TRIS(2,3-DIBROMOPROPYL) PHOSPHATE (Group 2A)

A. Evidence for carcinogenicity to humans (*inadequate*)

In a cohort mortality study in the USA of workers with multiple exposures, exposure to tris(2,3-dibromopropyl) phosphate was considered. A group of 628 male workers was classified as exposed either on a 'routine' or 'nonroutine' basis; 36 deaths occurred in this group (35 expected), seven of which were due to cancer compared to 6.6 that would have been expected[1].

B. Evidence for carcinogenicity to animals (*sufficient*)

Tris(2,3-dibromopropyl) phosphate was tested for carcinogenicity in mice and rats by oral administration. In mice, it produced tumours of the forestomach and lung in animals of each sex, benign and malignant liver tumours in females and benign and malignant tumours of the kidney in males[2]. In rats, it produced benign and malignant tumours of the kidney in males[2,3] and benign kidney tumours in females[2]. In a study of limited duration in male rats, benign colon tumours were reported[3]. After skin application to female mice, it produced tumours of the skin, lung, forestomach and oral cavity[2].

C. Other relevant data

No data were available on the genetic and related effects of tris(2,3-dibromopropyl) phosphate in humans.

Tris(2,3-dibromopropyl) phosphate induced micronuclei in bone-marrow cells and sperm abnormalities in mice treated *in vivo*. It induced sister chromatid exchanges and DNA damage in human cells *in vitro*. It transformed Syrian hamster embryo and mouse C3H 10T1/2 cells and induced chromosomal aberrations, sister chromatid exchanges and mutation in cultured rodent cells. It induced heritable translocations in *Drosophila* and DNA damage and mutation in bacteria[4].

References

[1]Wong, O., Brocker, W., Davis, H.V. & Nagle, G.S. (1984) Mortality of workers potentially exposed to organic and inorganic brominated chemicals, DBCP, Tris, PBB, and DDT. *Br. J. ind. Med.*, *41*, 15-24

[2]*IARC Monographs*, *20*, 575-588, 1979

[3]Reznik, G., Reznik-Schüller, H.M., Rice, J.M. & Hague, B.F., Jr (1981) Pathogenesis of toxic and neoplastic renal lesions induced by the flame retardant tris(2,3-dibromopropyl)phosphate in F344 rats, and development of colonic adenomas after prolonged oral administration. *Lab. Invest.*, *44*, 74-83

[4]*IARC Monographs*, *Suppl. 6*, 554-557, 1987