

Fact Sheet Date: March 12, 1998

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

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

SUBSTANCES:		CAS REGISTRY NUMBERS:
Dichlorotoluenes:		
2,3-Dichlorotoluene		32768-54-0
2,4-Dichlorotoluene		95-73-8
2,5-Dichlorotoluene		19398-61-9
2,6-Dichlorotoluene		118-69-4
3,4-Dichlorotoluene		95-75-0
3,5-Dichlorotoluene		25186-47-4

AMBIENT WATER QUALITY VALUE: 5 ug/L*

REMARKS: *Applies to each isomer individually; applies only to the isomers listed above.

BASIS: Principal Organic Contaminant (Groundwater)
Principal Organic Contaminant Classes (Surface Water)

SUMMARY OF INFORMATION

Introduction

Technical dichlorotoluene (DCT), a substituted halobenzene (C₇H₆Cl₂), contains a mixture of various isomers (mainly 2,5-DCT, 2,4-DCT and 3,4-DCT). 2,4-DCT is described as a combustible high boiling point solvent (196-197°C) having a density of 1.2498 (at 20/20°C) and a molecular weight of 161.03.¹ It is reported to be insoluble in water and has a naphthalene or mothball-like odor which is 100% recognizable at a concentration of 0.035 ppm (0.229 mg/m³) in air.^{1,2} 2,4-DCT is used as a chemical intermediate for the manufacture of the herbicide, Cabex.³

No information was found on the organoleptic properties, physico-chemical characteristics, or uses of 2,3-DCT, 2,5-DCT, 3,4-DCT or 3,5-DCT. 2,6-DCT is reported to have a musty or woody odor with an odor threshold in air (0.036 ppm; 0.23 mg/m³) similar to that of 2,4-DCT.²

Pharmacokinetics

No data were found.

Acute toxicity

Acute toxic effects of exposure to dichlorotoluenes include irritation of mucous membranes, eyes and skin. A recent Soviet study reported LD₅₀ values (route not specified in abstract) of 2,900, 4,600 and 5,000 mg/kg for 2,4-DCT in mice, rats and guinea pigs, respectively.⁴ Following exposure to one-tenth of the reported LD₅₀, 2,4-DCT affected primarily liver, kidney and central nervous system functions in these animals. Another Soviet study, Korkach (1987)⁵ reported changes in the level of hepatic alanine aminotransferase which correlated with the extent of liver damage in rats, following intragastric administration of 2,4-DCT (dose not reported in abstract). However, determination of the serum enzyme activity in this case was not found a reliable indicator of liver damage.

Chronic toxicity

Information on the chronic toxicity of dichlorotoluene isomers in humans or animals was not found.

Reproductive/development toxicity

No human or animal data on dichlorotoluene isomers were found.

Genotoxicity

A recent Soviet report indicates that 2,4-DCT caused chromosomal aberrations in the somatic cells and affected female gonads (no other details are available).⁴

Oncogenicity

No data were found.

Other standards and guidelines

Under the State Sanitary Code (10 NYCRR Part 5, Public Water Supplies), the New York State Department of Health has established a maximum contaminant level of 5 ug/L for

"Principal Organic Contaminants" such as the specific dichlorotoluenes listed above under "Substances," in drinking water.⁶

DERIVATION OF VALUE

Groundwater

2,3-,2,4-,2,5-,2,6-,3,4- and 3,5-Dichlorotoluene are principal organic contaminants, each with a maximum contaminant level of 5 ug/L under New York State Department of Health regulations as described above. The ambient groundwater standard for each of these substances is 5 ug/L because former groundwater regulations included 10 NYCRR Subpart 5-1 general standards by reference.

Surface Water

2,3-,2,4-,2,5-,2,6-,3,4- and 3,5-Dichlorotoluene belong to one of the principal organic contaminant classes as defined in 6NYCRR 700.1. The most stringent value that can be derived for these substances using the procedures in 6NYCRR 702.3 through 702.7 is 5 ug/L, required under 702.3(b) for substances belonging to any principal organic contaminant class. Therefore, the ambient water quality value for each of these substances is 5 ug/L.

REFERENCES

Handbook of Chemistry and Physics. 1976. 57th Edition. Cleveland, OH: CRC Press, Inc. (cited in HSDB, 1984).

U.S. Environmental Protection Agency (USEPA). 1983. Odor Thresholds of Selected Chemicals for Hooker Chemicals - Eleven Additional Samples with Cover Letter. EPA/OTS Document #878211178.

HSDB (Hazardous Substance Data Bank). 1988. 2,4-Dichlorotoluene. Online computer search at National Library of Medicine. Updated on 12/29/84.

Tolstopyatova, G.V., V.I. Korkach, I.R. Barilyak, A.P. Samoilov, O.V. Gudz and B.N. Bychkovskii. 1988. Hygienic regulation of 2,4-dichlorotoluene in reservoirs. Gig. Sanit. 2: 80-81. Chem. Abst. 108: 217382J.

Korkach, V.I. 1987. Alanine aminotransferase activity in blood serum and liver of chemical exposed rats. Gig. Sanit. 11: 86-87. Chem. Abst. 108: 050727M.

10 NYCRR Part 5, Drinking Water Supplies (Statutory Authority: Public Health Law Section 225) Subpart 5-1. January, 1989. New York State Department of Health.

SEARCH STRATEGY

The following reference sources were reviewed:

- Index Medicus, 1981 - Feb. 1991.
- Chemical Abstracts, 1979-1988.
- The following databases through 3/91: Toxline, Toxlit 65 and Toxlit, Chemline, and Hazardous Substances Data Bank (HSDB).
- U.S. Environmental Protection Agency. 1991. Integrated Risk Information System (IRIS) Database. Washington, DC: Office of Health and Environmental Assessment. (March 1, 1991).
- National Research Council. Drinking Water and Health, Volumes 1-9. Safe Drinking Water Committee, Board on Toxicology and Environmental Health Hazards, Commission on Life Sciences. Washington, DC: National Academy Press.
- International Agency for Research on Cancer (IARC). IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans. Volumes 1-47. Lyon, France: IARC.

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