

**DICOFOL
(Chemical Code 010501)**

TASK 3

**Reregistration Standard
Update**

Product Chemistry

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Contract No. 68-DO-0142

Submitted to:

U.S. Environmental Protection Agency
Arlington, VA 22202

Submitted by:

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DICOFOL

Chemical Code 010501

REREGISTRATION STANDARD UPDATE

PRODUCT CHEMISTRY

TASK 3

INTRODUCTION

A Product Search Listing conducted on 12/17/90 identified two manufacturing-use products of dicofol, the 88.0% technical (T) (Mitigan, EPA Reg. No. 11603-26) registered by Agan Chemical Manufacturers, Ltd. (c/o Makhteshim Agan America); and the 89.0% technical (T) (Kelthane, EPA Reg. No. 707-203) registered by Rohm and Haas Company.

Dicofol technical products are known to contain DDT and related contaminants (DDTr). Due to environmental concern, a special review of Dicofol was initiated in 1984. In an EPA memo dated July 8, 1985, the Agency proposed to cancel the registration of any pesticide product containing dicofol unless: (1) within 30 days after publication of EPA's final Notice of Intent to Cancel in the Federal Register, the registrant applies to amend the registration of his product to include the following statement: "skin contact with this pesticide may be hazardous; wear impervious gloves when mixing, loading, or applying this product" ; (2) by January 1, 1986, the registrant has amended the registration of his product to certify an upper limit on DDTr (calculated as the total amount of DDT, DDE, DDD and extra chlorine DDT) in his product which is equivalent to 2.5% of the percentage of technical dicofol in the product; and (3) by July 1, 1987, the registrant has amended the registration of his product to certify an upper limit on the amount of DDTr (calculated as the total amount of DDT, DDE, DDD and extra chlorine DDT) in his product which is equivalent to 0.1% of the percentage of technical dicofol in the product.

The Dicofol Guidance Document dated December, 1983 requires additional generic and product specific chemistry data for the technical product. Makhteshim Agan submitted data (1984, MRID 00150402; 1985, MRIDs 00151059, 00151575, 00151576, 00151577, 00154969, 00154970, and 00154971; 1986, MRIDs 00163337, 00163338, 00164383, 40001201, and 40004801; 1987, MRID 40297201; 1988, 40779201) in support of the reregistration of the 88.0% Mitigan Technical (EPA Reg. No. 11603-26).

In a series of Agency reviews (S. Hummel, CBRS No. 500, 2/25/85; CBRS No. 727, 3/20/85; CBRS No. 136, 1/21/86; CBRS No. 1570, 11/12/86; CBRS No. 1435, 11/18/86; CBRS No. 1673, 12/15/86; CBRS No. 2881, 5/18/89; W. Anthony, CBRS No. 4301, 10/17/89) the Makhteshim Agan data (1985, MRIDs 00154969, 00154970, 00154971, 00151059; 1986, MRIDs 00151575, 00151576, 00151577, 00163337, 00163338, 00164383, 40001201, 40004801 and 40297201) were found to fully satisfy the data requirements for the 2.5% DDTr dicofol technical product. However, since the current requirement is that

dicofol technical products contain less than 0.1% DDTr, product chemistry data demonstrating this are now required. Makhteshim Agan submitted data (1988; MRID 40779201) which demonstrated that the amount of DDTr in their technical product was <0.1%. This submission was reviewed by the Agency (W. Anthony, CBRS No. 4301, 10/17/89) who found it not adequate to satisfy Product Chemistry requirements for the 88.0% T (EPA Reg. No. 11603-26) containing <0.1% DDTr. Reducing the DDTr impurities to 0.1% in the technical product involves a change in the manufacturing process. Therefore, full Product Chemistry data are needed as required by the Dicofol PD 4 (Notice of Intent to Cancel).

Rohm and Haas failed to comply with the Dicofol PD 4 (Notice of Intent to Cancel) which resulted in the cancellation of its technical product (EPA Reg. No. 707-107) and any dicofol containing products on June 29, 1986. Data gaps from previously submitted data were never completed. In November, 1986 Rohm and Haas submitted an application (MRID 00164070) for new product registration for Kelthane Technical. The certified limit required by the Agency for the DDT related impurities at the time was not more than 2.5%. The registrant provided data (1986; MRIDs 00164070, 40042001 and 40042002) which were reviewed by the Agency (S. Hummel, CBRS No. 1878, 2/17/87; CBRS No. 3388, 3/3/88; CBRS No. 1869, 5/27/87). It was concluded that additional identification of impurities during preliminary analysis remained outstanding for Kelthane Technical containing 89.0% dicofol. Furthermore, the registrant was required to submit samples of the Kelthane technical and each impurity present at >0.1%.

The Agency granted Rohm and Haas the new EPA Registration Number 707-203 for Kelthane Technical. In March, 1988 Rohm and Haas Company submitted an amendment (1988, MRID 40504501; and supplement to MRID 40504501) to their registration for Kelthane Technical, which reduced the levels of DDTr in Kelthane Technical to 0.1%. This amendment was required by the PD4/Notice of Intent to Cancel (51 FR 19508, 5/29/86). These submissions were reviewed by the Agency (S. Hummel, CBRS No. 3388, 3/3/88; CBRS No. 4116, 9/10/88). It was concluded that the registrant is required to provide a new confidential statement of formula based on the production runs within six months after commercial production begins, suppliers and specifications for four beginning materials, verification of the identity of one beginning material, and new data on physical and chemical characteristics (color, odor, melting point, stability, storage stability, corrosion characteristics) which could change as a result of the new manufacturing process for the Kelthane 89% T (EPA Reg. No. 707-203).

Corresponding to each of the Topical Discussions below are the Guideline Reference Numbers from "Pesticide Assessment Guidelines - Subdivision D - Product Chemistry", referred to in Title 40 of the Code of Federal Regulations (40 CFR), Part 158, "Data requirements for Registration", Subpart C, "Product Chemistry Data Requirements". These regulations and guidelines explain the minimum data that the Agency needs to adequately assess the product chemistry of dicofol.

Product Composition and Manufacture	61-(1-3)
Analysis and Certification of Product Ingredients	62-(1-3)
Physical and Chemical Characteristics	63-(2-20)

SUMMARY

The following remain outstanding:

- o For Makhteshim Agan (EPA Reg. No. 11603-26), full Product Chemistry data for dicofol technical product containing less than 0.1% DDT are needed as required by the Dicofol PD4/Notice of Intent to Cancel.
- o For Rohm and Haas Company (EPA Reg. No. 707-203), a new confidential statement of formula based on the production runs, suppliers and specifications for four beginning materials, verification of the identity of one beginning material. New data are required for color, odor, melting point, stability, oxidation/reduction, storage stability, and corrosion characteristics since they may have been affected by the new product composition.

PRODUCT IDENTITY AND COMPOSITION

61-1. Product Identity and Disclosure of Ingredients

The Dicofol Guidance Document dated December, 1983 requires additional product specific data for product composition. In response, Makhteshim Agan submitted data (1984, MRIDs 00150402, 00154969; 1985, MRID 00151575; 1987, MRID 40297201) for the dicofol technical product containing 2.5% DDT. The Agency (S. Hummel, CBRS No. 727, 3/20/85; CBRS No. 136, 1/21/86; CBRS No. 2881, 5/18/89) reviewed the data and concluded that the requirements of 40 CFR §158.155 (Guideline Ref. No. 61-1) are satisfied. However, a revised Confidential Statement of Formula must be submitted with current nominal concentrations for the dicofol technical product containing less than 0.1% DDT as required by the Dicofol PD4 (Notice of Intent to Cancel). All data pertaining to this topic are required for Makhteshim Agan 88.0% T (EPA Reg. No. 11603-26).

Rohm and Haas submitted data (1988; MRID 40504501 and a supplement to this MRID) which were reviewed by the Agency (S. Hummel, CBRS No. 3388, 3/3/88; CBRS No. 4116, 9/10/88). The data provided satisfy the requirements of 40 CFR §158.155 (Guideline Ref. No. 61-1) for the Kelthane Technical (EPA Reg. No. 707-203). However, the Agency required that a new Confidential Statement of Formula based on the production runs be

provided within six months after commercial production begins. This requirement remains outstanding.

61-2. Starting Materials and Manufacturing Process

The Dicofol Guidance Document dated December, 1983 requires additional generic and product specific data regarding the starting materials used and the manufacturing process. Makhteshim Agan submitted data (1984, MRID 00154969; 1985, MRID 00151575; 1987, MRID 40297201) in support of the reregistration of their Mitigan technical (EPA Reg. No. 11603-26), which were reviewed by the Agency (S. Hummel, CBRS No. 500, 2/25/85; CBRS No. 136, 1/21/86; CBRS No. 2881, 5/18/89). It was concluded that the data provided for the dicofol technical product containing 2.5% DDTr fully satisfy the requirements of 40 CFR §158.162 (Guideline Ref. No. 61-2). However, the new requirement for the dicofol technical product is to reduce DDTr to less than 0.1%. Such DDTr reduction involves a change in the manufacturing process. Therefore, Makhteshim Agan is required to provide new information regarding starting materials and manufacturing process for the 88.0% T (EPA Reg. No. 11603-26).

Rohm and Haas submitted information (1988; MRID 40504501 and supplement to this MRID) which was reviewed by the Agency (S. Hummel, CBRS No. 3388, 3/3/88; CBRS No. 4116, 9/10/88). It was concluded that the information provided does not fully satisfy the requirements of 40 CFR §158.162 (Guideline Ref. No. 61-2) because suppliers and specifications for four beginning materials and verification of the identity of one beginning material were not provided (see Confidential Appendix A for specific details). Additional information is required for the 89.0% T (EPA Reg. No. 707-203).

61-3. Discussion of Formation of Impurities

The Dicofol Guidance Document dated December, 1983 requires additional generic and product specific data regarding the formation of impurities. In response, Makhteshim Agan submitted information (1984, MRIDs 00150402, 00154969; 1985, MRID 00151575; 1987, MRID 40297201) which were reviewed by the Agency (S. Hummel, CBRS No. 500, 2/25/85; CBRS No. 136, 1/21/86; CBRS No. 2881, 5/18/89). The information provided for the dicofol technical product containing 2.5% DDTr fully satisfy the requirements of 40 CFR §158.167 (Guideline Ref. No. 61-3). However, the current requirement calls for the reduction of DDTr to less than 0.1% in dicofol technical products. Such DDTr reduction involves a change in the manufacturing process that could lead to the formation of other impurities. Makhteshim Agan is therefore required to provide new information regarding a discussion of formation of impurities for the 88.0% T (EPA Reg. No. 11603-26) containing less than 0.1% DDTr.

Rohm and Haas Company submitted information (1988; MRID 40504501 and supplement to this MRID) which was reviewed by the Agency (S. Hummel, CBRS No. 3388, 3/3/88; CBRS No. 4116, 9/10/88). It was concluded that the information provided for the dicofol

technical product containing less than 0.1% DDT fully satisfy the requirements of 40 CFR §158.167 (Guideline Ref. No. 61-3) regarding the formation of impurities. No additional discussion is required for the 89.0% T (EPA Reg. No. 707-203).

62-1. Preliminary Analysis

The Dicofol Guidance Document dated December, 1983 specified generic and product specific requirements regarding preliminary analysis. Makhteshim Agan submitted preliminary analyses of five batches of Technical Dicofol (1984, MRID 00154970; 1985, MRID 00151576; 1986, MRIDs 00164383, 00163337, 40001201 and 40004801; 1987, MRID 40297201) which were reviewed by the Agency (S. Hummel, CBRS No. 500, 2/25/85; CBRS No. 136, 1/21/86; CBRS No. 1435, 11/18/86; CBRS No. 1673, 12/15/86; CBRS No. 2881, 5/18/89). It was concluded that the data for the dicofol technical product containing 2.5% DDT fully satisfy the requirements of 40 CFR §158.170 (Guideline Ref. No. 62-1).

In response to the current requirement that dicofol technical products contain less than 0.1% DDT, Makhteshim Agan submitted additional data (1988; MRID 40779201) which were also reviewed by the Agency (W. Anthony, CBRS No. 4301, 10/17/89). This submission provided chromatograms of six replicate runs of the standard, five chromatograms taken from, presumably, five individual batches and the analytical method and calculations for determining total DDT related impurities in the technical product. From the calculated data, it has been demonstrated that the amount of DDT related impurities in Makhteshim Agan Mitigan technical product was less than 0.1%. On the chromatograms provided,

given by the registrant are not acceptable despite the appearance of both peaks on the standard and samples chromatograms. Additional clarification for their presence is required for the 88.0% T (EPA Reg. No. 11603-26) in order to fully satisfy the requirements of 40 CFR §158.170 (Guideline Ref. No. 62-1) regarding preliminary analysis.

Rohm and Haas submitted data (1988; MRID 40504501 and supplement to this MRID) based on the preliminary analysis of five batches of Kelthane Technical (EPA Reg. No. 707-203). Additional attempts to further identify and confirm the identity of the impurities were done. The Agency (S. Hummel, CBRS No. 3388, 3/3/88; CBRS No. 4116, 9/10/88) reviewed the data for the technical dicofol containing less than 0.1% DDT and concluded that the requirements of 40 CFR §158.170 (Guideline Ref. No. 62-1) are fully met. No additional data are required for the 89.0% T (EPA Reg. No. 707-203).

62-2. Certified Limits

The Dicofol Guidance Document dated December, 1983 requires generic and product specific data pertaining to certified limits. Makhteshim Agan submitted data (1984, MRID

00154970; 1986 MRID 00151576; 1987, MRID 40297201) which were reviewed by the Agency (S. Hummel, CBRS No. 500, 2/25/85; CBRS No. 136, 1/21/86; CBRS No. 2881, 5/18/89). It was concluded that the data provided for the technical dicofol containing 2.5% DDTr fully satisfy the requirements of 40 CFR §158.175 (Guideline Ref. No. 62-2) regarding certified limits. However, the registrant is required to provide new certified limits to comply with the current requirement that dicofol technical product should contain less than 0.1% DDTr. Additional data are required for Makhteshim Agan 88.0% T (EPA Reg. No. 11603-26). Certified limits should be submitted on EPA Form 8570-4 (Rev. 2-85).

Rohm and Haas submitted data (1988; MRID 40504501 and supplement to this MRID) which were reviewed by the Agency (S. Hummel, CBRS No. 3388, 3/3/88; CBRS No. 4116, 9/10/88). Rohm and Haas has certified a limit of 0.1% for DDT related impurities. It was concluded that the data provided fully satisfy the requirements of 40 CFR §158.175 (Guideline Ref. No. 62-2) regarding certified limits. No additional data are required for the Kelthane Technical (EPA Reg. No. 707-203).

62-3. Enforcement Analytical Methods

Makhteshim Agan submitted enforcement analytical methods (1985, MRID 00151576; 1987, MRID 40297201). The Agency (S. Hummel, CBRS No. 136, 1/21/86; CBRS No. 2881, 5/18/89) reviewed the data provided for the Mitigan technical containing 2.5% DDTr and concluded that the requirements of 40 CFR §158.180 (Guideline Ref. No. 62-3) are fully met. However, the Agency also concluded that, due to the current requirement that technical dicofol product should contain less than 0.1% DDTr, the registrant must provide validated methods for enforcement of new certified limits. Additional data are required for the 88.0% T (EPA Reg. No. 11603-26).

Rohm and Haas submitted validated enforcement analytical methods (1988; MRID 40504501 and supplement to this MRID) for its dicofol technical product containing less than 0.1% DDTr, which were reviewed by the Agency (S. Hummel, CBRS No. 3388, 3/3/88; CBRS No. 4116, 9/10/88). The methodology submitted is adequate. No additional information is required for the Kelthane Technical (EPA Reg. No. 707-203).

PHYSICAL AND CHEMICAL CHARACTERISTICS

Makhteshim Agan Submitted data (1984, MRIDs 00154971; 1985, MRIDs 00151059, 00151575 and 00151577; 1986, MRID No. 00163338) which were reviewed by the Agency (S. Hummel, CBRS No. 500, 2/25/85; CBRS. No. 727, 3/20/85; CBRS No. 136, 1/21/86; CBRS No. 1435, 11/1/8/86). Rohm and Haas submitted data (1984, MRIDs 00161079, 00141704) which were reviewed by the Agency (W. Boodee, no CBRS No., 7/2/84; S. Hummel, CBRS Nos. 583, 584, 585, 586, 688, 689, 690, 691, 3/20/85). The physical and chemical characteristics data are presented in the following table.

Table 1. Physical and chemical properties of the Technical Dicofol.

Guideline Reference No., 40 CFR §158.190; Name of Property	Description (Product; Test Substance; EPA Reg. No.; MRID)
63-2. Color	no data (88.0% T;; 11603-26;) reddish brown (89.0% T; TGAI; 707-203; 00147104)
63-3. Physical state	no data (88.0% T;; 11603-26;) glassy solid (89.0% T; TGAI; 707-203; CBRS No.1878 ^a)
63-4. Odor	slight, aromatic-like, characteristic odor (88.0% T; TGAI; 11603-26; 00154971 and 00151577) very characteristic sweetish/musty odor reminiscent of chlorinated hydrocarbon (89.0% T; TGAI; 707-203; 00161709)
63-5. Melting point	no data (88.0% T;; 11603-26;) 50-57 °C (89.0% T; TGAI; 707-203; CBRS No. 1878 ^a)
63-6. Boiling point	N/A (88.0% T;; 11603-26; 00154971 and 00151577) decomposes at 193 °C (89.0% T; TGAI; 707-203; CBRS No. 1547 ^a)

(Continued)

Table 1. (Continued)

Guideline Reference No., 40 CFR §158.190; Name of Property	Description (Product; Test Substance; EPA Reg. No.; MRID)
63-7. Bulk density	<p>no data (88.0% T;; 11603-26;)</p> <p>1.4-1.5 g/ml (89.0% T; TGAI; 707-203; 00141704)</p>
63-8. Solubility (25 °C)	<p>water 80 µg/100 ml dichloromethane 260 g/100 ml methanol 275 g/100 ml xylene 135 g/100 ml (88.0% T; PAI; 11603-26; 00154971, 00151575 and 00163338)</p> <p>water 1.32 ppm organic solvents very soluble n-heptane 50 g/100 ml (89.0% T; PAI; 707-203; 00161079)</p> <p>water 0.07 ppm organic solvents moderately soluble in most (89.0% T; p,p'-Cl-DDT; 707-203; 00161079)</p>
63-9. Vapor pressure	<p>1.368 x 10⁻⁶mm Hg at 25 °C 3.046 x 10⁻⁶mm Hg at 34 °C (88.0% T; PAI; 11603-26; 00151577)</p> <p>1.444 x 10⁻⁶mm Hg at 25 °C 6.413 x 10⁻⁶mm Hg at 34 °C (88.0% T; p,p'-Cl-DDT; 11603-26; 00151575)</p> <p>3.9 x 10⁻⁷mm Hg at 25 °C (89.0% T; PAI; 707-203; 00161079)</p> <p>2.5 x 10⁻⁷mm Hg at 25 °C (89.0% T; p,p'-Cl-DDT; 707-203; 00161079)</p> <p>4.0 x 10⁻⁷mm Hg at 25 °C (89.0% T; o,p'-Cl-DDT; 707-203; 00161079)</p>

(Continued)

Table 1. (Continued)

Guideline Reference No., 40 CFR §158.190; Name of Property	Description (Product; Test Substance; EPA Reg. No.; MRID)
63-10. Dissociation constant	<p>the active ingredient does not undergo reversible dissociation reactions in aqueous media; dicofol is, instead, subject to highly irreversible degradation to dichlorobenzophenone [=bis(chlorophenyl)methanone] in aqueous, particularly alkaline solutions. (88.0% T; PAI; 11603-26; 00154971 and 00151577)</p> <p>no marked acidic or basic properties (89.0% T; PAI; 707-203; 00161079)</p>
63-11. Octanol/water partition coefficient	<p>$K_{ow} = 8.72 \times 10^4$ at 25 °C (88.0% T; PAI; 11603-26; 00151577)</p> <p>$K_{ow} = 6.13 \times 10^4$ at 25 °C (88.0% T; p,p'-Cl-DDT; 11603-26; 00154969, 00154971, 00151575 and 00151577)</p> <p>$K_{ow} = 2.2 \times 10^3$ at 20 °C (89.0% T; PAI; 707-203; 00161079)</p> <p>$K_{ow} = 5 \times 10^5$ at 23 °C (89.0% T; p,p'-Cl-DDT; 707-203; 00161079)</p>
63-12. pH	<p>no data (88.0% T;; 11603-26;)</p> <p>N/A (89.0% T;; 707-203;)</p>
63-13. Stability	<p>not sensitive to sunlight (88.0% T; PAI; 11603-26; 00154971 and 00151577)</p> <p>stable up to 140 °C; decomposes above 200 °C; unstable in presence of base, producing dichlorobenzophenone; degrades in UV light (89.0% T; PAI; 707-203; 00161079)</p>

Table 1. (Continued)

Guideline Reference No., 40 CFR §158.190; Name of Property	Description (Product; Test Substance; EPA Reg. No.; MRID)
63-14. Oxidation and reduction	<p>no substantial increase in temperature or evolution of gases was observed when placed in flask filled with water; monobasic ammonium hydrogen phosphate; Zn powder; 0.5% aqueous solution of potassium permanganate; in an atmosphere enriched with carbon dioxide; for 24 hours (88.0% T; TGAI; 11603-26; 00151577)</p> <p>not an oxidizing or reducing agent (89.0% T; TGAI; 707-203; 00141704)</p>
63-15. Flammability	<p>non-flammable (88.0% T; TGAI; 11603-26; 00151577)</p> <p>flash point 193 °C by open cup (89.0% T; TGAI; 707-203; 00141704)</p>
63-16. Explodability	<p>not explodable (89.0% T; TGAI; 707-203; 00141704)</p>
63-17. Storage stability	<p>stable during storage at normal warehouse conditions in polymer-coated metal containers; stable for three years (89.0% T; TGAI; 707-203; 00141704)</p>
63-18. Viscosity	<p>335 cps at 70 °C (89.0% T; TGAI; 707-203; CBRS No. 1547^a)</p>
63-19. Miscibility	<p>negligible in water >87.5% in methanol, methyl oleate, cyclohexanone, and xylene at 25 °C (89.0% T; TGAI; 707-203; 00141704)</p>
63-20. Corrosion characteristics	<p>slightly corrosive to uncoated metal surfaces (88.0% T; TGAI; 11603-26; 00154971)</p> <p>N/A (89.0% T; ; 707-203; 00141704)</p>

^aThese data were quoted verbatim from these Agency memoranda which found them satisfactory. The pertinent MRIDs were not cited.

The Agency has determined that Makhteshim Agan must submit new data to support the reregistration of their 88.0% T (EPA Reg. No. 11603-26). The Agency has also determined that Rohm and Haas must submit new data for those characteristics that might be affected by the new manufacturing process to support the reregistration of their 89.0% T (EPA Reg. No. 707-203).

[All physical and chemical characteristics remain outstanding for the Makhteshim Agan 88.0% T (EPA Reg. No. 11603-26. Color, odor, melting point, stability, oxidation/reduction, storage stability, and corrosion characteristics are required for the Rohm and Haas 89.0% T (EPA Reg. No. 707-203).]

AGENCY MEMORANDA CITED IN THIS UPDATE:

CBRS No. None
Subject: Kelthane Technical - Request for Revised Statement of Formula
From: Richard Loranger
To: Jay Ellenberger
Dated: 1/25/82
MRID: 00143708

CBRS No. None
Subject: Addendum #2 to Dicofol Registration Standard (Accession No. 253539)
From: W. Boodee
To: Amy Rispin and J. Ellenberger
Dated: 6/18/84
MRID: not known

CBRS No. None
Subject: Addendum #3 to Dicofol Registration Standard (Accession Nos. 253128, 253262)
From: W. Boodee
To: Amy Rispin and J. Ellenberger
Dated: 7/2/84
MRIDs: 00145489, 00161079

CBRS No. None
Subject: Change in Manufacturing process and Temporary Certification of Ingredient Limits of Technical Kelthane (Accession No. 253551)
From: W. Boodee
To: Amy Rispin and Jay Ellenberger
Dated: 8/13/84
MRID: 00142595

CBRS No. None
Subject: Dicofol Registration Standard - Octanol/water partition coefficient for a Dicofol technical impurity, 1,1-bis(4-chlorophenyl)-1,2,2,2-tetrachloroethane (Accession No. 254959)
From: Michele L. Loftus
To: Jay Ellenberger and Sam Creeger
Dated: 12/26/84
MRID: 00141578

CBRS No. 136
Subject: 010501 Amendment - Mitigan Technical (Dicofol) Reduction of DDT (Accession No. 25981)
From: Susan V. Hummel
To: Bruce Kapner, Edward Allen and Jay Ellenberger
Dated: 1/21/86
MRIDs: 00151575, 00151576, 00151577

CBRS No. 500
Subject: 010501 Product Chemistry Data for Acarin Technical (Accession No. 256070)
From: Susan V. Hummel
To: Bruce Kapner, Edward Allen and Jay Ellenberger
Dated: 2/25/85
MRIDs: 00154969, 00154970, 00154971

CBRS No. 567
Subject: Dicofol (010501) - Review of Rohm and Haas Response to PD 2/3 (No accession number)
From: Susan V. Hummel
To: Bruce Kapner
Dated: 3/15/85
MRID: not known

CBRS Nos. 583, 584, 585, 586, 688, 689, 690, 691
Subject: Dicofol Data Call-in Product Chemistry and Confidential Statements of Formula (Accession Nos. 256362 and 256589)
From: Susan V. Hummel
To: Edward Allen
Dated: 3/20/85
MRIDs: 00141704, 00147442

CBRS No. 727
Subject: 010501 Additional Product Chemistry Data for Acarin Technical (Accession No. 257035) Submission of 3/8/85
From: Susan V. Hummel

To: Bruce Kapner, Edward Allen and Jay Ellenberger
Dated: 3/20/85
MRIDs: 00151059

CBRS No. 1435
Subject: not known
From: Susan V. Hummel
To: not known
Dated: 11/18/86
MRIDs: 00163337, 00163338, 00164383

CBRS No. 1547
Subject: EPA File Symbol 707-ENG Rohm and Haas Kelthane Technical Product
Chemistry Data Supporting New Product Application (Accession No. 265520)
From: Susan V. Hummel
To: Dennis Edwards and Bruce Kapner
Dated: 11/21/86
MRID: 00164070

CBRS No. 1570
Subject: Additional Product Chemistry Data in Response to EPA Letter of 9/26/86
(Accession No. 265849)
From: Susan V. Hummel
To: Dennis Edwards and Bruce Kapner
Dated: 11/12/86
MRID: None

CBRS No. 1673
Subject: Additional Product Chemistry Data in Response to EPA Letter of 9/26/86
From: Susan V. Hummel
To: Dennis Edwards and Bruce Kapner
Dated: 12/15/86
MRIDs: 40001201, 40004801

CBRS No. 1878
Subject: EPA File Symbol 707-ENG Rohm and Haas Kelthane Technical Additional
Product Chemistry Data Supporting New Product Application (No accession
number)
From: Susan V. Hummel
To: Dennis Edwards
Dated: 2/17/87
MRID: not known

CBRS No. 2881
Subject: Additional Product Chemistry Data in Response to EPA Letter of 1/14/87
From: Susan V. Hummel
To: Dennis Edwards
Dated: 5/18/89
MRID: 40297201

CBRS No. 3388
Subject: Rohm and Haas Kelthane Technical Product Chemistry Data Supporting
Amendment to Reduce DDT_r Impurities to 0.1%
From: Susan V. Hummel
To: Dennis Edwards
Dated: 3/3/88
MRID: 40504501

CBRS No. 4116
Subject: Rohm and Haas Kelthane Technical Additional Product Chemistry Data
Supporting Amendment to Reduce DDT_r Impurities to 0.1%
From: Susan V. Hummel
To: Dennis Edwards/I. Gairola
Dated: 9/10/88
MRID: Supplement to MRID 40504501

CBRS No. 4301
Subject: Dicofol: Analysis of DDT_r Impurities in the Technical Product
From: William L. Anthony
To: Dennis Edwards
Dated: 10/17/89
MRID: 40779201

MASTER RECORD IDENTIFICATION NUMBERS:

MRID documents containing data which have been previously reviewed by the Agency are designated in bold print in the following bibliographic listing of Product Chemistry Citations (used). A summary of the subject memoranda and their associated MRID documents is presented above.

Product Chemistry Citations (used):

- 00141704 Rohm and Haas Co. (1984) Product Chemistry - Kelthane Miticides. Unpublished study. 19 p.**
- 00150402 Agan Chemical Manufacturers, Ltd. (1984): Product Chemistry of Acarin Technical. Unpublished compilation. 13 p.**
- 00151059 Schlesinger, H. (1985) p,p'-Dicofol Product Chemistry : Vapor Pressure. Unpublished study prepared by Analyst Ltd. 10 p.**
- 00151575 Agan Chemical Mfg. Ltd. (1985) Product Identity and Disclosure of Ingredients of Acarin. Unpublished compilation. 49 p.**
- 00151576 Agan Chemical Mfg. Ltd. (1985) Preliminary Analysis of Product Samples and Certification of Ingredients in Acarin. Unpublished compilation. 27 p.**
- 00151577 Agan Chemical Mfg. Ltd. (1985) Physical and Chemical Characteristics of Acarin. Unpublished compilation. 49 p.**
- 00154969 Makhteshim Agan (America) Inc. (1984) Product Identity and Composition: Acarin. Unpublished compilation. 49 p.**
- 00154970 Makhteshim Agan (America) Inc. (1985) Analysis and Certification of Product Ingredients: Acarin. Unpublished study. 11 p.**
- 00154971 Makhteshim Agan (America) Inc. (1985) Physical and Chemical Characteristics: Acarin. Unpublished study. 28 p.**
- 00161079 Rohm and Haas Co. (1984) Product Chemistry Kelthane Technical. Unpublished compilation. 138 p.**
- 00163337 Agan Chemical Co., Inc. (1986) Preliminary Analysis of Product Samples: Mitigan (Dicofol) Technical. Unpublished study. 32 p.**
- 00163338 Agan Chemical Co., Inc. (1986) Solubility of Mitigan (Dicofol) Technical. Unpublished study. 1 p.**

- 00164070 Rohm and Haas Co. (1986) Kelthane Product Chemistry. Unpublished compilation. 175 p.
- 00164383 Hodosh, R. (1986) Letter Sent to D. Edwards dated Oct. 28, 1986: Mitigan (Dicofol) Technical : Product Chemistry submitted in response to EPA letter of Sept. 26, 1986. Prepared by Makhteshim Agan (America) Inc. 16 p.
- 40001201 Zborowski, G. (1986) Mitigan (Dicofol) Technical: Composition of Dicofol. Unpublished study prepared by Agan Chemical Manufacturers, Ltd. 32 p.
- 40004801 Staff, Agan Chemical Manufacturers, Ltd. (1986) Additional Product Chemistry Information. Mitigan (Dicofol) Technical - EPA Reg. No. 11603-26. Unpublished compilation. 56 p.
- 40042001 Teeter, D. (1986) Determination of the Octanol/Water Partition Coefficient of Carbon 14 - p, p'-Dicofol: Technical Report No. 310-86-36: ABC Final Report No. 34623. Unpublished study prepared by Rohm and Haas Co. in cooperation with Analytical Bio-Chemistry Laboratories, Inc. 81 p.
- 40042002 Teeter, C. (1986) Determination of the Octanol/Water Partition Coefficient of Carbon 14 - o, p'-Dicofol: Technical Report No. 310-86-37-ABC Final Report No. 34621. Unpublished study prepared by Rohm and Haas in cooperation with Analytical Bio-Chemistry laboratories, Inc. 77 p.
- 40151575 Agan Manufacturers, Ltd. (1985) Product Identity and Disclosure of Ingredients of Acarin. Unpublished compilation. 49 p.
- 40151576 Agan Manufacturers, Ltd. (1985) Preliminary Analysis of Product Samples and Certification of Ingredients in Acarin. Unpublished compilation. 27 p.
- 40151577 Agan Manufacturers, Ltd. (1985) Physical and Chemical Characteristics of Acarin. Unpublished compilation. 49 p.
- 40297201 Agan Chemical Manufacturers, Ltd. (1987) Additional Product Chemistry Information: Mitigan (Dicofol) Technical. Unpublished study. 191 p.
- 40504501 Rohr, W. ; Nichols, R. (1988) Product Chemistry Section for Kelthane Technical: Project ID No. RWN-88-008. Unpublished study prepared by Rohm and Haas Co. 204 p.
- 40779201 Miller, Y. (1988) Estimation of DDTs in Five Samples of Dicofol Technical. Supplementary Data Lab. Report ID S551-4/S637-3. Unpublished study prepared by Agan Chemical Manufacturers, Ltd., Israel. 26 p.

Product Chemistry Citations (not used):

[These MRIDs contain data that are not relevant to currently registered manufacturing-use products.]

- 00141578 Keeney, J. (1984) Determination of the Octanol/Water Partition Coefficient (KOW) for ER-8.... En Cas Job # 83-177, Part 1. Unpublished Rohm and Haas Technical report No. 31 L-84-04 prepared by En Cas Analytical Labs. 20 p.
- 00141580 Keeney, J. (1984) Hydrolysis Study of ER-8....En Cas Job # 83-177, Part 2. Unpublished Rohm and Haas Technical Report No. 31 L-84-03 prepared by En Cas Analytical Labs. 26 p.
- 00142595 Rohm and Haas Co. (1984) Addendum to Generic Product Chemistry Submitted April 30, 1984. Unpublished study. 4 p.
- 00143705 Rothman, A. (1980) Product Chemistry for Kelthane and p,p'-dichlorobenzophenone: Unpublished study prepared by Rohm and Haas Co. 44 p.
- 00143708 Rohm and Haas Co. (1981) Kelthane Technical Product Composition. Unpublished compilation. 8 p.
- 00143715 Rothman, A. (1981) Water Solubility of ER-8: Technical Report No. 7487. Unpublished study prepared by Rohm and Haas Co. 14 p.
- 00145489 Rohm and Haas Co. (1984) Addendum to Generic Product Chemistry Data. Unpublished study. 7 p.
- 00147742 Rohm and Haas Co. (1985) Kelthane Solution Product Chemistry Data. Unpublished compilation. 18 p.
- 00149734 Rohm and Haas Co. (1985) Kelthane technical - Certification of limits: Product Chemistry Data. Unpublished study. 3 p.
- 00162966 Rohm and Haas Co. (1986) Kelthane Product Chemistry. Unpublished compilation. 86 p.
- 00163795 Rohm and Haas Co. (1986) Response to Dicofol Data Call-in Notice dated April 16, 1986. Unpublished.

TABLE A. GENERIC DATA REQUIREMENTS FOR THE DICOVOL TECHNICAL GRADE OF THE ACTIVE INGREDIENT.¹

Data Requirements	Test Substance ²	Does EPA have data to satisfy this requirement?	Bibliographic Citation ³	Must additional data be submitted under FIFRA Sec. 3(C)(2)(B)?
<u>40 CFR §158.155-190 Product Chemistry</u>				
<u>Product Composition</u>				
61-2. Beginning Materials and Production Process	TGAI	Partially	40504501	Yes ⁴
61-3. Formation of Impurities	TGAI	Yes	40504501	No
<u>Analysis and Certification of Product Ingredients</u>				
62-1. Preliminary Analysis of Product Samples	TGAI	Yes	40504501	No
<u>Physical and Chemical Characteristics⁵</u>				
63-2. Color	TGAI	Yes	00141704	Yes
63-3. Physical State	TGAI	Yes	not known ⁶	No
63-4. Odor	TGAI	Yes	00161079	Yes
63-5. Melting Point	TGAI	Yes	not known ⁶	Yes
63-6. Boiling Point	TGAI	Yes	not known ⁶	No

(Continued, footnotes follow)

TABLE A. (Continued)

Data Requirements	Test Substance ²	Does EPA have data to satisfy this requirement?	Bibliographic Citation ³	Must additional data be submitted under FIFRA Sec. 3(C)(2)(B)?
63-7. Density, Bulk Density, or Specific Gravity	TGAI	Yes	00141704	No
63-8. Solubility	TGAI or PAI	Yes	00161079	No
63-9. Vapor Pressure	TGAI or PAI	Yes	00161079	No
63-10. Dissociation Constant	TGAI or PAI	Yes	00161079	No
63-11. Octanol/Water Partition Coefficient	PAI	Yes	00161079	No
63-12. pH	TGAI	N/A	--	N/A
63-13. Stability	TGAI	Yes	00161079	Yes
<u>Other Requirements</u>				
64-1. Submittal of Samples	choice	Yes	N/A	No

¹Data requirements pertain to the Rohm and Haas 89.0% T (EPA Reg. No. 707-203).

²Test Substance: TGAI = technical grade of the active ingredient; PAI = purified active ingredient; MP = manufacturing use product.

³These references were submitted in response to the Dicofoil Guidance Document (December, 1983). Underlining indicates documents that have been reviewed for this update.

TABLE A. (Continued)

⁴Rohm and Haas has responded to the requirements of 40 CFR §158.162 for the 89.0% T (EPA Reg. No. 707-203). The data provided do not fully satisfy the requirements of 40 CFR §158.162 because the registrant failed to provide the suppliers and specifications for four beginning materials, and verification of the identity of one beginning material (see Confidential Appendix A of Reregistration Standard Update for product chemistry).

⁵Rohm and Haas responded to the requirements of 40 CFR §158.190 for the 89.0% T (EPA Reg. No. 707-203). The Agency has reviewed the submitted data and determined that the requirements are partially satisfied. Those data which may be affected by the change in manufacturing process, and reduced DDT_r, should be resubmitted. This list of outstanding characteristics includes color, odor, melting point, and stability.

⁶These data have been previously reviewed by the Agency. The applicable citation cannot be determined.

TABLE A. GENERIC DATA REQUIREMENTS FOR THE DICOVOL TECHNICAL GRADE OF THE ACTIVE INGREDIENT.¹

Data Requirements	Test Substance ²	Does EPA have data to satisfy this requirement?	Bibliographic Citation ³	Must additional data be submitted under FIFRA Sec. 3(C)(2)(B)?
<u>40 CFR §158.155-190 Product Chemistry</u>				
<u>Product Composition</u>				
61-2. Beginning Materials and Production Process	TGAI	Partially	00154969 00151575 40297201	Yes ⁴
61-3. Formation of Impurities	TGAI	Partially	00154969 00151575 40297201	Yes ⁵
<u>Analysis and Certification of Product Ingredients</u>				
62-1. Preliminary Analysis of Product Samples	TGAI	Partially	00154970 00151576 00164383 00163337 40001201 40004801 40297201 40779201	Yes ⁶
<u>Physical and Chemical Characteristics⁷</u>				
63-2. Color	TGAI	No	--	Yes
63-3. Physical State	TGAI	No	--	Yes
63-4. Odor	TGAI	Partially	00154971 00151577	Yes
63-5. Melting Point	TGAI	No	--	Yes

(Continued, footnotes follow)

TABLE A. (Continued)

Data Requirements	Test Substance ²	Does EPA have data to satisfy this requirement?	Bibliographic Citation ³	Must additional data be submitted under FIFRA Sec. 3(C)(2)(B)?
63-6. Boiling Point	TGAI	N/A	00154971 00151577	No
63-7. Density, Bulk Density, or Specific Gravity	TGAI	No	--	Yes
63-8. Solubility	TGAI or PAI	Partially	00154971 00151577 00163338	Yes
63-9. Vapor Pressure	TGAI or PAI	Partially	00151575	Yes
63-10. Dissociation Constant	TGAI or PAI	Partially	00154971 00151577	Yes
63-11. Octanol/Water Partition Coefficient	PAI	Partially	00154969 00154971 00151575 00151577	Yes
63-12. pH	TGAI	No	--	Yes
63-13. Stability	TGAI	Partially	00154971 00151577	Yes
<u>Other Requirements</u>				
64-1. Submittal of Samples	choice			Yes

¹Data requirements pertain to the Makhteshim Agan 88.0% T (EPA Reg. No. 11603-26).

²Test Substance: TGAI = technical grade of the active ingredient; PAI = purified active ingredient; MP = manufacturing use product.

TABLE A. (Continued)

³These references were submitted in response to the Dicofol Guidance Document (December, 1983). Underlining indicates documents that have been reviewed for this update.

⁴Makhteshim Agan responded to the requirements of 40 CFR §158.162 for the 88.0% T (EPA Reg. No. 11603-26) containing 2.5% DDTr. The data provided for the dicofol technical product containing 2.5% DDT related impurities fully satisfy the requirements of 40 CFR §158.162. However, the current requirement calls for the reduction of DDTr to <0.1% in dicofol technical product. Such DDTr reduction involves a change in the manufacturing process. Makhteshim Agan has not provided any information on the starting materials used and manufacturing process of the current TGAI. All requirements pertaining to this topic remain outstanding.

⁵Makhteshim Agan has responded to the requirements of 40 CFR §158.167 for the 88.0% T (EPA Reg. No. 11603-26) containing 2.5% DDTr. The discussion of formation of impurities for the dicofol technical product containing 2.5% DDTr fully satisfies the requirements of 40 CFR §158.167. However, the current requirement calls for the reduction of DDTr to <0.1%. Such DDTr reduction involves a change in the manufacturing process which requires a new discussion of the formation of impurities. Makhteshim Agan has not provided any information for the dicofol technical product containing <0.1% DDTr. All requirements pertaining to this topic remain outstanding.

⁶Makhteshim Agan has responded to the requirements of 40 CFR §158.170 for the 88.0% T (EPA Reg. No. 11603-26) containing <0.1% DDTr. The data for the current TGAI need additional clarification and identification for the two peaks that were classified as artifacts. Additional identification and clarification of these two peaks remain outstanding.

⁷Makhteshim Agan has not responded to the requirements of 40 CFR §158.190 for the current 88.0% T (EPA Reg. No. 11603-26). All requirements for this topic remain outstanding.

TABLE B. PRODUCT SPECIFIC DATA REQUIREMENTS FOR THE DICOFOL MANUFACTURING-USE PRODUCTS.¹

Data Requirements	Test Substance²	Does EPA have data to satisfy this requirement?	Bibliographic Citation³	Must additional data be submitted under FIFRA Sec. 3(C)(2)(B)?
<u>40 CFR §158.155-190 Product Chemistry</u>				
<u>Product Composition</u>				
61-1. Product Identity and Disclosure of Ingredients	MP	Partially	40504501	Yes ⁴
61-2. Beginning Materials and Production Process	MP	Partially	40504501	Yes ⁵
61-3. Formation of Impurities	MP	Yes	40504501	No
<u>Analysis and Certification of Product Ingredients</u>				
62-1. Preliminary Analysis of Product Samples	MP	Yes	40504501	No
62-2. Certification of Ingredient Limits	MP	Yes	40504501	No
62-3. Analytical Methods to Verify Certified Limits	MP	Yes	40504501	No
<u>Physical and Chemical Characteristics⁶</u>				
63-2. Color	MP	Partially	00141704	Yes
63-3. Physical State	MP	Yes	not known ⁷	No
63-4. Odor	MP	Partially	00161079	Yes
63-7. Density, Bulk Density, or Specific Gravity	MP	Yes	00141704	No
63-12. pH	MP	N/A	--	N/A

(Continued, footnotes follow)

TABLE B. (Continued)

Data Requirements	Test Substance ²	Does EPA have data to satisfy this requirement?	Bibliographic Citation ³	Must additional data be submitted under FIFRA Sec. 3(C)(2)(B)?
63-14. Oxidizing or Reducing Action	MP	Partially	00141704	Yes
63-15. Flammability	MP	Yes	00141704	No
63-16. Explodability	MP	Yes	00141704	No
63-17. Storage Stability	MP	Partially	00141704	Yes
63-18. Viscosity	MP	Yes	--	No
63-19. Miscibility	MP	Yes	00141704	No
63-20. Corrosion Characteristics	MP	Partially	00141704	Yes
<u>Other Requirements</u>				
64-1. Submittal of Samples	choice	Yes		No

¹Data requirements pertain to the Rohm and Haas 89.0% T (EPA Reg. No. 707-203).

²Test Substance: MP = manufacturing use product.

³These references were submitted in response to the Dicofol Guidance Document (December, 1983). Underlining indicates documents that have been reviewed for this update.

⁴Rohm and Haas responded to the requirements of 40 CFR §158.155 for the 89.0% T (EPA Reg. No. 707-203). At the time, the Agency concluded that the data provided satisfy the requirements of 40 CFR §158.155. However, the registrant was also required to provide a new confidential statement of formula with current nominal concentrations based on the production runs be provided within six months after commercial production begins. This requirement remains outstanding.

TABLE B. (Continued)

⁵Rohm and Haas responded to the requirements of 40 CFR §158.162 for the 89.0% T (EPA Reg. No. 707-203). The data provided do not fully satisfy the requirements of 40 CFR §158.162 because the registrant failed to provide the suppliers and specifications for four beginning materials, and verification of the identity of one beginning material (see Confidential Appendix A of Reregistration Standard Update for product chemistry).

⁶Rohm and Haas responded to the requirements of 40 CFR §158.190 for the 89.0% T (EPA Reg. No. 707-203). The Agency has reviewed the submitted data and determined that the requirements are partially satisfied. Those data which may be affected by the change in the manufacturing process, and reduced DDTr, should be resubmitted. The list of outstanding characteristics include color, odor, oxidation/reduction and storage stability, and corrosion characteristics.

⁷These data have been previously reviewed by the Agency. The applicable citation cannot be determined.

TABLE B. PRODUCT SPECIFIC DATA REQUIREMENTS FOR THE DICOFOL MANUFACTURING-USE PRODUCTS.¹

Data Requirements	Test Substance ²	Does EPA have data to satisfy this requirement?	Bibliographic Citation ³	Must additional data be submitted under FIFRA Sec. 3(C)(2)(B)?
<u>40 CFR §158.155-190 Product Chemistry</u>				
<u>Product Composition⁴</u>				
61-1. Product Identity and Disclosure of Ingredients	MP	Partially	00150402 00154969 00151575 40297201	Yes
61-2. Beginning Materials and Production Process	MP	Partially	00154969 00151575 40297201	Yes
61-3. Formation of Impurities	MP	Partially	00154969 00151576 40297201	Yes
<u>Analysis and Certification of Product Ingredients</u>				
62-1. Preliminary Analysis of Product Samples	MP	Partially	00154970 00151576 00164383 00163337 40001201 40004801 40297201 40779201	Yes ⁵
62-2. Certification of Ingredient Limits	MP	Partially	00154970 00151576 40297201	Yes ⁶
62-3. Analytical Methods to Verify Certified Limits	MP	Partially	00151576 40297201	Yes ⁷
<u>Physical and Chemical Characteristics⁸</u>				
63-2. Color	MP	No	--	Yes

(Continued, footnotes follow)

TABLE B. (Continued)

Data Requirements	Test Substance ²	Does EPA have data to satisfy this requirement?	Bibliographic Citation ³	Must additional data be submitted under FIFRA Sec. 3(C)(2)(B)?
63-3. Physical State	MP	No	--	Yes
63-4. Odor	MP	Partially	00154971 00151577	Yes
63-7. Density, Bulk Density, or Specific Gravity	MP	No	--	Yes
63-12. pH	MP	No	--	Yes
63-14. Oxidizing or Reducing Action	MP	Partially	00151577	Yes
63-15. Flammability	MP	Partially	00151577	Yes
63-16. Explodability	MP	No	--	Yes
63-17. Storage Stability	MP	No	--	Yes
63-18. Viscosity	MP	No	--	Yes
63-19. Miscibility	MP	No	--	Yes
63-20. Corrosion Characteristics	MP	Partially	00154971	Yes
<u>Other Requirements</u>				
64-1. Submittal of Samples	choice	No		Yes

¹Data requirements pertain to the Makhteshim Agan 88.0% T (EPA Reg. No. 11603-26).

²Test Substance: MP = manufacturing use product.

³These references were submitted in response to the Dicofol Guidance Document (December, 1983).

⁴Makhteshim Agan has responded to the requirements of 40 CFR §158.155, 158.162, and 158.1677 for the 88.0% T (EPA Reg. No. 11603-26) containing 2.5% DDT_r. The data provided for the dicofol technical product containing 2.5% DDT_r fully satisfy the requirements of 40 CFR §158.155, 158.162, and 159.167. However, these data are not applicable to the current product. All requirements pertaining to these three topics remain outstanding for the 88.0% T (EPA Reg. No. 11603-26) containing <0.1% DDT_r.

⁵Makhteshim Agan has responded to the requirements of 40 CFR §158.167 for the 88.0% T (EPA Reg. No. 11603-26) containing 2.5% DDT_r. The discussion of formation of impurities for the dicofol technical product containing 2.5% DDT_r fully satisfies the requirements of 40 CFR §158.167. However, the current requirement calls for the reduction of DDT_r to <0.1%. Such DDT_r reduction involves a change in the manufacturing process which requires a new discussion of the formation of impurities. Makhteshim Agan has not provided any information for the dicofol technical product containing <0.1% DDT_r. All requirements pertaining to this topic remain outstanding.

⁶Makhteshim Agan has responded to the requirements of 40 CFR §158.175 and 158.180 for the 88.0% T (EPA Reg. No. 11603-26) containing 2.5% DDT_r. However, these data are no longer acceptable under the current requirement. New data for certification of limits and enforcement of these certified limits remain outstanding for the 88.0% T (EPA Reg. No. 11603-26) containing <0.1% DDT_r. Certified limits must be reported on EPA Form 8570-4 (Rev. 2-85).

⁷Makhteshim Agan has responded to the requirements of 40 CFR §158.175 and 158.180 for the 88.0% T (EPA Reg. No. 11603-26) containing 2.5% DDT_r. However, these data are no longer acceptable under the current requirement. New data for certification of limits and enforcement of these certified limits remain outstanding for the 88.0% T (EPA Reg. No. 11603-26) containing <0.1% DDT_r. Certified limits must be reported on EPA Form 8570-4 (Rev. 2-85).

⁸Makhteshim Agan has not responded to the requirements of 40 CFR §158.190 for the current 88.0% T (EPA Reg. No. 11603-26). All requirements for this topic remain outstanding.

DICOFOL

Chemical Code 010501

REREGISTRATION STANDARD UPDATE

PRODUCT CHEMISTRY

TASK 3

(Final Report)

CONFIDENTIAL APPENDIX

Appendix A:- 1 Page(s)

Confidential Appendix to the Scientific Review of the Reregistration Standard Update Report for the Pesticide Dicofol by Chemistry Branch-II [Confidential FIFRA Trade Secret/CBI].

CONFIDENTIAL

Page 1 of 1

CONFIDENTIAL APPENDIX A

61-2. STARTING MATERIALS AND MANUFACTURING PROCESS

Rohm and Haas submitted information (1988; MRID 40504501 and supplement to this MRID) for the 89.0% T (EPA Reg. No. 707-203) containing less than 0.1% DDT. The Agency (S. Hummel, CBRS No. 3388, 3/3/88; CBRS No. 4116, 9/10/88) reviewed the submission. The information provided does not fully satisfy the requirements of 40 CFR §158.162 (Guideline Ref. No. 61-2) because the source and specifications of [REDACTED]

[REDACTED] It is not clear which of these materials was actually used.

[The source and specifications of Versene 100, chlorobenzene, methanol, and heptane must be provided. The registrant should note that the names and addresses of the suppliers and the specifications of all beginning materials including solvents and catalysts must be submitted. It should also be clarified as to which alcohol, butanol or isobutanol, was used in step 1 of the manufacturing process.

MANUFACTURING PROCESS INFORMATION IS NOT INCLUDED