

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:** 1,1,1-Trichloroethane

**CAS REGISTRY NUMBER:** 71-55-6

**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 1,1,1-trichloroethane 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 describes a general value of 50 ug/L when the database is inadequate to derive a specific value. Recent studies and assessments (1983-1989) of health effects have been reviewed.

In a well-designed lifetime study of rats and mice exposed to 0, 150, 500 or 1,500 ppm in air of 1,1,1-trichloroethane, there were no indications of oncogenic effects (Quast et al., 1988). An earlier National Toxicology Program bioassay (NTP, 1983) was judged inadequate (Hall et al., 1989). The evidence for genotoxicity is limited (Turina et al., 1986).

Adequate data exists to determine non-oncogenic effects produced in several species (mice, gerbils, rats) by exposure to 1,1,1-trichloroethane compared to controls. The NTP (1987a; 1987b) studied the teratogenic and postnatal toxicity of 1,1,1-trichloroethane in male and female rats treated with 3, 10, or 30 ppm in drinking water. There was a significant increase in mortality of pups from dams exposed to 30 ppm 1,1,1-trichloroethane compared

to controls. Other chronic effects were demonstrated at higher dose levels including central nervous system changes (Rosengren et al., 1985) and hepatic toxicity (McNutt et al., 1975).

## **DERIVATION OF VALUE**

A NOAEL of 10 ppm (1.16 mg/kg/day) was found for postnatal mortality (NTP, 1987b). An ambient water quality value of 8 ug/L can be calculated using the procedure established for non-oncogenic effects in NYS regulations.

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

### Groundwater

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

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