Monsanto

FROM (NAME & LOCATION) R.A. Baxter, Ruabon

DATE 25th February 1970

SUBJECT AROCLOR BIODEGRADABILITY

REFERENCE RAB/SMA:

TO : W.R. RICHARD, St. Louis

CC: R.D. Swisher, St. Louis
H.A. Vodden
J.H. Mainprize
R.A. Lidgett

I attach herewith a copy of the Review Report which Jack Mainprize has prepared on his work on biodegradability of chlorinated biphenyls. This is a complex story and I am sending a copy also to Bob Swisher in the hopes that he may make some comment on the techniques employed or the sort of results we have been getting. The report does not include results on the latest samples we are examining, among these are the mixtures of 2:3 and 3:4 dichlorobiphenyl which result from the arylation reaction of benzene sulphonyl chloride on orthodichlorobenzene.

We are also repeating some of the other samples using a pure culture of an organism which has been shown by workers at Bangor University to metabolise biphenyl. This latest work should throw more light on which particular structures are most easily biodegraded.

The samples sent by Scott Tucker have now arrived and we shall be including these bromochlorobiphenyls in our subsequent experiments.

It is difficult to draw any overall conclusions of our work at this stage, but it certainly looks as though the higher chlorinated biphenyls are very resistant to biodegradation, and even the lower ones seem to require the presence of biphenyl itself, at any rate under the conditions we have examined so far. However, I think there is still a possibility that we may be able to find a product which is both biodegradable and commercially viable.

We would be interested to hear what your views are along these lines however.

R.A. BAXTER

TRAN 060453

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PIF's 77
3-26-92

WATER_PCB-SD0000028583