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MONSANTO INDUSTRIAL CHEMICALS COMPANY, EUROPE

FUNCTIONAL PRODUCT GROUPS

PROCESS AND PRODUCT TECHNOLOGY DEPARTMENT

P.J.A. Marsh, Brussels
J.N. Haggart, Brussels
S. Turover, Brussels
T. Fischer, Dottikon,
D.E. Cox, Brussels
H.A. Vodden, Ruabon

R.A. Baxter, Ruabon
W.B. Papageorge, St. Louis
W.R. Richard, St. Louis
C. Paton, St. Louis
B.G. Tibbetts, St. Louis
J.T. Garrett, St. Louis

CONTACT REPORT

1) **Visit to:** Swiss Federal Dept. of Public Health (Toxic Products), Bern.

Date: April 17th, 1973

Present:

Dr. H. Stoll Dr. (Miss) Piado	Dept. of Public Health
J.N. Haggart	- Brussels
T. Fischer	- Fab.Suisse Dottikon
R.A. Baxter	- Ruabon

Objective: To review present position of Swiss authorities on PCBs and Pentachlorophenol.

Introduction:

Previous contacts with the Swiss authorities (see report by S. Turover Feb. 22nd, 1972) had been through Dr. Meyer who had now been replaced be Dr. Stoll. Dr. Stoll had only recently taken up his appointment and did not know the detailed background to some of the Swiss decisions relating to PCBs. Miss Piado is the Swiss representative on the OECD subcommittee dealing with unintended chemicals in the environment. They were both concerned with the operation of the new Swiss law which requires that all chemicals used by the public should be registered and categorised according to their toxicity.

DETAILS

Dr. Stoll explained that the use of PCBs in Switzerland had been completely prohibited since Dec. 23rd 1971. They now realised that this restriction was too severe and a new draft regulation proposed

1. That chlorinated biphenyls containing not more than 2 chlorine atoms would be permitted for any application.

2. PCBs containing 3 or more chlorine atoms would continue to be prohibited except for

   a) in apparatus used for research purposes

   b) transformers and large capacitors

   c) small capacitors until December 1976

   d) aviation lubricants.

This revised regulation was expected to be approved by mid year. Miss Piado agreed that these regulations differed in some respects from the OECD proposals. These later had been agreed by the sub-committee and were now to be put to the main committee. If agreed they then required ratification by the Council of OECD. At that time it would become mandatory for member countries to observe the OECD regulations but if their own requirements were more severe then this would be acceptable. It seems likely that the Swiss proposal to ban small capacitors after 1976 will therefore stand. The position on the dichloro biphenyls is not so clear cut. The Swiss regard them as presenting no environmental hazard on the advice of Dr. Bosshardt and seem to have accepted their free use on the basis of industry representations. OECD have made no distinction so far between different PCBs and it is not clear how the Swiss expect to be free to use dichloro diphenyls.

PCBs will continue to be placed in category 1, the most toxic category even though it is agreed that their acute oral toxicity might have suggested a much lower category. The basis of the classification was claimed to include assessment of environmental and other long term hazards and benzene was quoted as another compound that was placed in a higher category than its acute toxicity would suggest. However, they regard the classification of PCBs as being of little significance because of the other restrictions which they are imposing. They regard their current measures as being capable of change in the light of experience and future developments. They expect new products will be produced to replace the PCBs and apparently the Japanese OECD delegate stated that they had replacement products for all applications.

On the application of the new law generally they are clearly overwhelmed by the paper work but will expect to work through the backlog making suitable modifications as they go along in consultation with industry.

Pentachlorophenol

Pentachlorophenol is presently placed in category 3 which is in line with the LD_{50}. The Swiss authorities are considering what restrictions to place on the dioxin content but have not yet reached any decisions. They will be guided by Dr. Bosshardt's comments and expect to reach some preliminary conclusions by the end of 1973.

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2) Visit to: Der Eidgenossischen Forschungsanstalt (Plant Protection laboratory), Wädenswil

Present: Dr. H.P. Bosshardt, Chef de Lab.
R.A. Baxter

Dr. Bosshardt had recently published an article in the ZÜricher Zeitung calling for a very low level of tetrachlorodibenzodioxin 0.05 ppm in 2:4:5 T and other chlorophenol derivatives including pentachlorophenol. He is concerned with analyses and setting of levels of pesticide residues and became involved in PCBs and now PCP largely through analyses of chlorinated bodies in Swiss cheese. Apparently in 1968 FDA pointed out that Swiss cheese imported into the U.S.A. contained unduly high levels of chlorinated hydrocarbons. Bosshardt eventually tracked this down to the use of Dieldrin as an insecticide applied to cowsheds to prevent attack by wood boring insects. Through this work he became advisor to the Swiss Federal Dept. of Public Health on possible hazards associated with PCBs and more latterly dioxins. On his advice (he claims) the Swiss imposed their 1971 ban on PCBs. From a study of the literature he now feels that the lower chlorinated PCBs are biodegradable although he has done no experimental work himself. He was interested in Monsanto work confirming the view and recognised the importance of experimental demonstration of biodegradability under natural conditions, e.g. pond experiments.

On dioxins he had proposed a low level of 0.05 ppm for TCDD in 2:4:5T on the basis of high toxicity and likely persistence. He did not regard TCDD in penta as a real problem but was much more concerned about hexachlorodibenzodioxin. He feels that a level for hexachloro should be set which takes into account the relative toxicity and stability. He was not ready to propose a figure at present because of lack of data on stability and persistence but expects to put forward a figure shortly which may be modified later in the light of experience. It seems likely that this maximum level will be a few parts per million. Dr. Bosshardt knows the Dow group at Horgen which is a few miles away and may well be giving them support in introducing their low dioxin pentachlorophenol.

Dr. Bosshardt was not able to give complete details of his analytical methods for dioxins but described in general terms that he separated out a neutral fraction, cleaned up an alumina column or TLC plate and then ran G.L.C. with confirmation of peak identity by mass spectrometry. Most of his work had been concerned with 2:4:5T and he agreed that his claim to be able to detect 0.01 ppm TCDD in pentachlorophenol was optimistic although 0.05 ppm was quite possible.

Bosshardt is a very approachable and engaging character who admits that he overstates his case in order to achieve some action. He probably has a good deal of influence with the Bern authorities but no great international standing. His laboratories appear well equipped and his analytical work generally sound. It will be worthwhile maintaining contact with him.

R.A. BAXTER