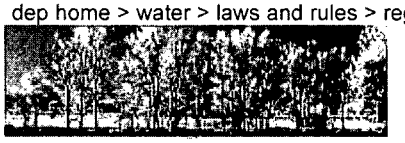

Current Regulatory Limit: n-Nitrosodimethylamine (NDMA)

Return to Standards Table

n-NITROSODIMETHYLAMINE (NDMA)	CASRN: 62759	Update: I 2004

Current Massachusetts Regulatory Limit: ORSGL = 0.00001 mg/L.

Federal Regulatory Limit: The The U.S. EPA has not published an MCL for n-Nitrosodimethylamine (NDMA).

Basis for Criteria: The ORSGL is based on the analytical practical quantitation (PQL) for this chemical in water. This PQL has been identified by the state of Ca as the concentration of NDMA that most analytical laboratories are capable of de in drinking water.

Critical Effects: NDMA has been found to be carcinogenic in all experimental ai tested. NDMA produces liver tumors after oral administration in rats and tumors i liver and kidney after inhalation exposures in rats and mice. It is a transplacental carcinogen when administered via various routes to pregnant mice, rats and han is also mutagenic and is structurally related to known carcinogens. Since this ch has consistently been found to be a potent carcinogen, and it is expected that thi endpoint is the most sensitive effect, the focus of animal studies has been carcinogenicity. As a result, other non-cancer endpoints have not been well stud available data are considered inadequate as a basis for their characterization (W 2002). Non-cancer effects observed in these studies include liver toxicity, kidney internal bleeding and death especially associated with acute exposures to high d also associated with longer-term exposure to low doses (WHO, 2002; ATSDR, 1

Cancer Assessment: B2 (by the old U.S. EPA carcinogen classification system U.S. EPA's Proposed Guidelines for Carcinogen Risk Assessment (U.S. EPA, 19 classification would correspond to the descriptor "likely to be carcinogenic to hun

Class:Organic

Analytical Information:

PQL: 0.00001 mg/L

Analytical Methods:
Gas chromatographic/mass spectrometric methods offer the most sensitive and measurement systems for analysis of NDMA in the low ng/L range. High-resoluti electron impact mass spectrometry, and low-resolution chemical ionization (usin ammonia, methanol, etc.) or other mass spectrometric techniques with equivaler sensitivity are acceptable (CDHS, 2003).

PQLs and analytical methods may have been updated since this guidance value revised. Updated analytical methods for drinking water and their associated PQL found at http://www.epa.gov/safewater/methods/methods.html.

Other Regulatory Data:

Any Health Advisories, Reference Doses (RfDs), cancer assessments or Cancer Factors (CPFs) referenced in this document pertain to the derivation of the curre guidance value. Updated information may be obtained from the following source:

Health Advisories - The U.S. EPA provides guidance for shorter-term exposures chemicals based on their non-cancer effects. Current health advisories may be r current than those used to derive MCLs and may be found at http://www.epa.gov/safewater/methods/methods.html.

RfDs, cancer assessments and CPFs - For specific information pertaining to deri drinking water criteria, consult the Federal Register notice that announces the av of the most current guidance for that chemical. In addition, information on other c RfDs and CPFs as well as cancer assessments for specific chemicals may be fo the U.S. EPA Integrated Risk Information System (IRIS) at http://www.epa.gov/ir Please note that the information in IRIS may differ from that used in the derivatio process as published in the Federal Register notice.

References:
ATSDR (Agency for Toxic Substances and Disease Registry). December 1989. Toxicological Profile for N-Nitrosodimethylamine. U.S. Public Health Service (in collaboration with U.S. Environmental Protection Agency).

CDHS (California Department of Health Services). May 16, 2003 (Last Update). Laboratory Analyses. General Considerations, Acceptable Analytical Approache Laboratories Capable of Low-Level analyses for NDMA. Available on the Interne http://www.dhs.ca.gov/ps/ddwem/chemicals/NDMA/NDMAlabs.htm.

U.S. EPA (U.S. Environmental Protection Agency). July 1999. Guidelines for Ca Risk Assessment. Review Draft. NCEA-F-0644. Risk Assessment Forum.

WHO (World Health Organization). 2002. Concise International Chemical Asses Document 38: N-Nitrosodimethylamine. (first draft: R.G. Liteplo and M.E. Meek, Canada, Ottawa, Canada and W. Windle, Environment Canada, Ottawa, Canad Published under the joint sponsorship of the United Nations Environment Progra International Labour Organization, and the World Health Organization, and prod within the framework of the Inter-Organization Programme for the Sound Manag Chemicals. Geneva.