Table U-13a

Soil-to-Plant Bioaccumulation Factors

CPECs in Soil	log K_{ow} [a]		K_{oc} [a,i]		Soil-to-Plant Uptake BAF_{plant} (dw) (unitless)		Primary Reference	Secondary Reference
Inorganic Compounds								
Barium	--		--		0.156		Bechtel Jacobs, 1998a	USEPA, 2007
Beryllium	--		--		ln(Cp) = 0.7345 * ln(Cs) - 0.5361		USEPA, 2007	--
Cadmium	--		--		ln(Cp) = 0.546 * ln(Cs) - 0.475		Bechtel Jacobs, 1998a	USEPA, 2007
Chromium	--		--		0.0410		Bechtel Jacobs, 1998a	USEPA, 2007
Cobalt	--		--		0.00750		Bechtel Jacobs, 1998a	USEPA, 2007
Copper	--		--		ln(Cp) = 0.394 * ln(Cs) + 0.668		Bechtel Jacobs, 1998a	USEPA, 2007
Cyanide (Total)	--		--		0		Assumed; Eisler, 1991	--
Lead	--		--		ln(Cp) = 0.561 * ln(Cs) - 1.328		Bechtel Jacobs, 1998a	USEPA, 2007
Manganese	--		--		0.079		Bechtel Jacobs, 1998a	USEPA, 2007
Mercury	--		--		ln(Cp) = 0.544 * ln(Cs) - 0.966		Bechtel Jacobs, 1998a	--
Molybdenum	--		--		4.418		Bechtel Jacobs, 1998a	--
Nickel	--		--		ln(Cp) = 0.748 * ln(Cs) - 2.223		Bechtel Jacobs, 1998a	USEPA, 2007
Selenium	--		--		ln (Cp) = 1.104 * ln(Cs) - 0.677		Bechtel Jacobs, 1998a	USEPA, 2007
Thallium	--		--		0.00400		Baes et al., 1984	--
Tin	--		--		0.200		Baes et al., 1984	--
Vanadium	--		--		0.00485		Bechtel Jacobs, 1998a	USEPA, 2007
Zinc	--		--		ln(Cp) = 0.554 * ln(Cs) + 1.575		Bechtel Jacobs, 1998a	USEPA, 2007
Volatile Organic Compounds (VOCs)								
1,1,1-Trichloroethane	2.49	1	--		0	b	--	--
1,1-Dichloroethylene	2.13	1	--		0	b	--	--
1,1-Dichloroethane	1.79	1	--		0	b	--	--
1,2-Dichloroethylene	2.09	1	--		0	b	--	--
Acetone	-0.24	1	--		0	b	--	--
Acetonitrile	-0.34	1	--		0	b	--	--
Acrolein	-0.01	1	--		0	b	--	--
Benzene	2.13	1	--		0	b	--	--
Carbon disulfide	2.24	1	--		0	b	--	--
Diisopropyl ether	1.52	2	--		0	b	--	--
Ethylbenzene	3.15	1	--		0	b	--	--
trifluoroethane	3.16	1	--		0	b	--	--
Isopropanol	0.05	1	--		0	b	--	--
Methylcyclopentane	3.31	1	--		0	b	--	--
Methyl ethyl ketone	0.29	1	--		0	b	--	--
Methyl isobutyl ketone (MIBK)	1.19	1	--		0	b	--	--
Methylene chloride	1.25	1	--		0	b	--	--
Propanal	0.59	1	--		0	b	--	--
Tert-Butyl alcohol (TBA)	0.35	1	--		0	b	--	--
Tetrachloroethylene	2.6	1	--		0	b	--	--
Tetrahydrofuran	0.46	1	--		0	b	--	--
Toluene	2.73	1	--		0	b	--	--
Trichloroethylene	2.42	1	--		0	b	--	--
Semi Volatile Organic Compounds (SVOCs)								
Benzoic acid	1.87	1	--		0	b	--	--
Bis(2-ethylhexyl)phthalate	1.29	1	--		0		Staples et al., 1997	
Di-n-butylphthalate	5.11	1	--		0		Staples et al., 1997	
Diethylphthalate	4.72	1	--		0	b	--	--
N-Nitrosodimethylamine	2.47	1	--		0	b	--	--
N-Nitrosodipropylamine	-0.57	1	--		0	b	--	--
N-Nitrosomethylethylamine	1.36	2	--		0	b	--	--
N-Nitrosopyrrolidine	0.04	1	--		0	b	--	--
Organochlorine Pesticides								
4,4'-DDD	6.02	1	--		ln(Cp) = 0.7524 * ln(Cs) -2.5119		--	--
4,4'-DDE	5.69	1	--		ln(Cp) = 0.7524 * ln(Cs) -2.5119		--	--
4,4'-DDT	6.36	1	--		ln(Cp) = 0.7524 * ln(Cs) -2.5119		--	--

Table U-13a

Soil-to-Plant Bioaccumulation Factors

CPECs in Soil	log K_{ow} [a]		K_{oc} [a,i]		Soil-to-Plant Uptake BAF_{plant} (dw) (unitless)		Primary Reference	Secondary Reference
Aldrin	5.52	1	--		0.35	h	--	--
BHC	NA		--		1.74	g, h	--	--
Chlordane	6.16	2	--		0.19	h	--	--
Dieldrin	4.55	1	--		0.86	h	--	--
Endosulfan I	3.83	1	--		1.69	h	--	--
Endosulfan II	3.83	1	--		1.69	h	--	--
Endosulfan sulfate	3.66	2	--		1.98	h	--	--
Endrin	4.56	1	--		0.85	h	--	--
Heptachlor	4.27	1	--		1.12	h	--	--
Heptachlor epoxide	5.4	1	--		0.39	h	--	--
Hexachlorobenzene	5.31	1	--		0.42	h	--	--
Kepone	4.5	1	--		0.90	h	--	--
Methoxychlor	4.83	1	--		0.66	h	--	--
Mirex	6.89	1	--		0.10	h	--	--
Polychlorinated Biphenyls (PCBs)								
Aroclor 1260	6.8	2	--		0.0045		USEPA, 1999	
Total PCB Congeners	--		--		0.0045	m	--	--
Total Avian PCB TEQ	--		--		0.0045	m	--	--
Total Mammalian PCB TEQ	--		--		0.0045	m	--	--
Organophosphate Pesticides/Herbicides								
2,4-Dichlorophenoxybutyric acid (2,4-DB)	3.53	2	--		0		USEPA, 2005	--
2,4,5-TP (Silvex)	3.8	2	--		0		Assumed; USEPA, 2006	--
(Dinoseb)	3.69	1	--		0		Assumed; USEPA, 2006	--
Dalapon	0.76	1	--		0	b	--	--
Dichlorprop	<3.5	1	--		0	b	--	--
MCPA	2.83	1	--		0	b	--	--
MCPP	3.14	1	--		0	b	--	--
Dioxin/Furans								
Total Dioxin/Furan TEQ	--		--		0.00560	d, l	USEPA, 1999	--
Total Avian TEQ	--		--		0.00560	d, l	USEPA, 1999	--
Total Mammalian TEQ	--		--		0.00560	d, l	USEPA, 1999	--
Polycyclic Aromatic Hydrocarbons (PAHs)								
2-Methylnaphthalene	3.86	1	8500	1	ln(Cp) = 0.791 * ln(Cs) - 1.144		--	--
Acenaphthene	3.92	1	10900	3	ln(Cp) = -0.8556 * ln(Cs) - 5.562		--	--
Acenaphthylene	4.07	1	947	3	ln(Cp) = 0.791 * ln(Cs) - 1.144		--	--
Anthracene	4.45	1	23500	3	ln(Cp) = 0.7784 * ln(Cs) - 0.9887		--	--
Benzo(a)anthracene	5.66	1	358000	3	ln(Cp) = 0.5944 * ln(Cs) - 2.7078		--	--
Benzo(a)pyrene	5.97	1	969000	3	ln(Cp) = 0.9750 * ln(Cs) - 2.0615		--	--
Benzo(b)fluoranthene	6.12	1	596000	3	0.310		--	--
Benzo(g,h,i)perylene	6.58	1	1430000	3	ln(Cp) = 1.1829 * ln(Cs) - 0.9313		--	--
Benzo(k)fluoranthene	6.12	1	596000	3	ln(Cp) = 0.8595 * ln(Cs) - 2.1579		--	--
Chrysene	5.66	1	248000	3	ln(Cp) = 0.5944 * ln(Cs) - 2.7078		--	--
Fluoranthene	4.95	1	41700	3	0.500		--	--
Fluorene	4.18	1	2830	3	ln(Cp) = -0.8556 * ln(Cs) - 5.562		--	--
Indeno(1,2,3-c,d)pyrene	6.58	1	1170000	3	0.110		--	--
Naphthalene	3.3	1	1190	3	12.2		--	--
Phenanthrene	4.46	1	33000	3	ln(Cp) = 0.6203 * ln(Cs) - 0.1665		--	--
Pyrene	4.88	1	62700	3	0.720		--	--

Footnotes after Table U-13e.