

DIMETHYLCARBAMOYL CHLORIDE (Group 2A)

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

No death from cancer was reported in an investigation of 39 dimethylcarbamoyle chloride production workers, 26 processing workers and 42 ex-workers aged 17-65 exposed for periods ranging from six months to 12 years¹.

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

Dimethylcarbamoyle chloride was tested for carcinogenicity by skin application and by subcutaneous and intraperitoneal injection in female mice of one strain; it induced local tumours¹. In another experiment, exposure of rats and male hamsters to dimethylcarbamoyle chloride by inhalation induced a high incidence of nasal-tract carcinomas².

C. Other relevant data

No data were available on the genetic and related effects of dimethylcarbamoyle chloride in humans.

Dimethylcarbamoyle chloride induced micronuclei but not sister chromatid exchanges in mice treated *in vivo*. It did not cause unscheduled DNA synthesis in human fibroblasts *in vitro*. It induced transformation of Syrian hamster embryo cells and chromosomal

aberrations in Chinese hamster cells; conflicting results were obtained with regard to the induction of sister chromatid exchanges. It was mutagenic to mouse lymphoma cells; it did not induce unscheduled DNA synthesis in rat hepatocytes but did induce DNA strand breaks in Chinese hamster cells. Dimethylcarbamoyl chloride did not induce sex-linked recessive lethal mutations in *Drosophila*; it induced aneuploidy, mutation, gene conversion and DNA damage in yeast. It was mutagenic to bacteria and caused DNA damage³.

References

¹*IARC Monographs*, 12, 77-84, 1976

²Sellakumar, A.R., Laskin, S., Kuschner, M., Rusch, G., Katz, G.V., Snyder, C.A. & Albert, R.E. (1980) Inhalation carcinogenesis by dimethylcarbamoyl chloride in Syrian golden hamsters. *J. environ. Pathol. Toxicol.*, 4, 107-115

³*IARC Monographs, Suppl. 6*, 265-268, 1987