[illegible]

Aroclor FE

[illegible] - [illegible].

25th November, 1970.

J.A. Barrett, London.
[illegible] Horne, Brussels.
[illegible] Richard, St. Louis.

[illegible] - [illegible], 1970.

[illegible]/bjo'K.

[illegible] - [illegible].
[illegible] - ST. LOUIS.

Robert Pierce Sec
Copies to
Scott Tucker
B.A. Keller

Organic Chemicals - PCBs - Europe.

Business Situation.

1. The decision has been taken to cease sales to non-controllable applications in the UK by 1 March, 1971.

2. Sales will continue for all applications in continental Europe until the end of 1971, but reformulated products will be introduced where possible.

3. We will continue to supply products containing PCBs to German mines through 1971 even where reformulated products are available, until approval is gained for the reformulated products.

4. Customers will be informed before the end of November 1970 of this policy.

5. We have been assured by the other European producers that they will not knowingly supply former Monsanto customers in the UK or [illegible].

6. Bayer have indicated that they are in agreement with the Monsanto timing for withdrawal from non-controllable applications.

7. Prog.1/Caffaro do not yet agree and wish to study the problem further. We have invited their representatives to Hudson for technical discussion.

8. The UK Board of Trade, through their Marine Safety Department, have proposed that Aroclor should be classified under Class 9, Dangerous Goods, for the purpose of carriage by sea. We will meet with the Board of Trade in December to discuss this and following discussion with J.A. Barrett will attempt to persuade the Board of Trade to alter the proposal.

Environmental Studies. (H.A Vodden)

Workers at the Tolworth Laboratory of the Ministry of Agriculture, Fisheries & Food have been studying effects of feeding Aroclor 1242 to pigeons and quail. Their analyses have indicated, what we have ourselves suspected, that the residues tend to resemble 1254/1260. Discussion with Bailey and Kenyon from this laboratory shows that they now believe that

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Aroclor 1242 may be a major source of the environmental pollution. They have also "discovered" that reproducing paper of the no carbon type is a potent source of Aroclor 1242 and, although they have not published this information yet, they may wish to do so as an explanation of the presence of PCB in cardboard. Feeding trials using single isomers are also planned by the Tolworth group, who are hoping to establish metabolic routes for the degradation of PCBs in animal organs.

A visit was made to the Monks Wood Experimental Station of the Nature Conservancy, but little new information emerged from the discussion.

Bio-degradation.

It has been confirmed that 2,3,2',3',4',5'-hexachlorobiphenyl is degraded by C_2 when mixed with lower chlorine isomers. This has been achieved under less vigorous conditions of flask shaking than previously, which suggests that the addition of the lower chlorine isomers has increased the solubility of the material.

We are currently studying a pentachloro-biphenyl, which should degrade, and the 4,4'-dichlorobiphenyl, which should be resistant, using a similar technique to improve solubility. The analytical results are awaited on these tests.

The results of degrading a series of PCB products with C_2 until no further change with time can be observed are now available. Subject to limitations imposed by the difficulties of interpretation of the GLC chromatograms it appears that the order of degradability, or the inverse order of apparent residues, is as follows:

[illegible]1016, [illegible]717, [illegible]762, Pyralene 1500, Aroclor 1242.

Satisfactory progress in the identification of isomers corresponding to the peaks obtained using high selectivity PLOT columns is reported, but development work is still needed on GLC - Mass before this can be utilised.

The most recent results on attempts to degrade [illegible]840 by C_2 have shown that at low concentrations (5 p.p.m.) considerable degradation has occurred. The main problem in this investigation has been that of sensitivity in the analysis, but this problem now seems to be overcome.

R.A. VODDEN.

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