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(2) WBP -

Do we have copy of the work on Salmon mink referred to on p. 1

PCB CONFERENCE

Utrecht - Holland

Date : September 20, 1972

CC : RA BAXTER - RUABON
HR COLLET - THE HAGUE
HA VODDEN - RUABON
PJA MARSH - BRUSSELS
S TUROVER - BRUSSELS
C PATON - ST LOUIS
WB PAPAGEORGE - ST LOUIS

Bayer on p. 2

Could we not also get someone to summarize the various countries' approach toward disposal & update it even 1/4?

Attached are my notes on this conference which was sponsored by the Dutch office of Bayer, Germany.

To summarise - no legislation planned, cooperation between industry and Government encouraged.

The paint industry will cease use of PCB's and related compounds (PCT's) as soon as possible.

A copy of the Task Force Report should be sent to Prof. H van Genderen at Utrecht. If one of the copees has a spare, please mail it to me for onward transmission.

(3) JS

Dr. Vos, who works with Van Genderen, will specialise in the effects of dibenzo-furan and benzo-dioxins. He will be off to the USA in 1973 to do some work and would be a useful contact on any work on Pentachlorophenol impurities.

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Item 2 - Prof. Dr. J.H. Koeman

2-10 ppm of PCB in fish in Rhine in Holland.
Measured PCB's in cormorants, dolphins and porpoises, seals. Blubber analysis of porpoise/dolphin from N. Sea 50-100 ppm PCB and 25-100 ppm DDT. New Zealand and Surinam porpoise no PCB but 50-100 ppm DDT.

Inshore N. Sea seals 500-2500 ppm PCB in blubber. DDT very low. Brain level 80 ppm PCB. Cormorants brain level 130 ppm PCB. Unpublished Canadian work : great lake salmon containing 30 ppm PCB fed to mink, reproduction disturbed. There is also a correlation with DDT. Then 10 ppm each of Aroclor 1242, 1248, 1254 to make 30 ppm mixed into salmon fed to mink. Same results as before. Tissue levels in mink only 10 ppm.

Highest levels of PCB's are found in fish feeders.

Dr. J.G. Vos (author of paper in OECD Report on Third Technical Reality on Occurence and Significance of Chemicals in the Environment- Berlin Jan. 1972 - p. 40)

Effects of PCB's on the organism acnegenic, oedemal, liver damage, hepatic porphyria, immunosuppressive.
Vos wrote the paper on the presence of dibenzofuran in Phenoclor DP 6 and Clophen A-60 and absence in Aroclor 1260. Dibenzofuran thought to be formed during distillation of Aroclor in presence of sodium hydroxide.

PCB is an immunosuppressive of humoral and cellular system. Tests on rabbits showed that skin reactions and thymus gland are affected.

Dr. J. Freudenthal

1-10 ppm PCB in Rhine fish.
Elutrification factor 10,000.
Detection limit in water was 0.5 µg/liter.
Peak levels of PCB's in Rhine and other surface waters
0.2 - 0.3 ppb
Types of PCB not known.
Claim to have measured PCT's in surface waters concentrations a little lower than PCB's. Pigs fed with 0.25 ppm PCT's accumulated 2.5 ppm in subcutaneous fat.

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Item 3 - Dr. Knust

Escape of PCB's into environment

1. During manufacture of PCB's
2. During manufacture of electrical equipment
3. During servicing of electrical equipment

PCB's not used in switchgear or cables.
In AC capacitors PCB's have replaced mineral oil > 90% .
All hermetically sealed.
Use in transformers mainly for inside buildings. Distribution transformers have safety device to shut down in event of pressure rise in transformer. Capacitors contain an internal fuse which will action if an overvoltage occurs.
In capacitors only the lower chlorinated PCB's are used and these rarely found in environment.

Pentachlors and higher content in Clophen A-30 is approx. 2% and producers are trying to get less than 1%.
Used PCB or PCB wastes can be sent to the manufacturer for reclamation or incineration. A Bayer leaflet is available on the subject of PCB's.

Item 4 - Dr. Sijderius

PCB's in transformers and capacitors. Needed because of fire resistance/electrical properties. Subcommittee of CIGRE, Paris, studying replacement, waste and how to handle in case of fire. Mr. Jay of Prodelec is chairman of this subcommittee.

Item 5 - Dr. J. Doorgeest

Paints chlorinated rubber 20,000 tons/year in Europe.
Need 50-100 pph plasticiser NN always necessary to use PCB but for structures constantly immersed in water need PCB's.

Paint industry is a compounding industry only. They look to plasticiser suppliers to provide replacements. Bayer offered Clophenharz PCT as a replacement for PCB's in chlorinated rubber paints. Paint industry were upset to find it was a similar product to PCB's. I was asked for my opinion on the use of PCT's in paint and told them we had ceased sales of PCT's for all applications March 31st 1972 because PCT's belonged to the same chemical family as PCB's.

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Item 5 (cont'd)

Bayer were obviously embarassed and explained that PCT's were not toxic and had not, to their knowledge, been found in the environment.

Mr. Fowler, ICI Rotterdam

Chlorinated paraffin LD50 approx. 8,000 mg/Kg to % of chlorinated paraffin go to PVC industry.

90 day feeding trials in rats and dogs. No effects level is 1000 ppm in food. Slight decrease in body weight (because food unpalatable ?). 2500 ppm in food required before effects on liver observed.
Extraction work on PVC film.
Solubility in water 0.3 ppm.
Accumulation studies with rats at 450 ppm in food used chlorinated paraffin 50% chlorine and molec. wt. 450. 60 day feeding with radioactive trace. After 30 days plateau level was reached. Material is not easily absorbed by body ; most is eliminated. When gets into body breaks down. If cease to feed disappears with half life of 12 days.

ICI have lodged petition with FDA for use of chlorinated paraffin in bottle top closure compounds. Information ICI have should be sufficient. First effect nil until fish practically swimming in chloroparaffin. Chlorinated paraffin very difficult to characterise in the environment.

The Dutch paint industry in consultation with the Ministry have agreed to cease the use of PCB and related materials. Chairman proposed as a thought before lunch :

> "Compounds (used in open systems) which accumulate in food chains are not acceptable whatever toxicity they may have".

Dr. Vos mentioned a paper on dioxins by Norback L Allen Environmental Health Prospective - April 1, 1972 Experimental issue published by Dept. of Health Education Welfare Research Triangle Park - p. 137. This was published along with others presented at a congress on PCB's in the USA.

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Item 6 - Dr. Groen

Has to prevent PCB's ? Even with laws and efficient control PCB's would still be "imported" in the waters of the Rhine. 80% of surface water in Holland comes from Germany/Belgium. Only international laws would do any good.

Why not limit use to approved manufacturers under certain conditions. Legally only possible in Holland for pesticides. In Switzerland "Giftgesetz". This has been tried in Holland but failed on definitions OECD considering PCB situation - quantifying problem.

A law on waste products will be discussed in Parliament mid 1973. Chemical waste products and packaging. Will regulate what has to happen to waste products. It may be possible to include PCB but this is doubtful. Japan banned PCB's existing stocks may only be used in the electrical industry if these can be controlled and later destroyed other partial bans in Finland, Norway, Sweden and U.S.

Conclusion

No Dutch law on PCB's, possibly later international law. In the meantime "cooperation" between Government and Industry is the key.

JH/nch
September 28, 1972

J HAGGART

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