Table D-1

Bioconcentration Factors for Media to Community Receptors

COPC	$BCF_{Soil\text{-}Soil\ Inv}$		$BCF_{Soil\ or\ Sed\text{-}Plant}$		$BCF_{Water\text{-}Water\ Inv}$		$BCF_{Water\text{-}Algae}$		$BCF_{Water\text{-}Fish}$		$BCF_{Sed\text{-}Benthic\ Inv}$	
Dioxins and Furans												
2,3,7,8-TCDD	1.590E+00		5.600E-03		1.560E+03		3.302E+03		4.235E+03		1.960E+04	
1,2,3,7,8-PeCDD	1.460E+00		5.200E-03		1.435E+03		3.038E+03		3.896E+03		1.802E+04	
1,2,3,4,7,8-HxCDD	4.900E-01		1.700E-03		4.836E+02		1.024E+03		1.313E+03		6.075E+03	
1,2,3,6,7,8-HxCDD	1.900E-01		6.700E-04		1.872E+02		3.962E+02		5.082E+02		2.351E+03	
1,2,3,7,8,9-HxCDD	2.200E-01		7.800E-04		2.184E+02		4.623E+02		5.929E+02		2.743E+03	
1,2,3,4,6,7,8-HpCDD	8.100E-02		2.900E-04		7.960E+01		1.684E+02		2.159E+02		9.940E+01	
OCDD	1.900E-02		6.700E-05		1.870E+01		3.960E+01		5.080E+01		2.350E+01	
2,3,7,8-TCDF	1.270E+00		4.500E-03		1.248E+03		2.642E+03		3.388E+03		2.642E+03	
1,2,3,7,8-PeCDF	3.200E-01		1.100E-03		3.432E+02		7.264E+02		9.317E+02		4.311E+03	
2,3,4,7,8-PeCDF	2.540E+00		9.000E-03		2.496E+03		5.293E+03		6.776E+03		3.135E+04	
1,2,3.4,7,8-HxCDF	1.210E-01		4.300E-04		1.186E+02		2.510E+02		3.219E+02		1.489E+03	
1,2,3,6,7,8-HxCDF	3.000E-01		1.100E-03		2.964E+02		6.274E+02		8.047E+02		3.723E+03	
2,3,4,6,7,8-HxCDF	1.070E+00		3.800E-03		1.045E+03		2.212E+03		2.837E+03		1.313E+04	
1,2,3,7,8,9-HxCDF	1.000E+00		3.500E-03		9.828E+02		2.080E+03		2.668E+03		1.235E+04	
1,2,3,4,6,7,8	1.700E-02		6.200E-05		1.720E+01		3.630E+01		4.660E+01		2.156E+02	
1,2,3,4,7,8,9	6.200E-01		2.200E-03		6.084E+02		1.288E+03		1.651E+03		7.642E+03	
OCDF	2.500E-02		9.000E-05		2.500E+01		5.280E+01		6.780E+01		3.135E+02	
Polynuclear Aromatic Hydrocarbons (PAHs)												
Benzo(a)pyrene	7.000E-02		1.100E-02		4.697E+03		5.258E+03		5.000E+02		1.590E+00	
Benzo(a)anthracene	3.000E-02		2.020E-02		1.230E+04		5.258E+03		5.000E+02		1.450E+00	
Benzo(b)fluoranthene	7.000E-02		1.010E-02		4.697E+03		5.258E+03		5.000E+02		1.610E+00	
Benzo(k)fluoranthene	8.000E-02		1.010E-02		1.323E+04		5.258E+03		5.000E+02		1.610E+00	
Chrysene	4.000E-02		1.870E-02		9.800E+02		5.258E+03		5.000E+02		1.380E+00	
Dibenz(a,h)anthracene	7.000E-02		6.400E-03		7.100E+02		5.258E+03		5.000E+02		1.610E+00	
Indeno(1,2,3-cd)pyrene	8.000E-02		3.900E-03		4.697E+03		5.258E+03		5.000E+02		1.610E+00	
Polychlorinated Biphenyls (PCB)												
Aroclor 1016	1.130E+00		1.000E-02		1.300E+04		4.768E+05		2.265E+04		5.300E-01	
Aroclor 1254	1.130E+00		1.000E-02		5.538E+03		4.768E+05		2.304E+05		5.300E-01	
Nitroaromatics												
1,3-Dinitrobenzene	1.190E+00		5.320E+00		1.300E+01		2.507E+03		7.400E+01		1.190E+00	
2,4-Dinitrotoluene	3.080E+00		2.720E+00		1.300E+01		2.507E+03		2.104E+01		5.800E+01	
2,6-Dinitrotoluene	2.500E+00		3.150E+00		1.300E+01		2.507E+03		2.104E+01		2.500E+00	
Nitrobenzene	2.260E+00		3.380E+00		1.300E+01		2.400E+01		2.104E+01		2.270E+00	
Pentachloronitrobenzene	4.510E+02		8.000E-02		1.300E+01		4.740E+03		2.140E+02		4.510E+02	
2,4,6-Trinitrotoluene	1.460E+00	a,b	4.605E+00	a,b	1.460E+00	a,b	1.460E+00	a,b	4.676E+00	a,b	1.460E+00	a,b
Phthalate Esters												
Bis(2-ethylhexyl)phthalate	1.309E+03		3.800E-02		3.180E+02		9.931E+03		7.000E+01		1.309E+03	
Diethyphthalate	7.971E+00	a,b	1.390E+00	a,b	7.971E+00	a,b	7.971E+00	a,b	3.083E+01	a,b	7.971E+00	a,b
Di-n-butylphthalate	4.262E+02	a,b	8.380E-02	a,b	4.262E+02	a,b	4.262E+02	a,b	2.565E+03	a,b	4.262E+02	a,b
Di(n)octyl phthalate	3.128E+06		1.570E-04		5.946E+03		2.850E+04		9.400E+03		3.128E+06	
Volatile Organic Compounds												
Acetone	5.000E-02		5.200E+01		5.000E-02		5.000E-02		1.000E-01		5.000E-02	
Acrylonitrile	1.000E-02		2.777E+01		1.100E-01		1.100E-01		4.800E+01		1.100E-01	
Bromoform	6.001E+00	a,b	1.697E+00	a,b	6.007E+00	a,b	6.007E+00	a,b	2.252E+01	a,b	6.007E+00	a,b
Chloroform	2.820E+00		2.900E+00		2.820E+00		2.820E+00		3.590E+00		2.820E+00	
Crotonaldehyde	2.000E-01		1.863E+01		2.000E-01		2.000E-01		5.200E-01		2.000E-01	
1,4-Dioxane	4.000E-02		5.532E+01		4.300E-02		4.000E-02		ND		4.000E-02	
Ethylbenzene	2.665E+01	a,b	2.457E+01	a,b	2.665E+01	a,b	2.665E+01	a,b	1.179E+02	a,b	2.665E+01	a,b
Formaldehyde	1.400E-01		8.430E+00		1.400E-01		1.400E-01		3.400E-01		1.400E-01	
n-Hexane	1.117E+02	a,b	2.157E-01	a,b	1.117E+02	a,b	1.117E+02	a,b	5.794E+02	a,b	1.117E+02	a,b

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Bioconcentration Factors for Media to Community Receptors

COPC	$BCF_{Soil\text{-}Soil\ Inv}$		$BCF_{Soil\ or\ Sed\text{-}Plant}$		$BCF_{Water\text{-}Water\ Inv}$		$BCF_{Water\text{-}Algae}$		$BCF_{Water\text{-}Fish}$		$BCF_{Sed\text{-}Benthic\ Inv}$	
1,1,2,2-Tetrachloroethane	6.478E+00	a,b	1.609E+00	a,b	6.478E+00	a,b	6.478E+00	a,b	2.448E+01	a,b	6.478E+00	a,b
Vinyl chloride	6.200E-01		8.430E+00		6.200E-01		6.200E-01		1.810E+00		6.200E-01	

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COPC	$BCF_{Soil\text{-}Soil\ Inv}$		$BCF_{Soil\ or\ Sed\text{-}Plant}$		$BCF_{Water\text{-}Water\ Inv}$		$BCF_{Water\text{-}Algae}$		$BCF_{Water\text{-}Fish}$		$BCF_{Sed\text{-}Benthic\ Inv}$	
Semi-volatile Organics												
Benzoic acid	2.384E+00	a,b	3.258E+00	a,b	2.384E+00	a,b	2.384E+00	a,b	8.065E+00	a,b	2.384E+00	a,b
Benzyl alcohol	5.795E-01	a,b	8.839E+00	a,b	5.795E-01	a,b	5.795E-01	a,b	1.675E+00	a,b	5.795E-01	a,b
Inorganics												
Aluminum	2.200E-01		4.000E-03		4.066E+03		8.330E+02		2.700E+00		9.000E-01	
Antimony	2.200E-01		2.000E-01		7.000E+00		1.475E+03		4.000E+01		9.000E-01	
Arsenic	1.100E-01		3.600E-02		7.300E+01		2.930E+02		1.140E+02		9.000E-01	
Barium	2.200E-01		1.500E-01		2.000E+02		2.600E+02		6.330E+02		9.000E-01	
Beryllium	2.200E-01		1.000E-02		4.500E+01		1.410E+02		6.200E+01		9.000E-01	
Boron	2.200E-01	c	1.000E+00	a,g	4.066E+03	c	1.000E+00	a,g	6.330E+02	c	9.000E-01	c
Cadmium	9.600E-01		3.640E-01		3.461E+03		7.820E+02		9.070E+02		3.400E+00	
Chromium (total)	1.000E-02		7.500E-03		3.000E+03		4.406E+03		1.900E+01		3.900E-01	
Copper	4.000E-02		4.000E-01		3.718E+03		5.410E+02		7.100E+02		3.000E-01	
Total Cyanide	1.120E+00		ND		4.066E+03		2.200E+01		6.330E+02		9.000E-01	
Lead	3.000E-02		4.500E-02		5.059E+03		1.706E+03		9.000E-02		6.300E-01	
Mercuric chloride	4.000E-02		3.750E-02		2.018E+04		2.476E+04		3.530E+03		6.800E-02	
Methylmercury	8.500E+00		1.370E-01		5.500E+04		8.000E+04		1.117E+04		4.800E-01	
Nickel	2.000E-02		3.200E-02		2.800E+01		6.100E+01		7.800E+01		9.000E-01	
Selenium	2.200E-01		1.600E-02		1.262E+03		1.845E+03		1.290E+02		9.000E-01	
Silver	2.200E-01		4.000E-01		2.980E+02		1.070E+04		8.771E+01		9.000E-01	
Thallium	2.200E-01		4.000E-03		1.500E+04		1.500E+04		1.000E+04		9.000E-01	
Zinc	5.600E-01		1.200E-12		4.578E+03		2.175E+03		2.059E+03		5.700E-01	
Other Compounds												
GB (Sarin)	9.411E-02	a,d	3.188E+01	a,d	9.410E-02	a,d	9.410E-02	a,d	2.223E-01	a,d	9.410E-02	a,d
VX	3.679E+00	a,d	2.399E+00	a,d	3.679E+00	a,d	3.679E+00	a,d	1.306E+01	a,d	3.679E+00	a,d
Sulfur mustard	4.710E-01	a,d	1.023E+01	a,d	4.709E-01	a,d	4.709E-01	a,d	2.889E+00	a,d	4.709E-01	a,d
Cyclotrinitraminemethylene	3.679E-01	a,e	1.218E+01	a,e	3.678E-01	a,e	3.678E-01	a,e	1.011E+00	a,e	3.678E-01	a,e
Decane	2.705E+03	a,f	2.270E-02	a,f	2.705E+03	a,f	2.705E+03	a,f	1.999E+04	a,f	2.705E+03	a,f

Source: BCF values presented in EPA (1999), except where noted.

Notes:

a BCF value derived using methods presented in the EPA (1999).

b BCF value calculated using log K_{ow} value presented in Karichoff et al. (1995).

c Empirical data not available to calculate BCF. BCF value is the arithmetic mean of the recommended values provided in the SLERAP for those inorganics with available empirical data, as recommended in EPA (1999).

d BCF value calculated using log K_{ow} value presented in USACHPPM (1999).

e BCF value calculated using log K_{ow} value presented in USACHPPM (2002).

f BCF value calculated using log K_{ow} value presented in Mackay, Shiu, and Ma (1993).

g BCF is not available; thus, a value of 1.0 will be used to estimate the bioconcentration potential of the COPC in food items, as recommended in EPA (1999).

ND No data