Fact Sheet Date: March 24, 1992

NEW YORK STATE
- HUMAN HEALTH FACT SHEET -

Ambient Water Quality Value for Protection of Sources of Potable Water

SUBSTANCE: 2,3,4-Trichlorotoluene **CAS REGISTRY NUMBER:** 7359-72-0

AMBIENT WATER QUALITY VALUE: 0.34 ug/L

BASIS: Non-oncogenic, Chronic (6 NYCRR 702.5), Chemical Correlation (6 NYCRR 702.7)

SUMMARY OF INFORMATION

Introduction:

2,3,4-Trichlorotoluene (2,3,4-TCT) is one isomeric form of trichlorotoluene ($C_7H_5Cl_3$), a substituted halobenzene, with a molecular weight of 195.47.

Pharmacokinetics:

No information was found.

Acute Toxicity:

No information was found.

Chronic Toxicity:

No information was found.

Reproductive/Developmental Effects:

No information was found.

Genotoxicity:

No information was found.

Oncogenicity:

No information was found.

Other Standards and Guidelines:

Under the State Sanitary Code, the New York State Department of Health has established a maximum contaminant level of 5 ug/L for "principal organic contaminants" such as 2,3,4-TCT in drinking water (NYS, 1990).

DERIVATION OF VALUE

The regulations (6 NYCRR 702.2(b)) require that the ambient water quality value be the most stringent of the values derived using the procedures in sections 702.3 through 702.7.

2,3,4-TCT belongs to one of the principal organic contaminant classes as referred to in 6 NYCRR 702.3(b) which would yield a value of 5 ug/L. No information was found upon which to derive a value based on sections 702.4 through 702.6. Section 702.7 provides that in such case a value may be based on chemical correlation "where similar toxic effects or aesthetic considerations are anticipated because of similarity of functional groups or metabolic or toxicologic pathways." An ambient water quality value of 0.34 ug/L has been derived for 2,3,6-TCT, on the basis of 702.5 (NYS, 1991a). A value of 0.34 ug/L can be derived for 2,3,4-TCT, based on chemical correlation to 2,3,6-TCT as justified below. 2,3,4-TCT is a positional isomer of 2,3,6-TCT; both have three chlorines and one methyl group attached to the benzene ring. This homogeneity of functional groups indicates the potential for similar metabolic and toxicologic pathways. The major metabolic pathway for toluene, xylenes and 2-chlorotoluene is methyl group oxidation, resulting in benzyl alcohol, benzoic acid, and conjugates with glucuronic acid, amino acids or sulfur containing moieties. Based on structural similarity of toluene, xylenes and 2-chlorotoluene to trichlorotoluenes, the major metabolic degradation pathway for both 2,3,4-TCT and 2,3,6-TCT is expected to be methyl group oxidation.

The most stringent value for 2,3,4-TCT derived using the procedures in sections 702.3 through 702.7 is 0.34 ug/L, based on chemical correlation to 2,3,6-TCT. The ambient water quality value for 2,3,4-TCT is thus 0.34 ug/L.

REFERENCES

1. New York State (NYS) 1990. 10 NYCRR Part 5, Drinking Water Supplies (Statutory Authority: Public Health Law Section 225) Subpart 5-1. New York State Department of Health. January, 1990.

2. New York State (NYS) 1991a. New York State Human Health Fact Sheet. Ambient Water Quality Value for Protection of Sources of Potable Water: 2,3,6-Trichlorotoluene. New York State Department of Health, Bureau of Toxic Substance Assessment. November 15, 1991.

3. New York State (NYS) 1991b. New York State Human Health Fact Sheet. Ambient Water Quality Value for Protection of Sources of Potable Water: 2,4,5-Trichlorotoluene. New York State Department of Health, Bureau of Toxic Substance Assessment. November 15, 1991.

Search Strategy

The following databases were searched:

- STN Registry, December, 1991
- NTIS, December, 1991
- Toxline, December, 1991
- Registry of Toxic Effects of Chemical Substances (RTECS), January, 1992
- Hazardous Substances Data Bank (HSDB), January, 1992.
- Chemical Carcinogenesis Research Information System (CCRIS), January, 1992.
- CHEM, December, 1991
- Integrated Risk Information System (IRIS), January, 1992.

CSS/SS
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