

**Table 5-1
Chemical Properties Affecting Fate**

CHEMICAL	WATER SOLUBILITY (mg/L)	VAPOR PRESSURE (mm Hg)	HENRY'S LAW CONSTANT (atm-m ³ /mol)	K _{oc} (ml/g)	log K _{ow}	Fish BCF (l/kg)	Fate and Transport Driver	Reference
VOC								
1,1,1-Trichloroethane	1.50E+03	1.24E+02	8.00E-03	1.52E+02	2.49	9	Volatilization (VP) Leaching (WS)	Howard 1990
1,1,2-Trichloroethane	4.50E+03	3.00E+01	1.17E-03	5.60E+01	2.47	5	Volatilization (VP) Leaching (WS)	EPA 1987
1,2-Dichloroethane (EDC)	8.52E+03	6.40E+01	9.78E-04	1.40E+01	1.48	1	Volatilization (VP) Leaching (WS)	EPA 1987
Acetone	1.00E+06	2.70E+02	2.06E-05	2.20E+00	-2.40	ND	Volatilization (VP) Leaching (WS)	EPA 1987
Carbon disulfide	2.94E+03	3.60E+02	1.23E-02	5.40E+01	2.00	0	Volatilization (VP) Leaching (WS)	EPA 1987
SVOC								
SVOCs - PHTHALATES								
Bis(2-ethylhexyl)phthalate	2.85E-01	6.20E-08	1.10E-05	5.00E+00	4.50	3	Adsorb to soil (Koc)	Howard 1990
SVOCs - AROMATIC								
4-Chloro-3-methylphenol (para-chlorocresol)	3.85E+03				2.95	18	Leaching (WS)	Clement Associates 1985
Hexachlorobenzene (HCB)	6.00E-03	1.09E-05	6.81E-04	3.90E+03	5.23	8600	Bioaccumulation (WS, BCF)	EPA 1987
Hexachlorobutadiene (HCBD)	2 to 4	1.50E-01	1.02E-03 to 2.6E-02	4.68E+03 to 5.01E+04	4.78 - 4.90	435 to 1,700		ChemRisk 1994
N-nitrosodiphenylamine	4.00E+01	1.00E-01	6.60E-04	3.00E+00	3.00	ND	Volatilization (VP)	ATSDR 1992
SVOCs - PAHs								
Acenaphthylene	3.93E+00	2.90E-02	1.48E-03	2.50E+03	3.70	ND	Volatilization (VP) Bioaccumulation (WS, Koc)	EPA 1987
Benzo(a)anthracene	5.70E-03	2.20E-08	1.16E-06	1.38E+06	5.60	ND	Bioaccumulation (WS, Koc)	EPA 1987
Benzo(a)pyrene	1.20E-03	5.60E-09	1.55E-06	5.50E+06	6.06	ND	Bioaccumulation (WS, Koc)	EPA 1987
Benzo(b)fluoranthene	1.40E-02	5.00E-07	1.19E-05	5.50E+05	6.06	ND	Bioaccumulation (WS, Koc)	EPA 1987
Benzo(g,h,i)perylene	7.00E-04	1.03E-10	5.34E-08	1.60E+06	6.51	ND	Bioaccumulation (WS, Koc)	EPA 1987
Benzo(k)fluoranthene	4.30E-03	5.10E-07	3.94E-05	5.50E+05	6.06	ND	Bioaccumulation (WS, Koc)	EPA 1987
Chrysene	1.80E-03	6.30E-09	1.05E-06	2.00E+05	5.61	ND	Bioaccumulation (WS, Koc)	EPA 1987
Dibenz(a,h)anthracene	5.00E-04	1.00E-10	7.33E-08	3.30E+06	6.80	ND	Bioaccumulation (WS, Koc)	EPA 1987
Fluoranthene	2.06E-01	5.00E-06	6.46E-06	3.80E+04	4.90	1150	Bioaccumulation (BCF, Koc)	EPA 1987
Fluorene	1.69E+00	7.10E-04	6.42E-05	7.30E+03	4.20	1300	Bioaccumulation (BCF, Koc)	EPA 1987
Phenanthrene	1.00E+00	6.80E-04	1.59E-04	1.40E+04	4.46	2630	Bioaccumulation (BCF, Koc)	EPA 1987
Pyrene	1.32E-01	2.50E-06	5.04E-06	3.80E+04	4.88	ND	Bioaccumulation (BCF, Koc)	EPA 1987
PESTICIDES								
Aldrin	1.80E-01	6.00E-06	1.60E-05	9.60E-04	5.30	28	Bioaccumulation (WS, BCF)	EPA 1987
Chlordane	5.60E-01	1.00E-05	9.63E-06	1.40E+05	3.32	14000	Bioaccumulation (BCF, Koc)	EPA 1987
Chlordane (alpha)	ND	ND	ND	ND	ND	ND		
Chlordane (gamma)	ND	ND	ND	ND	ND	ND		
Dieldrin	1.95E-01	1.78E-07	4.58E-07	1.70E+03	3.50	4760	Bioaccumulation (WS, BCF)	EPA 1987
Endosulfan	1.55E-01	1.00E-05	1.00E-05	3.50E+00	3.60	600	Bioaccumulation (WS, BCF)	ATSDR 1991
Endosulfan II	5.30E-01	1.00E-05	1.00E-05	ND	3.52	600	Bioaccumulation (WS, BCF)	ATSDR 1991
Endosulfan Sulfate	1.17E-01	1.00E-05	2.60E-05	ND	3.66	600	Bioaccumulation (WS, BCF)	ATSDR 1991
Hexachlorocyclohexane (alpha)	1.63E+00	2.50E-05	5.87E-06	3.80E+03	3.90	130	Bioaccumulation (WS, BCF)	EPA 1987
Hexachlorocyclohexane (beta)	2.40E-01	2.80E-07	4.47E-07	3.80E+03	3.90	130	Bioaccumulation (WS, BCF)	EPA 1987
Hexachlorocyclohexane (delta)	3.14E+01	1.70E-05	2.07E-07	6.60E+03	4.10	130	Bioaccumulation (WS, BCF)	EPA 1987
Hexachlorocyclohexane (gamma)	7.80E+00	1.60E-04	7.85E-06	1.08E+03	3.90	130	Bioaccumulation (WS, BCF)	EPA 1987
Endrin aldehyde	2.60E-01	2.00E-07	3.86E-07	3.98E+05	4.43	ND	Bioaccumulation, Adsorb to soil	ChemRisk, 1994
Endrin ketone	3.10E-02	7.70E-05	1.07E-03	5.30E+05	1100000.00	25 to 200	Bioaccumulation (Kow, BCF)	ATSDR 1992

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PCBs								
Aroclor 1254	1.20E-02	7.71E-05	2.00E-03	4.10E+05 to 1.07E+06	6.50	ND	Adsorb to soil, Bioaccumulation (WS, Kow)	ATSDR 1992
DIOXIN/FURANS								
2,3,7,8-TCDD	2.00E-04	1.00E-06	2.10E-03	3.98E+06	6.84	9333	Adsorb to soil, Bioaccumulation(BCF)	Mackay et al. 1992
METALS								
Arsenic	ND	NA	NA	NA	NA	0-350	Bioaccumulation (BCF)	ATSDR 1999
Barium		NA	NA	NA	NA			
Chromium (total)	ND	NA	NA	NA	NA	1-192	Bioaccumulation (BCF)	ATSDR 1992
Chromium (+6)	ND	NA	NA	NA	NA	1-192	Bioaccumulation (BCF)	ATSDR 1992
Copper	ND	NA	NA	NA	NA	10 to 100	Bioaccumulation (BCF)	ATSDR 1990
Lead	ND	NA	NA	NA	NA	0-92,000	Bioaccumulation (BCF)	ATSDR 1997
Mercury	3.00E-02	2.00E-03	1.10E-02	ND	3.4 to 6.0	10000 to 100000	Bioaccumulation (BCF)	ATSDR 1999
Nickel	ND	NA	NA	NA	NA	36	Bioaccumulation (BCF)	ATSDR 1997
Zinc	ND	NA	NA	NA	NA	4-24000	Bioaccumulation (BCF)	EPA 1987, ATSDR 1994

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ATSDR - Toxicological Profiles

NIH - National Institutes of Health Hazardous Substance Database

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atm-m³/mol = (vapor pressure - cubic meters per mole)
 BCF = bioconcentration factor
 mg/L = milligrams per liter
 MIBK = Methyl Isobutyl Ketone
 ml/g = milliliters per gram
 mm Hg = millimeters mercury
 ND = no data

PAH = polycyclic aromatic hydrocarbons
 PCB = polychlorinated biphenyls
 SVOC = semivolatle organic chemical
 VOC = volatile organic chemical
 VP = Vapor Pressure
 WS=Water Solubility