-1 - Submit all samples

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*Required; CR = Conditionally Required; HP = Manufacturing-use Product*
Page 8 is not included in this copy.

Pages ____ through ____ are not included.

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.
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