

ETHYLENE GLYCOL HAS NOT BEEN SHOWN TO CAUSE CANCER

STUDY RESULTS

Data from the following lifetime studies in laboratory animals indicate that exposure to ethylene glycol would not be expected to cause cancer.

- A study in rats and mice, in which ethylene glycol was mixed with animals' drinking water, did not indicate an oncogenic (cancer causing) potential from ethylene glycol.
- A more recent federal government study with mice in which ethylene glycol was mixed with the animals' feed found "no evidence of carcinogenic activity."

GOVERNMENT FINDINGS

The United States Environmental Protection Agency (EPA) and other regulatory organizations use the results of genotoxicity studies, which investigate whether substances cause changes to genes, to predict the cancer-causing potential of a substance. Many such studies have been conduct-

ed with ethylene glycol and the resulting data support the conclusion that there is no cancer potency with respect to ethylene glycol. In its review of ethylene glycol, the Agency for Toxic Substances and Disease Registry considered the available genotoxicity data and reported that laboratory studies demonstrated that "ethylene glycol is negative for genotoxic effects."

In considering a potential cancer-causing classification for ethylene glycol, EPA concluded that ethylene glycol is either "not classifiable" (Group D) or had "evidence of no carcinogenicity" (Group E). EPA further stated that "Substances in ... groups 'D' and 'E' are not given a hazard ranking (for carcinogenicity) because the Agency does not consider them to be potential carcinogens."

The National Institute for Occupational Safety and Health maintains the Registry of Toxic Effects of Chemical Substances, and the National Library of Medicine reviews and maintains the Hazardous Substances Data Bank on its Toxicology Data Network. Both of these government databases indicate that ethylene glycol shows "no evidence of potential carcinogenicity."

- DePass, L.R., Garman, R.H., Woodside, M.D. et al. Chronic Toxicity and Oncogenicity Studies of Ethylene Glycol in Rats and Mice. *Fundamental Applied Toxicology* 7(4):547-565 (1986).
- National Toxicology Program Technical Report on the Toxicology and Carcinogenesis Studies of Ethylene Glycol (CAS No. 107-21-1) in B6C3F1 Mice (Feed Studies), U.S. Department of Health and Human Services, February 1993.
- Union Carbide Chemical Corporation, Bushy Run Research Center Study, "Ethylene Glycol In Vitro Mutagenesis Studies 3-Test Battery," (Abstract), June 12, 1981.
- Union Carbide Chemical Corporation, Bushy Run Research Center Study, "Ethylene Glycol Salmonella/Microsome (Ames) Bacterial Mutagenicity Assay," (Abstract), November 26, 1984.
- Union Carbide Chemical Corporation, Bushy Run Research Center Study, "Ethylene Glycol In Vitro Cytogenic Studies," (Abstract), April 2, 1985.
- Agency for Toxic Substances and Disease Registry, Toxicological Profile for Ethylene Glycol and Propylene Glycol, September 1997.
- Technical Background Document to Support Rulemaking Pursuant to CERCLA Section 102, Volume 7, Reportable Quantity Adjustments for Clean Air Act Hazardous Air Pollutants and Resource Conservation and Recovery Act Hazardous Wastes, U.S. Environmental Protection Agency September 3, 1993.
- EPA Memorandum "Evaluation of the RQ to be Proposed for Ethylene Glycol," Gerain Perry, Response Regulations Development Section, U.S. Environmental Protection Agency, May 5, 1993.