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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

JUL 17 1990

MEMORANDUM (CONFIDENTIAL)

SUBJECT: Product Chemistry Data Review for Daconil 2787 Fungicide (Chlorothalonil) to Determine the Potential for Halogenated Dibenzop-Dioxin/Dibenzofuran Formation. I. D. No. 50534-4. Record No. 262801. MRID/Accession Nos. 143748, 257517, 257516, 257515. DEB No. 6576.

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

Background

In response to a 06/87 DCI, Fermenta Plant Protection Corporation, Mentor, OH submitted manufacturing data for end-use product Daconil 2787 Fungicide, a wettable powder formulation. The active ingredient is 75.0% chlorothalonil, or 2,4,5,6-tetrachloro-1,3-benzenedicarbonitrile, or 2,4,5,6-tetrachloro-1,3-dicyanobenzene. Fermenta also holds a registration for the technical chlorothalonil 97.0%, I. D. 50534-7. 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 dibenzop-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.

An identical submission for technical chlorothalonil 96.0% was reviewed previously (DEB Memo 07/01/88, M. T. Flood, RCB No. 3762). Confidential Appendix 1 reviewed the impurities in chlorothalonil; Confidential Appendix 2 reviewed the manufacturing process; Confidential Appendix 3 considered the formation of non-dioxin/non-dibenzofuran impurities; and Confidential Appendix 4 reviewed the potential for formation of chlorinated dibenzo-p-dioxins (CDD's) and chlorinated dibenzofurans (CDF's). It was concluded that DCI requirements for the manufacturing process, for impurities (CSF), and for a discussion of impurities (including CDD's and CDF's) were satisfied. It was also concluded that analytical chemistry data on CDD's and CDF's in chlorothalonil were required because impurities in the technical product are precursors of CDD's and CDF's. Similar data on formulated end-use products were not requested, pending receipt and evaluation of the chlorothalonil data.

Discussion

Daconil 2787 Fungicide is an end-use product made by formulation of technical chlorothalonil (I. D. No. 50534-7). The wettable powder is prepared from technical chlorothalonil (75.0% a.i.) and inerts in a physical process in a closed batch system. Inerts plus technical chlorothalonil are mixed in a blender and milled. A second blender performs additional mixing for uniformity. The batch is processed through a Sturdevant air mill to yield an average particle size of 2.5 microns. It is blended a final time and packaged. Most materials of construction are mild steel. Specific information on time, temperature, and batch size was not provided. No CSF was supplied, and this particular formulation is not described in the chlorothalonil FRSTR, 03/11/88.

The inerts include silica, sodium ligninsulfonate, calcium silicate, and kaolin clay. None of these materials are halogenated dibenzo-p-dioxin/dibenzofuran precursors.

Conclusion

The preparation of Daconil 2787 Fungicide (a.i. 75% chlorothalonil) will not contain chlorinated dibenzo-p-dioxin (CDD)/dibenzofuran (CDF) impurities in excess of levels present in the starting technical chlorothalonil. Analyses for CDD's and CDF's in this formulated product are not required at this time, as previously concluded (DEB Memo, 07/01/88, M. T. Flood, RCB No. 3762). Analytical chemistry data are required on CDD's and CDF's in technical chlorothalonil. The results of those analyses may necessitate analysis of Daconil 2787 Fungicide.

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Recommendation

DEB recommends that the registrant be exempt at this time from the requirement to submit analytical chemistry data for chlorinated dibenzo-p-dioxin and chlorinated dibenzofuran contaminants in Daconil 2787 Fungicide. DEB further reiterates the previous recommendation that Fermenta Plant Protection Corporation be requested to supply analytical chemistry data on CDD's and CDF's in technical chlorothalonil. The registrant should submit sampling and analytical method protocols before embarking upon analytical work. The registrant is referred to the Guidelines for the Determination of Halogenated Dibenzo-p-Dioxins and Dibenzofurans in Commercial Products (EPA-560/5-87/007, 09/87).

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

RDI:A. Rathman:07/10/90:R. Loranger:07/10/90:
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