

Chemical-specific Inputs for EPA's 2015 Final Updated Human Health Ambient Water Quality Criteria

Chemical Name	CAS	Cancer Slope Factor, CSF (per mg/kg-d)	Reference Dose, RfD (mg/kg-d)	Relative Source Contribution, RSC (-)	Bioaccumulation Factor			Bioconcentration Factor (L/kg tissue)
					Trophic Level 2 (L/kg tissue)	Trophic Level 3 (L/kg tissue)	Trophic Level 4 (L/kg tissue)	
1,1,1-Trichloroethane	71-55-6	ND	2	0.20	6.9	9.0	10	
1,1,2,2-Tetrachloroethane	79-34-5	0.2	0.02	0.20	5.7	7.4	8.4	
1,1,2-Trichloroethane	79-00-5	0.057	0.004	0.20	6.0	7.8	8.9	
1,1-Dichloroethylene	75-35-4	ND	0.05	0.20	2.0	2.4	2.6	
1,2,4,5-Tetrachlorobenzene	95-94-3	ND	0.0003	0.20	17,000	2,900	1,500	
1,2,4-Trichlorobenzene	120-82-1	0.029	0.01	0.20	2,800	1,500	430	
1,2-Dichlorobenzene	95-50-1	ND	0.3	0.20	52	71	82	
1,2-Dichloroethane	107-06-2	0.0033	0.078	0.20	1.6	1.8	1.9	
1,2-Dichloropropane	78-87-5	0.036	0.0893	0.20	2.9	3.5	3.9	
1,2-Diphenylhydrazine	122-66-7	0.8	ND	ND	18	24	27	
1,3-Dichlorobenzene	541-73-1	ND	0.002	0.20	31	120	190	
1,3-Dichloropropene	542-75-6	0.122	0.025	0.20	2.3	2.7	3.0	
1,4-Dichlorobenzene	106-46-7	ND	0.07	0.20	28	66	84	
2,4,5-Trichlorophenol	95-95-4	ND	0.1	0.20	100	140	160	
2,4,6-Trichlorophenol	88-06-2	0.011	0.001	0.20	94	130	150	
2,4-Dichlorophenol	120-83-2	ND	0.003	0.20	31	42	48	
2,4-Dimethylphenol	105-67-9	ND	0.02	0.20	4.8	6.2	7.0	
2,4-Dinitrophenol	51-28-5	ND	0.002	0.20	4.4*	4.4*	4.4*	
2,4-Dinitrotoluene	121-14-2	0.667	0.002	0.20	2.8	3.5	3.9	
2-Chloronaphthalene	91-58-7	ND	0.08	0.80	150	210	240	
2-Chlorophenol	95-57-8	ND	0.005	0.20	3.8	4.8	5.4	
2-Methyl-4,6-Dinitrophenol	534-52-1	ND	0.0003	0.20	6.8	8.9	10	
3,3'-Dichlorobenzidine	91-94-1	0.45	ND	ND	44	60	69	
3-Methyl-4-Chlorophenol	59-50-7	ND	0.1	0.20	25	34	39	
Acenaphthene	83-32-9	ND	0.06	0.20	510*	510*	510*	
Acrolein	107-02-8	ND	0.0005	0.20	1.0	1.0	1.0	
Acrylonitrile	107-13-1	0.54	ND	ND	1.0	1.0	1.0	

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Aldrin	309-00-2	17	0.00003	0.20	18,000	310,000	650,000	
alpha-Hexachlorocyclohexane (HCH)	319-84-6	6.3	0.008	0.20	1,700	1,400	1,500	
alpha-Endosulfan	959-98-8	ND	0.006	0.20	130	180	200	
Anthracene	120-12-7	ND	0.3	0.20	610*	610*	610*	
Benzene	71-43-2	0.015 – 0.055	0.0005	0.20	3.6	4.5	5.0	
Benzidine	92-87-5	230	0.003	0.20	1.4	1.6	1.7	
Benzo(a)anthracene	56-55-3	0.73	ND	ND	3,900*	3,900*	3,900*	
Benzo(a)pyrene	50-32-8	7.3	ND	ND	3,900*	3,900*	3,900*	
Benzo(b)fluoranthene	205-99-2	0.73	ND	ND	3,900*	3,900*	3,900*	
Benzo(k)fluoranthene	207-08-9	0.073	ND	ND	3,900*	3,900*	3,900*	
beta-Hexachlorocyclohexane (HCH)	319-85-7	1.8	ND	ND	110	160	180	
beta-Endosulfan	33213-65-9	ND	0.006	0.20	80	110	130	
Bis(2-Chloro-1-Methylethyl) Ether	108-60-1	ND	0.04	0.20	6.7	8.8	10	
Bis(2-Chloroethyl) Ether	111-44-4	1.1	ND	ND	1.4	1.6	1.7	
Bis(2-Ethylhexyl) Phthalate	117-81-7	0.014	0.06	0.20	710*	710*	710*	
Bis(Chloromethyl) Ether	542-88-1	220	ND	ND	1.0	1.0	1.0	
Bromoform	75-25-2	0.0045	0.03	0.20	5.8	7.5	8.5	
Butylbenzyl Phthalate	85-68-7	0.0019	1.3	0.20	19,000*	19,000*	19,000*	
Carbon Tetrachloride	56-23-5	0.07	0.004	0.20	9.3	12	14	
Chlordane	57-74-9	0.35	0.0005	0.20	5,300	44,000	60,000	
Chlorobenzene	108-90-7	ND	0.02	0.20	14	19	22	
Chlorodibromomethane	124-48-1	0.040	0.02	0.20	3.7	4.8	5.3	
Chloroform	67-66-3	ND	0.01	0.20	2.8	3.4	3.8	
Chlorophenoxy Herbicide (2,4-D)	94-75-7	ND	0.21	0.20	13*	13*	13*	
Chlorophenoxy Herbicide (2,4,5-TP) [Silvex]	93-72-1	ND	0.008	0.80	58*	58*	58*	

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Chrysene	218-01-9	0.0073	ND	ND	3,900*	3,900*	3,900*	
Cyanide	57-12-5	ND	0.0006	0.20	ND	ND	ND	1**
Dibenzo(a,h)anthracene	53-70-3	7.3	ND	ND	3,900*	3,900*	3,900*	
Dichlorobromomethane	75-27-4	0.034	0.003	0.20	3.4	4.3	4.8	
Dieldrin	60-57-1	16	0.00005	0.20	14,000	210,000	410,000	
Diethyl Phthalate	84-66-2	ND	0.8	0.20	920*	920*	920*	
Dimethyl Phthalate	131-11-3	ND	10	0.20	4,000*	4,000*	4,000*	
Di-n-Butyl Phthalate	84-74-2	ND	0.1	0.20	2,900*	2,900*	2,900*	
Dinitrophenols	25550-58-7	ND	0.002	0.20	ND	ND	ND	1.51**
Endosulfan Sulfate	1031-07-8	ND	0.006	0.20	88	120	140	
Endrin	72-20-8	ND	0.0003	0.80	4,600	36,000	46,000	
Endrin Aldehyde	7421-93-4	ND	0.0003	0.80	440	920	850	
Ethylbenzene	100-41-4	ND	0.022	0.20	100	140	160	
Fluoranthene	206-44-0	ND	0.04	0.20	1,500*	1,500*	1,500*	
Fluorene	86-73-7	ND	0.04	0.20	230	450	710	
gamma- Hexachlorocyclohexane (HCH)	58-89-9	ND	0.0047	0.50	1,200	2,400	2,500	
Heptachlor	76-44-8	4.1	0.0001	0.20	12,000	180,000	330,000	
Heptachlor Epoxide	1024-57-3	5.5	0.000013	0.20	4,000	28,000	35,000	
Hexachlorobenzene	118-74-1	1.02	0.0008	0.20	18,000	46,000	90,000	
Hexachlorobutadiene	87-68-3	0.04	0.0003	0.20	23,000	2,800	1,100	
Hexachlorocyclohexane (HCH)- Technical	608-73-1	1.8	ND	ND	160	220	250	
Hexachlorocyclopentadiene	77-47-4	ND	0.006	0.20	620	1,500	1,300	
Hexachloroethane	67-72-1	0.04	0.0007	0.20	1,200	280	600	
Indeno(1,2,3-cd)pyrene	193-39-5	0.73	ND	ND	3,900*	3,900*	3,900*	
Isophorone	78-59-1	0.00095	0.2	0.20	1.9	2.2	2.4	
Methoxychlor	72-43-5	ND	0.00002	0.80	1,400	4,800	4,400	

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Methyl Bromide	74-83-9	ND	0.02	0.20	1.2	1.3	1.4	
Methylene Chloride	75-09-2	0.002	0.006	0.20	1.4	1.5	1.6	
Nitrobenzene	98-95-3	ND	0.002	0.20	2.3	2.8	3.1	
Pentachlorobenzene	608-93-5	ND	0.0008	0.20	3,500	4,500	10,000	
Pentachlorophenol	87-86-5	0.4	0.005	0.20	44	290	520	
Phenol	108-95-2	ND	0.6	0.20	1.5	1.7	1.9	
p,p'-Dichlorodiphenyldichloroethane (DDD)	72-54-8	0.24	0.0005	0.20	33,000	140,000	240,000	
p,p'-Dichlorodipenyldichloroethylene (DDE)	72-55-9	0.167	0.0005	0.20	270,000	1,100,000	3,100,000	
p,p'-Dichlorodiphenyltrichloroethane (DDT)	50-29-3	0.34	0.0005	0.20	35,000	240,000	1,100,000	
Pyrene	129-00-0	ND	0.03	0.20	860*	860*	860*	
Tetrachloroethylene (Perchloroethylene)	127-18-4	0.0021	0.006	0.20	49	66	76	
Toluene	108-88-3	ND	0.0097	0.20	11	15	17	
Toxaphene	8001-35-2	1.1	0.00035	0.20	1,700	6,600	6,300	
trans-1,2-Dichloroethylene (DCE)	156-60-5	ND	0.02	0.20	3.3	4.2	4.7	
Trichloroethylene (TCE)	79-01-6	0.05	0.0005	0.20	8.7	12	13	
Vinyl Chloride	75-01-4	1.5	0.003	0.20	1.4	1.6	1.7	

ND = No data.

* This bioaccumulation factor was estimated from laboratory-measured bioconcentration factors; EPA multiplied this bioaccumulation factor by the overall national recommended fish consumption rate of 22.0 g/d (see EPA's 2014 *Estimated Fish Consumption Rates for the U.S. Population and Selected Subpopulations (NHANES 2003-2010)*) to calculate the 2015 final updated human health criteria.

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