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

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

JUN 20 1990

MEMORANDUM (CONFIDENTIAL)

SUBJECT: Product Chemistry Data Review for Technical Methyl Parathion to Determine the Potential for Halogenated Dibenzo-p-Dioxin/Dibenzofuran Formation. I. D. No. 4787-4. Record No. 261278. MRID/Accession Nos. 40482401, 40601501. DEB No. 6491.

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THRU: Andrew Rathman, Section Head
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TO: E. Feris, RM 74
Special Review/
Reregistration Division (H7508C)

Background

In response to a 06/87 DCI, Cheminova, Lemvig, Denmark submitted manufacturing data for technical methyl parathion, or O,O-dimethyl-O-(4-nitrophenyl)-phosphorothioate. The registrant claims CBI status for the information supplied. The purpose of the DCI is to acquire information on the potential for formation of halogenated dibenzo-p-dioxin or dibenzofuran contaminants during certain manufacturing processes. Three specific types of information were requested (Pesticide Assessment Guidelines, Subdivision D, Sections 61-1, 61-2, and 61-3):

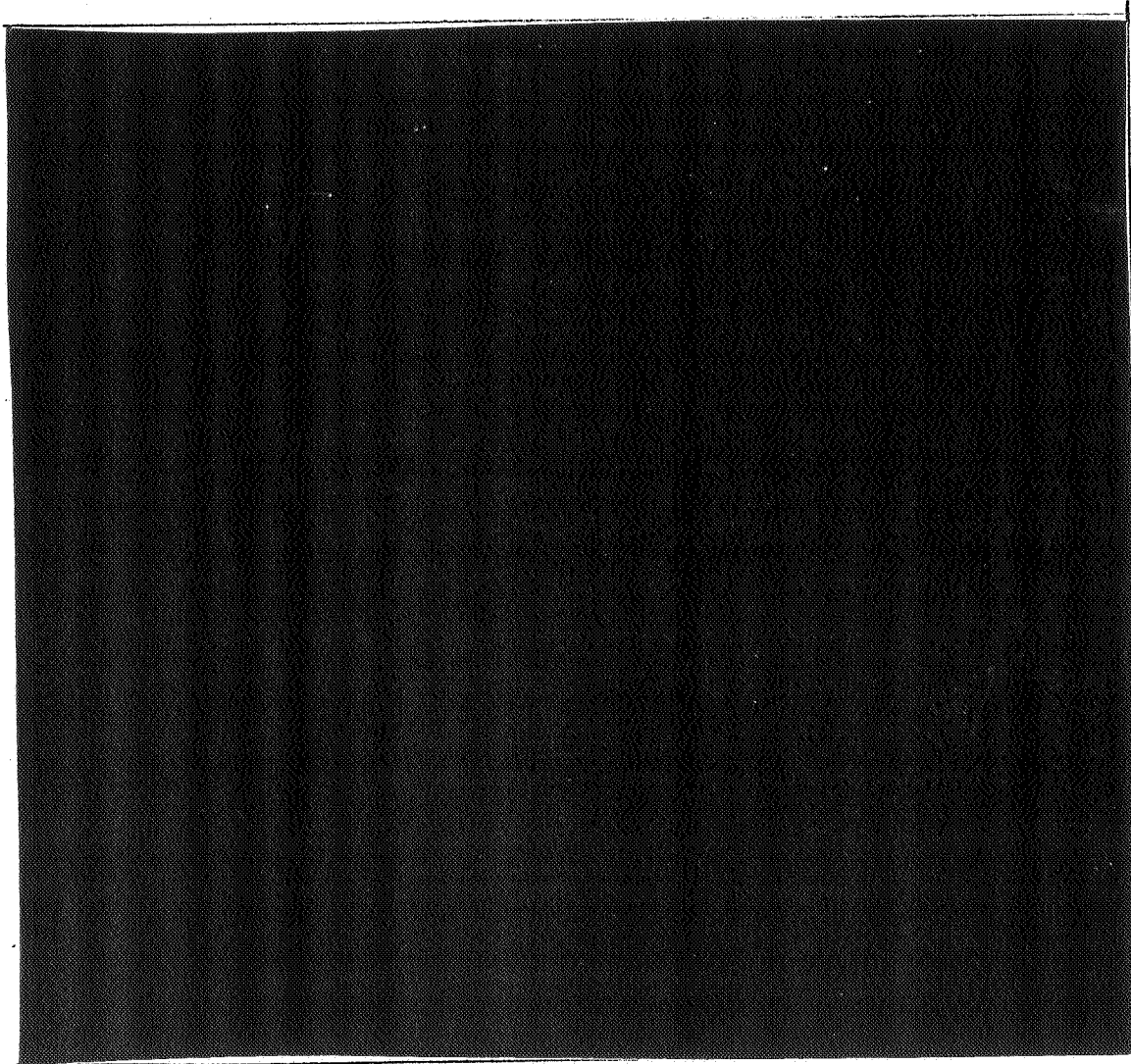
1. Product identity and ingredients.
2. Description of beginning materials and manufacturing process.
3. Discussion of the formation of impurities.

Discussion

The submission consists of sections 62-1 (Preliminary Analysis), 62-2 (Certification of Ingredient Limits), and 62-3 (Analytical Methods). No information was supplied on the manufacturing process and on the origin of the impurities. No theoretical discussion was submitted on the possibility for halogenated dibenzo-p-dioxin/dibenzofuran contaminant formation during the manufacturing process.

The following components and maximum upper limits are reported:

Compound	Maximum % (w/w)
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MANUFACTURING PROCESS INFORMATION IS NOT INCLUDED

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Conclusion

None of the impurities certified by Cheminova are halogenated dibenzo-p-dioxin/dibenzofuran precursors. However, only impurities ≥ 0.1 were considered. Halogenated dioxin levels as low as 0.1 ppb are of concern. Detailed manufacturing data are required to assess the potential for halogenated dibenzo-p-dioxin/dibenzofuran contaminant formation during the methyl parathion synthesis. Complete descriptions of each manufacturing step are required, especially temperature, pressure, pH, reactor (materials of construction, agitation, size, temperature control), amounts or relative amounts of reactants, solvent, catalysts, and product work-ups (distillation, filtration, etc.). All starting materials should be completely described. This includes both the source and impurity specifications. The manufacturing process for [REDACTED] the probable starting material for methyl parathion synthesis, should be briefly described. Any isomers or other phenolic impurities are of particular interest.

Recommendation

DEB can make no recommendation on the need for analytical chemistry data for halogenated dibenzo-p-dioxins and dibenzofurans in technical methyl parathion, because the DCI-requested information

MANUFACTURING PROCESS INFORMATION IS NOT INCLUDED

was not submitted. DEB recommends that Cheminova be requested to comply with the 06/87 DCI, especially with regards to detailed manufacturing process information (Sect. 61-2) and a discussion of the formation of impurities (Sect. 61-3).

cc: Dioxin SF, RF, Methyl Parathion SF, R. Schmitt (Branch Chief),
Funk, C. Furlow (PIB, FOD).

RDI:A. Rathman:06/14/90:E. Zager:06/15/90:
H7509C:DEB:S. Funk:557-1439:CM#2:Rm803-A:SF (DIOX.50):06/15/90

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