



TABLE 20

AQUATIC LIFE WATER QUALITY CRITERIA SUMMARY¹

The concentration for each compound listed in Table 20 is a criterion not to be exceeded in waters of the state in order to protect aquatic life. All values are expressed as micrograms per liter (µg/L) except where noted. Compounds are listed in alphabetical order with the corresponding designations as to whether EPA has identified it as a priority pollutant and a carcinogen, aquatic life freshwater acute and chronic criteria, aquatic life marine acute and chronic criteria. The acute criteria refer to the average concentration for one (1) hour and the chronic criteria refer to the average concentration for 96 hours (4 days), and that these criteria should not be exceeded more than once every three (3) years.

Compound Name (or Class)	Priority Pollutant	Concentration in Micrograms Per Liter for Protection of Aquatic Life			
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria
Acenaphthene	Y				
Acrolein	Y				
Acrylonitrile	Y				
Aldrin	Y	3		1.3	
Alkalinity	N		20,000		
Ammonia	N	CRITERIA ARE pH AND TEMPERATURE DEPENDENT—SEE DOCUMENT USEPA JANUARY 1985 (Fresh Water) CRITERIA ARE pH AND TEMPERATURE DEPENDENT—SEE DOCUMENT USEPA APRIL 1989 (Marine Water)			
Antimony	Y				
Arsenic	Y				
Arsenic (Pent)	Y				



Compound Name (or Class)	Priority Pollutant	Concentration in Micrograms Per Liter for Protection of Aquatic Life			
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria
Arsenic (Tri)	Y	360	190	69	36
Asbestos	Y				
Barium	N				
Benzene	Y				
Benzidine	Y				
Beryllium	Y				
BHC	Y				
Cadmium	Y	3.9+	1.1+	43	9.3
Carbon Tetrachloride	Y				
Chlordane	Y	2.4	0.0043	0.09	0.004
Chloride	N	860 mg/L	230 mg/L		
Chlorinated Benzenes	Y				
Chlorinated Naphthalenes	Y				
Chlorine	N	19	11	13	7.5
Chloroalkyl Ethers	Y				
Chloroethyl Ether (Bis-2)	Y				
Chloroform	Y				
Chloroisopropyl Ether (Bis-2)	Y				
Chloromethyl Ether (Bis)	N				
Chlorophenol 2	Y				
Chlorophenol 4	N				



Compound Name (or Class)	Priority Pollutant	Concentration in Micrograms Per Liter for Protection of Aquatic Life			
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria
Chlorophenoxy Herbicides (2,4,5,-Tp)	N				
Chlorophenoxy Herbicides (2,4-D)	N				
Chlorpyrifos	N	0.083	0.041	0.011	0.0056
Chloro-4 Methyl-3 Phenol	N				
Chromium (Hex)	Y	16	11	1,100	50
Chromium (Tri)	N	1,700.+	210.+		
Copper	Y	18.+	12.+	2.9	2.9
Cyanide	Y	22	5.2	1	1
DDT	Y	1.1	0.001	0.13	0.001
(TDE) DDT Metabolite	Y				
(DDE) DDT Metabolite	Y				
Demeton	Y		0.1		0.1
Dibutylphthalate	Y				
Dichlorobenzenes	Y				
Dichlorobenzidine	Y				
Dichloroethane 1,2	Y				
Dichloroethylenes	Y				
Dichlorophenol 2,4	N				
Dichloropropane	Y				
Dichloropropene	Y				
Dieldrin	Y	2.5	0.0019	0.71	0.0019



Compound Name (or Class)	Priority Pollutant	Concentration in Micrograms Per Liter for Protection of Aquatic Life			
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria
Diethylphthalate	Y				
Dimethyl Phenol 2,4	Y				
Dimethyl Phthalate	Y				
Dinitrotoluene 2,4	N				
Dinitrotoluene	Y				
Dinitrotoluene	N				
Dinitro-o-Cresol 2,4	Y				
Dioxin (2,3,7,8-Tcdd)	Y				
Diphenylhydrazine	Y				
Diphenylhydrazine 1,2	Y				
Di-2-Ethylhexyl Phthalate	Y				
Endosulfan	Y	0.22	0.056	0.034	0.0087
Endrin	Y	0.18	0.0023	0.037	0.0023
Ethylbenzene	Y				
Fluoranthene	Y				
Guthion	N		0.01		0.01
Haloethers	Y				
Halomethanes	Y				
Heptachlor	Y	0.52	0.0038	0.053	0.0036
Hexachloroethane	N				
Hexachlorobenzene	Y				



Compound Name (or Class)	Priority Pollutant	Concentration in Micrograms Per Liter for Protection of Aquatic Life			
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria
		Hexachlorobutadiene	Y		
Hexachlorocyclohexane (Lindane)	Y	2	0.08	0.16	
Hexachlorocyclohexane-Alpha	Y				
Hexachlorocyclohexane-Beta	Y				
Hexachlorocyclohexane-Gama	Y				
Hexachlorocyclohexane-Technical	Y				
Hexachlorocyclopentadiene	Y				
Iron	N		1,000		
Isophorone	Y				
Lead	Y	82+	3.2+	140	5.6
Malathion	N		0.1		0.1
Manganese	N				
Mercury	Y	2.4	0.012	2.1	0.025
Methoxychlor	N		0.03		0.03
Mirex	N		0.001		0.001
Monochlorobenzene	Y				
Naphthalene	Y				
Nickel	Y	1,400+	160+	75	8.3
Nitrates	N				
Nitrobenzene	Y				
Nitrophenols	Y				



Compound Name (or Class)	Priority Pollutant	Concentration in Micrograms Per Liter for Protection of Aquatic Life			
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria
Nitrosamines	Y				
Nitrosodibutylamine N	Y				
Nitrosodiethylamine N	Y				
Nitrosodimethylamine N	Y				
Nitrosodiphenylamine N	Y				
Nitrosopyrrolidine N	Y				
Parathion	N	0.065	0.013		
PCB's	Y	2	0.014	10	0.03
Pentachlorinated Ethanes	N				
Pentachlorobenzene	N				
Pentachlorophenol	Y	***20	***13	13	
Phenol	Y				
Phosphorus Elemental	N				0.1
Phthalate Esters	Y				
Polynuclear Aromatic Hydrocarbons	Y				
Selenium	Y	260	35	410	54
Silver	Y	4.1+	0.12	2.3	
Sulfide Hydrogen Sulfide	N		2		2
Tetrachlorinated Ethanes	Y				
Tetrachlorobenzene 1,2,4,5	Y				
Tetrachloroethane 1,1,2,2	Y				



Compound Name (or Class)	Priority Pollutant	Concentration in Micrograms Per Liter for Protection of Aquatic Life			
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria
Tetrachloroethanes	Y				
Tetrachloroethylene	Y				
Tetrachlorophenol 2,3,5,6	Y				
Thallium	Y				
Toluene	Y				
Toxaphene	Y	0.73	0.0002	0.21	0.0002
Trichlorinated Ethanes	Y				
Trichloroethane 1,1,1	Y				
Trichloroethane 1,1,2	Y				
Trichloroethylene	Y				
Trichlorophenol 2,4,5	N				
Trichlorophenol 2,4,6	Y				
Vinyl Chloride	Y				
Zinc	Y	120+	110+	95	86



MEANING OF SYMBOLS:

- g = grams
- mg = milligrams
- + = Hardness Dependent Criteria (100 mg/L used).

The freshwater criterion for this metal is expressed as a function of hardness (mg/L) in the water column. Criteria values for hardness may be calculated from the following formulae (CMC refers to Acute Criteria; CCC refers to Chronic Criteria):

CMC = (exp(m_A*[ln(hardness)] + b_A))*CF

CCC = (exp(m_C*[ln(hardness)] + b_C))*CF

<u>Chemical</u>	<u>m_A</u>	<u>b_A</u>	<u>m_C</u>	<u>b_C</u>
<u>Cadmium</u>	1.128	-3.828	0.7852	-3.49
<u>Chromium III</u>	0.819	3.688	0.819	1.561
<u>Copper</u>	0.9422	-1.464	0.8545	-1.465
<u>Lead</u>	1.273	-1.46	1.273	-4.705
<u>Nickel</u>	0.846	3.3612	0.846	1.1645
<u>Silver</u>	1.72	-6.52		
<u>Zinc</u>	0.8473	0.8604	0.8473	0.7614

- ug = micrograms
- * = Insufficient data to develop criteria; value presented is the L.O.E.L – Lower Observed Effect Level.
- ng = nanograms
- pg = picograms
- *** = pH Dependent Criteria (7.8 pH used).
- Y = Yes
- N = No
- 1 = Values in Table 20 are applicable to all basin