

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: 1,1-Dichloroethane

CAS REGISTRY NUMBER: 75-34-3

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 1,1-dichloroethane of 50 ug/L based on a review of literature up to 1984 (NYS, 1985). This was based on subdivision 701.15(e) of 6 NYCRR that describes a general value of 50 ug/L when the database is inadequate to derive a specific value. Studies of health effects on the basis of a search of recent literature (1983-1989) have been reviewed (USEPA, 1984; Klaunig *et al.*, 1986; ATSDR, 1990) and are summarized below.

The toxicity and oncogenicity of 1,1-dichloroethane have not been thoroughly studied. In a two-year bioassay in rats and mice, no conclusive evidence of oncogenic effects was found in treated mice, and the rat study was judged inadequate due to poor survival (NTP, 1977). Male mice ingesting 1,1-dichloroethane in drinking water for a year demonstrated no increase in lung or liver tumors over controls and no increases in the number of tumors occurred in a promotion assay (Klaunig *et al.*, 1986). There are limited and inconclusive data as to the oncogenic potential of 1,1-dichloroethane.

USEPA classifies 1,1-dichloroethane in group C, a possible human carcinogen (USEPA, 1990; ATSDR, 1990). There are insufficient data on which to calculate a value on the basis of oncogenic effects.

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 1,1-dichloroethane. Therefore, the ambient surface water quality value for 1,1-dichloroethane is 5 ug/L.

Groundwater

The principal organic contaminant (POC) groundwater standard of 5 ug/L (6 NYCRR 703.5) applies to 1,1-dichloroethane. 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

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Klaunig, J.E., R.J. Ruch, M.A. Pereira. 1986. Carcinogenicity of Chlorinated Methane and Ethane Compounds Administered in Drinking Water to Mice. *Environ. Health Perspect.* 69: 89 - 95.

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

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

NYS, New York State, 1985. Ambient Surface Water Quality Standards Documentation.

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NTP. 1977. Bioassay of 1,1-Dichloroethane for Possible Carcinogenicity. National Cancer Institute. Bethesda, MD. PB283-345.

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USEPA. 1984. Health Effects Assessment for 1,1-dichloroethane. Environmental Criteria and Assessment Office. Cincinnati, OH. PB86-134384.

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August 30, 1991