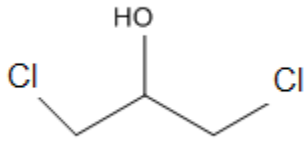
1,3-Dichloro-2-Propanol



1,3-Dichloro-2-propanol is used in the synthesis of glycerol, the production of plastics and textiles and in the synthesis of pharmaceuticals. It is used as a solvent, and as a cement for celluloid. It is also present in some foods, *e.g*. soy sauce, soup spices and instant soups, from hydrolization of proteins.

1,3-Dichloro-2-propanol 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.

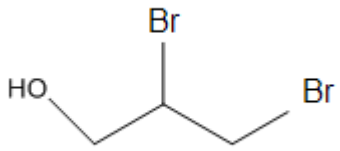
Animal carcinogenicity data

- Drinking water studies
  - 104-week studies in male and female Wistar rats: Hercules, Inc. (1986), as reviewed in NTP (2005, pp. 22-23.)

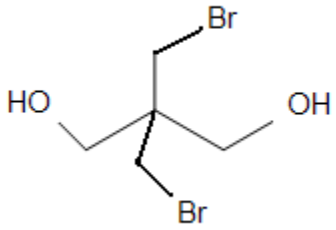
Other relevant data

- Genotoxicity
  - Review: NTP (2005, p. 23)
  - Mouse fibroblast assay for malignant transformation: Piasecki *et al.* (1990)
  - Salmonella assay for point mutations: Hahn *et al*. (1991)
  - SOS chromotest for gene mutation in *E. coli*: Hahn *et a*l. (1991)

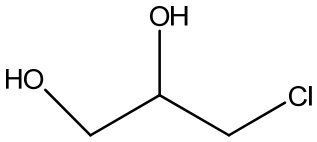
- Structure activity considerations



2,3-dibromo-1-propanol
(Proposition 65 carcinogen)



2,2-bis(bromomethyl)1,3-propanediol
(Proposition 65 carcinogen)



3-monochloropropane-1,2-diol
(Chemical[1] with positive evidence of carcinogenicity)

- Metabolism
  - 1,3-dichloro-2-propanol may be metabolized to epichlorhydrin which then conjugates with glutathione: NTP (2005, p. 17)

References[2]

Hahn H, Eder E, Deininger C (1991). Genotoxicity of 1,3-dichloro-2-propanol in the SOS chromotest and in the Ames test. Elucidation of the genotoxic mechanism. *Chem-Biol Interact* **80**:73-88.

National Toxicology Program (NTP, 2005). 1,3-Dichloro-2-propanol. Review of Toxicological Literature. Prepared for the NTP, National Institute of Environmental Health Sciences, National Institutes of Health, U.S. Department of Health and Human Services, Contract No. N01-ES-35515.

Piasecki A, Ruge A, Marquardt H (1990). Malignant transformation of mouse M2-fibroblasts by glycerol chlorohydrines contained in protein hydrolysates and commercial food. *Arzneim Forsch/Drugs Res* **40**:1054-1055.

[1] See material prepared for this chemical, also in this CIC consultation package
[2] Copies of these listed references, as either the abstract, the relevant sections of the publication, or the complete publication, have been provided to members of the Carcinogen Identification Committee. These references have been provided in the order in which they are discussed in this document.