

number of mutagenicity assays and has been negative for clastogenicity in genotoxicity studies. IARC has not classified the carcinogenicity of monochloroacetic acid.

Monochlorobenzene

Releases of monochlorobenzene (MCB) to the environment are thought to be mainly due to volatilization losses associated with its use as a solvent in pesticide formulations, as a degreasing agent and from other industrial applications. MCB has been detected in surface water, groundwater and drinking-water; mean concentrations were less than 1 µg/l in some potable water sources (maximum 5 µg/l) in Canada. The major source of human exposure is probably air.

Reason for not establishing a guideline value	Occurs in drinking-water at concentrations well below those of health concern, and health-based value would far exceed lowest reported taste and odour threshold
Assessment date	2003
Principal reference	WHO (2004) <i>Monochlorobenzene in drinking-water</i>

MCB is of low acute toxicity. Oral exposure to high doses of MCB results in effects mainly on the liver, kidneys and haematopoietic system. There is limited evidence of carcinogenicity in male rats, with high doses increasing the occurrence of neoplastic nodules in the liver. The majority of evidence suggests that MCB is not mutagenic; although it binds to DNA *in vivo*, the level of binding is low.

A health-based value of 300 µg/l can be calculated for MCB on the basis of a TDI of 85.7 µg/kg body weight, based on neoplastic nodules identified in a 2-year rat study with dosing by gavage, and taking into consideration the limited evidence of carcinogenicity. However, because MCB occurs at concentrations well below those of health concern, it is not considered necessary to derive a formal guideline value. It should also be noted that the health-based value far exceeds the lowest reported taste and odour threshold for MCB in water.

MX

MX, which is the common name for 3-chloro-4-dichloromethyl-5-hydroxy-2-(5H)-furanone, is formed by the reaction of chlorine with complex organic matter in drinking-water. It has been identified in chlorinated humic acid solutions and drinking-water in Finland, the United Kingdom and the USA and was found to be present in 37 water sources at levels of 2–67 ng/l. Five drinking-water samples from different Japanese cities contained MX at concentrations ranging from less than 3 to 9 ng/l.

Reason for not establishing a guideline value	Occurs in drinking-water at concentrations well below those of health concern
Assessment date	2003
Principal references	IPCS (2000) <i>Disinfectants and disinfectant by-products</i> WHO (2003) <i>MX in drinking-water</i>