**Monsanto** INDUSTRIAL CHEMICALS CO.

FROM (NAME & LOCATION): J. P. Mieure - T2F

XC TKG CP per DW

DATE: September 12, 1975

SUBJECT: FORMATION OF PCBs IN THE ENVIRONMENT BY CHLORINATION

REFERENCE:

TO: D. Wood
B2SD

cc: R. E. Keller - T1B
R. H. Munch - T1B
W. B. Papageorge - B2SK
W. R. Richard - T3A

Per your request, I have reviewed the literature and our in-house work to assess the likelihood of PCBs being formed by chlorination in the environment.

Chlorination under conditions used for treating waste water can chlorinate trace organic contaminants in the water. This has been demonstrated for biphenyl in the laboratory and in a real-life situation with effluent water containing biphenyl from a textile mill (Science 183, 367 [1974]). However, the chlorobiphenyls formed under these conditions are almost exclusively mono-chlorobiphenyls, with progressively decreasing probability of higher chlorinated components. Hence, the products of chlorination should be biodegradable and have a minimal environmental impact.

Monoisopropyl biphenyl is also likely to be chlorinated by waste treatment, and to a similar degree as biphenyl. The products of chlorination of MIPB should be distinguishable from PCBs.

Jim

J. P. Mieure

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P.S. We are investigating the products of perchlorination of MIPB to assess the likelihood of interference with the analytical technique reportedly in use by EPA for PCBs in water.



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