

Fact Sheet Date: March 12, 1998

**NEW YORK STATE
- HUMAN HEALTH FACT SHEET -**

**Ambient Water Quality Value for
Protection of Sources of Potable Water**

SUBSTANCE: Ethylbenzene

CAS REGISTRY NUMBER: 100-41-4

AMBIENT WATER QUALITY VALUE: 5 ug/L

BASIS: Surface Water: Principal Organic Contaminant Classes
Groundwater: Former Reference to 10 NYCRR Subpart 5-1 Principal Organic Contaminant (POC) General Maximum Contaminant Level (MCL)

SUMMARY OF INFORMATION

New York State developed a guidance value for ethylbenzene in water of 50 ug/L based on a review of literature up to 1984 (NYS, 1985). This was based on section 701.15(e) of 6 NYCRR that provides a general value of 50 ug/L when the database is inadequate to derive a specific value. Recent assessments (1983-1989) of health effects have been reviewed (USEPA, 1988; USEPA, 1987; USEPA, 1986).

Female rats were administered ethylbenzene orally at 4 different doses once daily 5 days a week for 6 months (Wolf, *et al.*, 1956). Based on increases in liver and kidney weights, a NOAEL of 136 mg/kg/day and a reference dose of 97 ug/kg/day were determined by the Office of Drinking Water (USEPA, 1987). A specific ambient water quality value using procedures established in section 702.5 of 6 NYCRR greatly exceeds 5 ug/L.

The compound has not been adequately tested to determine its carcinogenic potential (USEPA, 1986b). An ongoing carcinogenicity bioassay will not be completed until 1992 (Boorman, 1990).

DERIVATION OF VALUE

Surface Water

Regulations [6 NYCRR 702.2(b)] require that the value be the most stringent of the values derived using the procedures found in sections 702.3 through 702.7. The principal organic contaminant class value of 5 ug/L (702.3(b)) represents the most stringent value that can be derived for ethylbenzene. Therefore, the ambient water quality value for ethylbenzene is 5 ug/L.

Groundwater

The principal organic contaminant (POC) groundwater standard of 5 ug/L (6 NYCRR 703.5) applies to ethylbenzene. This standard became effective on January 9, 1989 by inclusion by reference to 10 NYCRR Subpart 5-1 standards. The basis and derivation of the POC standard are described in a separate fact sheet.

REFERENCES

Boorman, G.A., 1990. National Toxicology Program, personal communication.

6 NYCRR, Chapter X, Parts 700-705. Water Quality Regulations. Surface Waters and Groundwater Classifications and Standards.

10 NYCRR, Chapter I, Part 5, Subpart 5-1. Public Water Supplies.

NYS, New York State, 1985. Ambient Surface Water Quality Standards Documentation. Ethylbenzene. September 6, 1985 (Fact Sheet Revised). Albany, NY

USEPA, 1988. U.S. Environmental Protection Agency. Science Advisory Board's Review of the Ethylbenzene Health Criteria Document. Environmental Protection Agency, Washington, DC. PB89-109607.

USEPA, 1987. U.S. Environmental Protection Agency. Drinking Water Criteria Document for Ethylbenzene. Environmental Criteria and Assessment Office, Cincinnati, OH. PB89-192173.

USEPA, 1986. U.S. Environmental Protection Agency. Health and Environmental Effects Profile for Ethylbenzene. Environmental Criteria and Assessment Office, Cincinnati, OH. PB88-251202.

USEPA, 1986b. U.S. Environmental Protection Agency. Guidelines for Carcinogenic Risk Assessment. Federal Register 51 (185): 33992-34003.

Wolf, M.A., V.K. Rowe, D.D. McCollister, R.L. Hollingsworth and F. Oyen, 1956. Toxicological studies of certain alkylated benzenes and benzene. Arch. Ind. Health. 14: 387-398.

New York State Department of Environmental Conservation
Division of Water
AS
July 17, 1990