# WINTER 2020

## STANDARDS AND GUIDELINES

## FOR

## CONTAMINANTS IN MASSACHUSETTS DRINKING WATERS

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
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**TO:** Interested Parties

**FROM:** C. Mark Smith, Director, Office of Research and Standards

**DATE:** ***Winter 2020***

**RE:** Massachusetts Drinking Water Standards and Guidelines

Attached is the latest list of the Massachusetts Drinking Water Standards and Guidelines. The last issue was updated in the spring of 2019.

There is one update to this list from its last edition. The Office of Research and Standards Guideline (ORSG) for Per- and Polyfluoroalkyl Substances (PFAS) that applies to a group of five PFAS compounds was updated with a new value as well as with the addition of a sixth compound.

The list of the standards and guidelines may not apply to all contaminant situations, so I urge you to continue to contact the Office of Research and Standards (ORS) with any questions regarding the application or interpretation of this information. Also, when a contaminant of interest is not on the list, please contact ORS for guidance (phone number 617-556-1158; email: diane.manganaro@mass.gov).

The list of Massachusetts standards and guidelines is available on the MassDEP Web Page at https://www.mass.gov/guides/drinking-water-standards-and-guidelines with links to chemical-specific documentation. Users have the option of clicking on an individual chemical in the list to see the basis for the derivation of the drinking water criterion, along with other pertinent information. The Web Page also provides limits for some routinely used drinking water treatment chemicals. This information is presented in the Department's Office of Research and Standards (ORS) documentation for the Immediate Action Levels for Water Treatment Plant Chemicals (formerly referred to as "Memorandum on Treatment Chemicals as Do Not Drink or Use Guidance" located at: https://www.mass.gov/files/documents/2016/08/ur/ialwtps.pdf.

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## I. Introduction

The Drinking Water List of Standards and Guidelines is a convenient compendium of guidance values available for evaluating contaminants in drinking water in Massachusetts. The list is designed to be used by individuals or groups concerned with the integrity of drinking water, for example, water suppliers, homeowners, environmental groups, government regulators, boards of health, or private consultants.

Under the Safe Drinking Water Act (SDWA), a state may be granted primacy for implementing the provisions of the SDWA. The Massachusetts Department of Environmental Protection (MassDEP) has primacy for implementation. As part of that primacy, MassDEP is responsible for ensuring the quality of Massachusetts public drinking waters.

Four primary types of guidance are available for assessing drinking water quality in the Commonwealth:

| | |
|---|---|
| Standards: | Massachusetts Maximum Contaminant Levels (MMCLs) |
| Guidelines: | ORS Guidelines |
| | US EPA Health Advisories |
| | Secondary Maximum Contaminant Levels |

## II. Standards

The Massachusetts Maximum Contaminant Levels (MMCLs) listed in the drinking water regulations (310 CMR 22.00) consist of promulgated US EPA MCLs which have become effective, plus a few MCLs set specifically by Massachusetts. The standards are enforced by the Drinking Water Program (DWP). Massachusetts may adopt a more stringent standard than the US EPA based on an independent review of primary or secondary data. The regulations were last promulgated in March, 2016 and can be viewed at https://www.mass.gov/regulations/310-CMR-22-the-massachusetts-drinking-water-regulations.

The MMCLs listed in 310 CMR 22.00 apply to water that is delivered to any user of a public water system as defined in 310 CMR 22.02. More specific definitions and applications are in the regulations. Private residential wells are not subject to the requirements of 310 CMR 22.00. However, these drinking water standards are recommended for the evaluation of private drinking water and are often used to evaluate private residential contamination, especially in Federal Superfund and M.G.L Chapter 21E activities.

## III. Guidelines

### ORS Guidelines

ORS issues guidance for chemicals other than those with Massachusetts MCLs in drinking water. These ORS guidance values are known as ORS Guidelines or ORSG and are usually developed for use by Departmental programs in the absence of any other federal standards or guidance. ORSG may be based upon US EPA Integrated Risk Information System (IRIS) toxicity values or derived based on a review and evaluation of all available data for the chemical of interest.

Some ORSG may be based on US EPA Health Advisories. Standards promulgated by the US EPA but not yet effective may also be included on the list of Massachusetts Drinking Water Guidelines. ORSG are updated when IRIS toxicity values change so as to reflect the current toxicological guidance for the chemical.

ORS uses methodology similar to that used by the US EPA's Office of Groundwater and Drinking Water (OGWDW) when setting guidelines for chemicals in drinking water. Concentrations of chemicals having evidence of carcinogenicity are minimized as much as feasible; therefore, guidelines are set at a target excess lifetime cancer risk of one in one million ($1 \times 10^{-6}$) or at the lowest practical quantitation limit (PQL) if the concentration at $1 \times 10^{-6}$ is below the PQL. This practice applies to chemicals classified as A or B carcinogens under the old cancer classification scheme of US EPA (US EPA, 1986). Class C carcinogens are individually evaluated for a decision regarding whether to set the guidelines on cancer effects. For carcinogens classified under US EPA's Carcinogen Risk Assessment Guidelines (US EPA, 2005), MassDEP will follow US EPA OGWDW's procedures for development of guidance.

To derive guidance for potential non-carcinogenic effects for a chemical, ORS applies a percentage (usually 20%) to published or derived route-specific reference doses and then uses standard exposure assumptions to convert the dose to a drinking water concentration. This practice allows for the possibility of human exposures from sources other than drinking water.

US EPA Health Advisories

The US EPA provides drinking water guidance in the form of Health Advisories for different durations of exposure (i.e., one-day, ten-day and lifetime). These are based upon non-cancer health effects. They are used by MassDEP when evaluating the potential health risks from chemicals in drinking water when no MMCL or ORSG is available.

Secondary Maximum Contaminant Levels (SMCLs)

SMCLs are guidance values issued by the US EPA representing levels of chemicals or parameters above which the aesthetic properties of the water can be affected (e.g., taste, odor, color) or cosmetic effects may occur (e.g., skin or tooth discoloration). The SMCLs are listed in 310 CMR 22.00.

For more information

The Department's Drinking Water Program provides a description of how ORSG and US EPA HA's are used in its regulatory oversight of water quality in public drinking water supplies in a document entitled DWP's Use of Office of Research and Standards Drinking Water Guidelines and US EPA Health Advisory Levels (MassDEP 2009), available on MassDEP's website at: https://www.mass.gov/service-details/dwps-use-of-mcls-office-of-research-and-standards-drinking-water-guidelines-for.

## IV. Winter 2020 Drinking Water Standards and Guidelines Lists Update

| Changes to the Winter 2020 List of Drinking Water Standards and Guidelines | | |
|---|---|---|
| **Contaminant** | **Description of Change or Notation** | **BASIS FOR CHANGE OR NOTATION** |
| **Per- and Polyfluoroalkyl Substances (PFAS)** | The ORS Guideline for this group of chemicals has been updated. | The ORS guideline developed by ORS in 2018 for PFAS was updated with the addition of a sixth PFAS compound (i.e., PFDA) to the subgroup of compounds covered by the ORSG, as well as the application of a database uncertainty factor to the Reference Dose (RfD) used to derive the ORSG, which results in a decrease of the ORSG from 0.000070 mg/L to 0.000020 mg/L. The updated ORSG level is for the sum of six PFAS compounds: PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA. When some or all of these compounds occur together in drinking water, the detected concentrations for these PFAS should be summed and compared to the ORSG. This value is also applicable to the individual compounds. |

## V. References


MassDEP. 2009. DWP's Use of Office of Research and Standards Drinking Water Guidelines and US EPA Health Advisory Levels. Massachusetts Department of Environmental Protection, Drinking Water Program. Boston, MA.

US EPA (US Environmental Protection Agency). 2005. Guidelines for Carcinogen Risk Assessment. EPA/630/P-03/001F. Risk Assessment Forum. US Environmental Protection Agency. Washington, D.C.

US EPA (US Environmental Protection Agency). 1986. Guidelines for Carcinogen Risk Assessment. Risk Assessment Forum. US Environmental Protection Agency. Washington, D.C.

# MASSACHUSETTS DRINKING WATER STANDARDS – Inorganic and Organic Chemicals

Please note that drinking water guidance is contained in five separate lists, in the following order:
(1) Massachusetts Maximum Contaminant Levels – Inorganic/Organics; (2) Massachusetts Maximum Contaminant Levels – Radionuclides;
(3) Massachusetts Maximum Contaminant Levels – Biologicals; (4) Massachusetts Drinking Water Guidelines (ORSG);
(5) Secondary Maximum Contaminant Levels

| SUBSTANCE | CASRN | MMCL (mg/L) |
|---|---|---|
| Acrylamide[1] | 79061 | Treatment Technique |
| Alachlor | 15972608 | 0.002 |
| Antimony | 7440360 | 0.006 |
| Arsenic | 7440382 | 0.010 |
| Asbestos[2] | 1332214 | 7 million fibers/liter |
| Atrazine | 1912249 | 0.003 |
| Barium | 7440393 | 2 |
| Benzene | 71432 | 0.005 |
| Benzo(a)pyrene | 50328 | 0.0002 |
| Beryllium | 7440417 | 0.004 |
| Bromate | 15541454 | 0.010 |
| Cadmium | 7440439 | 0.005 |
| Carbofuran | 1563662 | 0.04 |
| Carbon tetrachloride | 56235 | 0.005 |
| Chloramines (as $Cl_2$) | N/A | 4.0 (MRDL[3]) |
| Chlordane | 57749 | 0.002 |
| Chlorine (as $Cl_2$) | 7782505 | 4.0 (MRDL) |
| Chlorine dioxide (as $ClO_2$) | 10049044 | 0.8 (MRDL) |
| Chlorite | 7758192 | 1.0 |
| Chlorobenzene | 108907 | 0.1 |
| Chromium (total) | 7440473 | 0.1 |
| Copper | 7440508 | Treatment Technique, 1.3 (Action Level) |
| Cyanide (as free cyanide) | 57125 | 0.2 |
| 2,4-D (2,4-Dichlorophenoxyacetic acid) | 94757 | 0.07 |

**MASSACHUSETTS DRINKING WATER STANDARDS – Inorganic and Organic Chemicals**

| SUBSTANCE | CASRN | MMCL (mg/L) |
|---|---|---|
| Dalapon | 75990 | 0.2 |
| 1,2-Dibromo-3-chloropropane (DBCP) | 96128 | 0.0002 |
| 1,2-Dichlorobenzene (o-DCB) | 95501 | 0.6 |
| 1,4-Dichlorobenzene (p-DCB)[4] | 106467 | 0.005 |
| 1,2-Dichloroethane | 107062 | 0.005 |
| 1,1-Dichloroethylene | 75354 | 0.007 |
| *cis*-1,2-Dichloroethylene | 156592 | 0.07 |
| *trans*-1,2-Dichloroethylene | 156605 | 0.1 |
| Dichloromethane | 75092 | 0.005 |
| 1,2-Dichloropropane | 78875 | 0.005 |
| Di(2-ethylhexyl)-adipate | 103231 | 0.4 |
| Di(2-ethylhexyl)-phthalate | 117817 | 0.006 |
| Dinoseb | 88857 | 0.007 |
| Diquat | 85007 | 0.02 |
| Endothall | 145733 | 0.1 |
| Endrin | 72208 | 0.002 |
| Epichlorohydrin[5] | 106898 | Treatment Technique |
| Ethylbenzene | 100414 | 0.7 |
| Ethylene dibromide (EDB)[6] | 106934 | 0.00002 |
| Fluoride[7] | 7782414 | 4.0 |
| Glyphosate | 1071536 | 0.7 |
| Haloacetic acids (HAA5) (for chlorinated supplies only): including monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, bromoacetic acid and dibromoacetic acid | N/A | 0.060 |
| Heptachlor | 76448 | 0.0004 |
| Heptachlor epoxide | 1024573 | 0.0002 |

**MASSACHUSETTS DRINKING WATER STANDARDS – Inorganic and Organic Chemicals**

| SUBSTANCE | CASRN | MMCL (mg/L) |
|---|---|---|
| Hexachlorobenzene | 118741 | 0.001 |
| Hexachlorocyclopentadiene | 77474 | 0.05 |
| Lead | 7439921 | Treatment Technique, 0.015 (Action Level) |
| Lindane | 58899 | 0.0002 |
| Mercury (inorganic) | 7439976 | 0.002 |
| Methoxychlor | 72435 | 0.04 |
| Nitrate (As N) | 14797558 | 10 |
| Nitrate/Nitrite (total) | N/A | 10 |
| Nitrite (As N) | 14797650 | 1 |
| Oxamyl (Vydate) | 23135220 | 0.2 |
| PCBs (Polychlorinated biphenyls)[8] | 1336363 | 0.0005 |
| Pentachlorophenol | 87865 | 0.001 |
| Perchlorate[9] | | 0.002 |
| Picloram | 1918021 | 0.5 |
| Selenium | 7782492 | 0.05 |
| Simazine | 122349 | 0.004 |
| Styrene | 100425 | 0.1 |
| 2,3,7,8-TCDD (Dioxin) | 1746016 | $3 \times 10^{-8}$ |
| Tetrachloroethylene | 127184 | 0.005 |
| Thallium | 7440280 | 0.002 |
| Toluene | 108883 | 1 |

**MASSACHUSETTS DRINKING WATER STANDARDS – Inorganic and Organic Chemicals**

| SUBSTANCE | CASRN | MMCL (mg/L) |
|---|---|---|
| Total trihalomethanes (for chlorinated supplies only) | N/A | 0.080 |
| Including: Chloroform | 67663 | N/A[10] |
| Chlorodibromomethane | 124481 | N/A |
| Bromodichloromethane | 75274 | N/A |
| Bromoform | 75252 | N/A |
| Toxaphene | 8001352 | 0.003 |
| 2,4,5-TP (Silvex) | 93721 | 0.05 |
| 1,2,4-Trichlorobenzene | 120821 | 0.07 |
| 1,1,1-Trichloroethane | 71556 | 0.2 |
| 1,1,2-Trichloroethane | 79005 | 0.005 |
| Trichloroethylene | 79016 | 0.005 |
| Vinyl chloride | 75014 | 0.002 |
| Xylenes (total) | 1330207 | 10 |

[1] No numerical MCL is provided for these compounds. If detected, a treatment technique is specified. Each water system must certify, in writing, to the state (using third-party or manufacturer's certification) that when acrylamide and epichlorohydrin are used in drinking water systems, the combination (or product) of dose and monomer level does not exceed the levels specified, as follows:

- Acrylamide = 0.05% dosed at 1 mg/L (or equivalent)
- Epichlorohydrin = 0.01% dosed at 20 mg/L (or equivalent)

[2] For fibers longer than 10 microns.

[3] MRDL = maximum residual disinfectant level - the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

[4] The MMCL for this chemical is more stringent than the federal MCL.

[5] See footnote 1 above.

[6] See footnote 4 above.

[7] The U.S. Environmental Protection Agency (US EPA) completed a scientific assessment of fluoride in response to a 2006 National Academy of Sciences (NAS) report recommending that US EPA update its fluoride health and exposure assessments to take into account bone and dental effects and to consider all sources of fluoride. Based upon the NAS and US EPA information and its own independent assessment, the U.S. Health and Human Services (HHS) issued a final recommendation on April 27, 2015, lowering the non-regulatory HHS limit for fluoride in drinking water to 0.7 mg/L. US EPA is currently considering whether to lower its fluoride MCL of 4 mg/L. http://fluoridealert.org/news/hhs-issues-final-recommendation-for-community-water-fluoridation/

[8] The MCL for PCBs applies to the decachlorobiphenyl species.

[9] The MCL is directed at the sensitive subgroups of pregnant women, infants, children up to the age of 12, and individuals with hypothyroidism. They should not consume drinking water containing concentrations of perchlorate exceeding 2 µg/L. MassDEP recommends that no one consume water containing perchlorate concentrations greater than 18 µg/L.

[10] Not applicable

## MASSACHUSETTS DRINKING WATER STANDARDS – Radionuclides

Please note that drinking water guidance is contained in five separate lists, in the following order:
(1) Massachusetts Maximum Contaminant Levels – Inorganic/Organics; (2) Massachusetts Maximum Contaminant Levels – Radionuclides;
(3) Massachusetts Maximum Contaminant Levels – Biologicals; (4) Massachusetts Drinking Water Guidelines (ORSG);
(5) Secondary Maximum Contaminant Levels

| SUBSTANCE | CASRN | TYPE OF GUIDANCE | MMCL (mg/L) |
|---|---|---|---|
| Beta particle and photon radioactivity | N/A | MMCL | concentration which produces an annual dose of 4 millirem/yr |
| Gross alpha radiation[1] | N/A | MMCL | 15 pCi/L |
| Radium (226 + 228) | 7440144 | MMCL | 5 pCi/L |
| Radon-222[2] | 14859677 | ORSG | 10,000 pCi/L (ORSG) |
| Uranium | 7440611 | MMCL | 0.030 |

[1] If the gross alpha result is equal to or greater than 5 pCi/L then testing for radium 226 and radium 228 should be requested of the laboratory. If the gross alpha result is equal to or greater than 15 pCi/L then testing for uranium should also be requested.

[2] Exceedance of this guideline indicates that indoor air sampling for Radon-222 should be done. US EPA proposed MCLs for radon (64 FR 211; Tuesday, November 2, 1999) which have not been finalized.

## MASSACHUSETTS DRINKING WATER STANDARDS – Biologicals

Please note that drinking water guidance is contained in five separate lists, in the following order:
(1) Massachusetts Maximum Contaminant Levels – Inorganic/Organics; (2) Massachusetts Maximum Contaminant Levels – Radionuclides;
(3) Massachusetts Maximum Contaminant Levels – Biologicals; (4) Massachusetts Drinking Water Guidelines (ORSG);
(5) Secondary Maximum Contaminant Levels

| SUBSTANCE | CASRN | MMCL |
|---|---|---|
| *Cryptosporidium* | N/A | Treatment Technique |
| *E. coli* | N/A | 310 CMR 22.05 |
| *Giardia lamblia* | N/A | Treatment Technique |
| Heterotrophic plate count | N/A | Treatment Technique |
| *Legionella* | N/A | Treatment Technique |
| Turbidity | N/A | Treatment Technique |
| Viruses (enteric) | N/A | Treatment Technique |
| Total Coliforms | N/A | Indicator used in tiered monitoring protocol in the Revised Total Coliform Rule[1] |
| Fecal Indicator (*E. coli*, enterococci, coliphage) | N/A | Indicator used in tiered monitoring protocol in the Ground Water Rule[2] |

[1] For additional information on the Revised Total Coliform Rule, go to **310 CMR 22.05**
[2] For additional information on the Ground Water Rule, go to **310 CMR 22.26**

Please note that drinking water guidance is contained in five separate lists, in the following order:
(1) Massachusetts Maximum Contaminant Levels – Inorganic/Organics; (2) Massachusetts Maximum Contaminant Levels – Radionuclides;
(3) Massachusetts Maximum Contaminant Levels – Biologicals; (4) Massachusetts Drinking Water Guidelines (ORSG);
(5) Secondary Maximum Contaminant Levels

| SUBSTANCE | CASRN | ORSG (mg/L) |
|---|---|---|
| Acetone | 67641 | 6.3 |
| Aldicarb[1] | 116063 | 0.003 |
| Aldicarb sulfone[2] | 1646884 | 0.002 |
| Aldicarb sulfoxide[3] | 1646873 | 0.004 |
| Bromomethane | 74839 | 0.01 |
| Chloroform[4] | 67663 | 0.07 |
| Dichlorodifluoromethane | 75718 | 1.4 |
| 1,1-Dichloroethane | 75343 | 0.07 |
| 1,3-Dichloropropene | 542756 | 0.0004 |
| 1,4-Dioxane | 123911 | 0.0003 |
| Ethylene glycol | 107211 | 14 |
| Manganese[5] | 7439965 | general population:<br>0.3 (lifetime);<br>1.0 (limit exposure to > 1.0 mg/L to 10 days)<br>infants < 1 yr old:<br>0.3 (limit exposure to > 0.3 mg/L to 10 days) |
| Methyl ethyl ketone | 78933 | 4.0 |
| Methyl isobutyl ketone | 108101 | 0.35 |
| Methyl *tertiary* butyl ether[6] | 1634044 | 0.07 |
| Metolachlor | 51218452 | 0.1 |
| Naphthalene | 91203 | 0.140 |
| Nickel[7] | 7440020 | 0.1 |
| N-Nitrosodimethylamine (NDMA) | 62759 | 0.00001 |

| SUBSTANCE | CASRN | ORSG (mg/L) |
|---|---|---|
| Petroleum hydrocarbons[8] | | |
| TPH | N/A | 0.2 |
| Aliphatics | | |
| $C_5$-$C_8$ | | 0.3 |
| $C_9$-$C_{12}$[9] | | 0.7 |
| $C_9$-$C_{18}$[10] | | 0.7 |
| $C_{19}$-$C_{36}$ | | 14.0 |
| Aromatics | | |
| $C_6$-$C_8$ | | use guidance for individual chemicals |
| $C_9$-$C_{10}$ | | 0.2 |
| $C_{11}$-$C_{22}$ | | 0.2 |
| Per- and Polyfluoroalkyl Substances (PFAS) [11] | N/A | 0.000020 |
| Sodium[12] | 7440235 | 20 |
| Tertiary-Amyl Methyl Ether (TAME) | 994058 | 0.09 |
| Tertiary Butyl Alcohol (TBA) | 75650 | 0.12 |
| Tetrahydrofuran | 109999 | 0.6 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (FREON 113) | 76131 | 210 |

All guidelines are current with the information listed in IRIS as of January 10, 2020 except where noted.

[1] The MCLs for aldicarb, aldicarb sulfone and aldicarb sulfoxide have been stayed.
[2] See footnote 1above.
[3] See footnote 1 above.
[4] This guideline applies to non-chlorinated water supplies. For chlorinated drinking water supplies, see Total Trihalomethanes MMCL above.
[5]The ORSG for manganese is based on the US EPA manganese Health Advisory, with a modification as it pertains to infants. The lifetime Health Advisory for manganese contains a precautionary statement that "*for infants younger than 6 months, the lifetime Health Advisory of 0.3 mg/L be used even for an acute exposure of 10 days, because of the concerns for differences in manganese content in human milk and formula and the possibility of a higher absorption and lower excretion in young infants*." MassDEP is extending that age to one year out of concerns for formula use up to that age and the potential susceptibility of this early life stage to excessive manganese exposure and potential resultant toxicity. The 10-day limits are not critical bright lines, but are used to underscore the need to minimize high exposures. See also the Secondary Maximum Contaminant Level listing on p. 16 and US EPA Health Advisory reference on p. 17.
[6] The health-based guideline for MTBE was reviewed by ORS in 2000.
[7] The MCL for Nickel has been remanded and is no longer in effect, however the current US EPA IRIS chronic oral reference dose for soluble salts of nickel (https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=271) supports this value and it is also the basis for the currently listed US EPA Life-time Health Advisory value (https://www.epa.gov/sites/production/files/2018-03/documents/dwtable2018.pdf).

[8] Monitoring for these compounds is not required but is done on a case-by-case basis. These limits may be used when evaluating health risks posed by clearly identified mixtures of petroleum hydrocarbon compounds. The analytical methods to use to generate data to compare to the Drinking Water Guidelines are the Volatile Petroleum Hydrocarbon (VPH) and the Extractable Petroleum Hydrocarbon (EPH) methods developed by the MassDEP (MassDEP 1998).

[9] The overlap in the $C_9$-$C_{12}$ range is the result of the VPH and EPH analytical methods used to quantitate these ranges of petroleum hydrocarbons in drinking water. The choice of the most appropriate range to use is based on the identity of the petroleum product of concern and is therefore determined on a case-specific basis.

[10] See footnote 9 above.

[11] The ORSG level is for the sum of six PFAS compounds: PFOA, PFOS, PFNA, PFHxS, PFHpA and PFDA. When some or all of these compounds occur together in drinking water, the detected concentrations for these PFAS should be summed and compared to the ORSG. This value is also applicable to the individual compounds.

[12] All detections of sodium must be reported. Please refer to 310 CMR 22.06A for the specific requirements. The sodium guideline of 20 mg/L is based on an eight (8) ounce serving.

## SCONDARY MAXIMUM CONAMINANT LEVELS

Please note that drinking water guidance is contained in five separate lists, in the following order:
(1) Massachusetts Maximum Contaminant Levels – Inorganic/Organics; (2) Massachusetts Maximum Contaminant Levels – Radionuclides;
(3) Massachusetts Maximum Contaminant Levels – Biologicals; (4) Massachusetts Drinking Water Guidelines (ORSG);
(5) Secondary Maximum Contaminant Levels

| Chemicals/Parameter | Status | SMCL (mg/L) |
|---|---|---|
| Aluminum | F[1] | 0.05 to 0.2 |
| Chloride | F | 250 |
| Color | F | 15 Color Units |
| Copper | F | 1.0 |
| Corrosivity | F | non-corrosive |
| Fluoride | F | 2.0 |
| Foaming agents | F | 0.5 |
| Iron | F | 0.3 |
| Manganese[2] | F | 0.05 |
| Methyl *tertiary* butyl ether[3] | A[4] | 0.020-0.040 |
| Odor | F | 3 threshold odor numbers |
| pH[5] | F | 6.5 - 8.5 |
| Silver | F | 0.10 |
| Sulfate | F | 250[6] |
| Total dissolved solids (TDS) | F | 500 |
| Zinc | F | 5 |

Secondary Standards are referenced in the Massachusetts Drinking Water Regulations (310 CMR 22.07D).

[1] Final
[2] See also ORS Guideline Level listing on p. 13 and US EPA Health Advisory reference on p. 17.
[3] The secondary MCL for MTBE is based on the Drinking Water Advisory set by US EPA and is based on taste and odor considerations.
[4] Advisory
[5] This range of values is set to avoid adverse aesthetic impacts. Alternate system-specific values for pH may be generated for other program areas (e.g., Lead and Copper Rule water quality parameters; Immediate Action Level for Water Treatment Plant Chemicals).
[6] An MCL of 500 mg/L has been proposed by US EPA (Federal Register 12/20/94).

A tabular compilation of US EPA Health Advisories and related information, including the US EPA 2016 Health Advisories for Perfluoroctanoic Acid (PFOA) and Perfluoroctane Sulfonate (PFOS), may be obtained at: https://www.epa.gov/dwstandardsregulations/drinking-water-contaminant-human-health-effects-information#dw-standards.