

Monsanto INDUSTRIAL CHEMICALS CO.

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

DATE : January 16, 1976

SUBJECT : PCB DETERMINATIONS BY PERCHLORINATION

REFERENCE :

TO : D. Wood
B2SD

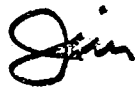
CC: W. C. Hammann - T3A
O. Hicks - T2F
R. E. Keller - T1B
W. B. Papageorge - B2SK
J. C. Weber - B2SK

As you requested, we have investigated the products formed from MIPB by the perchlorination procedure used by EPA and others to measure and/or confirm PCB's in environmental materials. We found that MIPB is converted to decachlorobiphenyl. Thus, MIPB and biphenyl interfere with the perchlorination procedure. Many other substituted biphenyls, such as MCS 1839 and various petroleum components, may also interfere. If present in environmental materials, they would cause erroneously high PCB concentrations to be reported.

In addition, we have recently obtained a journal article (attached) which points out two other limitations of the perchlorination procedure:

1. High and variable reagent blanks, which cause erroneously high findings.
2. Formation of bromononachlorobiphenyl, which causes low recoveries. We have confirmed that the bromine compound is also formed from MIPB.

The above limitations can lead to significant errors in determining trace levels of PCB's in environmental samples. We may want to review these limitations with EPA and others and suggest that they carefully review the validity of the perchlorination technique. Results obtained in the past by this technique may not be valid.



J. P. Mieure

SS
Attachment

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