

Risk assessment of formaldehyde for the general population in Japan.

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Formaldehyde is used in the production of resins, molding compounds, photographic film, bactericide, and tissue preservative. The purpose of this study was to provide an up-to-date critical review of the information to the toxicological profile of formaldehyde, and to assess the risk of formaldehyde for the general population in Japan. Inhaled formaldehyde is an effective sensory irritant at a dosage of 0.5 ppm in mice. Following inhalation in laboratory animals, more than 6 ppm formaldehyde causes degenerative non-neoplastic effects in mice and monkeys and nasal tumors in rats. It is considered that formaldehyde induces genotoxic effects directly in vitro and secondarily in vivo. Sensory irritation of the eyes and respiratory tract in response to inhalation exposure to formaldehyde has been reported at 0.08 ppm and above in human study. **Formaldehyde is carcinogenic at the site of contact as a consequence of epithelial cell regenerative proliferation resulting from cytotoxicity and mutation, based on studies in both animals and humans.** Levels of formaldehyde in atmosphere detected in rural, suburban, and urban areas in Japan were 2.5-3.2 ppb from 1998 to 2003. The majority of the population is exposed to atmosphere concentrations of formaldehyde less than those associated with sensory irritation. The reference concentration of formaldehyde in atmosphere for the Japanese general population is recommended to be 0.01 ppm.

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