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Office of Toxic Substances
U.S. Environmental Protection Agency
401 M Street SW
Washington, DC 20460

ATTENTION: Section 8(e) Coordinator

Dear Sir/Madam:

In compliance with TSCA Section 8(e) reporting requirements, we are informing you of preliminary results from a chronic (2 year) feeding study in Sprague-Dawley rats with various PCB Aroclor mixtures conducted at Battelle Laboratories, Columbus, Ohio. This study is being conducted with strict adherence to Good Laboratory Practice guidelines, and the study protocol has been previously shared with EPA.

Aroclors 1016, 1242, 1254 and 1260 were administered in the diet to male and female rats for 24 months, with interim sacrifices at 3, 6, 9, 12 and 18 months. The dose levels for Aroclor 1016 were 50, 100 and 200 ppm; for Aroclor 1242, 50 and 100 ppm; and for Aroclors 1254 and 1260, 25, 50 and 100 ppm. Tissue samples were taken at all sacrifice intervals and are being analyzed for PCB content using high resolution gas chromatography in order to determine congener-specific PCB retention and clearance patterns and total accumulation amounts.

A group of expert independent pathologists was recently convened as a Pathology Working Group (PWG) for the purpose of reviewing the histopathology of suspect liver tumors. All potential liver tumors observed by either the Study Pathologists (Battelle) or an independent Reviewing Pathologist (Experimental Pathology Laboratories) were forwarded to the PWG for consensus diagnosis. Determination of non-tumor pathology in the liver, or in other organs, has not yet been completed. Although we do not have a final written report from the PWG or from Battelle, our preliminary assessment is that Cancer Slope Factors (CSF or $q1^*$) calculated for all Aroclor mixtures tested are substantially below the value of 7.7 $mg/kg/day^{-1}$ that EPA currently assigns to all PCBs (regardless of mixture composition and congener content). If this holds true once the

final data is available and evaluated, then the calculated human cancer risk for PCB exposures would be substantially less than current estimates.

Not withstanding indications of reduced potency, statistically significant increases in liver tumors (adenomas and carcinomas) were found for females in all but the lowest dose group of Aroclor 1016. The tumor incidence rates appear to differ between Aroclors. Positive trend analyses were observed for all Aroclors in female rats. In male rats, only the high dose group of Aroclor 1260 exhibited a significant increase in liver tumors. A positive dose trend was also observed for Aroclor 1260 in male rats. The liver tumors found were predominantly adenomas, and there have been no reports of metastasis to other organs. The histopathology was judged to be consistent with that observed in previous chronic bioassays involving PCB mixtures[1-4] and re-evaluated by an earlier PWG[5].

It is too early for us to conclusively judge how these findings translate into an assessment of human cancer risk from exposure to PCBs. The contractor is currently performing histopathological examination of the remaining tissues, compiling the data and performing QA/QC in compliance with Good Laboratory Practices. Concurrently, we are characterizing the PCB exposure in these rats (in liver, mammary adipose and brain) to obtain a better understanding of PCB metabolism, and for possible correlations with tumorigenicity.

We will provide the agency with the final histopathology results and interpretations as soon as they are available. We anticipate receiving the final report from the contractor by the end of the second quarter, 1996. If you have further questions, please contact me at (203) 373-3316.

Sincerely,

for Stephen B. Hamilton

Stephen B. Hamilton
Manager, Environmental
Science and Technology

SBH/bjb
Att.

REFERENCES

1) KIMBROUGH, R.D., SQUIRE, R.A., LINDER, R.E., et al. (1975). Induction of liver tumors in Sherman strain female rats by PCB Aroclor 1260. J. Natl. Cancer Inst. 55(6), 1453-1456.

2) National Cancer Institute (NCI) (1977). Bioassay of Aroclor 1254 for Possible Carcinogenicity. Carcinogenesis Technical Report Series No. 38, DHEW Publ. No. (NIH) 78-838, U.S. Department of Health, Education, and Welfare, National Institutes of Health, Bethesda, MD.

3) NORBACK, D.H., AND WELTMAN, R.H. (1985). Polychlorinated biphenyl induction of hepatocellular carcinoma in the Sprague-Dawley rat. Environ. Health Perspect. 60, 97-105.

4) SCHAEFFER, E., GREIM, H., AND GOESSNER, W. (1984). Pathology of chronic polychlorinated biphenyl (PCB) feeding in rats. Toxicol. Appl. Pharmacol. 75, 278-288.

5) MOORE, J.A., HARDISTY, J.F., BANAS, D.A., AND SMITH, M.A. (1994). A Comparison of Liver Tumor Diagnoses From Seven PCB Studies in Rats. Reg. Tox. and Pharm. 20, 362-370.