MEMORANDUM

SUBJECT: EPA Registration No. 464-474. Chiorpyrifos (Lorsban®
1-Ethyl/polyethylene-5) Product Chemistry Follow-Up in
Response to the Chiorpyrifos Registration Standard Data
Gaps. Accession No. 227892. ESB No. 736.

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TO: Amy E. Rinske, Chief
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and

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Registration Division (TB-767)

THRU: Charles L. Trichilo, Ph.D., Chief
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Hazard Evaluation Division (TB-769)

In response to the chlorpyrifos Registration Standard of
February 25, 1994, Dow Chemical Company responded on April 6, 1995,
by submitting product chemistry data cited in the standard as
data gaps for their manufacturing-use product (MUP), Lorsban®

Chlorpyrifos is the common name for the insecticide O,O-
diethyl O-(2-ethyl-6-isopropyl-1-pyridyl)phosphorothioate. Technical
chlorpyrifos is manufactured by Dow Chemical Company. DOW
formulates several intermediate products known as
Intermediating-Use Products (IUP). DOW also sells technical
chlorpyrifos to several other companies for formulating intermediate
products (MUPs), or end-use products, several of which are
registered with the EPA.

\[ 794 \]
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, Data Requirements for Pesticide Registration Final Rule (40 CFR Part 158, 49 FR 42356, October 24, 1984) followed by Dow's response and our comments.

Series 61: Product Identity and Composition

§61-1 Product Indentity and Disclosure of Ingredients

Dow's Response:

Lorsban® 1-PZ/polyethylene-D, EPA Registration No. 644-074, is a granular solid composed of polyethylene pellets impregnated with 11% chlorpyrifos O,O-diethyl-1-(2,2-dichlorvinyl)-2-cyano-3-pyrrolidinone ester.

Lorsban® 1-PZ/polyethylene-D is a manufacturing use product produced by Dow Chemical Company for export sale only for the purpose of manufacturing plastic and plasticine shreds for banana plants. A copy of the Confidential Statement of Formula is included on page 1 of the Confidential Appendix, Attachment 2 of this review.

PCB 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 on page 2 of the Confidential Appendix, Attachment 2 of this review.

(b) Manufacturing process is reported by Dow in one page, a copy of which is included on page 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.

PCB Comments:

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:

Lorsban 1-PE/polyethylene-D; Registration No. 464-676 is a granular solid composed of polyethylene pellets impregnated with 1-chloroprene, the source of which is therefore, we expect that the impurities in both technical products, and Lorasan 1-PE/polyethylene-D to be identical. These impurities were reported by Dow under Dow Company reported that since Lorsban 1-PE/polyethylene-D is manufactured by no new impurities are introduced except for the inert ingredients, polyethylene pellets.

PCB 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 several randomly selected batches of the manufacturing-use product, Lorsban 1-PE/polyethylene-D sampled during four production periods in 1964. Samples were analyzed for chlorpyrifos per as using Dow's Method No. ML-AM-82-24 (QA No. 1972) and TC-AM-82-14 (QA No. 1971). The resulting upper and lower limits for chlorpyrifos was reported at respectively. The company did not report on any impurities associated with Lorsban 1-PE/ polyethylene-D nor did they report on any intentionally added
ingredients. These data, however, were previously reported and discussed in connection with...

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 [redacted] respectively. The upper and lower limits of the intentionally added ingredients were also reported by Dow Company as could be seen in page 3 of the Confidential Appendix, Attachment 2 of this review. The upper certified limits for the impurities associated with Lorsban 1-PR [polyethylene-D] were not reported in this submission. These impurities, however, are the same as those in...

RCB Comments:

No additional information is required under §62-2.

§62-3 Analytical Methods for Enforcement of Limits

Dow's Response:


This represents a data gap.
Dow's method No. ML-AM-31 (QA No. 2349) is used for determination of the impurities in which are the same as those in chlorpyrifos product chemistry day gaps.

**RCB Comments:**

Validation data including actual sample values and representative chromatograms should be submitted. This data gap is not satisfied.

**Series 63: Physical and Chemical Characteristics**

**Dow's Response:**

The physical and chemical characteristics for the manufacturing use product, Lorban 1-23/Polyethylene D, required under this series, were reported as follows:

<table>
<thead>
<tr>
<th>No.</th>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>63-2</td>
<td>Color</td>
<td>Mixed White and Blue Pellets</td>
</tr>
<tr>
<td>63-3</td>
<td>Physical State</td>
<td>Granular Solid</td>
</tr>
<tr>
<td>63-4</td>
<td>Odor</td>
<td>Mercaptan</td>
</tr>
<tr>
<td>63-7</td>
<td>Specific Gravity</td>
<td>0.92 - 0.93</td>
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<tr>
<td>63-12</td>
<td>pH</td>
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<tr>
<td>63-14</td>
<td>Oxidizing/Reducing</td>
<td>None</td>
</tr>
<tr>
<td>63-15</td>
<td>Flammability</td>
<td>NA</td>
</tr>
<tr>
<td>63-16</td>
<td>Explosibility</td>
<td>None</td>
</tr>
<tr>
<td>63-17</td>
<td>Storage Stability</td>
<td>Stable under normal conditions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Storage below 50 °C recommended</td>
</tr>
<tr>
<td>63-19</td>
<td>Miscibility</td>
<td>NA</td>
</tr>
<tr>
<td>63-20</td>
<td>Corrosion</td>
<td>None</td>
</tr>
</tbody>
</table>

**RCB Comments:**

No additional information is required under series 63.
Conclusions and Recommendations:

1. With the exception of data including actual sample values and representative chromatograms, required under §62-3 product chemistry data requirements for chlorpyrifos (Lorsban 1-PE/Polychloroprene-P), EPA registration No. 464-474, have been satisfied.

2. We recommend that data available for Lorsban 1-PE/Polychloroprene-P in this review, be added to the chlorpyrifos Registration Standard.

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

Attachment 1: Table 3 (2 pages)
Attachment 2: Confidential Appendix (3 pages)
Page 1: Confidential statement of formula,
Page 2: Beginning materials,
Pages 3: Manufacturing process and certified limits,
cc: Ciba, FDP, EPA,
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Test Substance</th>
<th>Guidelines Status</th>
<th>Are Data Required</th>
<th>Notes/Number</th>
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</thead>
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<tr>
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<td>Product Identity and Disclosure of Ingredients</td>
<td>RP</td>
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</tr>
<tr>
<td></td>
<td>Description of Beginning Materials and Manufacturing Process</td>
<td>RP</td>
<td>R</td>
<td>No</td>
<td></td>
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<tr>
<td></td>
<td>Discussion of Formation of Inexpedite</td>
<td>RP</td>
<td>R</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Analysis and Certification of Product Identity</td>
<td>Preliminary Analysis</td>
<td>RP</td>
<td>CR</td>
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</tr>
<tr>
<td></td>
<td>Certification of Limits</td>
<td>RP</td>
<td>R</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Analytical Methods to Verify Certified Limits</td>
<td>RP</td>
<td>R</td>
<td>No</td>
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</tr>
<tr>
<td>Physical and Chemical Characteristics</td>
<td>Color</td>
<td>RP</td>
<td>R</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Physical State</td>
<td>RP</td>
<td>R</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Odor</td>
<td>RP</td>
<td>R</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

Note: Some sections are marked with an 'X' indicating that they are not applicable or have been completed.

Additional Note: Not applicable.
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.
Page is not included in this copy.
Pages through are not included.

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Conf. Appendix

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