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MONSANTO CHEMICALS LIMITED
RESEARCH AND DEVELOPMENT DEPARTMENT
RUABON

J.W. Barrett, London.
R.A. Baxter, Ruabon.
R.A. Lidgett, Ruabon.
P.J.A. Marsh, Brussels.
W.B. Papageorge, St. Louis.
W.R. Richard, St. Louis.
H.A. Vodden, St. Louis.

Meeting with National Swedish Environment Protection Board
at Solna, Sweden,
on 25 May 1971.

Present: Dr. Lennart Hannerz, Research Director NSEPB.
R.A. Lidgett.)
P.J.A. Marsh.) Monsanto.
O. Palm.)
H.A. Vodden.)

This meeting was arranged so that we could discuss the PCB environmental problem and the attitude of the Swedish authorities to the use of PCB products. In particular we wished to ascertain the reaction of the authorities to the concept of degradable PCB products.

Legislation in Sweden will ban the use of PCB products from January 1972 except under licence. Licences will be granted in special cases, for example for impregnation of high voltage electrical capacitors and as transformer coolants.

Hannerz was very interested in our concept of a non-persistent PCB product and said that they would recommend the licensing of such a product in preference to existing products if it could be demonstrated that it would not accumulate and was functionally acceptable.

Detail.

Hannerz outlined the Swedish policy on PCBs. The National Swedish Environment Protection Board had recommended to the government that restrictions should be placed on the use of PCB products. Legislation was introduced to ban the use of such products from January 1972 except under licence. Such licences would be granted to responsible manufacturers for specific applications such as impregnation of high voltage capacitors and as transformer coolants; they would be coupled with stringent requirements for reclaim and disposal of wastes.

We outlined to Hannerz our concept of a degradable PCB product and showed him some of the results of the analysis of residues after degradation of 1242 and 1016 by micro-organism cultures and after feeding trials to pigeons and quail. These results demonstrated quite well that considerable degradation could be expected, particularly for 1016, and Hannerz was clearly very interested in the outcome of these developments.

He questioned the effect of temperature, especially in the case of degradation by micro-organisms since in Scandinavia temperatures would be low. We indicated that some work on the effect of temperature would be possible in shake-flask experiments.

Hannerz said that in his view, a PCB product which did not accumulate in the environment would be acceptable and he thought that such a product would be licenced in preference to other products, provided it was satisfactory functionally. The problem which faced the authorities was how to decide that a particular product would not accumulate and, whilst the work which Monsanto had done was very valuable, he would like to see an experiment to demonstrate more directly whether or not the product would accumulate. This, he thought, might be done in a 'pond experiment'. Such a pond would be a miniature eco-system containing plant and animal life from micro-organisms to fish. If the product under examination could be added to the pond in significant quantities without showing an accumulation in the fish at the top end of the food chain, he would regard this as good evidence of acceptability.

We promised to consider the possibility of such an experiment and agreed to discuss with Hannerz or one of his people how one might be set up. We suggested that one of the technical people from the Swedish Environment Protection Board might like to visit Ruabon to discuss the analytical results on degradation residues and perhaps discuss further these ideas for a pond experiment. Hannerz agreed this would be useful and suggested that Jensen, who was on vacation during our visit, would probably do this.

During our discussion we also outlined the Monsanto actions which had been taken in North America and the United Kingdom to limit the applications of PCBs. Hannerz was obviously impressed by Monsanto's responsible attitude and wishes to take a constructive attitude himself to resolve the PCB environmental problem without preventing essential uses of these products.

H.A. Vodden

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