α-Methylstyrene

α-Methylstyrene (1-methyl-1-phenylethylene) is a high production volume industrial chemical used in the production of acrylonitrile-butadiene-styrene (ABS) resins and copolymers. Occupational exposure may occur during its manufacture and use.

α-Methylstyrene passed the animal data screen, underwent a preliminary toxicological evaluation, and is being brought to the Carcinogen Identification Committee for consultation. This is a compilation of the relevant studies identified during the preliminary toxicological evaluation.

Epidemiological data

No cancer epidemiology studies were identified.

Animal carcinogenicity data

- Two year inhalation studies
  - Male and female F344/N rats: NTP (2007)
    - *Increases in renal tubular adenomas and carcinomas (combined) and in mononuclear cell leukemia in males (by pairwise comparison and trend)*
    - *No treatment-related tumor findings in females*
  - Male and female B6C3F$_1$ mice: NTP (2007)
    - *Increases in hepatocellular adenomas and carcinomas (combined) in males (by pairwise comparison) and females (by pairwise comparison and trend)*

Other relevant data

- Genotoxicity
  - Sister chromatid exchange in Chinese hamster ovary (CHO) cells with S9 (*positive in two studies)*: Norppa & Vainio (1983); NTP (2007)
  - Mutagenicity in *Salmonella typhimurium* reverse mutation assays *(negative)*: NTP (2007)
  - Chromosome aberrations in CHO cells *(negative)*: NTP (2007)
  - Micronuclei in mice *in vivo (positive in females, negative in males)*: NTP (2007)

References[1]:

Norppa H, Vainio H (1983). Induction of sister-chromatid exchanges by styrene analogues in cultured human lymphocytes. *Mutat. Res.* **116**:379-87.

National Toxicology Program (NTP, 2007). *Toxicology and Carcinogenesis Studies of α-Methylstyrene (Cas No. 98-83-9) in F344/N Rats and B6C3F$_1$ Mice (Inhalation Studies).* NTP Technical Report Series No.543, NIH Publication No. 08-4474.

[1] Excerpts or the complete publication have been provided to members of the Carcinogen Identification Committee, in the order in which they are discussed in this document.