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9-11-85



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

SEP 11 1985

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: EPA Registration No. 464-358. Chlorpyrifos (Dursban 6 Insecticidal Concentrate®) Product Chemistry Data Gaps in Response to the Chlorpyrifos Registration Standard. Accession No. 257598. RCB No. 946.

FROM: Sami Malak, Ph.D., Chemist *Sami Malak*
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 *CD Schmitt*
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), chlorpyrifos (Dursban 6 Insecticidal 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 (MUP). 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 158, FR 49, No. 207, p. 42856, October 24, 1984), followed by Dow's response and our comments.

Series 61: Product Identity and Composition

Dow's Response

§61-1 Product identity and disclosure of ingredients

Dursban 6 Insecticidal Concentrate® (EPA Registration No. 464-358) is a manufacturing-use product containing 61.5 percent chlorpyrifos, equivalent to 6 lb act/gal. Dursban 6 is formulated by Dow [REDACTED]

[REDACTED] A copy of the Confidential Statement of Formula is included on page 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 page 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 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.

RCB Comments

Dow Company complied with data requirements under §61-2 of the Product Chemistry Guidelines, Subdivision D.

§61-3 Discussion of formation of impuritiesDow's Response

Dursban 6 is a manufacturing-use product containing 61.5 percent chlorpyrifos (Registration No. 464-358). It is formulated by Dow Company [REDACTED]

[REDACTED] therefore, we expect that the impurities in both products, Dursban 6 and [REDACTED]

RCB Comments

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

Series 62: Analysis of Certification of Product Ingredients§62-1 Preliminary AnalysisDow's Response

The analysis included in this submission is for five randomly selected production batches of the manufacturing-use product, Dursban 6, sampled during 1983. Samples were analyzed for chlorpyrifos per se using Dow's method No. 26008C (QA No. 1670), with a resulting range of 61.7 to 62.7 percent, respectively. The analyses included determination of the xylene range aromatic solvent at [REDACTED]. The company did not report on any impurities associated with Dursban 6, nor did they report on any intentionally added ingredients. These data, however, were previously reported and discussed in connection with [REDACTED]

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 xylene range aromatic solvent with an upper and lower certification of [redacted] respectively. The upper certified limit for the impurities associated with Dursban 6 was given at [redacted]. The nature of the impurities associated with Dursban 6 are expected to be the same as those in [redacted]

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 6, is described in this submission. In this method, Dow's method No. 26008C, QA No. 1670, [redacted]

Dow's method No. ML-AH-81 (QA No. 2349) is used for determination of the impurities in Dursban 6, which are the same as those in [redacted]

RCB Comments

No additional information is needed under §62-3.

QUALITY CONTROL PROCEDURE INFORMATION IS NOT INCLUDED

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Series 63: Physical and Chemical CharacteristicsDow's Response

The physical and chemical characteristics for the manufacturing-use product, Dursban 6, 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 - 1.16 at 20 °C
 §63-12 pH - N/A
 §63-14 Oxidizing/Reducing - N/A
 §63-15 Flash point 95 °F
 §63-16 Explodability - N/A
 §63-17 Storage Stability - 3 years at room temp.;
 several months up to 120 °F
 §63-18 Viscosity - 5.12 cps at 15 °C, 3.94 cps at 20 °C,
 3.37 cps at 30 °C
 §63-19 Miscibility - N/A
 §63-20 Corrosion - Noncorrosive to stainless steel or
 aluminum. Corrosive to brass, copper and tin.

RCS Comments

No additional information is required under Series 63.

Conclusion and Recommendations

1. Product Chemistry data requirements for chlorpyrifos (Dursban 6 Insecticidal Concentrate), EPA Registration No. 464-358, have been satisfied.
2. We recommend that data available for Dursban 6 in this review, be added to the chlorpyrifos Registration Standard.
3. An updated copy of product chemistry Table B is attached.

Attachment - 1: Table B (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.F., S. Malak, chlorpyrifos S.F., chlorpyrifos Registration Standard File, TOX, Ellenberger-PH §12-BD, and PHSD/ISS)

cc: Circu, EEB, EAB

RDI: P. Errico:6/7/85; R.D. Schmitt:6/7/85

ES-769: RCS:S. Malak:PH §10:CK #2:X557-7377:6/23/85.

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GENERAL REQUIREMENTS

TABLE B

PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING CHEMICALS: CHEMPURUS (VOLUME 6) EPA REGISTRATION NO. 464-358

519.120 - MOUNT CYCLER

Guideline Citation and Name of Test	Test Substance	Guidelines Status	Are Data Required		Footnote Number
			Yes	No	
<u>Product Identity:</u>					
61-1 - Product Identity and Disclosure of Ingredients	MP	R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
61-2 - Description of Beginning Materials and Manufacturing Process	MP	R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
61-3 - Discussion of Formation of Impurities	MP	R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<u>Analysis and Certification of Product Ingredients</u>					
62-1 - Preliminary Analysis	MP	CR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
62-2 - Certification of Limits	MP	R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
62-3 - Analytical Methods to Verify Certified Limit	MP	R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<u>Physical and Chemical Characteristics</u>					
63-2 - Color	MP	R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
63-3 - Physical State	MP	R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
63-4 - Odor	MP	R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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EPA REGISTRATION FOOTNOTES:

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ANNEXURE 1

GENERAL REQUIREMENTS

TABLE B

MINIMUM SPECIFIC IMA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING CHEMICAL: CHLORPYRIFOS (DURBAN 6) IMA REGISTRATION NO. 464-358

519-120 - PESTICIDE CHEMISTRY (Cont)

Guideline Citation and Name of Test	Test Substance	Guidelines Status	Are Data Required	Footnote Number
			Yes No	
<u>Physical and Chemical Characteristics (Continued)</u>				
62-7 - Density, Bulk Density, or Specific Gravity	NP	R	<input type="checkbox"/> <input checked="" type="checkbox"/>	
63-12 - pH	NP	N/A	<input type="checkbox"/> <input type="checkbox"/>	
63-14 - Crystallinity or Reducting Action	NP	N/A	<input type="checkbox"/> <input type="checkbox"/>	
63-15 - Flexibility	NP	CR	<input type="checkbox"/> <input checked="" type="checkbox"/>	
63-16 - Solubility	NP	N/A	<input type="checkbox"/> <input type="checkbox"/>	
63-17 - Storage Stability	NP	R	<input type="checkbox"/> <input checked="" type="checkbox"/>	
63-18 - Viscosity	NP	CR	<input type="checkbox"/> <input checked="" type="checkbox"/>	
63-19 - Miscibility	NP	N/A	<input type="checkbox"/> <input type="checkbox"/>	
63-20 - Oxidation Characteristics	NP	R	<input type="checkbox"/> <input checked="" type="checkbox"/>	
<u>Other Requirements:</u>				
64-1 - Submittal of samples	NP	CR	<input type="checkbox"/> <input type="checkbox"/>	

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 Required; CR = Conditionally Required; NP = Manufacturing-use Product
IMA REQUIREMENT NUMBERS:

AD-RM-4524-95

Chlorpyrifos Review

Page 4 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.

NO-RM-4524-95

Chlorpyrifos Review

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Pages 9 through 10 are not included.

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- 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.

Conf. Appendix

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.