National Recommended Water Quality Criteria - Aquatic Life Criteria Table

Related Information

- Aquatic Life Criteria and Methods for Toxics
- Human Health Criteria Table
- Organoleptic Effects Criteria Table

This table contains the most up to date criteria for aquatic life ambient water quality criteria. Aquatic life criteria for toxic chemicals are the highest concentration of specific pollutants or parameters in water that are not expected to pose a significant risk to the majority of species in a given environment or a narrative description of the desired conditions of a water body being "free from" certain negative conditions. The table below lists EPA's recommended aquatic life criteria. State and tribal governments may use these criteria or use them as guidance in developing their own.

Select pollutant name for current criteria document.

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National Recommended Aquatic Life Criteria table

Pollutant (P = Priority Pollutant)	CAS (Chemical Abstracts Service) Number	Freshwater CMC (Criteria Maximum Concentration)[1] (acute) (µg/L)	Freshwater CCC (Criterion Continuous Concentration)[2] (chronic) (µg/L)	Saltwater CMC (Criteria Maximum Concentration)[1] (acute) (µg/L)	Saltwater CCC (Criterion Continuous Concentration)[2] (chronic) (µg/L)	Publication Year	Notes
Acrolein (P)	107028	3ug/L	3ug/L	—	—	2009	
Aesthetic Qualities	—	—	—	—	—	1986	Refer t Criteri for Wa ("Gold narrati statem
Aldrin (P)	309002	3.0	—	1.3	—	1980	These based criteria differe Data R and de proced the 198 Guidel evaluat done u averag the acu values should by 2 to value t compa CMC using t Guidel

Alkalinity	—	—	20000	—	—	1986	The C 20mg/l minim except alkalin natural which criteric lower t the nat
alpha-Endosulfan (P)	959988	0.22	0.056	0.034	0.0087	1980	These based c criteria differe Data R and de proced the 198 Guidel evaluat done u averag the acu values should by 2 to value t compa CMC c using t Guidel This va derivec for end is most approp applie of alph endosu beta-er

Aluminum pH 5.0 - 10.5	7429905	--	--	—	—	2018	The cri based c chemis pH, ha DOC) the crit calcula given l
Ammonia	7664417	—	—	—	—	2013 (Freshwater), 1989 (Saltwater)	Freshw are ph, and lif depend Saltwa are pH temper depend
Arsenic	7440382	340	150	69	36	1995	This re water c criteric derivec for ars but is a to total Freshw saltwat for me expres of the c metal i columr Office Policy Techni Guidar Interpr Implen Aquati Metals
Atrazine	1912249						

Bacteria	—	—	—	—	—	1986	Refer t Criteri for Wa ("Gold narrati statem
beta-Endosulfan (P)	33213659	0.22	0.056	0.034	0.0087	1980	These based criteria differe Data R and de proced the 198 Guidel evaluat done u averag the acu values should by 2 to value t compa CMC using t Guidel This va derive for end is most approp applie of alph endosu beta-en

Boron	—	—	—	—	—	1986	Refer t Criteri for Wa ("Gold narrati statem
Cadmium (P)	7440439	1.8	0.72	33	7.9	2016	Freshw and ch are har depenc were n a hardr mg/L a allow t present represe criteria Freshw saltwat for me expres of the metal i columr Office Policy Techni Guidar Interpr Implen Aquati Metals
Carbaryl	63252	2.1	2.1	1.6	—	2012	

Chlordane (P)	57749	2.4	0.0043	0.09	0.004	1980	These based criteria differe Data R and de proced the 198 Guidel evaluat done u averag the acu values should by 2 to value t compa CMC c using t Guidel
Chloride	16887006	860000	230000	—	—	1988	
Chlorine	7782505	19	11	13	7.5	1986	
Chlorpyrifos	2921882	0.083	0.041	0.011	0.0056	1986	

Chromium (III) (P)	16065831	570	74	—	—	1995	Freshw saltwat for me expres of the metal i colum Office Policy Techni Guidar Interpr Implen Aquati Metals The fre criteric metal i as a fu hardne The va here cc a hardr mg/L.
Chromium (VI) (P)	18540299	16	11	1,100	50	1995	Freshw saltwat for me expres of the metal i colum Office Policy Techni Guidar Interpr Implen Aquati Metals

Color	—	—	—	—	—	1986	Refer t Criteri for Wa ("Gold narrati statem
Copper (P)	7440508	—	—	4.8	3.1	2007	Freshw calcula the Bic Model Freshw saltwat for me expres of the metal i colum Office Policy Techni Guidar Interpr Implen Aquati Metals
Cyanide (P)	57125	22	5.2	1	1	1985	These recom water criteria expres free cy (CN/L)
Demeton	8065483	—	0.1	—	0.1	1985	
Diazinon	333415	0.17ug/L	0.17ug/L	0.82ug/L	0.82ug/L	2005	

Dieldrin (P)	60571	0.24	0.056	0.71	0.0019	1995	The fre CCC c both Sa criteria are bas the 198 criteria differe Data R and de proced the 198 Guidel evaluat done u averag the acu values should by 2 to value t compa CMC c using t Guidel
Endrin (P)	72208	0.086	0.036	0.037	0.0023	1995	The de the CC polluta consid through which import aquatic occupy trophic

gamma-BHC (Lindane) (P)	58899	0.95	—	0.16	—	1995	The Sa criteric on the criteria differe Data R and de proced the 198 Guidel evaluat done u averag the acu values should by 2 to value t compa CMC c using t Guidel
Gases, Total Dissolved	—	—	—	—	—	1986	Refer t Criteri for Wa ("Gold narrati statem
Guthion	86500	—	0.01	—	0.01	1986	Refer t Criteri for Wa ("Gold narrati statem
Hardness	—	—	—	—	—	1986	Refer t Criteri for Wa ("Gold narrati statem

Heptachlor (P)	76448	0.52	0.0038	0.053	0.0036	1980	These based criteria differe Data R and de proced the 19 Guidel evaluat done u averag the acu values should by 2 to value t compa CMC using t Guidel

Heptachlor Epoxide (P)	1024573	0.52	0.0038	0.053	0.0036	1981	These based criteria differe Data R and de proced the 198 Guidel evaluat done u averag the acu values should by 2 to value t compa CMC c using t Guidel This va derivec for hep there w insuffi determ toxiciti heptach heptach epoxid
Iron	7439896	—	1000	—	—	1986	Refer t Criteri for Wa ("Gold narrati statem

Lead (P)	7439921	65	2.5	140	5.6	1984	Freshw saltwat for me expres of the metal i colum Office Policy Techni Guidar Interpr Implen Aquati Metals The fre criteric metal i as a fu hardne The va here cc a hardr mg/L.
Malathion	121755	—	0.1	—	0.1	1986	Refer t Criteri for Wa ("Gold narrati statem

Mercury (P)	7439976 22967926	1.4	0.77	1.8	0.94	1995	Freshw saltwat for me expres of the metal i colum Office Policy Techni Guidar Interpr Implen Aquati Metals
Methoxychlor	72435	—	0.03	—	0.03	1986	Refer t Criteri for Wa ("Gold narrati statem
Methyl Tertiary-Butyl Ether (MTBE)							
Mirex	2385855	—	0.001	—	0.001	1986	Refer t Criteri for Wa ("Gold narrati statem

Nickel (P)	7440020	470	52	74	8.2	1995	Freshw saltwat for me expres of the metal i colum Office Policy Techni Guidar Interpr Implen Aquati Metals The fre criteric metal i as a fu hardne The va here cc a hardr mg/L.
Nonylphenol	84852153	28 ug/L	6.6 ug/L	7 ug/L	1.7 ug/L	2005	
Nutrients	—	—	—	—	—	—	Refer t EPA's criteria Phosph Nitrog Chloro Water (Secch lakes; t stream (and L Ecoreg criteria

Oil and Grease	—	—	—	—	—	1986	Refer t Criteri for Wa ("Gold narrati statem
Oxygen, Dissolved Freshwater Oxygen, Dissolved Saltwater	7782447	—	—	—	—	1986	Refer t Criteri for Wa ("Gold freshw saltwat Aquati Criteri Dissol Oxyge Cape C Hattera
Parathion	56382	0.065	0.013	—	—	1995	
Pentachlorophenol (P)	87865	19	15	13	7.9	1995	Freshw life val pentac are exp functio values table c a pH o

pH	—	—	6.5 – 9	—	6.5 – 8.5	1986	Refer t Criteri for Wa ("Gold narrati statem For op waters depth i substa greater euphot pH sh change 0.2 uni natural variati case o range For sh produc and est where occurri variati the let some s change should but in should the lim establi fresh w 6.5-9.0
Phosphorus Elemental	7723140	—	—	—	—	1986	

Polychlorinated Biphenyls (PCBs) (P)	—	—	0.014	—	0.03	—	This cr applies PCBs, sum of congen isomer or Aro analys
Selenium (P)	7782492	—	---	290	71	2016 Freshwater 1999 Saltwater	Refer t Life A Water Criteri Seleni Freshw for nar statem
Silver (P)	7440224	3.2	—	1.9	—	1980	
Solids Suspended and Turbidity	—	—	—	—	—	1986	Refer t Criteri for Wa ("Gold narrati statem
Sulfide-Hydrogen Sulfide	7783064	—	2.0	—	2.0	1986	
Tainting Substances	—	—	—	—	—	1986	Refer t Criteri for Wa ("Gold narrati statem
Temperature	—	—	—	—	—	1986	Criteri depend Quality for Wa ("Gold

Toxaphene (P)	8001352	0.73	0.0002	0.21	0.0002	1986	
Tributyltin (TBT)	—	0.46	0.072	0.42	0.0074	2004	
Zinc (P)	7440666	120	120	90	81	1995	
4,4'-DDT (P)	50293	1.1	0.001	0.13	0.001	1980	

Appendix A

Conversion Factors for Dissolved Metals

Metal	**Freshwater CMC**	**Freshwater CCC**	**Saltwater CMC**	**Saltwater CCC**
Arsenic	1.000	1.000	1.000	1.000
Cadmium	1.136672-[(ln hardness)(0.041838)]	1.101672-[(ln hardness)(0.041838)]	0.994	0.994
Chromium III	0.316	0.860	—	—
Chromium VI	0.982	0.962	0.993	0.993
Copper	0.960	0.960	0.83	0.83
Lead	1.46203-[(ln hardness)(0.145712)]	1.46203-[(ln hardness)(0.145712)]	0.951	0.951
Mercury	0.85	0.85	0.85	0.85
Nickel	0.998	0.997	0.990	0.990
Selenium	—	—	0.998	0.998
Silver	0.85	—	0.85	—

Metal	Freshwater CMC	Freshwater CCC	Saltwater CMC	Saltwater CCC
Zinc	0.978	0.986	0.946	0.946

Appendix B

Parameters for Calculating Freshwater Dissolved Metals Criteria That Are Hardness-Dependent

Chemical	mA	bA	mC	bC	Freshwater Conversion Factors (CF)	
					CMC	CCC
Cadmium	0.9789	-3.866	0.7977	-3.909	1.136672-[(*ln*hardness)(0.041838)]	1.101672-[(*ln*hardness)(0.041838)]
Chromium III	0.8190	3.7256	0.8190	0.6848	0.316	0.860
Lead	1.273	-1.460	1.273	-4.705	1.46203-[(*ln*hardness)(0.145712)]	1.46203-[(*ln*hardness)(0.145712)]
Nickel	0.8460	2.255	0.8460	0.0584	0.998	0.997
Silver	1.72	-6.59	—	—	0.85	—
Zinc	0.8473	0.884	0.8473	0.884	0.978	0.986

Hardness-dependant metals' criteria may be calculated from the following:

CMC (dissolved) = exp{mA [*ln*(hardness)]+ bA} (CF)

CCC (dissolved) = exp{mC [*ln*(hardness)]+ bC} (CF)

1/ CMC: Criterion Maximum Concentration
2/ CCC: Criterion Continuous Concentration

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