



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
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# **DRINKING WATER STANDARDS AND HEALTH ADVISORIES TABLE**

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## REGION 9 DRINKING WATER STANDARDS AND HEALTH ADVISORIES TABLE

The USEPA Region 9 Drinking Water Standards and Health Advisories Table is a compendium of standards, health advisories and related information for chemicals and other contaminants which may be found in ground and surface waters. It provides a comprehensive listing of all current and proposed National Primary Drinking Water Regulations (NPDWRs), additional Maximum Contaminant Levels (MCLs) specific for California, Arizona and Hawaii, and California Drinking Water Action Levels. Where available, it includes USEPA Integrated Risk Information System (IRIS) cancer risk levels and oral reference dose (RfD) values, and USEPA Office of Ground Water and Drinking Water (OGWDW) Health Advisories for drinking water contaminants.

In order to make this table a manageable size, very few explanations or caveats for the values are included in the body of the table. Because of this, and the fact that background documentation and understanding of the derivation of specific values are critical to the proper use of this information, this table should not be used as a sole source of information for decision making. While the Appendix contains brief explanations of the different standards, criteria and advisories, consideration must be given to the context in which these numbers will be used. The appropriate reference materials should be consulted to determine the applicability of the number being considered. Some references are listed in the Appendix.

**The values in this table are current to the publication date, but are subject to change.** The user is advised to contact Bruce Macler, Drinking Water Toxicologist, USEPA Region 9, at (415) 972-3569 or [macler.bruce@epa.gov](mailto:macler.bruce@epa.gov), if questions arise regarding current values. Additional information is available from USEPA's Office of Science and Technology. The web site for this Office is: [www.epa.gov/ost/drinking/standards](http://www.epa.gov/ost/drinking/standards). Regulations appear at: [www.epa.gov/safewater](http://www.epa.gov/safewater).

### INFORMATION IN THIS TABLE

The information for specific contaminants in this table is arranged by contaminant type. Inorganic chemicals are listed first, followed by organic chemicals, radionuclides, microbial contaminants and water quality factors.

For each contaminant, any applicable or proposed USEPA National Primary Drinking Water Regulation is listed. These include the enforceable **Maximum Contaminant Levels (MCLs)**, the health-based, but not enforceable **Maximum Contaminant Level Goals (MCLGs)**, and the aesthetics-based **Secondary MCLs**. A given contaminant may have both a MCL and a Secondary MCL, as well as a MCLG. The regulatory status of these standards is indicated. **Proposed MCLs or MCLGs** have been formally proposed by USEPA, but not promulgated. **Final MCLs or MCLGs** have been promulgated, but are not yet effective as of the publication date. The effective date, if available, is indicated. **Current MCLs or MCLGs** are promulgated and in effect.

In addition to regulatory information, health risk information is provided in the table. Data from IRIS for cancer and non-cancer health effects associated with drinking water contaminants is listed. The **RfD (Reference Dose)** is the daily oral intake (on a body weight basis) that is below the level USEPA believes to be without adverse, non-cancer health risks (i.e., zero risk). The IRIS **10<sup>-6</sup> risk level** is that contaminant concentration (in ug/liter) in drinking water that would yield no greater than an additional risk of one-in-a-million (10<sup>-6</sup>) after a lifetime

of drinking that water. The USEPA OGWDW Health Advisories provide information on acceptably safe levels of exposures to contaminants in drinking water. The **Acute 10-day** values apply specifically to acute toxic effects on children, but are expected to be protective for adults. The **chronic (lifetime)** values for non-cancer health effects should be protective of health even with a lifetime exposure. For non-carcinogenic chemicals, this value is typically the same as the MCLG, if one has been established. The chronic (lifetime) values for cancer are set at a level that should yield no greater than an additional  $10^{-6}$  risk over a lifetime exposure.

EPA has recently changed its approach to determining carcinogenicity of chemicals to allow a fuller consideration of the many factors involved in the development of cancer. The Agency is beginning the process of reevaluating all the chemicals previously classed as to their carcinogenicity. The following **cancer weight of evidence** determinations are thus now archaic, but have yet to be changed and are therefore listed to provide additional information on EPA's judgment of carcinogenicity for each chemical. These (old) weight of evidence classifications are as follows:

- A** known human carcinogen
- B1** probable human carcinogen based on human data
- B2** probable human carcinogen based on animal data
- C** possible human carcinogen based on animal data
- D** insufficient data to classify chemical
- E** not a human carcinogen

The new cancer classifications are as follows:

- H** carcinogenic to humans
- L** likely to be carcinogenic to humans
- L/N** likely to be carcinogenic above a specified dose, but not below
- S** suggestive evidence of carcinogenic potential
- I** inadequate information to assess carcinogenic potential
- N** not likely to be carcinogenic to humans

### **APPLICABILITY AND USES OF THIS TABLE**

The different types of standards and advisories contained in this table are based upon approaches and assumptions that are specific to each and consequently may have varying applications depending on their derivation. Use of specific types of information should be guided by the relevant legal requirements and an understanding of the meaning of the information itself.

MCLs and treatment techniques are the only federally enforceable NPDWRs for drinking water systems. They are set to be health protective as well as feasible, and take into account analytical and treatment limitations. More stringent state-specific MCLs are enforceable in the indicated state. MCLGs, based solely on health information, are not enforceable, but provide health-based guidance for decision making. MCLGs for chemicals causing non-carcinogenic health effects are based on the RfD and set at a level believed to be safe. MCLGs for chemicals believed to be carcinogens are set at zero, from the perspective that no level of carcinogen is safe. Feasibility is not considered in setting MCLGs. Secondary MCLs are not enforceable, but provide information on aesthetics and palatability.

Health advisories and criteria are not formally promulgated in regulations and are subject to change as new data and analyses become available. MCLGs, values in IRIS and health advisories are developed by different EPA Offices and on different schedules. Therefore, values for similar effects from a given chemical may not be consistent throughout the table. The derivations of MCLGs and chronic (lifetime) health advisories for non-carcinogenic chemicals are based on the same assumptions regarding endpoints of toxicity. Slight differences in the table are due to rounding of numbers by different offices.

When considering a value to use for determining an acceptable level of contaminant in drinking water, the MCL should be selected first. In the absence of existing or proposed MCLs, users may have to decide which criteria are most appropriate. USEPA recommends a priority ranking to first consider any proposed MCLG (if other than zero), followed by the IRIS RfD or cancer risk level, and finally the chronic health advisory values.

Under the **Superfund Program**, remedial actions must comply with the **Applicable or Relevant and Appropriate Requirements (ARARs)**. For actions involving contamination of drinking water supplies, the ARARs under the Safe Drinking Water Act are typically the MCLs. Where there are no MCLs, or where the MCLs are determined to be insufficiently protective because of multiple contaminants, reference should be made to Superfund guidance documents to determine clean-up policy. For remedial actions impacting aquatic organisms and waters regulated under the Clean Water Act, consult the National Ambient Water Quality Criteria (NAWQC).

## DESCRIPTIONS OF STANDARDS AND ADVISORIES

### Authority

Under the authority of the Safe Drinking Water Act (SDWA, Public Law 93-523, Title XIV of the Public Health Service Act), the USEPA is mandated to establish National Primary Drinking Water Regulations for contaminants occurring in drinking water. Primary NPDWRs are established and enforced to protect the public from adverse health effects resulting from a drinking water contaminant. Included in these regulations are the drinking water standards which set either 1) treatment techniques to control a contaminant, or 2) the Maximum Contaminant Level (MCL) allowable for the contaminant in drinking water. A MCL is set when an appropriate method of detection for the contaminant exists. A treatment technique approach is used when it is not possible to quantify the contaminant at the level necessary to protect public health. Secondary standards are established based on non-health related aesthetic qualities of appearance, taste and odor. These secondary standards are not federally enforceable. In California, SMCLs are enforceable at the request of a community.

States may choose to accept responsibility (Primacy Status) for the oversight and enforcement of US drinking water regulations. States which have primacy status from USEPA must adopt State drinking water standards that are at least as stringent as federal standards. A state may choose to enforce secondary standards as well as primary standards.

### USEPA Maximum Contaminant Level Goals (MCLGs)

MCLGs are developed by the Office of Science and Technology in the USEPA Office of Water as a required first step toward promulgation of NPDWRs. MCLGs are non-enforceable health goals which are to be set at levels at which no known or anticipated adverse effects on the health of persons occur, and which allow for an adequate margin of safety. Prior to the SDWA

Amendments of 1986, these levels were called Recommended Maximum Contaminant Levels (RMCLs). MCLGs are strictly health-based levels and are derived from relevant toxicological data.

For chemicals that produce adverse health effects and are not believed to be carcinogenic (non-carcinogens), the MCLG is based on the Reference Dose (RfD)(see additional discussion below. A RfD is calculated from toxicological data to represent a contaminant level that should be without risk of adverse health effects even with a lifetime exposure. USEPA assumes that a threshold exists for non-cancer health effects from chemical contaminants, below which the effect will not occur. Thus the MCLG will be a non-zero number. The RfD, which is based on the total daily amount of contaminant taken up by a person on a body weight basis, is converted to a Drinking Water Equivalent Level (DWEL) concentration and adjusted for the percentage contribution of other sources (relative source contribution, RSC) of the contaminant besides drinking water (air, food, etc) to arrive at the MCLG. This calculation assumes a lifetime consumption of two liters of drinking water per day by a 70 kg adult. Unless otherwise noted, the RSC from drinking water for organic and inorganic compounds is respectively 20% and 10%.

USEPA Office of Water assumes as a default that no threshold exists for cancer and thus, there is no absolutely safe level of exposure. USEPA has recently revised its process for evaluating the carcinogenicity of chemicals. However, as of this date, no previously classified chemical has been reclassified using this approach. Until such time as this occurs, classifications under the older approach are still used for management purposes. For chemicals that are known (old Group A) or probable (old Group B) human carcinogens, USEPA policy directs that the MCLG be set at zero, in accordance with a recommendation by the US Congress. For contaminants believed to be possible human carcinogens (old Group C), the MCLG may be derived based on relevant non-cancer health effects as described above. In this case, the RfD is divided by an additional uncertainty factor of 10. In some cases, Group C chemicals will have MCLGs set based on calculated maximum lifetime cancer risks of between 1/10,000 and 1/million.

### **Maximum Contaminant Levels (MCLs)**

MCLs are federally enforceable limits for contaminants in drinking water established as NPDWRs. The MCL for a given contaminant is set as close to the corresponding MCLG as is feasible. "Feasible" is defined in the 1986 SDWA Amendments as "feasible with the use of the best technology, treatment techniques and other means which the Administrator finds, after examination for efficacy under field conditions and not solely under laboratory conditions, are available (taking cost into consideration)." This has been amplified in the 1996 SDWA Amendments to require EPA to consider feasibility with respect to smaller drinking water systems as well. To promulgate a MCL for a contaminant requires that a method of detection for that contaminant is available suitable for the level desired and Best Available Technologies are identified that can feasibly remove the contaminant to the desired level.

### **Secondary Maximum Contaminant Levels**

Secondary MCLs are established under the SDWA to protect the public welfare. Such regulations apply to contaminants in drinking water that adversely affect its odor, taste or appearance and consequently cause a substantial number of persons to discontinue its use.

Secondary MCLs are not based on direct adverse health effects associated with the contaminant, although some contaminants may have both a MCL and a SMCL. SMCLs are considered as desirable goals and are not federally enforceable. However, states may choose to promulgate and enforce SMCLs at the state level.

### **Health Advisories**

Health Advisories (HAs) for drinking water contaminants are levels considered to be without appreciable health risk for specific durations of exposure. HAs should be considered guidance and are not enforceable drinking water standards.

USEPA HAs are developed and published initially as External Review Drafts, and then as a Final Draft. This designation indicates that the HA will be always subject to change as additional information becomes available. HAs are developed for one-day, 10-day, longer-term (approximately 7 years) and lifetime (70 year) exposures based on data describing non-carcinogenic health effects resulting from the contaminant. One-day and 10-day HAs use parameters which reflect exposures and effects for a 10 kg child consuming 1 liter of water per day. Lifetime HAs consider a 70 kg adult consuming 2 liters of water per day. Longer-term HAs can incorporate either child or adult parameters. A relative source contribution from water is also factored into the lifetime HA calculation to account for exposures from other sources (air, food, soil, etc) of the contaminant.

For known or probably human carcinogens, the lifetime HA level is based on an upper-bound excess lifetime cancer risk of 1/million. This means that **USEPA considers that the risk from a lifetime consumption of water at the given level is unlikely to be greater than 1/million, is most likely substantially less and may be zero.**

### **Reference Dose (RfD) and Drinking Water Equivalent Level (DWEL)**

The RfD is a daily exposure level which is believed to be without appreciable health risk to humans over a lifetime. The RfD is usually derived from an experimental "no observed adverse effect level" (NOAEL), identified as the highest dose in the most relevant study that did not result in a known adverse effect. The NOAEL is divided by various uncertainty factors to derive the RfD. These uncertainty factors account for the variation in human response, extrapolation to human responses if animal experiments were used, data quality and relevance. The RfD takes the form of dose ingested per unit body weight per day (ug/kg-d).

The DWEL is the conversion of the RfD into an equivalent water concentration. It assumes that a 70 kg adult consumes two liters of water per day and that the total dose to a person results solely from drinking water. It is important to remember that actual exposures in the environment may occur through other routes, such as inhalation or dermal contact, or from other sources, such as from food or soil.

### **California Public Health Goals and Notification Levels**

California Department of Health Services Public Health Goals and Notification Levels are health-based criteria derived much in the same way as EPA Health Advisories. Specific approaches to determining cancer risks and exposure assumptions may differ in some ways from those used by USEPA. Public Health Goals, like USEPA MCLGs and HAs, are concentrations of drinking water contaminants that pose no significant health risk if consumed for a lifetime, based on current risk assessment principles, practices, and methods. California Notification

Levels are not enforceable drinking water standards, but are levels at which CA DOHS strongly urges water purveyors to take corrective action to reduce the level of contamination in the water they supply. Notification Levels cease to exist when CA State MCLS are promulgated. The CA DOHS web site is “[www.dhs.ca.gov/ps/ddwem](http://www.dhs.ca.gov/ps/ddwem)”.

### **Integrated Risk Information System (IRIS)**

IRIS is an EPA catalogue of Agency risk assessment and risk management information for chemical substances. It is available electronically in several formats. The risk assessment information contained in IRIS, unless specifically noted, has been reviewed and agreed upon by intra-agency work groups and represents Agency consensus. Chemical contaminants listed in IRIS may have descriptions of relevant toxicological experiments and risk assessment approaches used in the determination of RfDs, cancer risks and health advisories. Extensive bibliographies are included. Regulations and regulatory status for different media may be presented. The IRIS web site is “[www.epa.gov/iris](http://www.epa.gov/iris)”.

### **FDA standards for bottled water**

The U.S. Food and Drug Administration is responsible for regulating bottle water quality. It is required to adopt health-protective allowable limits for bottled water based on NPDWRs. Regulations governing bottled water can be found in Code of Federal Regulations Title 21, Parts 129 and 165. FDA predominantly adopts EPA contaminant MCLs. Allowable limits based on Secondary MCLs apply for aluminum and silver. In addition, bottled water must not exceed 5 ug/L lead and 1 mg/L copper. The FDA web site is “[www.fda.gov](http://www.fda.gov)”

## **REFERENCES**

### **Safe Drinking Water Act:**

Title XIV of the Public Health Service Act

### **EPA National Primary Drinking Water Regulations (NPDWRs):**

Code of Federal Regulations, Title 40, Part 141

### **Specific NPDWRs, including supporting information:**

NPDWRs; Synthetic Organic Chemicals, Inorganic Chemicals and Microorganisms; Proposed Rule: FR 50, n. 219, November 13, 1985. (Phase I contaminants.)

NPDWRs; Volatile Synthetic Organic Chemicals, Final Rule and Proposed Rule: FR 50, n. 219, November 13, 1985. (Phase I chemicals.)

NPDWRs; Fluoride; Final Rule and Proposed Rule: FR 50, n. 220, November 14, 1985.

NPDWRs; Fluoride; Final Rule: FR 51, n. 63, April 2, 1986.

NPDWRs; Volatile Organic Chemicals; Final Rule: FR 52, n. 130, July 8, 1987. (Phase I chemicals.)

NPDWRs; Filtration and Disinfection; Turbidity, Giardia lamblia, Viruses, Legionella, and Heterotrophic Bacteria; Proposed Rule: FR 52, n. 212, November 3, 1987.

Drinking Water; NPDWRs; Total Coliforms; Proposed Rule: FR 52, n. 212, November 3, 1987.

Drinking Water Regulations; MCLGs and NPDWRs for Lead and Copper; Proposed Rule: FR 53, n. 160, August 18, 1988.

NPDWRs, Proposed Rule: FR 54, n. 97, May 22, 1989. (Phase II inorganics, VOCs, SOCs.)

Drinking Water; NPDWRs; Filtration, Disinfection; Turbidity, Giardia lamblia, Viruses, Legionella, and Heterotrophic Bacteria; Final Rule: FR 54, n. 124, June 29, 1989.

Drinking Water; NPDWRs; Total Coliforms (Including Fecal Coliforms and E. coli); Final Rule: FR 54, n. 124, June 29, 1989.

NPDWRs; Synthetic Organic Chemicals and Inorganic Chemicals; Proposed Rules: FR 55, n. 143, July 25, 1990. (Phase V chemicals.)

NPDWRs, Final Rule: FR 56, n. 20, January 30, 1991. (Phase II inorganics, VOCs, SOCs.)

NPDWRs, Proposed Rule: FR 56, n. 20, January 30, 1991. (Aldicarb, Aldicarb Sulfoxide, Aldicarb Sulfone, Pentachlorophenol, Barium.)

MCLGs and NPDWRs for Lead and Copper; Final Rule. FR 56, n.110, June 7, 1991.

NPDWRs; Final Rule. FR 56, n.126, July 1, 1991. (Aldicarb, Aldicarb Sulfoxide, Aldicarb Sulfone, Pentachlorophenol, Barium.)

NPDWRs; Radionuclides; Proposed Rule. FR 56, n.138, July 18, 1991.

NPDWRs; Synthetic Organic Chemicals and Inorganic Chemicals; Final Rule. FR 57, n.138, July 17, 1992. (Phase V chemicals.)

NPDWRs; Disinfectants and Disinfection Byproducts; Proposed Rule. FR 59, n.145, July 29, 1994.

NPDWRs; Enhanced Surface Water Treatment Requirements; Proposed Rule. FR 59, n.145, July 29, 1994.

NPDWRs: Disinfectants and Disinfection Byproducts; Notice of Data Availability; Proposed Rule. FR 62, n.212, November 3, 1997.



NPDWRs: Disinfectants and Disinfection Byproducts Notice of Data Availability; Proposed Rule. FR 63, n.61, March 31, 1998.

NPDWRs: Interim Enhanced Surface Water Treatment; Final Rule. FR 63, n.241, December 16, 1998.

NPDWRs: Disinfectants and Disinfection Byproducts; Final Rule. FR 63, n.241, December 16, 1998.

NPDWRs; Radon-222; Proposed Rule. FR 64, n.211, November 2, 1999.

NPDWRs: Long Term 1 Enhanced Surface Water Treatment and Filter Backwash Rule; Proposed Rule. FR 65, n.69, April 10, 2000.

NPDWRs: Ground Water Rule; Proposed Rules. FR 65, n. 91, May 10, 2000.

NPDWRs; Radionuclides; Final Rule. FR 65, n.236, December 7, 2000.

NPDWRs; Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring; Final Rule. FR 66, n. 14, January 22, 2001.

NPDWRs: Filter Backwash Recycling Rule; Final Rule. FR 66, n. 111, June 8, 2001

NPDWRs: Long Term 1 Enhanced Surface Water Treatment Rule; Final Rule. FR 67, n.9, January 14, 2002.

NPDWRs: Long Term 2 Enhanced Surface Water Treatment Rule; Proposed Rule. FR 68, n. 154, August 11, 2003

NPDWRs: Stage 2 Disinfectants and Disinfection Byproducts Rule; National Primary and Secondary Drinking Water Regulations: Approval of Analytical Methods for Chemical Contaminants; Proposed Rule. FR 68, n. 159, August 18, 2003

Drinking Water Contaminant Candidate List; Final Notice. FR 70, n. 36, February 24, 2005

NPDWRs: Stage 2 Disinfectants and Disinfection Byproducts Rule; Final Rule. FR 71, n. 2, January 4, 2006

NPDWRs: Long Term 2 Enhanced Surface Water Treatment Rule; Final Rule. FR 71, n. 3, January 5, 2006

NPDWRs for Lead and Copper: Short-term regulatory revisions and clarification. FR 71, n. 137, July 18, 2006.

## DRINKING WATER CONTAMINANT CANDIDATE LIST 2 (2005)

### Microbiological contaminants

Adenoviruses  
Caliciviruses  
Coxsackieviruses  
Cyanobacteria (blue-green algae), other freshwater algae, and their toxins  
Echoviruses  
*Helicobacter pylori*  
Microsporidia (Enterocytozoon and Septata)  
Mycobacterium avium intracellulare (MAC)

### Chemical contaminants

1,1,1,2-tetrachloroethane	1,2,4-trimethylbenzene
1,1-dichloroethane	1,1-dichloropropene
1,2-diphenylhydrazine	1,3-dichloropropane
1,3-dichloropropene	2,4,6-trichlorophenol
2,2-dichloropropane	2,4-dichlorophenol
2,4-dinitrophenol	2,4-dinitrotoluene
2,6-dinitrotoluene	2-methylphenol (o-cresol)
Acetochlor	
Alachlor ESA and acetanilide degradation products	
Aluminum	Boron
Bromobenzene	DCPA mono-acid degradate
DCPA di-acid degradate	DDE
Diazinon	Disulfoton
Diuron	EPTC (s-ethyl-dipropylthiocarbamate)
Fonofos	p-Isopropyltoluene (p-cymene)
Linuron	Methyl bromide
Methyl-t-butyl ether (MTBE)	Metolachlor
Molinate	Nitrobenzene
Organotins	Perchlorate
Prometon	RDX
Terbacil	Terbufos
Triazines and degradation products of triazines	
Vanadium	

## Drinking Water Standards and Health Advisories

### INORGANIC

Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California**		Arizona**	Hawaii**
		MCL	MCLG	RfD <i>ug/kg-d</i>	10 <sup>-6</sup> Risk	Acute 10 days	Chronic (lifetime)			MCL	PHG	MCL	MCL
							Non-Cancer	Cancer					
Nitrite (as N)	Current	1mg/L	1mg/L	160		1mg/L***			D	1mg/L		1 mg/L	1 mg/L
Perchlorate				24.6							6		
Selenium	Current	50	50	5						50		50	50
Silver	Secondary	100		5		200	100		D	100 Secondary		50	50
Strontium				600		25 mg/L	17 mg/L		D				
Sulfate	Secondary	250 mg/L								250-600 Secondary			
Thalium	Current	2	0.5	0.07		7	0.4			2	0.1	2	2
Vanadium				7					D				
White Phosphorous				0.02			0.1		D				
Zinc	Secondary	5mg/L		300		6mg/L	2mg/L		I	5mg/L Secondary			

Value are indicated in micrograms per liter (*ug/L*) [equivalent to parts per billion (ppb)] unless otherwise stated

Oral Reference Doses (RfD) are in micrograms per kilogram per day (*ug/kg-d*), 10<sup>-6</sup> lifetime risk levels are in micrograms per liter.

\*\* - EPA MCLs apply unless noted as different

\*\*\* - 10 day NA for nitrate/nitrite for 4kg child (protective of 10kg child & adults); also used for chronic (lifetime)

## Drinking Water Standards and Health Advisories

WATER QUALITY, SECONDARY STANDARDS													
COMPONENT	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California		Arizona	Hawaii
		SMCL		RfD <i>ug/kg-d</i>	$10^{-6}$ Risk	Acute 10 days	Chronic (lifetime)			MCL	Action Level	MCL	MCL
							Non-Cancer	Cancer					
Color	Secondary	15 color units								*			
Corrosivity	Secondary	Non-corrosive								*			
Foaming Agents	Secondary	500 ug/L								*			
Odor	Secondary	3.0 OT#								*			
Total Dissolved Solids (TDS)	Secondary	500 mg/L								*			
pH	Secondary	6.5-8.5								*			

\* - Secondary standards are not federally enforceable, but may be enforced in California

# - Odor threshold number

## Drinking Water Standards and Health Advisories

### MICROBIALS AND INDICATORS

Contaminant	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California		Arizona	Hawaii
		MCL	MCLG	RfD ug/kg-d	10 <sup>-6</sup> Risk	Acute 10 days	Chronic (lifetime)			MCL	Action Level	MCL	MCL
							Non-Cancer	Cancer					
<i>Cryptosporidium</i>	Current	TT a	0										
<i>Giardia lamblia</i>	Current	TT b	0										
Heterotrophic Plate Count	Current	TT c											
<i>Legionella</i>	Current	TT c	0										
Total Coliform Bacteria	Current	P/A	0										
Turbidity	Current	0.3/1NTU*											
Viruses	Current	TT d	0										

TT a- Two-log reduction by filtration treatment technique applies to surface water systems serving >10,000 people

TT b- Three-log filtration/inactivation treatment technique applies to all surface water systems

TT c- Applies to surface water systems only

TT d- Four-log inactivation treatment technique applies to all surface water systems, groundwater systems that require disinfection

P/A- MCL is presence/absence of total or fecal coliform bacteria

\* 0.3 NTU, conv. or direct filtration; 1 NTU, diatomaceous earth or slow sand filtration. Applies only to systems required to filter

## Drinking Water Standards and Health Advisories

ORGANIC o4 Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California*		Arizona*	Hawaii*
		MCL	MCLG	RfD ug/kg-d	10 <sup>-6</sup> Risk	Acute 10 day	Chronic (lifetime)			MCL	PHG	MCL	MCL
							Non-Cancer	Cancer					
Trichlorofluoromethane (Freon 11)				300		7,000	2000			150	700		
2,4,6-Trichlorophenol				0.3	3	30		3	B2				
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)				10		800	70		D				
2,4,5-Trichlorophenoxypropionic acid (2,4,5-TP) (Silvex)	Current	50	50	7.5		200	50		D	50	25	50	50
1,2,3-Trichloropropane				6		600	40						0.8
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)										1200	4000		
Trifluralin				20	4	80	10	4	C				
Trihalomethanes (TTHM)	Current	80							B2				
Trinitroglycerol						5	5	0.2					
Trinitrotoluene				0.5	1	20	2	1	C				
Trithion													
Vinyl Chloride	Current	2	0	3	0.02	3,000		0.015	H	0.5	0.05	2	2
Xylenes (sum of isomers)	Current Proposed Secondary	10,000 20	10,000	200		40,000			I	1750	1800	10,000	10,000

Values are indicated in micrograms per liter (ug/l) [equivalent to parts per billion (ppb)] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day (ug/kg-d), 10<sup>-6</sup> lifetime risk levels are in micrograms per liter.

\*- EPA MCLs apply unless noted as different

TTHM- Total Trihalomethanes. MCL is sum of bromoform, chloroform, bromodichloromethane, and dibromochloromethane

## Drinking Water Standards and Health Advisories

ORGANIC													
Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California*		Arizona*	Hawaii*
		MCL	MCLG	RfD $\mu\text{g/kg-d}$	$10^{-6}$ Risk	Acute 10 day	Chronic (lifetime) Non-Cancer      Cancer			MCL	PHG	MCL	MCL
1,1,2,2-Tetrachloroethane				0.05	0.2	40	0.3	0.2	C	1	0.1		
Tetrachloroethylene (Perchloroethylene)	Current	5	0	10	0.7	2,000	10			5	0.06	5	5
2,3,7,8-Tetrachlorodibenzo-p-dioxin (Dioxin)	Current	3 E-5	0	1 E-6	2 E-7	1 E-4		2 E-7	B2	3 E-5		3 E-5	3 E-5
Thiobencarb (Bolero)				20						70	70		
Toluene	Current Proposed Secondary	1000 40	1,000	80		2,000			I	150	150	1000	1000
Toxaphene	Current	3	0	0.4	0.03	4		0.03	B2	3	0.03	3	3
Tribromomethane (Bromoform, TTHM)	Current	80		20	4	2,000		4	B2	80		80	80
Trichloroacetaldehyde (Chloral hydrate)				100					C				
Trichloroacetic acid (HAA5)	Current	60	20	30		3,000	20		S	60		60	60
1,2,4-Trichlorobenzene	Current	70	70	1		100	10		D	70	5	70	70
1,3,5-Trichlorobenzene				6		600	40		D				
1,1,1-Trichloroethane	Current	200	200	35		40,000	200		D	200		200	200
1,1,2-Trichloroethane	Current	5	3	4	0.6	400	3	0.6	C	5		5	5
Trichloroethylene	Current	5	0	7	3			3	B2	5	0.8	5	5

Values are indicated in micrograms per liter ( $\mu\text{g/l}$ ) [equivalent to parts per billion (ppb)] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day ( $\mu\text{g/kg-d}$ ),  $10^{-6}$  lifetime risk levels are in micrograms per liter.

\*- EPA MCLs apply unless noted as different

TTHM- Total Trihalomethanes. MCL is sum of bromoform, chloroform, bromodichloromethane, and dibromochloromethane

HAA5- Haloacetic acids. MCL is sum of mono-, di- and tri-chloro-acetic acids, and mono- and di-bromo-acetic acids

## Drinking Water Standards and Health Advisories

### ORGANIC

Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California*		Arizona*	Hawaii*
		MCL	MCLG	RfD	10 <sup>-6</sup> Risk	Acute 10 day	Chronic (lifetime)			MCL	PHG	MCL	MCL
				ug/kg-d			Non-Cancer	Cancer					
Picloram	Current	500	500	200		20,000	500		D	500	500	500	500
Polychlorinated Biphenyls (PCBs)	Current	0.5	0		0.01			0.01	B2	0.5		0.5	0.5
Polynuclear Aromatic Hydrocarbons (PAHs) (Benzo(a)pyrene)	Current	0.2	0						B2	0.2	0.004	0.2	0.2
Prometon				15		200	100		D				
Pronamide				80	2	800		2	B2				
Propachlor				50	1	500		1	L				
Propazine				20			100		N				
Propham				20		5,000	100		D				
RDX				3	0.3	100	2	0.3	C				
Simazine	Current	4	4	20					N	4	4	4	4
Styrene	Current Proposed Secondary	100 10	100	200		2,000	100		C	100		100	100
Tebutiuron				70		3,000	500		D				
Terbacil				13		300	90		E				
Terbufos				0.05		5	0.4		D				
Terrachlor (Pentachloronitrobenzene)				3	0.1				C				
1,1,1,2-Tetrachloroethane				30	1	2,000	70	1	C				

Values are indicated in micrograms per liter (ug/l) [equivalent to parts per billion (ppb)] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day (ug/kg-d), 10<sup>-6</sup> lifetime risk levels are in micrograms per liter.

\*- EPA MCLs apply unless noted as different



## Drinking Water Standards and Health Advisories

ORGANIC Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California*		Arizona*	Hawaii*
		MCL	MCLG	RfD ug/kg-d	10 <sup>-6</sup> Risk	Acute 10 day	Chronic (lifetime)			MCL	PHG	MCL	MCL
							Non-Cancer	Cancer					
Methyl Isobutyl Ketone (MIBK)													
Methyl Parathion				0.2		300	1		N				
Methyl t-Butyl Ether (MTBE)				30		24,000	200		C	13 5 (2ndary)	13		
Metolachlor				100		2,000	700		C				
Metribuzin				10		5,000	70		D				
Mirex				0.2	0.02				B2				
Molinate				2						20			
Naphthalene				20		500	100		I				
Nitroguanidine				100		10,000	700		D				
p-Nitrophenol				8		800	60		D				
Oxamyl (Vydate)	Current	200	200	1		10			N	200		200	200
Paraquat				4.5		100	30		C				
Parathion (Ethyl Parathion)				6					C				
Pentachloronitrobenzene (Terraclor)				3	0.1				C				
Pentachlorophenol	Current	1	0	30	0.3	300		0.3	B2	1	0.4	1	1
Phenol				600		6,000	4,000		D				
Phthalates (Di(ethylhexyl)-phthalate)	Current	6	0	20	3			3	B2	4	12	6	6

Values are indicated in micrograms per liter (ug/l) [equivalent to parts per billion (ppb)] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day (ug/kg-d), 10<sup>-6</sup> lifetime risk levels are in micrograms per liter.

\*- EPA MCLs apply unless noted as different

## Drinking Water Standards and Health Advisories

ORGANIC													
Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California*		Arizona*	Hawaii*
		MCL	MCLG	RfD <i>ug/kg-d</i>	$10^{-6}$ Risk	Acute 10 day	Chronic (lifetime)			MCL	PHG	MCL	MCL
							Non-Cancer	Cancer					
Hexachlorobutadiene					0.9	300	1	0.9	L				
Hexachlorocyclopentadiene (HEX)	Current Proposed Secondary	50	8	50	6				N	50	50	50	50
n-Hexane						4,000			I				
Hexazinone					50	2,000	400		D				
HMX					50	5,000	400		D				
Isophorone					200	15,000	100	40	C				
Isopropyl benzene (cumene)					100	11,000			D				
Isopropyl N-(3-chlorophenyl) carbamate (CIPC)													
Isopropyl methylphosphonate					100	30,000	700		D				
Lindane	Current	0.2	0.2	5		1,000			S	0.2	0.032	0.2	0.2
Linuron					2				C				
Malathion					20	200	100		D				
Maleic Hydrazide					500	10,000	4,000		D				
MCPA					4	100	30		N				
Methomyl (Lannate)					25	300	200		E				
Methoxychlor	Current	40	40	5		50	40		D	40	30	40	40
Methylene Chloride (Dichloromethane)	Current	5	0	60	5	2,000		5	B2	5	4	5	5
Methyl Ethyl Ketone (MEK, 2-Butanone)					600	7500	4000		D				

Values are indicated in micrograms per liter (*ug/l*) [equivalent to parts per billion (ppb)] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day (*ug/kg-d*),  $10^{-6}$  lifetime risk levels are in micrograms per liter.

\*- EPA MCLs apply unless noted as different

## Drinking Water Standards and Health Advisories

ORGANIC													
Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California*		Arizona*	Hawaii*
		MCL	MCLG	RfD <i>ug/kg-d</i>	$10^{-6}$ Risk	Acute 10 day	Chronic (lifetime) Non-Cancer      Cancer			MCL	PHG	MCL	MCL
Ethion				0.5									
Ethylbenzene	Current Proposed Secondary	700 30	700	100		3,000	700		D	700	300	700	700
Ethylene Dibromide (Dibromoethane) (EDB)	Current	0.05	0	9	0.02	8		0.02	L	0.05	0.01	0.05	0.04
Ethylene Glycol				2,000		6,000	14,000		D				
Ethylene Thiourea (ETU)				0.08	0.2	300		0.2	B2				
Fenamiphos				0.1		9	2		E				
Fluometuron				13		2,000	90		D				
Fluorotrichloro- methane				300		7,000	2,000		D				
Folpet				100					B2				
Fonofos				2		20	10		N				
Formaldehyde				200		5,000	1,000		B1				
Glyphosate	Current	700	700	2		20,000	700		D	700	1000	700	700
Haloacetic Acids (5) (HAA5)	Current	60								60		60	60
Heptachlor	Current	0.4	0	0.5	.008	10		0.008	B2	0.01	0.008	0.4	0.4
Heptachlor Epoxide	Current	0.2	0	0.013	.004			0.004	B2	0.01	0.006	0.2	0.2
Hexachlorobenzene (Perchlorbenzene) (HCB)	Current	1	0	0.8	0.02	50		0.02	B2	1	30	1	1

Values are indicated in micrograms per liter (*ug/l*) [equivalent to parts per billion (ppb)] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day (*ug/kg-d*),  $10^{-6}$  lifetime risk levels are in micrograms per liter.

\*- EPA MCLs apply unless noted as different

HAA5- Haloacetic acids. MCL is sum of mono-, di- and tri-chloro-acetic acids, and mono- and di-bromo-acetic acids

## Drinking Water Standards and Health Advisories

ORGANIC													
Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California*		Arizona*	Hawaii*
		MCL	MCLG	RfD <i>ug/kg-d</i>	$10^{-6}$ Risk	Acute 10 day	Chronic (lifetime)			MCL	PHG	MCL	MCL
							Non-Cancer	Cancer					
Dimethyl methyl-phosphonate				200	7	2000	100	7	C				
2,4-Dimethylphenol				200									
1,3-Dinitrobenzene				0.1		40	1		D				
2,4-Dinitrotoluene				2	0.05	500		0.05	B2				
2,6-Dinitrotoluene				1.0	0.05	400		0.05	B2				
Dinoseb	Current	7	7	1		300	7		D	7	14	7	7
1,4-Dioxane) (p Dioxane)					3	400		3	B2				
Dioxin (2,3,7,8-TCDD)	Current	3E-5	0	1 E-6	2 E-7	1 E-4		2 E-7	B2	3 E-5		3 E-5	3 E-5
Diphenamid(e)				30		300	200		D				
Diphenylamine				30		1,000	200		D				
Di(ethylhexyl)-phthalate (PAE) (Phthalates)	Current	6	0	20	3			3	B2	4	14	6	6
Diquat	Current	20	20	5					E	20	15	20	20
Disulfoton				0.1		10	0.7		E				
1,4-Dithiane				10		400	80		D				
Diuron				3		1,000		2	L				
Endothall	Current	100	100	7		800	50		N	100	580	100	100
Endrin	Current	2	2	0.3		5	2		D	2	1.8	2	2
Epichlorohydrin	Current	TT	0	2	3	100		3	B2	TT		TT	TT

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Oral Referenced Doses (RfD) are in micrograms per kilogram per day (*ug/kg-d*),  $10^{-6}$  lifetime risk levels are in micrograms per liter.

\*- EPA MCLs apply unless noted as different

PAE- Phthalate acid esters. MCL is sum of PAEs

TT- Treatment technique in lieu of numeric MCL

## Drinking Water Standards and Health Advisories

### ORGANIC

Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California*		Arizona*	Hawaii*
		MCL	MCLG	RfD <i>ug/kg-d</i>	$10^{-6}$ Risk	Acute 10 day	Chronic (lifetime)			MCL	PHG	MCL	MCL
							Non-Cancer	Cancer					
Dichlorodifluoromethane (Freon 12)				200		40,000	1,000		D				
1,1-Dichloroethane										5	3		
1,2-Dichloroethane	Current	5	0		0.4	700		0.4	B2	0.5	0.4	5	5
1,1-Dichloroethylene	Current	7	7	50		1,000			S	6	10	7	7
cis-1,2-Dichloroethylene	Current	70	70	10		3,000	70		D	6		70	70
trans-1,2-Dichloroethylene	Current	100	100	20		1,000	100		D	10	4	100	100
Dichloromethane (Methylene chloride)	Current	5	0	60		2,000		5	B2	5		5	5
2,4-Dichlorophenol				3		30	20		E				
2,4-Dichlorophenoxyacetic acid (2,4-D)	Current	70	70	10		300	70		D	70	70	70	70
1,2-Dichloropropane	Current	5	0		0.5	90		0.6	B2	5	0.5	5	5
1,3-Dichloropropene				30	0.4	30		0.4	L	0.5	0.2		
Dieldrin				0.05	0.002	0.5		0.002	B2				
Diethylphthalate (PAE)				800			5000		D				
Diisopropyl methylphosphonate				80		8,000	600		D				
Dimethoate				0.2									
Dimethrin				300		10,000	2,000		D				
Dimethylaniline				20	0.05				C				

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Oral Referenced Doses (RfD) are in micrograms per kilogram per day (*ug/kg-d*),  $10^{-6}$  lifetime risk levels are in micrograms per liter.

\*- EPA MCLs apply unless noted as different

PAE- Phthalate acid esters. MCL is sum of PAEs

## Drinking Water Standards and Health Advisories

ORGANIC													
Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California*		Arizona*	Hawaii*
		MCL	MCLG	RfD <i>ug/kg-d</i>	$10^{-6}$ Risk	Acute 10 day	Chronic (lifetime)			MCL	PHG	MCL	MCL
							Non-Cancer	Cancer					
Di(ethylhexyl)-adipate (Adipates)	Current	400	400	600	30	20,000	400	30	C	400	600	400	400
Diazinon				0.2		20	0.6		E				
Dibromoacetonitrile				20		2000	20		C				
Dibromochloromethane (Chlorodibromomethane, TTHM)	Current	80	60	20	0.8	600	60	0.8	S	80		80	80
1,2-Dibromo-3-chloro propane (DBCP)	Current	0.2	0		0.03	50		0.03	B2	0.2	0.0017	0.2	0.04
Dibutyl phthalate (PAE)				100					D				
Dicamba				500			4000		N				
Dichloroacetic acid (HAA5)	Current	60	0	4	0.7	1000		0.7	L	60		60	60
Dichloroacetonitrile				8		1,000	6		C				
1,2-Dichlorobenzene (o-Dichlorobenzene)	Current Proposed Secondary	600 100	600	90		9,000	600		D	600	600	600	600
1,3-Dichlorobenzene (m-Dichlorobenzene)				90		9,000	600		D				
1,4-Dichlorobenzene (p-Dichlorobenzene)	Current Proposed Secondary	75 5	75	100		10,000	75		C	5	6	75	75

Values are indicated in micrograms per liter (*ug/l*) [equivalent to parts per billion (ppb)] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day (*ug/kg-d*),  $10^{-6}$  lifetime risk levels are in micrograms per liter.

\*- EPA MCLs apply unless noted as different

TTHM- Total Trihalomethanes. MCL is sum of bromoform, chloroform, bromodichloromethane, and dibromochloromethane

HAA5- Haloacetic acids. MCL is sum of mono-, di- and tri-chloro-acetic acids, and mono- and di-bromo-acetic acids

T&O- Taste and odor threshold

PAE- Phthalate acid esters. MCL is sum of PAEs

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## Drinking Water Standards and Health Advisories

ORGANIC Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California*		Arizona*	Hawaii*
		MCL	MCLG	RfD ug/kg-d	10 <sup>-6</sup> Risk	Acute 10 day	Chronic (lifetime)			MCL	PHG	MCL	MCL
							Non-Cancer	Cancer					
Chloroform (Trichloromethane, TTHM)	Current	80		10	6	4,000	70		L/N	80		80	80
bis-2-Chloroisopropyl ether				40		4,000	300		D				
Chloromethane				4		400	3		D				
2-Chlorophenol				5		50	40		D				
Chloropicrin													
Chlorothalonil				15	1.5	200		1.5	B2				
Chlorotoluene (o,p)				20		2,000	100		D				
Chlorpyrifos				0.3		30	2		D				
CIPC (Chlorpropham) (isopropyl-N-(3-chlorophenyl) carbamate)				200									
Cresol (o,m)				500					C				
Cresol (p)				5					C				
Cyanazine				2		100	1		C				
Cyanogen chloride				50		50			D				
Dalapon	Current	200	200	26		3,000	200		D	200	790	200	200
DCPA (Dachthal)				10		80,000	700		C				
DDT				0.5	0.1				B2				

Values are indicated in micrograms per liter (ug/l) [equivalent to parts per billion (ppb)] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day (ug/kg-d), 10<sup>-6</sup> lifetime risk levels are in micrograms per liter.

\*- EPA MCLs apply unless noted as different

T&O- Taste and odor threshold

TTHM- Total Trihalomethanes. MCL is sum of bromoform, chloroform, bromodichloromethane, and dibromochloromethane



## Drinking Water Standards and Health Advisories

ORGANIC													
Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California*		Arizona*	Hawaii*
		MCL	MCLG	RfD <i>ug/kg-d</i>	$10^{-6}$ Risk	Acute 10 day	Chronic (lifetime) Non-Cancer    Cancer			MCL	PHG	MCL	MCL
Bromomethane (Methyl Bromide)				1		100	10		D			2.5	
Butylbenzene													
Butyl benzylphthlate (PAE)				200					C				
Butylate				50		2,000	350		D				
Captafol				2	4				C				
Captan				130					B2				
Carbaryl (Sevin)				10		1,000		40	L				
Carbofuran	Current	40	40	0.06				40	N	18	1.7	36	40
Carbon Disulfide				100								830	
Carbon Tetrachloride	Current	5	0	0.7	0.3	200		0.3	B2	0.5	0.1	5	5
Carboxin				100		1,000	700		D				
Chloral Hydrate (Trichloroacetaldehyde)				100		1,400	60		C				
Chloramden				15		3,000	100		D				
Chlordane	Current	2	0	0.5	0.01	60		0.1	B2	0.1	0.03	2	2
Chlorobenzene (Monochlorobenzene)	Current	100	100	20		4,000	100		D	70		100	100
Chlorodibromomethane (Dibromochloromethane, TTHM)	Current	80	60	20	1	600	60	0.8	S	80		80	80

Values are indicated in micrograms per liter (*ug/l*) [equivalent to parts per billion (ppb)] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day (*ug/kg-d*),  $10^{-6}$  lifetime risk levels are in micrograms per liter.

\*- EPA MCLs apply unless noted as different

PAE- Phthalate acid esters. MCL is sum of PAEs

TTHM- Total Trihalomethanes. MCL is sum of bromoform, chloroform, bromodichloromethane, and dibromochloromethane

## Drinking Water Standards and Health Advisories

ORGANIC													
Chemicals	Standard	EPA		IRS		Health Advisories			Wt. of Evid.	California*		Arizona*	Hawaii*
		MCL	MCLG	RfD <i>ug/kg-d</i>	$10^{-6}$ Risk	Acute 10 days	Chronic (lifetime) Non-Cancer	Cancer		MCL	PHG	MCL	MCL
Anthracene (PAH)				300					D				
Atrazine	Current	3	3	35		100	200		N	3	0.15	3	3
Baygon (Propoxur)				4		40	3		C				
Benefin				300									
Bentazon (Bassagran)				30		300	20		D	18	200		
Benz(a)anthracene (PAH)									B2				
Benzene	Current	5	0	4	1	200		1	H	1	0.15	5	5
Benzene Hexachloride (alpha, beta isomers)													
Benzo(a)pyrene (PAH)	Current	0.2	0					0.005	B2	0.2	0.004	0.2	0.2
Benzo(b)fluoranthene (PAH)									B2				
Bolero (Thiobencarb)				20						70 1 SMCL			
Bromacil				130		5,000	90		C				
Bromobenzene						4,000			D				
Bromochloromethane				13		1,000	90		D				
Bromodichloromethane (TTHM)	Current	80	0	3	1	600		1	L	80		80	80
Bromoform (TTHM)	Current	80	0	30	8	200		8	L	80		80	80

Values are indicated in micrograms per liter (*ug/l*) [equivalent to parts per billion (ppb)] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day (*ug/kg-d*),  $10^{-6}$  lifetime risk levels are in micrograms per liter.

\*- EPA MCLs apply unless noted as different

LOQ- Level of quantitation

PAH- Polycyclic aromatic hydrocarbons

TTHM- Total Trihalomethanes. MCL is sum of bromoform, chloroform, bromodichloromethane, and dibromochloromethane

## Drinking Water Standards and Health Advisories

ORGANIC													
Chemicals	Standard	EPA		IRS	10 <sup>-6</sup> Risk	Health Advisories			Wt. of Evid.	California*		Arizona*	Hawaii*
		MCL	MCLG	RfD ug/kg-d		Acute 10 days	Chronic (lifetime)			MCL	PHG	MCL	MCL
							Non-Cancer	Cancer					
Acenaphthylene (Acenaphthene)				60									
Acephate				4					C				
Acetone				100					D				
Acetophone				100									
Acifluorfen				13	1	2,000		1	L/N				
Acrolein									C			320	
Acrylamide	Current	TT	0	0.2	0.01	300		0.008	B2	TT		TT	TT
Acrylonitrile					0.06			0.06	B1			10	
Adipates (di(ethylhexyl)adipate)	Current	400	400	600	30	20,000	400	30	C	400		400	400
Alachlor	Current	2	0	10	0.4	100		0.4	B2	2	4	2	2
Aldicarb	Final (a)	3	1	1.0		10	7		D				
Aldicarb Sulfone	Final (a)	2	1	1.0		10	7		D				
Aldicarb Sulfoxide	Final (a)	4	1	1.0		10	7		D				
Aldrin				0.03	0.002	0.3		0.002	B2				
Allyl alcohol				5									
Ametryn				9		9,000	60		D				
Ammonium Sulfamate				200		20,000	2,000		D				

Values are indicated in micrograms per liter (ug/l) [equivalent to parts per billion (ppb)] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day (ug/kg-d), 10<sup>-6</sup> lifetime risk levels are in micrograms per liter.

(a) - Effective date postponed

\*- EPA MCLs apply unless noted as different

TT- Treatment technique in lieu of numeric MCL

## Drinking Water Standards and Health Advisories

INORGANIC													
Chemical	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California**		Arizona**	Hawaii**
		MCL	MCLG	RfD <i>ug/kg-d</i>	$10^{-6}$ Risk	Acute 10 day	Chronic (lifetime)			MCL	PHG	MCL	MCL
							Non-Cancer	Cancer					
Aluminum	Secondary	50-200								1000 200 SMCL	600		
Ammonia							30,000		D				
Antimony	Current	6	6	0.4		15	3		D	6	20	6	6
Arsenic	Current	10	0	0.3	0.02			0.02	A	50		50	50
Asbestos	Current	7E+6 10um fibers	7E+6 10um fibers						A	7E+6 10um fibers			
Barium	Current	2,000	2,000	200		700			N	1,000	700	2,000	2000
Beryllium	Current	4	4	2		30,000				4	1	4	4
Boron				200		900	1000		I				
Bromate	Current	10	0	4	0.05			0.05	B2				
Cadmium	Current	5	5	0.5		40	5		D	5	0.07	5	5
Chloramines	Current	MRDL* 4.0mg/L as Cl	MRDLG* 4.0mg/L as Cl	100		1000	3000		D				
Chlorate									D		200		
Chloride	Secondary	250mg/L								250-600 Secondary			
Chlorine	Current	MRDL* 4.0mg/L as Cl	MRDLG* 4.0mg/L as Cl	100		3000	4000		D				

Values are indicated in micrograms per liter (*ug/l*) [equivalent to parts per billion (ppb)] unless otherwise stated

Oral Referenced Doses (RfD) are in micrograms per kilogram per day (*ug/kg-d*),  $10^{-6}$  lifetime risk levels are in micrograms per liter.

\*\* - EPA MCLs apply unless noted as different

\* - MRDL, MRDLG: Maximum residual disinfectant level and goal. Apply only if this disinfectant is used.

## Drinking Water Standards and Health Advisories

### INORGANIC

Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California**		Arizona**	Hawaii**
		MCL	MCLG	RfD ug/kg-d	10 <sup>-6</sup> Risk	Acute 10 days	Chronic (lifetime)			MCL	PHG	MCL	MCL
							Non-Cancer	Cancer					
Chlorine Dioxide	Current	MRDL* 0.8mg/L as ClO <sub>2</sub>	MRDLG* 0.8mg/L as ClO <sub>2</sub>	30		840	800		D				
Chlorite	Current	1.0mg/L	800	30		840	800		D				
Chromium (total)	Current	100	100	3		1,000.00			D	50		100	100
Copper	Current _____ Secondary	AL 1300 TT ## 1,000	1,300						D	TT ## 1000 SMCL	170	TT##	TT##
Cyanide	Current	200	200	22		200	200		D	200	150	200	200
Fluoride	Current Proposed Secondary	4 mg/L 2mg/L	4 mg/L	60						1400-2400 td	1000	4 mg/L	4 mg/L
Iron	Secondary	300								300			
Lead	Current	AL 15 TT#	0						B2	TT #	2	TT#	TT#
Manganese	Secondary	50		140 (food) 5(water)						50			
Mercury (inorganic)	Current	2	2	0.3			2		D	2	1.2	2	2
Molybdenum				5		40	40		D				
Nickel				20		1,000	100		D	100	12		
Nitrate (as N)	Current	10mg/L	10mg/L	1.6mg/L		10mg/L***			D	45 mg/L (as NO <sub>3</sub> )		10 mg/L	10 mg/L

Value are indicated in micrograms per liter (ug/L) [equivalent to parts per billion (ppb)] unless otherwise stated

Oral Reference Doses (RfD) are in micrograms per kilogram per day (ug/kg-d), 10<sup>-6</sup> lifetime risk levels are in micrograms per liter.

\*\* - EPA MCLs apply unless noted as different

\* - MRDL, MRDLG: Maximum residual disinfectant level and goal. Apply only if this disinfectant is used.

\*\*\* - 10 day NA for nitrate/nitrite for 4kg child (protective of 10kg child & adults); also used for chronic (lifetime)

td- temperature dependent value

TT # - Treatment technique and public notification triggered at Action Level of 15 ppb

TT ## - Treatment technique triggered at Action Level of 1300 ppb

## Drinking Water Standards and Health Advisories

RADIONUCLIDES													
Chemicals	Standard	EPA		IRIS		Health Advisories			Wt. of Evid.	California		Arizona	Hawaii
		MCL	MCLG	RfD ug/kg-d	10 <sup>-6</sup> Risk	Acute 10 days	Chronic (lifetime)			MCL	PHG	MCL	MCL
							Non-Canc	Cancer					
Gross alpha (excluding uranium & radon)	Current	15 pCi/L	0					0.15 pCi/L	A	15 pCi/L		15 pCi/L	15 pCi/L
Gross beta and photon emitters	Current	4 mrem/yr	0					0.04 mrem/yr	A	50pCi/L		4 mrem/yr	4 mrem/yr
Radium 226	Current	5 pCi/L (+Ra228)	0					0.20 pCi/L	A	5 pCi/L (+Ra228)		5 pCi/L (+Ra228)	5 pCi/L (+Ra228)
Radium 228	Current	5 pCi/L (+Ra226)	0					0.20 pCi/L	A	5 pCi/L (+Ra226)		5 pCi/L (+Ra226)	5 pCi/L (+Ra226)
Radon	Proposed	300 pCi/L AMCL* 4000pCi/L	0					1.5 pCi/L	A				
Strontium 90									A	8 pCi/L			
Tritium									A	20 nCi/L			
Uranium	Current	30 ug/L	0	3				0.7 ug/L	A	20 pCi/L	0.43 pCi/L		

Value are indicated in micro grams per liter (ug/L) [equivalent to parts per billion (ppb) ] unless otherwise stated

Oral Reference Doses (RfD) are in micrograms per kilogram per day (ug/kg-d), 10<sup>-6</sup> risk levels are in micrograms per liter.

\* Alternative MCL of 4000 pCi/L applies if radon multimedia mitigation program in place