MEMORANDUM


FROM: Semi 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, PM #12 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 29, 1984, Dow Chemical Company responded on April 8, 1985, by submitting product chemistry data cited in the Standard as data gaps for their Manufacturing-Use Product (MUP), Durban 6R Insecticidal Concentrate, Registration No. 464-567.

Chlorpyrifos is the common name for the insecticide O,O-dimethyl O-(3,5,6-trichloro-2-pyridyl) phosphorothiate. Technical chlorpyrifos is manufactured by Dow Chemical Company. Dow apparently formulates several intermediate products known as Manufacturing-Use Products (MUP's). Dow also sells technical chlorpyrifos to several other companies for formulating intermediate products (MUP's), or end-use products, several of which are registered with the EPA.
Detailed data gaps cited in Table B of the Standard for MUP'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 153; 49 FR 42856, 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 6R Insecticidal Concentrate® (EPA Registration No. 464-567). A copy of the one page Confidential Statement of Formula is included in the Confidential Appendix of 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 are reported by Dow in one page, a copy of which is included in page 2 of the Confidential Appendix of Attachment 2 of this review.

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

(c) Changes in beginning materials or manufacturing process: No changes in the beginning materials or manufacturing process were reported.
Dow Chemical 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 6R Insecticidal Concentrate is a manufacturing-use product containing 62.4 percent chlorpyrifos. Registration No. 464-567. It is formulated by Dow Company. Therefore, we expect that the impurities in both manufacturing-use products, and Dursban 6R, to be identical. These impurities were reported by Dow (September 11, 1985) product chemistry data gaps. Dow Company reported that since Dursban 6R is a solvent, no new impurities are introduced except for the solvent.

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 five randomly selected production batches of the manufacturing-use product, Dursban 6R, sampled during 1981. Samples were analyzed for chlorpyrifos per se using Dow’s method No. 26057 (QA No. 1677) with a reporting upper and lower limits of respectively. Analysis of the results are reported on p. 4 of the Confidential Appendix, Attachment 2. The company reported no new impurities associated with Dursban 6R, which were not already reported for nor did they report on any intentionally added ingredients except for the above addition of solvent. These impurities for were previously discussed by S. Malak in connection with product chemistry data gaps (September 11, 1985).

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 se at \underline{[redacted]} respectively. The certification of limits for the inserts are reported on p. 4 of the Confidential Appendix, Attachment 2.

RCB Comments

No additional information is required under §62-2.

§62-3 Analytical Methods for Enforcement of Limits

Dow's Response

The analytical method employed for the determination of chlorpyrifos per se in the manufacturing-use product, Dursban 6R, is Dow's method No. 26057 (QA No. 1677), entitled "Dursban 6R Insecticidal Concentrate," April 7, 1981.

Dow's method No. M2-AM-81 (QA No. 2349) is used for determination of the impurities in \underline{[redacted]}

RCB Comments

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

Dow's Response

The physical and chemical characteristics for the manufacturing-use product, Dursban 5R, required under this series were reported as follows:

- **63-2 Color**: Clear
- **63-3 Physical State**: Liquid
- **63-4 Odor**: 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**: 125 °F
- **63-16 Explodability**: 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**: Noncorrosive to stainless steel or aluminum
- **63-20 Corrosion**: Corrosive to brass, copper, and tin

**RGS Comments**

No additional information is required under Section 63.

**Conclusion and Recommendations**

1. Product chemistry data requirements for chlorpyrifos (Dursban 5R), EPA Registration No. 664-567, have been satisfied.

2. We recommend that data available for Dursban 5R in this review be added to the Chlorpyrifos Registration Standard.

3. An updated copy of product chemistry Table-B as Attachment 1 is included.

**Attachment 1**: Table-B (2 pages).

**Attachment 2**: Confidential Appendix (3 pages).

- p1: Confidential Statement of Formula.
- p2: Beginning materials.

**R.G.S., Chera, Director, Subject File**: Amended Use File, RGS/108

**Reallocation Serial:V,57GC**: Activ 9/12/65, FDB994206-8 Emphatic Date: 9/12/65

**57-569**: Reviewer initials (R. Naish: 57-569-7377-8393)

**RENECA CONTRACT SUPPIE**: DARA:8/17/65, RECEIVED NUMBER 569-1270
<table>
<thead>
<tr>
<th>Guideline Citation and Name of Task</th>
<th>Test Substance</th>
<th>Guidelines Status</th>
<th>Are Data Required</th>
<th>Footnote Number</th>
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<tr>
<td>61-1 - Product Identity and Disclosure of Ingredients</td>
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<td>R</td>
<td>☐</td>
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<td>61-2 - Description of Beginning Materials and Manufacturing process</td>
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<td>R</td>
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<td>61-3 - Discussion of Formation of Impurities</td>
<td>MP</td>
<td>R</td>
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| Analysis and Certification of Product Ingredients |
|-----------------------------------|----------------|------------------|-------------------|-----------------|
| 62-1 - Preliminary Analysis | MP | CR | ☐ | ☑ |
| 62-2 - Certification of Limits | MP | R | ☐ | ☑ |
| 62-3 - Analytical Methods to Verify Certified Limit | MP | R | ☐ | ☑ |

**Physical and Chemical Characteristics**

| 63-2 - Color | MP | R | ☐ | ☑ |
| 63-3 - Physical State | MP | R | ☐ | ☑ |
| 63-4 - Odor | MP | R | ☐ | ☑ |
### Table B

**Product Specific Data Requirements for Manufacturing-Use Products Containing Chemical:**
Chlorpyrifos (Durban 6 R), EPA Reg. No. 464-367

#### Product Chemistry

<table>
<thead>
<tr>
<th>Guideline Citation and Date of Test</th>
<th>Test Substance</th>
<th>Guidelines Status</th>
<th>Are Data Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>62-7 - Density, Bulk Density, or Specific Gravity</td>
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<td>R</td>
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<tr>
<td>62-12 - pH</td>
<td>NP</td>
<td>N/A</td>
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<tr>
<td>62-14 - Oxidizing or Reducing Action</td>
<td>NP</td>
<td>N/A</td>
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<td>62-15 - Flammability</td>
<td>NP</td>
<td>CR</td>
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<td>62-16 - Explosibility</td>
<td>NP</td>
<td>N/A</td>
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<td>62-17 - Storage Stability</td>
<td>NP</td>
<td>R</td>
<td>☐ Yes ☐ No</td>
</tr>
<tr>
<td>62-18 - Viscosity</td>
<td>NP</td>
<td>CR</td>
<td>☐ Yes ☐ No</td>
</tr>
<tr>
<td>62-19 - Miscibility</td>
<td>NP</td>
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<tr>
<td>62-20 - Corrosion Characteristics</td>
<td>NP</td>
<td>R</td>
<td>☐ Yes ☐ No</td>
</tr>
</tbody>
</table>

**Other Requirements:**

- 62-1 - Quantities of samples | NP | CR | ☐ Yes ☐ No |
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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