

Symbol	Definition (units)	Default	Reference
<b>Resident SLs</b>			
SL <sub>res-sol-ingnc</sub>	Resident Soil Noncarcinogenic Child Ingestion (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>res-sol-dernc</sub>	Resident Soil Noncarcinogenic Child Dermal (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>res-sol-inhnc</sub>	Resident Soil Noncarcinogenic Child Inhalation (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>res-sol-totnc</sub>	Resident Soil Noncarcinogenic Child Total (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>res-sol-ingna</sub>	Resident Soil Noncarcinogenic Adult Ingestion (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>res-sol-derna</sub>	Resident Soil Noncarcinogenic Adult Dermal (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>res-sol-inhna</sub>	Resident Soil Noncarcinogenic Adult Inhalation (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>res-sol-totna</sub>	Resident Soil Noncarcinogenic Adult Total (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>res-sol-ingc</sub>	Resident Soil Carcinogenic Ingestion (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>res-sol-derc</sub>	Resident Soil Carcinogenic Dermal (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>res-sol-inhc</sub>	Resident Soil Carcinogenic Inhalation (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>res-sol-totc</sub>	Resident Soil Carcinogenic Total (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>res-sol-ingmu</sub>	Resident Soil Mutagenic Ingestion (mg/kg)	Mutagen-specific	Determined in this calculator
SL <sub>res-sol-dermu</sub>	Resident Soil Mutagenic Dermal (mg/kg)	Mutagen-specific	Determined in this calculator
SL <sub>res-sol-inhmu</sub>	Resident Soil Mutagenic Inhalation (mg/kg)	Mutagen-specific	Determined in this calculator
SL <sub>res-sol-totmu</sub>	Resident Soil Mutagenic Total (mg/kg)	Mutagen-specific	Determined in this calculator
SL <sub>res-sol-ingvc</sub>	Resident Soil Carcinogenic Vinyl Chloride Ingestion (mg/kg)	Vinyl Chloride -specific	Determined in this calculator
SL <sub>res-sol-dervc</sub>	Resident Soil Carcinogenic Vinyl Chloride Dermal (mg/kg)	Vinyl Chloride-specific	Determined in this calculator
SL <sub>res-sol-inhvc</sub>	Resident Soil Carcinogenic Vinyl Chloride Inhalation (mg/kg)	Vinyl Chloride-specific	Determined in this calculator
SL <sub>res-sol-totvc</sub>	Resident Soil Carcinogenic Vinyl Chloride Total (mg/kg)	Vinyl Chloride-specific	Determined in this calculator
SL <sub>res-sol-ingtce</sub>	Resident Soil Trichloroethylene Ingestion (mg/kg)	Trichloroethylene-specific	Determined in this calculator
SL <sub>res-sol-der tce</sub>	Resident Soil Trichloroethylene Dermal (mg/kg)	Trichloroethylene-specific	Determined in this calculator
SL <sub>res-sol-inhtce</sub>	Resident Soil Trichloroethylene Inhalation (mg/kg)	Trichloroethylene-specific	Determined in this calculator
SL <sub>res-sol-tottce</sub>	Resident Soil Trichloroethylene Total (mg/kg)	Trichloroethylene-specific	Determined in this calculator
SL <sub>res-wat-ingnc</sub>	Resident Tapwater Noncarcinogenic Child Ingestion (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>res-wat-dernc</sub>	Resident Tapwater Noncarcinogenic Child Dermal (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>res-wat-inhnc</sub>	Resident Tapwater Noncarcinogenic Child Inhalation (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>res-wat-totnc</sub>	Resident Tapwater Noncarcinogenic Child Total (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>res-wat-ingna</sub>	Resident Tapwater Noncarcinogenic Adult Ingestion (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>res-wat-derna</sub>	Resident Tapwater Noncarcinogenic Adult Dermal (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>res-wat-inhna</sub>	Resident Tapwater Noncarcinogenic Adult Inhalation (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>res-wat-totna</sub>	Resident Tapwater Noncarcinogenic Adult Total (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>res-wat-ingc</sub>	Resident Tapwater Carcinogenic Ingestion (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>res-wat-derc</sub>	Resident Tapwater Carcinogenic Dermal (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>res-wat-inhc</sub>	Resident Tapwater Carcinogenic Inhalation (µg/L)	Contaminant-specific	Determined in this calculator

Symbol	Definition (units)	Default	Reference
SL <sub>res-wat-totc</sub>	Resident Tapwater Carcinogenic Total (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>res-wat-ingmu</sub>	Resident Tapwater Mutagenic Ingestion (µg/L)	Mutagen-specific	Determined in this calculator
SL <sub>res-wat-demu</sub>	Resident Tapwater Mutagenic Dermal (µg/L)	Mutagen-specific	Determined in this calculator
SL <sub>res-wat-inhmu</sub>	Resident Tapwater Mutagenic Inhalation (µg/L)	Mutagen-specific	Determined in this calculator
SL <sub>res-wat-totmu</sub>	Resident Tapwater Mutagenic Total (µg/L)	Mutagen-specific	Determined in this calculator
SL <sub>res-wat-ingvc</sub>	Resident Tapwater Carcinogenic Vinyl Chloride Ingestion (µg/L)	Vinyl Chloride-specific	Determined in this calculator
SL <sub>res-wat-dervc</sub>	Resident Tapwater Carcinogenic Vinyl Chloride Dermal (µg/L)	Vinyl Chloride-specific	Determined in this calculator
SL <sub>res-wat-inhvc</sub>	Resident Tapwater Carcinogenic Vinyl Chloride Inhalation (µg/L)	Vinyl Chloride-specific	Determined in this calculator
SL <sub>res-wat-totvc</sub>	Resident Tapwater Carcinogenic Vinyl Chloride Total (µg/L)	Vinyl Chloride-specific	Determined in this calculator
SL <sub>res-wat-ingtce</sub>	Resident Tapwater Trichloroethylene Ingestion (µg/L)	Trichloroethylene-specific	Determined in this calculator
SL <sub>res-wat-dertce</sub>	Resident Tapwater Trichloroethylene Dermal (µg/L)	Trichloroethylene-specific	Determined in this calculator
SL <sub>res-wat-inhtce</sub>	Resident Tapwater Trichloroethylene Inhalation (µg/L)	Trichloroethylene-specific	Determined in this calculator
SL <sub>res-wat-tottce</sub>	Resident Tapwater Trichloroethylene Total (µg/L)	Trichloroethylene-specific	Determined in this calculator
SL <sub>res-air-inhn</sub>	Resident Air Noncarcinogenic (µg/m <sup>3</sup> )	Contaminant-specific	Determined in this calculator
SL <sub>res-air-inhc</sub>	Resident Air Carcinogenic (µg/m <sup>3</sup> )	Contaminant-specific	Determined in this calculator
SL <sub>res-air-inhmu</sub>	Resident Air Mutagenic (µg/m <sup>3</sup> )	Mutagen-specific	Determined in this calculator
SL <sub>res-air-inhvc</sub>	Resident Air Carcinogenic Vinyl Chloride (µg/m <sup>3</sup> )	Vinyl Chloride-specific	Determined in this calculator
SL <sub>res-air-inhtce</sub>	Resident Air Trichloroethylene (µg/m <sup>3</sup> )	Trichloroethylene-specific	Determined in this calculator
<b>Worker SLs</b>			
SL <sub>com-sol-ingn</sub>	Composite Worker Soil Noncarcinogenic Ingestion (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>com-sol-dern</sub>	Composite Worker Soil Noncarcinogenic Dermal (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>com-sol-inhn</sub>	Composite Worker Soil Noncarcinogenic Inhalation (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>com-sol-totn</sub>	Composite Worker Soil Noncarcinogenic Total (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>com-sol-ingc</sub>	Composite Worker Soil Carcinogenic Ingestion (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>com-sol-derc</sub>	Composite Worker Soil Carcinogenic Dermal (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>com-sol-inhc</sub>	Composite Worker Soil Carcinogenic Inhalation (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>com-sol-totc</sub>	Composite Worker Soil Carcinogenic Total (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>com-air-inhn</sub>	Composite Worker Air Noncarcinogenic (µg/m <sup>3</sup> )	Contaminant-specific	Determined in this calculator
SL <sub>com-air-inhc</sub>	Composite Worker Air Carcinogenic (µg/m <sup>3</sup> )	Contaminant-specific	Determined in this calculator
SL <sub>out-sol-ingn</sub>	Outdoor Worker Soil Noncarcinogenic Ingestion (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>out-sol-dern</sub>	Outdoor Worker Soil Noncarcinogenic Dermal (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>out-sol-inhn</sub>	Outdoor Worker Soil Noncarcinogenic Inhalation (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>out-sol-totn</sub>	Outdoor Worker Soil Noncarcinogenic Total (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>out-sol-ingc</sub>	Outdoor Worker Soil Carcinogenic Ingestion (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>out-sol-derc</sub>	Outdoor Worker Soil Carcinogenic Dermal (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>out-sol-inhc</sub>	Outdoor Worker Soil Carcinogenic Inhalation (mg/kg)	Contaminant-specific	Determined in this calculator

Symbol	Definition (units)	Default	Reference
SL <sub>out-sol-totc</sub>	Outdoor Worker Soil Carcinogenic Total (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>out-air-inhn</sub>	Outdoor Worker Air Noncarcinogenic ( $\mu\text{g}/\text{m}^3$ )	Contaminant-specific	Determined in this calculator
SL <sub>out-air-inhc</sub>	Outdoor Worker Air Carcinogenic ( $\mu\text{g}/\text{m}^3$ )	Contaminant-specific	Determined in this calculator
SL <sub>ind-sol-ingn</sub>	Indoor Worker Soil Noncarcinogenic Ingestion (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>ind-sol-inhn</sub>	Indoor Worker Soil Noncarcinogenic Inhalation (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>ind-sol-totn</sub>	Indoor Worker Soil Noncarcinogenic Total (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>ind-sol-ingc</sub>	Indoor Worker Soil Carcinogenic Ingestion (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>ind-sol-inhc</sub>	Indoor Worker Soil Carcinogenic Inhalation (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>ind-sol-totc</sub>	Indoor Worker Soil Carcinogenic Total (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>ind-air-inhn</sub>	Indoor Worker Air Noncarcinogenic ( $\mu\text{g}/\text{m}^3$ )	Contaminant-specific	Determined in this calculator
SL <sub>ind-air-inhc</sub>	Indoor Worker Air Carcinogenic ( $\mu\text{g}/\text{m}^3$ )	Contaminant-specific	Determined in this calculator
SL <sub>con-sol-ingn</sub>	Construction Worker Soil Noncarcinogenic Ingestion (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>con-sol-dern</sub>	Construction Worker Soil Noncarcinogenic Dermal (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>con-sol-inhn</sub>	Construction Worker Soil Noncarcinogenic Inhalation (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>con-sol-totn</sub>	Construction Worker Soil Noncarcinogenic Total (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>con-sol-ingc</sub>	Construction Worker Soil Carcinogenic Ingestion (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>con-sol-derc</sub>	Construction Worker Soil Carcinogenic Dermal (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>con-sol-inhc</sub>	Construction Worker Soil Carcinogenic Inhalation (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>con-sol-totc</sub>	Construction Worker Soil Carcinogenic Total (mg/kg)	Contaminant-specific	Determined in this calculator
<b>Recreator SLs</b>			
SL <sub>rec-sol-ingnc</sub>	Recreator Soil Noncarcinogenic Child Ingestion (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>rec-sol-dernc</sub>	Recreator Soil Noncarcinogenic Child Dermal (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>rec-sol-inhnc</sub>	Recreator Soil Noncarcinogenic Child Inhalation (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>rec-sol-totnc</sub>	Recreator Soil Noncarcinogenic Child Total (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>rec-sol-ingna</sub>	Recreator Soil Noncarcinogenic Adult Ingestion (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>rec-sol-derna</sub>	Recreator Soil Noncarcinogenic Adult Dermal (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>rec-sol-inhna</sub>	Recreator Soil Noncarcinogenic Adult Inhalation (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>rec-sol-totna</sub>	Recreator Soil Noncarcinogenic Adult Total (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>rec-sol-ingc</sub>	Recreator Soil Carcinogenic Ingestion (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>rec-sol-derc</sub>	Recreator Soil Carcinogenic Dermal (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>rec-sol-inhc</sub>	Recreator Soil Carcinogenic Inhalation (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>rec-sol-totc</sub>	Recreator Soil Carcinogenic Total (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>rec-sol-ingmu</sub>	Recreator Soil Mutagenic Ingestion (mg/kg)	Mutagenic-specific	Determined in this calculator
SL <sub>rec-sol-dermu</sub>	Recreator Soil Mutagenic Dermal (mg/kg)	Mutagenic-specific	Determined in this calculator
SL <sub>rec-sol-inhmu</sub>	Recreator Soil Mutagenic Inhalation (mg/kg)	Mutagenic-specific	Determined in this calculator
SL <sub>rec-sol-totmu</sub>	Recreator Soil Mutagenic Total (mg/kg)	Mutagenic-specific	Determined in this calculator

Symbol	Definition (units)	Default	Reference
SL <sub>rec-sol-ingvc</sub>	Recreator Soil Carcinogenic Vinyl Chloride Ingestion (mg/kg)	Vinyl Chloride-specific	Determined in this calculator
SL <sub>rec-sol-dervc</sub>	Recreator Soil Carcinogenic Vinyl Chloride Dermal (mg/kg)	Vinyl Chloride-specific	Determined in this calculator
SL <sub>rec-sol-inhvc</sub>	Recreator Soil Carcinogenic Vinyl Chloride Inhalation (mg/kg)	Vinyl Chloride-specific	Determined in this calculator
SL <sub>rec-sol-totvc</sub>	Recreator Soil Carcinogenic Vinyl Chloride Total (mg/kg)	Vinyl Chloride-specific	Determined in this calculator
SL <sub>rec-sol-ingtce</sub>	Recreator Soil Trichloroethylene Ingestion (mg/kg)	Trichloroethylene-specific	Determined in this calculator
SL <sub>rec-sol-dertce</sub>	Recreator Soil Trichloroethylene Dermal (mg/kg)	Trichloroethylene-specific	Determined in this calculator
SL <sub>rec-sol-inhtce</sub>	Recreator Soil Trichloroethylene Inhalation (mg/kg)	Trichloroethylene-specific	Determined in this calculator
SL <sub>rec-sol-tottce</sub>	Recreator Soil Trichloroethylene Total (mg/kg)	Trichloroethylene-specific	Determined in this calculator
SL <sub>rec-wat-ingnc</sub>	Recreator Surface Water Noncarcinogenic Child Ingestion (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>rec-wat-dernc</sub>	Recreator Surface Water Noncarcinogenic Child Dermal (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>rec-wat-totnc</sub>	Recreator Surface Water Noncarcinogenic Child Total (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>rec-wat-ingna</sub>	Recreator Surface Water Noncarcinogenic Adult Ingestion (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>rec-wat-derna</sub>	Recreator Surface Water Noncarcinogenic Adult Dermal (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>rec-wat-totna</sub>	Recreator Surface Water Noncarcinogenic Adult Total (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>rec-wat-ingc</sub>	Recreator Surface Water Carcinogenic Ingestion (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>rec-wat-derc</sub>	Recreator Surface Water Carcinogenic Dermal (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>rec-wat-totc</sub>	Recreator Surface Water Carcinogenic Total (µg/L)	Contaminant-specific	Determined in this calculator
SL <sub>rec-wat-ingmu</sub>	Recreator Surface Water Mutagenic Ingestion (µg/L)	Mutagen-specific	Determined in this calculator
SL <sub>rec-wat-dermu</sub>	Recreator Surface Water Mutagenic Dermal (µg/L)	Mutagen-specific	Determined in this calculator
SL <sub>rec-wat-totmu</sub>	Recreator Surface Water Mutagenic Total (µg/L)	Mutagen-specific	Determined in this calculator
SL <sub>rec-wat-ingvc</sub>	Recreator Surface Water Carcinogenic Vinyl Chloride Ingestion (µg/L)	Vinyl Chloride-specific	Determined in this calculator
SL <sub>rec-wat-dervc</sub>	Recreator Surface Water Carcinogenic Vinyl Chloride Dermal (µg/L)	Vinyl Chloride-specific	Determined in this calculator
SL <sub>rec-wat-totvc</sub>	Recreator Surface Water Carcinogenic Vinyl Chloride Total (µg/L)	Vinyl Chloride-specific	Determined in this calculator
SL <sub>rec-wat-ingtce</sub>	Recreator Surface Water Trichloroethylene Ingestion (µg/L)	Trichloroethylene-specific	Determined in this calculator
SL <sub>rec-wat-dertce</sub>	Recreator Surface Water Trichloroethylene Dermal (µg/L)	Trichloroethylene-specific	Determined in this calculator
SL <sub>rec-wat-tottce</sub>	Recreator Surface Water Trichloroethylene Total (µg/L)	Trichloroethylene-specific	Determined in this calculator
Fish SLs			
SL <sub>res-fsh-ingn</sub>	Resident Fish Noncarcinogenic Ingestion (mg/kg)	Contaminant-specific	Determined in this calculator
SL <sub>res-fsh-ingc</sub>	Resident Fish Carcinogenic Ingestion (mg/kg)	Contaminant-specific	Determined in this calculator

Symbol	Definition (units)	Default	Reference
<b>Miscellaneous Variables</b>			
TR	target risk	$1 \times 10^{-6}$	Selected by user
THQ	target hazard quotient	0.1	Selected by user
RBA	relative bioavailability factor	Arsenic = 0.6 All Others = 1	<a href="#">U.S. EPA 2012</a>
K	Andelman Volatilization Factor (L/m <sup>3</sup> )	0.5	U.S. EPA 1991b (pg. 20)
K <sub>p</sub>	Dermal Permeability Constant (cm/hour)	Contaminant-specific Inorganic default = 0.001	U.S. EPA 2004 Exhibit 3-1 and Section 3.1.2.1
K <sub>p,ve</sub>	Steady-state Permeability Coefficient (cm/hour)	Contaminant-specific K <sub>p,ve</sub> = K <sub>ew</sub> D <sub>e</sub> /L <sub>e</sub> , K <sub>ew</sub> = 1 assuming the viable epidermis (ve) (cm/hr) behaves essentially as water; L <sub>e</sub> = 10 <sup>-2</sup> cm, D <sub>e</sub> = 7.1×10 <sup>-6</sup> /MW cm <sup>2</sup> /s assuming D <sub>e</sub> = 10 <sup>-6</sup> cm <sup>2</sup> /s when MW = 50 (Bunge and Cleek, 1995)	U.S. EPA 2004
K <sub>ew</sub>	Equilibrium Partition Coefficient between epidermis and water for the absorbing chemical (unitless)	Contaminant-specific	U.S. EPA 2004
D <sub>sc</sub>	Effective diffusion coefficient for chemical transfer through the stratum corneum (cm <sup>2</sup> /hr)	Contaminant-specific	U.S. EPA 2004
B	Dimensionless ratio of the permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis (ve) (unitless)	Contaminant-specific	U.S. EPA 2004
t*	Time to reach steady-state (hr)	Contaminant-specific	U.S. EPA 2004
T <sub>event</sub>	Lag time per event (hr/event)	Contaminant-specific	U.S. EPA 2004
D <sub>e</sub>	Effective Diffusivity of absorbing chemical in the epidermis (cm <sup>2</sup> /sec)	(7.1 × 10 <sup>-6</sup> ) / (√MW)	U.S. EPA 2004
l <sub>sc</sub>	Apparent thickness of stratum corneum (cm)	0.001	U.S. EPA 2004
b,c	Correlation coefficients	Contaminant-specific see User's Guide section 4.9.8	U.S. EPA 2004
L <sub>e</sub>	Effective Thickness of the Epidermis (cm)	0.01	U.S. EPA 2004
AT <sub>res-c</sub>	Averaging time - resident child (days)	365 x ED <sub>res-c</sub> = 2190	U.S. EPA 1989 (pg. 6-23)
AT <sub>res-a</sub>	Averaging time - resident adult (days)	365 x ED <sub>res</sub> = 9490	U.S. EPA 1989 (pg. 6-23)
AT <sub>res</sub>	Averaging time - resident age adjusted (days)	365 x LT = 25550	U.S. EPA 1989 (pg. 6-23)
AT <sub>com-a</sub>	Averaging time - composite worker (days)	365 x ED <sub>com</sub> = 9125 (non-carcinogenic)	U.S. EPA 1989 (pg. 6-23)
AT <sub>com</sub>	Averaging time - composite worker (days)	365 x LT = 25550 (carcinogenic)	U.S. EPA 1989 (pg. 6-23)
AT <sub>ind-a</sub>	Averaging time - indoor worker (days)	365 x ED <sub>ind</sub> = 9125 (non-carcinogenic)	U.S. EPA 1989 (pg. 6-23)
AT <sub>ind</sub>	Averaging time - indoor worker soil (days)	365 x LT = 25550 (carcinogenic)	U.S. EPA 1989 (pg. 6-23)
AT <sub>out-a</sub>	Averaging time - outdoor worker (days)	365 x ED <sub>out</sub> = 9125 (non-carcinogenic)	U.S. EPA 1989 (pg. 6-23)
AT <sub>out</sub>	Averaging time - outdoor worker (days)	365 x LT = 25550 (carcinogenic)	U.S. EPA 1989 (pg. 6-23)
AT <sub>con-a</sub>	Averaging time - construction worker (days)	EW <sub>con</sub> x 7 (d/wk) x ED <sub>con</sub> = 350 (non-carcinogenic)	U.S. EPA 1989 (pg. 6-23)
AT <sub>con</sub>	Averaging time - construction worker (days)	365 x LT = 25550 (carcinogenic)	U.S. EPA 1989 (pg. 6-23)
AT <sub>rec-c</sub>	Averaging time - recreator child (days)	365 x ED <sub>rec-c</sub>	U.S. EPA 1989 (pg. 6-23)
AT <sub>rec-a</sub>	Averaging time - recreator adult (days)	365 x ED <sub>rec-a</sub>	U.S. EPA 1989 (pg. 6-23)
AT <sub>rec</sub>	Averaging time - recreator (days)	365 x LT	U.S. EPA 1989 (pg. 6-23)
LT	Lifetime (years)	70	U.S. EPA 1989 (pg. 6-22)
ΔH <sub>v,b</sub>	Enthalpy of vaporization at the normal boiling point (cal/mol)	Contaminant-specific	See Chemical-specific hierarchy
ΔH <sub>v,gw</sub>	Enthalpy of vaporization at temperature of groundwater (cal/mol)	Contaminant-specific	Determined in this calculator
HLC	Henry's Law Constant at specified groundwater temperature (atm·m <sup>3</sup> /mol)	Contaminant-specific	See Chemical-specific hierarchy
T <sub>gw</sub>	Groundwater Temperatures (Kelvin)	Site-Specific	Site-Specific
T <sub>c</sub>	Critical Temperatures (Kelvin)	Contaminant-specific	See Chemical-specific hierarchy
T <sub>b</sub>	Normal Boiling Point (Kelvin)	Contaminant-specific	See Chemical-specific hierarchy
n	If (T <sub>g</sub> /T <sub>c</sub> < 0.57)	n = 0.3	<a href="#">U.S. EPA Fact Sheet</a>
	If (T <sub>g</sub> /T <sub>c</sub> > 0.71)	n = 0.41	Unitless exponent values used to determine ΔH <sub>v,gw</sub>

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<b>Miscellaneous Variables</b>			
	If $(0.57 < T_v/T_c \leq 0.71)$	$n = (0.74 \times T_v/T_c - 0.116)$	
$VPT_{gw}$	Vapor Pressure at Groundwater Temperature (mmHg)	Contaminant-specific	Determined in this calculator
VP	Vapor Pressure at 25°C (mmHg)	Contaminant-specific	Contaminant-specific

Symbol	Definition (units)	Default	Reference
<b>Toxicity Values</b>			
RfD <sub>o</sub> or RFDOC	Chronic Oral Reference Dose (mg/kg-day)	Contaminant-specific	EPA Superfund hierarchy
RfC or RFCIC	Chronic Inhalation Reference Concentration (mg/m <sup>3</sup> )	Contaminant-specific	EPA Superfund hierarchy
SRfD <sub>o</sub> or RFDOS	Subchronic Oral Reference Dose (mg/kg-day)	Contaminant-specific	EPA Superfund hierarchy
SRfC or RFCIS	Subchronic Inhalation Reference Concentration (mg/m <sup>3</sup> )	Contaminant-specific	EPA Superfund hierarchy
CSF <sub>o</sub> or SFO	Oral Slope Factor (mg/kg-day) <sup>-1</sup>	Contaminant-specific	EPA Superfund hierarchy
IUR	Inhalation Unit Risk (µg/m <sup>3</sup> ) <sup>-1</sup>	Contaminant-specific	EPA Superfund hierarchy

Symbol	Definition (units)	Default	Reference
<b>Ingestion and Dermal Contact Rates</b>			
IRW <sub>res-c</sub>	Resident Drinking Water Ingestion Rate - Child (L/day)	0.78	U.S. EPA 2011, Tables 3-15 and 3-33; weighted average of 90th percentile consumer-only ingestion of drinking water (birth to <6 years)
IRW <sub>res-a</sub>	Resident Drinking Water Ingestion Rate - Adult (L/day)	2.5	U.S. EPA 2011, Table 3-33; 90th percentile of consumer-only ingestion of drinking water (>= 21 years)
IFW <sub>res-adj</sub>	Resident Drinking Water Ingestion Rate - Age-adjusted (L/kg)	327.95	Calculated using the age adjusted intake factors equation
IFWM <sub>res-adj</sub>	Resident Mutagenic Drinking Water Ingestion Rate - Age-adjusted (L/kg)	1019.9	Calculated using the age adjusted intake factors equation
IRS <sub>res-c</sub>	Resident Soil Ingestion Rate - Child (mg/day)	200	U.S. EPA 1991a (pg. 15)
IRS <sub>res-a</sub>	Resident Soil Ingestion Rate - Adult (mg/day)	100	U.S. EPA 1991a (pg. 15)
IFS <sub>res-adj</sub>	Resident Soil Ingestion Rate - Age-adjusted (mg/kg)	36750	Calculated using the age adjusted intake factors equation
IFSM <sub>res-adj</sub>	Resident Mutagenic Soil Ingestion Rate - Age-adjusted (mg/kg)	166833.33	Calculated using the age adjusted intake factors equation
IR <sub>ind</sub>	Indoor Worker Soil Ingestion Rate (mg/day)	50	U.S. EPA 1991a (pg. 15)
IR <sub>out</sub>	Outdoor Worker Soil Ingestion Rate (mg/day)	100	U.S. EPA 1991a (pg. 15)
IR <sub>con</sub>	Construction Worker Soil Ingestion Rate (mg/day)	330	U.S. EPA 2002 Exhibit 5-1
IR <sub>com</sub>	Composite Worker Soil Ingestion Rate (mg/day)	100	U.S. EPA 1991a (pg. 15)
IRW <sub>rec-c</sub>	Recreator Surface Water Ingestion Rate - Child (L/hour)	0.12	U.S. EPA 2011, Table 3.5
IRW <sub>rec-a</sub>	Recreator Surface Water Ingestion Rate - Adult (L/hour)	0.11	Time weighted average was calculated based on the upper percentile from U.S. EPA 2019, Table 3.7
IFW <sub>rec-adj</sub>	Recreator Surface Water Ingestion Rate - Age-adjusted (L/kg)	Site-Specific	Calculated using the age adjusted intake factors equation
IRW <sub>0-2</sub>	Surface Water Ingestion Rate - Age Segment 0-2 (L/hour)	0.12	U.S. EPA 2011, Table 3.5
IRW <sub>2-6</sub>	Surface Water Ingestion Rate - Age Segment 2-6 (L/hour)	0.12	U.S. EPA 2011, Table 3.5
IRW <sub>6-16</sub>	Surface Water Ingestion Rate - Age Segment 6-16 (L/hour)	0.124	Time weighted average was calculated based on the upper percentile from U.S. EPA 2019, Table 3.7
IRW <sub>16-26</sub>	Surface Water Ingestion Rate - Age Segment 16-26 (L/hour)	0.0985	Time weighted average was calculated based on the upper percentile from U.S. EPA 2019, Table 3.7
IFWM <sub>rec-adj</sub>	Recreator Mutagenic Surface Water Ingestion Rate - Age-adjusted (L/kg)	Site-Specific	Calculated using the age adjusted intake factors equation
IRS <sub>rec-c</sub>	Recreator Soil Ingestion Rate - Child (mg/day)	Site-Specific	U.S. EPA 1991a (pg. 15)
IRS <sub>rec-a</sub>	Recreator Soil Ingestion Rate - Adult (mg/day)	Site-Specific	U.S. EPA 1991a (pg. 15)
IFS <sub>rec-adj</sub>	Recreator Soil Ingestion Rate - Age-adjusted (mg/kg)	Site-Specific	Calculated using the age adjusted intake factors equation
IRS <sub>0-2</sub>	Soil Ingestion Rate - Age-segment 0-2 (mg/day)	200	U.S. EPA 1991a (pg. 15)
IRS <sub>2-6</sub>	Soil Ingestion Rate - Age-segment 2-6 (mg/day)	200	U.S. EPA 1991a (pg. 15)
IRS <sub>6-16</sub>	Soil Ingestion Rate - Age-segment 6-16 (mg/day)	100	U.S. EPA 1991a (pg. 15)
IRS <sub>16-26</sub>	Soil Ingestion Rate - Age-segment 16-26 (mg/day)	100	U.S. EPA 1991a (pg. 15)

Symbol	Definition (units)	Default	Reference
<b>Ingestion and Dermal Contact Rates</b>			
IFSM <sub>rec-adj</sub>	Recreator Mutagenic Soil Ingestion Rate - Age-adjusted (mg/kg)	Site-Specific	Calculated using the age adjusted intake factors equation
DFS <sub>res-adj</sub>	Resident soil dermal contact factor- age-adjusted (mg/kg)	103390	Calculated using the age adjusted intake factors equation
DFSM <sub>res-adj</sub>	Resident Mutagenic soil dermal contact factor- age-adjusted (mg/kg)	428260	Calculated using the age adjusted intake factors equation
DFS <sub>rec-adj</sub>	Recreator soil dermal contact factor- age-adjusted (mg/kg)	Site-Specific	Calculated using the age adjusted intake factors equation
DFSM <sub>rec-adj</sub>	Recreator Mutagenic soil dermal contact factor- age-adjusted (mg/kg)	Site-Specific	Calculated using the age adjusted intake factors equation
DFW <sub>res-adj</sub>	Resident water dermal contact factor- age-adjusted (cm <sub>2</sub> - event/kg)	2610650	Calculated using the age adjusted intake factors equation
DFWM <sub>res-adj</sub>	Resident Mutagenic water dermal contact factor- age-adjusted (cm <sub>2</sub> - event/kg)	8191633	Calculated using the age adjusted intake factors equation
DFW <sub>rec-adj</sub>	Recreator water dermal contact factor- age-adjusted (cm <sub>2</sub> - event/kg)	Site-Specific	Calculated using the age adjusted intake factors equation
DFWM <sub>rec-adj</sub>	Recreator Mutagenic water dermal contact factor- age-adjusted (cm <sup>2</sup> - event/kg)	Site-Specific	Calculated using the age adjusted intake factors equation
IRF <sub>res-a</sub>	Fish Ingestion Rate (mg/day)	Site-Specific	Recommend using Site-Specific values
SA <sub>res-c</sub>	Resident surface area soil - child (cm <sup>2</sup> /day)	2373	U.S. EPA 2011a, Tables 7-2 and 7-8; weighted average of mean values for head, hands, forearms, lower legs, and feet (male and female, birth to < 6 years)(forearm and lower leg-specific data used when available, ratios for nearest available age group used elsewhere)
SA <sub>res-a</sub>	Resident surface area soil - adult (cm <sup>2</sup> /day)	6032	U.S. EPA 2011, Tables 7-2 and 7-12; weighted average of mean values for head, hands, forearms, lower legs, and feet (male and female, 21+ years)(forearm and lower leg-specific data used for males and female lower leg; ratio of male forearm to arm applied to female arm data.
SA <sub>res-c</sub>	Resident surface area water - child (cm <sup>2</sup> )	6365	U.S. EPA 2014, weighted average of mean values for children <6 years.
SA <sub>res-a</sub>	Resident surface area water - adult (cm <sup>2</sup> )	19652	U.S. EPA 2014, weighted average of mean values for adults, male and female 21+.
SA <sub>out</sub>	Outdoor Worker soil surface area - adult (cm <sup>2</sup> /day)	3527	US EPA 2011a, Table 7-2; weighted average of mean values for head, hands, and forearms (male and female, 21+years)
SA <sub>con</sub>	Construction Worker soil surface area - adult (cm <sup>2</sup> /day)	3527	US EPA 2011a, Table 7-2; weighted average of mean values for head, hands, and forearms (male and female, 21+years)
SA <sub>com</sub>	Composite Worker soil surface area - adult (cm <sup>2</sup> /day)	3527	US EPA 2011a, Table 7-2; weighted average of mean values for head, hands, and forearms (male and female, 21+years)

Symbol	Definition (units)	Default	Reference
<b>Ingestion and Dermal Contact Rates</b>			
SA <sub>rec-c</sub>	Recreator surface area soil - child (cm <sup>2</sup> /day)	Site-Specific	Site-Specific
SA <sub>rec-a</sub>	Recreator surface area soil - adult (cm <sup>2</sup> /day)	Site-Specific	Site-Specific
SA <sub>rec-c</sub>	Recreator surface area water - child (cm <sup>2</sup> )	6365	U.S. EPA 2014, weighted average of mean values for children <6 years.
SA <sub>rec-a</sub>	Recreator surface area water - adult (cm <sup>2</sup> )	19652	U.S. EPA 2014, weighted average of mean values for adults, male and female 21+.
SA <sub>0-2</sub>	Resident/Recreator surface area soil - age segment 0-2 (cm <sup>2</sup> /day)	Resident 2373	U.S. EPA 2011, Tables 7-2 and 7-12; weighted average of mean values for head, hands, forearms, lower legs, and feet (male and female, 21+ years)(forearm and lower leg-specific data used for males and female lower leg; ratio of male forearm to arm applied to female arm data.
		Recreator - Site-Specific	Recreator - Site-Specific
SA <sub>2-6</sub>	Resident/Recreator surface area soil - age segment 2-6 (cm <sup>2</sup> /day)	Resident 2373	U.S. EPA 2011, Tables 7-2 and 7-12; weighted average of mean values for head, hands, forearms, lower legs, and feet (male and female, 21+ years)(forearm and lower leg-specific data used for males and female lower leg; ratio of male forearm to arm applied to female arm data.
		Recreator - Site-Specific	Recreator - Site-Specific
SA <sub>6-16</sub>	Resident/Recreator surface area soil - age segment 6-16 (cm <sup>2</sup> /day)	Resident 6032	U.S. EPA 2011, Tables 7-2 and 7-12; weighted average of mean values for head, hands, forearms, lower legs, and feet (male and female, 21+ years)(forearm and lower leg-specific data used for males and female lower leg; ratio of male forearm to arm applied to female arm data.
		Recreator - Site-Specific	Recreator - Site-Specific
SA <sub>16-26</sub>	Resident/Recreator surface area soil - age segment 16-26 (cm <sup>2</sup> /day)	Resident 6032	U.S. EPA 2011, Tables 7-2 and 7-12; weighted average of mean values for head, hands, forearms, lower legs, and feet (male and female, 21+ years)(forearm and lower leg-specific data used for males and female lower leg; ratio of male forearm to arm applied to female arm data.
		Recreator - Site-Specific	Recreator - Site-Specific
SA <sub>0-2</sub>	Resident/Recreator surface area water - age segment 0-2 (cm <sup>2</sup> )	6365	U.S. EPA 2014, weighted average of mean values for children <6 years.
SA <sub>2-6</sub>	Resident/Recreator surface area water - age segment 2-6 (cm <sup>2</sup> )	6365	U.S. EPA 2014, weighted average of mean values for children <6 years.

Symbol	Definition (units)	Default	Reference
<b>Ingestion and Dermal Contact Rates</b>			
SA <sub>6-16</sub>	Resident/Recreator surface area water - age segment 6-16 (cm <sup>2</sup> )	19652	U.S. EPA 2014, weighted average of mean values for adults, male and female 21+.
SA <sub>16-26</sub>	Resident/Recreator surface area water - age segment 16-26 (cm <sup>2</sup> )	19652	U.S. EPA 2014, weighted average of mean values for adults, male and female 21+.
AF <sub>res-c</sub>	Resident soil adherence factor - child (mg/cm <sup>2</sup> )	0.2	U.S. EPA 2002 (Exhibit 1-2)
AF <sub>res-a</sub>	Resident soil adherence factor - adult (mg/cm <sup>2</sup> )	0.07	U.S. EPA 2002 (Exhibit 1-2)
AF <sub>out</sub>	Outdoor Worker soil adherence factor (mg/cm <sup>2</sup> )	0.12	U.S. EPA 2011, Table 7-20 and Section 7.2.2; arithmetic mean of weighted average of body part- specific (hands, forearms, and face) mean adherence factors for adult commercial/industrial activities
AF <sub>com</sub>	Composite Worker soil adherence factor (mg/cm <sup>2</sup> )	0.12	U.S. EPA 2011, Table 7-20 and Section 7.2.2; arithmetic mean of weighted average of body part- specific (hands, forearms, and face) mean adherence factors for adult commercial/industrial activities
AF <sub>con</sub>	Construction Worker soil adherence factor (mg/cm <sup>2</sup> )	0.3	U.S. EPA 2002 (Exhibit 5-1)
AF <sub>rec-c</sub>	Recreator soil adherence factor - child (mg/cm <sup>2</sup> )	none	U.S. EPA 2004 Exhibit 3-3 presents options
AF <sub>rec-a</sub>	Recreator soil adherence factor - adult (mg/cm <sup>2</sup> )	none	U.S. EPA 2004 Exhibit 3-3 presents options
AF <sub>0-2</sub>	Resident soil adherence factor - age segment 0-2 (mg/cm <sup>2</sup> )	0.2	U.S. EPA 2002 (Exhibit 1-2)
AF <sub>2-6</sub>	Resident soil adherence factor - age segment 2-6 (mg/cm <sup>2</sup> )	0.2	U.S. EPA 2002 (Exhibit 1-2)
AF <sub>6-16</sub>	Resident soil adherence factor - age segment 6-16 (mg/cm <sup>2</sup> )	0.07	U.S. EPA 2002 (Exhibit 1-2)
AF <sub>16-26</sub>	Resident soil adherence factor - age segment 16-26 (mg/cm <sup>2</sup> )	0.07	U.S. EPA 2002 (Exhibit 1-2)
BW <sub>res-c</sub>	Resident Body Weight - child (kg)	15	U.S. EPA 1991a (pg. 15)
BW <sub>res-a</sub>	Resident Body Weight - adult (kg)	80	U.S. EPA 2011, Table 8-3; weighted mean values for adults 21 - 78
BW <sub>rec-c</sub>	Recreator Body Weight - child (kg)	15	U.S. EPA 1991a (pg. 15)
BW <sub>rec-a</sub>	Recreator Body Weight - adult (kg)	80	U.S. EPA 2011, Table 8-3; weighted mean values for adults 21 - 78
BW <sub>0-2</sub>	Resident/Recreator Body Weight - age segment 0-2 (kg)	15	U.S. EPA 1991a (pg. 15)
BW <sub>2-6</sub>	Resident/Recreator Body Weight - age segment 2-6 (kg)	15	U.S. EPA 1991a (pg. 15)
BW <sub>6-16</sub>	Resident/Recreator Body Weight - age segment 6-16 (kg)	80	U.S. EPA 2011, Table 8-3; weighted mean values for adults 21 - 78
BW <sub>16-26</sub>	Resident/Recreator Body Weight - age segment 16-26 (kg)	80	U.S. EPA 2011, Table 8-3; weighted mean values for adults 21 - 78
BW <sub>out</sub>	Outdoor Worker Body Weight (kg)	80	U.S. EPA 1991a (pg. 15)
BW <sub>con</sub>	Construction Worker Body Weight (kg)	80	U.S. EPA 2011, Table 8-3; weighted mean values for adults 21 - 78
BW <sub>ind</sub>	Indoor Worker Body Weight (kg)	80	U.S. EPA 2011, Table 8-3; weighted mean values for adults 21 - 78
BW <sub>com</sub>	Composite Worker Body Weight (kg)	80	U.S. EPA 2011, Table 8-3; weighted mean values for adults 21 - 78
ARS	Fraction of contaminant absorbed dermally from soil (unitless)	Contaminant-specific	U.S. EPA 2004 (Exhibit 3-4 and section 3.2.2.4)
		Inorganic default = none	

Symbol	Definition (units)	Default	Reference
<b>Ingestion and Dermal Contact Rates</b>			
$AD_{d}$	Fraction of contaminant absorbed dermally from soil (unitless)	VOC default = none SVOC default = 0.1	U.S. EPA 2004 (Exhibit 3-4 and section 3.2.2.4)
GIABS	Fraction of contaminant absorbed in gastrointestinal tract (unitless) Note: if the GIABS is >50% then it is set to 100% for the calculation of dermal toxicity values.	Contaminant-specific Inorganic default = 1.0 VOC default = 1.0 SVOC default = 1.0	U.S. EPA 2004 (Exhibit 4-1 and section 4.2)
$DA_{event}$	Absorbed dose per event ( $\mu\text{g}/\text{cm}^2$ - event)	Contaminant-specific	U.S. EPA 2004 (Equation 3.2 and 3.3)

Symbol	Definition (units)	Default	Reference
<b>Exposure Frequency, Exposure Duration, and Exposure Time Variables</b>			
EF <sub>res</sub>	Resident Exposure Frequency (days/year)	350	U.S. EPA 1991a (pg. 15)
EF <sub>res-a</sub>	Resident Exposure Frequency - adult (days/year)	350	U.S. EPA 1991a (pg. 15)
EF <sub>res-c</sub>	Resident Exposure Frequency - child (days/year)	350	U.S. EPA 1991a (pg. 15)
EF <sub>com</sub>	Composite Worker Exposure Frequency (days/year)	250	U.S. EPA 1991a (pg. 15)
EF <sub>ind</sub>	Indoor Worker Exposure Frequency (days/year)	250	U.S. EPA 1991a (pg. 15)
EF <sub>out</sub>	Outdoor Worker Exposure Frequency (days/year)	225	U.S. EPA 2002 (Exhibit 1-2)
EF <sub>con</sub>	Construction Worker Exposure Frequency (days/year)	250	U.S. EPA 2002 Exhibit 5-1
EF <sub>rec</sub>	Recreator Exposure Frequency (days/year)	Site-Specific	Site-Specific
EF <sub>rec-c</sub>	Recreator Exposure Frequency - child (days/year)	Site-Specific	Site-Specific
EF <sub>rec-a</sub>	Recreator Exposure Frequency - adult (days/year)	Site-Specific	Site-Specific
EF <sub>0-2</sub>	Resident/Recreator Exposure Frequency - age segment 0-2 (days/year)	Resident - 350	Resident - U.S. EPA 1991a (pg. 15)
		Recreator - Site-Specific	Recreator - Site-Specific
EF <sub>2-6</sub>	Resident/Recreator Exposure Frequency - age segment 2-6 (days/year)	Resident - 350	Resident - U.S. EPA 1991a (pg. 15)
		Recreator - Site-Specific	Recreator - Site-Specific
EF <sub>6-16</sub>	Resident/Recreator Exposure Frequency - age segment 6-16 (days/year)	Resident - 350	Resident - U.S. EPA 1991a (pg. 15)
		Recreator - Site-Specific	Recreator - Site-Specific
EF <sub>16-26</sub>	Resident/Recreator Exposure Frequency - age segment 16-26 (days/year)	Resident - 350	Resident - U.S. EPA 1991a (pg. 15)
		Recreator - Site-Specific	Recreator - Site-Specific
ED <sub>res</sub>	Resident Exposure Duration (years)	26	EPA 2011, Table 16-108; 90th percentile for current residence time.
ED <sub>res-c</sub>	Resident Exposure Duration - child (years)	6	U.S. EPA 1991a (pg. 15)
ED <sub>res-a</sub>	Resident Exposure Duration - adult (years)	20	ED <sub>res</sub> (26 years) - ED <sub>res-c</sub> (6 years)
ED <sub>com</sub>	Composite Worker Exposure Duration - (years)	25	U.S. EPA 1991a (pg. 15)
ED <sub>ind</sub>	Indoor Worker Exposure Duration - (years)	25	U.S. EPA 1991a (pg. 15)
ED <sub>out</sub>	Outdoor Worker Exposure Duration (years)	25	U.S. EPA 1991a (pg. 15)
ED <sub>con</sub>	Construction Worker Exposure Duration (years)	1	U.S. EPA 2002 Exhibit 5-1
ED <sub>rec</sub>	Recreator Exposure Duration (years)	26	EPA 2011, Table 16-108; 90th percentile for current residence time.
ED <sub>rec-c</sub>	Recreator Exposure Duration - child (years)	6	U.S. EPA 1991a (pg. 15)
ED <sub>rec-a</sub>	Recreator Exposure Duration - adult (years)	20	ED <sub>rec</sub> (26 years) - ED <sub>rec-c</sub> (6 years)
ED <sub>0-2</sub>	Resident/Recreator Exposure Duration - age segment 0-2 (years)	2	U.S. EPA 2005 (pg. 37)
ED <sub>2-6</sub>	Resident/Recreator Exposure Duration - age segment 2-6 (years)	4	U.S. EPA 2005 (pg. 37)
ED <sub>6-16</sub>	Resident/Recreator Exposure Duration - age segment 6-16 (years)	10	U.S. EPA 2005 (pg. 37)
ED <sub>16-26</sub>	Resident/Recreator Exposure Duration - age segment 16-26 (years)	10	U.S. EPA 2005 (pg. 37)
ET <sub>res-a</sub>	Resident Exposure Time (hours/day)	24	The whole day
ET <sub>res-c</sub>	Resident Exposure Time (hours/day)	24	The whole day
ET <sub>res</sub>	Resident Exposure Time (hours/day)	24	The whole day
ET <sub>com</sub>	Composite Worker Exposure Time (hours/day)	8	The work day

Symbol	Definition (units)	Default	Reference
<b>Exposure Frequency, Exposure Duration, and Exposure Time Variables</b>			
ET <sub>ind</sub>	Indoor Worker Exposure Time (hours/day)	8	The work day
ET <sub>out</sub>	Outdoor Worker Exposure Time (hours/day)	8	The work day
ET <sub>con</sub>	Construction Worker Exposure Time (hours/day)	8	The work day
ET <sub>rec</sub>	Recreator Exposure Time (hours/day)	Site-Specific	Site-Specific
ET <sub>rec-c</sub>	Recreator Exposure Time - child (hours/day)	Site-Specific	Site-Specific
ET <sub>rec-a</sub>	Recreator Exposure Time - adult (hours/day)	Site-Specific	Site-Specific
ET <sub>event-res-c</sub>	Resident Water Exposure Time - child (hours/event)	0.54	U.S. EPA 2011, Table 16-28; weighted average of 90th percentile time spent bathing (birth to <6 years)
ET <sub>event-res-a</sub>	Resident Water Exposure Time - adult (hours/event)	0.71	U.S. EPA 2011, Tables 16-30 and 16-31; weighted average of adult (21 to 78) 90 <sup>th</sup> percentile of time spent bathing/ showering in a day, divided by mean number of baths/showers taken in a day.
ET <sub>event-res-adj</sub>	Resident Water Exposure Time - age-adjusted (hours/event)	0.6708	Calculated using the age adjusted intake factors equation
ET <sub>event-res-madj</sub>	Resident Exposure Time - age-adjusted (hours/event)	0.6708	Calculated using the age adjusted intake factors equation
ET <sub>event-rec-c</sub>	Recreator Surface Water Exposure Time - child (hours/event)	Site-Specific	Site-Specific
ET <sub>event-rec-a</sub>	Recreator Surface Water Exposure Time - adult (hours/event)	Site-Specific	Site-Specific
ET <sub>0-2</sub>	Resident/Recreator Exposure Time - age segment 0-2 (hours/day)	Resident - 24	Resident - The whole day
		Recreator - Site-Specific	Recreator - Site-Specific
ET <sub>2-6</sub>	Resident/Recreator Exposure Time - age segment 2-6 (hours/day)	Resident - 24	Resident - The whole day
		Recreator - Site-Specific	Recreator - Site-Specific
ET <sub>6-16</sub>	Resident/Recreator Exposure Time - age segment 6-16 (hours/day)	Resident - 24	Resident - The whole day
		Recreator - Site-Specific	Recreator - Site-Specific
ET <sub>16-26</sub>	Resident/Recreator Exposure Time - age segment 16-26 (hours/day)	Resident - 24	Resident - The whole day
		Recreator - Site-Specific	Recreator - Site-Specific
ET <sub>event-rec-adj</sub>	Recreator Exposure Time - age-adjusted (hours/event)	Site-Specific	Calculated using the age adjusted intake factors equation
ET <sub>event-rec(0-2)</sub>	Recreator Exposure Time - age segment 0-2 (hours/event)	Site-Specific	Site-Specific
ET <sub>event-rec(2-6)</sub>	Recreator Exposure Time - age segment 2-6 (hours/event)	Site-Specific	Site-Specific
ET <sub>event-rec(6-16)</sub>	Recreator Exposure Time - age segment 6-16 (hours/event)	Site-Specific	Site-Specific
ET <sub>event-rec(16-26)</sub>	Recreator Exposure Time - age segment 16-26 (hours/event)	Site-Specific	Site-Specific
ET <sub>event-res(0-2)</sub>	Resident Exposure Time - age segment 0-2 (hours/event)	0.54	Calculated based on the ET given for ETevent-res-c
ET <sub>event-res(2-6)</sub>	Resident Exposure Time - age segment 2-6 (hours/event)	0.54	Calculated based on the ET given for ETevent-res-c
ET <sub>event-res(6-16)</sub>	Resident Exposure Time - age segment 6-16 (hours/event)	0.71	Calculated based on the ET given for ETevent-res-a
ET <sub>event-res(16-26)</sub>	Resident Exposure Time - age segment 16-26 (hours/event)	0.71	Calculated based on the ET given for ETevent-res-a
ET <sub>event-rec-madj</sub>	Recreator Exposure Time - age-adjusted (hours/event)	Site-Specific	Calculated using the age adjusted intake factors equation
EV <sub>rec-c</sub>	Recreator Events - child (events/day)	Site-Specific	Site-Specific

Symbol	Definition (units)	Default	Reference
<b>Exposure Frequency, Exposure Duration, and Exposure Time Variables</b>			
EV <sub>rec-a</sub>	Recreator Events - adult (events/day)	Site-Specific	Site-Specific
EV <sub>res-c</sub>	Resident Events - child (events/day)	1	U.S. EPA 2004; Exhibit 3-2
EV <sub>res-a</sub>	Resident Events - adult (events/day)	1	U.S. EPA 2004; Exhibit 3-2
EV <sub>0-2</sub>	Resident/Recreator Events - age segment 0-2 (events/day)	Resident - 1	U.S. EPA 2004; Exhibit 3-2
		Recreator - Site-Specific	
EV <sub>2-6</sub>	Resident/Recreator Events - age segment 2-6 (events/day)	Resident - 1	U.S. EPA 2004; Exhibit 3-2
		Recreator - Site-Specific	
EV <sub>6-16</sub>	Resident/Recreator Events - age segment 6-16 (events/day)	Resident - 1	U.S. EPA 2004; Exhibit 3-2
		Recreator - Site-Specific	
EV <sub>16-26</sub>	Resident/Recreator Events - age segment 16-26 (events/day)	Resident - 1	U.S. EPA 2004; Exhibit 3-2
		Recreator - Site-Specific	

Symbol	Definition (units)	Default	Reference
<b>Soil to Groundwater SSL Factor Variables</b>			
$C_w$	Target soil leachate concentration (mg/L)	nonzero MCL or RSL $\times$ DAF	U.S. EPA. 2002 Equation 4-14
DAF	Dilution attenuation factor (unitless)	1 (or Site-Specific)	U.S. EPA. 2002 Equation 4-11
ED	Exposure duration	70	U.S. EPA. 2002 Equation 4-14
I	Infiltration Rate (m/year)	0.18	U.S. EPA. 2002 Equation 4-11
L	source length parallel to ground water flow (m)	Site-Specific	U.S. EPA. 2002 Equation 4-11
i	hydraulic gradient (m/m)	Site-Specific	U.S. EPA. 2002 Equation 4-11
K	aquifer hydraulic conductivity (m/year)	Site-Specific	U.S. EPA. 2002 Equation 4-11
$\theta_w$	water-filled soil porosity ( $L_{water}/L_{soil}$ )	0.3	U.S. EPA. 2002 Equation 4-10
$\theta_a$	air-filled soil porosity ( $L_{air}/L_{soil}$ )	$= n - \theta_w$	U.S. EPA. 2002 Equation 4-10
n	total soil porosity ( $L_{pore}/L_{soil}$ )	$= 1 - (\rho_b/\rho_s)$	U.S. EPA. 2002 Equation 4-10
$\rho_s$	soil particle density (kg/L)	2.65	U.S. EPA. 2002 Equation 4-10
$\rho_b$	dry soil bulk density (kg/L)	1.5	U.S. EPA. 2002 Equation 4-10
H'	Dimensionless Henry Law Constant (unitless)	Contaminant-specific	See Chemical-specific hierarchy
$K_d$	soil-water partition coefficient (L/kg)	$= K_{oc} \times f_{oc}$ for organics	U.S. EPA. 2002 Equation 4-10
$K_{oc}$	soil organic carbon/water partition coefficient (L/kg)	Contaminant-specific	See Chemical-specific hierarchy
$f_{oc}$	fraction organic carbon in soil (g/g)	0.002	U.S. EPA. 2002 Equation 4-10
$d_a$	aquifer thickness (m)	Site-Specific	U.S. EPA. 2002 Equation 4-10
$d_s$	depth of source (m)	Site-Specific	U.S. EPA. 2002 Equation 4-10
d	mixing zone depth (m)	Site-Specific	U.S. EPA. 2002 Equation 4-12

Symbol	Definition (units)	Default	Reference
<b>Wind Particulate Emission Factor Variables</b>			
PEF	Particulate Emission Factor - Minneapolis (m <sup>3</sup> /kg)	1.36 x 10 <sup>9</sup> (region-specific)	U.S. EPA 2002 Exhibit D-2
Q/C <sub>wind</sub>	Inverse of the Mean Concentration at the Center of a 0.5-Acre-Square Source (g/m <sup>2</sup> -s per kg/m <sup>3</sup> )	93.77 (region-specific)	U.S. EPA 2002 Exhibit D-2
V	Fraction of Vegetative Cover (unitless)	0.5	U.S. EPA. 2002 Equation 4-5
U <sub>m</sub>	Mean Annual Wind Speed (m/s)	4.69	U.S. EPA. 2002 Equation 4-5
U <sub>t</sub>	Equivalent Threshold Value of Wind Speed at 7m (m/s)	11.32	U.S. EPA. 2002 Equation 4-5
F(x)	Function Dependent on U <sub>m</sub> /U <sub>t</sub> (unitless)	0.194	U.S. EPA. 2002 Equation 4-5
A	Dispersion constant unitless	PEF and region-specific	U.S. EPA 2002 Exhibit D-2
A <sub>s</sub>	Areal extent of the site or contamination (acres)	0.5 (range 0.5 to 500 )	U.S. EPA 2002 Exhibit D-2
B	Dispersion constant unitless	PEF and region-specific	U.S. EPA 2002 Exhibit D-2
C	Dispersion constant unitless	PEF and region-specific	U.S. EPA 2002 Exhibit D-2

Symbol	Definition (units)	Default	Reference
<b>Mechanical Particulate Emission Factor Variables from Vehicle Traffic</b>			
PEF <sub>sc</sub>	Particulate Emission Factor - subchronic (m <sup>3</sup> /kg)	Site-Specific	U.S. EPA 2002 Equation 5-5
Q/C <sub>sr</sub>	Inverse of the ratio of the 1-h geometric mean concentration to the emission flux along a straight road segment bisecting a square site (g/m <sup>2</sup> -s per kg/m <sup>3</sup> )	23.02 (for 0.5 acre site)	U.S. EPA 2002 Equation 5-5
F <sub>D</sub>	Dispersion correction factor (unitless)	0.185	U.S. EPA 2002 Equation E-16
T	Total time over which construction occurs (s)	Site-Specific	U.S. EPA 2002 Equation 5-5
A <sub>R</sub>	Surface area of contaminated road segment (m <sup>2</sup> )	(A <sub>R</sub> = L <sub>R</sub> × W <sub>R</sub> × 0.092903m <sup>2</sup> /ft <sup>2</sup> )	U.S. EPA 2002 Equation 5-5
L <sub>R</sub>	Length of road segment (ft)	Site-Specific	U.S. EPA 2002 Equation 5-5
W <sub>R</sub>	Width of road segment (ft)	20	U.S. EPA 2002 Equation E-18
W	Mean vehicle weight (tons)	(number of cars x tons/car + number of trucks x tons/truck) / total vehicles	U.S. EPA 2002 Equation 5-5
p	Number of days with at least 0.01 inches of precipitation (days/year)	Site-Specific	U.S. EPA 2002 Exhibit 5-2
∑VKT	Sum of fleet vehicle kilometers traveled during the exposure duration (km)	∑VKT = total vehicles x distance (km/day) x frequency (weeks/year) x (days/year)	U.S. EPA 2002 Equation 5-5
A	Dispersion constant unitless	12.9351	U.S. EPA 2002 Equation 5-6
A <sub>s</sub>	Areal extent of site surface soil contamination (acres)	0.5 (range 0.5 to 500 )	U.S. EPA 2002 Equation 5-6
B	Dispersion constant unitless	5.7383	U.S. EPA 2002 Equation 5-6
C	Dispersion constant unitless	71.7711	U.S. EPA 2002 Equation 5-6

Symbol	Definition (units)	Default	Reference
<b>Mechanical Particulate Emission Factor Variables from other than Vehicle Traffic</b>			
PEF' <sub>sc</sub>	Particulate Emission Factor - subchronic (m <sup>3</sup> /kg)	Site-Specific	U.S. EPA 2002 Equation E-26
Q/C <sub>sa</sub>	Inverse of the ratio of the 1-h. geometric mean air concentration and the emission flux at the center of the square emission source (g/m <sup>2</sup> -s per kg/m <sup>3</sup> )	Site-Specific	U.S. EPA 2002 Equation E-15
F <sub>D</sub>	Dispersion correction factor (unitless)	Site-Specific	U.S. EPA 2002 Equation E-16
A	Dispersion constant unitless	2.4538	U.S. EPA 2002 Equation E-15
B	Dispersion constant unitless	17.566	U.S. EPA 2002 Equation E-15
C	Dispersion constant unitless	189.0426	U.S. EPA 2002 Equation E-15
A <sub>s</sub>	Areal extent of site surface soil contamination (acres)	(range 0.5 to 500)	U.S. EPA 2002 Equation E-15
J' <sub>T</sub>	Total time-averaged PM <sub>10</sub> unit emission flux for construction activities other than traffic on unpaved roads (g/m <sup>2</sup> -s)	Site-Specific	U.S. EPA 2002 Equation E-25
M <sup>PC</sup> <sub>wind</sub>	Unit mass emitted from wind erosion (g)	Site-Specific	U.S. EPA 2002 Equation E-20
V	Fraction of Vegetative Cover (unitless)	0	U.S. EPA 2002 Equation E-20
U <sub>m</sub>	Mean Annual Wind Speed (m/s)	4.69	U.S. EPA 2002 Equation E-20
U <sub>t</sub>	Equivalent Threshold Value of Wind Speed at 7m (m/s)	11.32	U.S. EPA 2002 Equation E-20
F(x)	Function Dependent on U <sub>m</sub> /U <sub>t</sub> (unitless)	0.194	U.S. EPA 2002 Equation E-20
A <sub>surf</sub>	Areal extent of site surface soil contamination (m <sup>2</sup> )	(range 0.5 to 500)	U.S. EPA 2002 Equation E-20
ED	Exposure duration (years)	Site-Specific	U.S. EPA 2002 Equation E-20
M <sub>excav</sub>	Unit mass emitted from excavation soil dumping (g)	Site-Specific	U.S. EPA 2002 Equation E-21
0.35	PM <sub>10</sub> particle size multiplier (unitless)	0.35	U.S. EPA 2002 Equation E-21
U <sub>m</sub>	Mean annual wind speed during construction (m/s)	4.69	U.S. EPA 2002 Equation E-21
M <sub>m-excav</sub>	Gravimetric soil moisture content (%)	12 (mean value for municipal landfill cover)	U.S. EPA 2002 Equation E-21
ρ <sub>soil</sub>	In situ soil density (includes water) (mg/m <sup>3</sup> )	1.68	U.S. EPA 2002 Equation E-21
A <sub>excav</sub>	Areal extent of excavation (m <sup>2</sup> )	(range 0.5 to 500)	U.S. EPA 2002 Equation E-21
d <sub>excav</sub>	Average depth of excavation (m)	Site-Specific	U.S. EPA 2002 Equation E-21
N <sub>A-dump</sub>	Number of times soil is dumped (unitless)	2	U.S. EPA 2002 Equation E-21
M <sub>doz</sub>	Unit mass emitted from dozing operations (g)	Site-Specific	U.S. EPA 2002 Equation E-22
0.75	PM <sub>10</sub> scaling factor (unitless)	0.75	U.S. EPA 2002 Equation E-22
S <sub>doz</sub>	Soil silt content (%)	6.9	U.S. EPA 2002 Equation E-22
M <sub>m-doz</sub>	Gravimetric soil moisture content (%)	7.9 (mean value for overburden)	U.S. EPA 2002 Equation E-22
ΣVKT <sub>doz</sub>	Sum of dozing kilometers traveled (km)	Site-Specific	U.S. EPA 2002 Equation E-22
S <sub>doz</sub>	Average dozing speed (kph)	11.4 (mean value for graders)	U.S. EPA 2002 Equation E-22
N <sub>A-doz</sub>	Number of times site is dozed (unitless)	Site-Specific	U.S. EPA 2002 Equation E-22
B <sub>d</sub>	Dozer blade length (m)	Site-Specific	U.S. EPA 2002 Page E-28
M <sub>grade</sub>	Unit mass emitted from grading operations (g)	Site-Specific	U.S. EPA 2002 Equation E-23
0.6	PM <sub>10</sub> scaling factor (unitless)	0.6	U.S. EPA 2002 Equation E-23
ΣVKT <sub>grade</sub>	Sum of grading kilometers traveled (km)		U.S. EPA 2002 Equation E-23
S <sub>grade</sub>	Average grading speed (kph)	11.4 (mean value for graders)	U.S. EPA 2002 Equation E-23
N <sub>A-grade</sub>	Number of times site is graded (unitless)	Site-Specific	U.S. EPA 2002 Equation E-23
B <sub>g</sub>	Grader blade length (m)	Site-Specific	U.S. EPA 2002 Page E-28
M <sub>till</sub>	Unit mass emitted from tilling operations (g)	Site-Specific	U.S. EPA 2002 Equation E-24
S <sub>till</sub>	Soil silt content (%)	18	U.S. EPA 2002 Equation E-24
A <sub>c-till</sub>	Areal extent of tilling (acres)	Site-Specific	U.S. EPA 2002 Equation E-24
A <sub>c-grade</sub>	Areal extent of grading (acres)	Site-Specific	Necessary to solve ΣVKT <sub>grade</sub> in U.S. EPA 2002 Equation E-23
A <sub>c-doz</sub>	Areal extent of dozing (acres)	Site-Specific	Necessary to solve ΣVKT <sub>grade</sub> in U.S. EPA 2002 Equation E-22
N <sub>A-till</sub>	Number of times soil is tilled (unitless)	2	U.S. EPA 2002 Equation E-24

Symbol	Definition (units)	Default	Reference
<b>Chronic Volatilization Factor and Soil Saturation Limit Variables</b>			
VF <sub>ulim</sub>	Volatilization Factor - Los Angeles (m <sup>3</sup> /kg)	Contaminant-specific	U.S. EPA. 2002 Equation 4-8
C <sub>sat</sub>	Soil saturation concentration (mg/kg)	Contaminant-specific	U.S. EPA. 2002 Equation 4-9
Q/C <sub>vol</sub>	Inverse of the Mean Concentration at the Center of a 0.5-Acre-Square Source (g/m <sup>2</sup> -s per kg/m <sup>3</sup> )	68.18	U.S. EPA. 2002 Equation 4-8
A <sub>s</sub>	Areal extent of the site contamination (acres)	0.5 (range 0.5 to 500 )	U.S. EPA 2002 Equation 4-8
B	Dispersion constant unitless	18.4385 (region-specific)	U.S. EPA 2002 Exhibit D-3
C	Dispersion constant unitless	209.7845 (region-specific)	U.S. EPA 2002 Exhibit D-3
D <sub>A</sub>	Apparent Diffusivity (cm <sup>2</sup> /s)	Contaminant-specific	U.S. EPA. 2002 Equation 4-8
T	Exposure interval (s)	8.2 × 10 <sup>8</sup> (used for unlimited source model) = 26 years	U.S. EPA. 2002 Equation 4-8
T	Exposure interval (years)	26 (used for mass-limit model)	U.S. EPA. 2002 Equation 4-13
ρ <sub>b</sub>	Dry soil bulk density (g/cm <sup>3</sup> )	1.5	U.S. EPA. 2002 Equation 4-8
θ <sub>a</sub>	Air-filled soil porosity (L <sub>air</sub> /L <sub>soil</sub> ) (n-θ <sub>w</sub> )	0.28	U.S. EPA. 2002 Equation 4-8
n	Total soil porosity ( L <sub>pore</sub> /L <sub>soil</sub> ) (1-(ρ <sub>b</sub> /ρ <sub>s</sub> )	0.43	U.S. EPA. 2002 Equation 4-8
θ <sub>w</sub>	Water-filled soil porosity (L <sub>water</sub> /L <sub>soil</sub> )	0.15	U.S. EPA. 2002 Equation 4-8
ρ <sub>s</sub>	Soil particle density (g/cm <sup>3</sup> )	2.65	U.S. EPA. 2002 Equation 4-8
S	Water Solubility Limit (mg/L)	Contaminant-specific	See Chemical-specific hierarchy
R	Universal Gas Constant (L-atm/mole-K)	0.082057	<a href="#">U.S. EPA Fact Sheet</a>
R <sub>c</sub>	Universal Gas Constant (cal/mole-K)	1.9872	<a href="#">U.S. EPA Fact Sheet</a>
D <sub>ia</sub>	Diffusivity in air (cm <sup>2</sup> /s)	Contaminant-specific	U.S. EPA. 2001
H'	Dimensionless Henry's Law Constant	Contaminant-specific	See Chemical-specific hierarchy
D <sub>iw</sub>	Diffusivity in water (cm <sup>2</sup> /s)	Contaminant-specific	U.S. EPA. 2001
K <sub>d</sub>	Soil-water partition coefficient (L/kg) (Koc×foc)	Contaminant-specific	U.S. EPA. 2002 Equation 4-8
K <sub>oc</sub>	Soil organic carbon-water partition coefficient (L/kg)	= K <sub>oc</sub> × f <sub>oc</sub> for organics	See Chemical-specific hierarchy
f <sub>oc</sub>	Organic carbon content of soil (g/g)	0.006	U.S. EPA. 2002 Equation 4-8
d <sub>s</sub>	Average source depth (m)	Site-Specific	U.S. EPA 2002 Equation 4-13

Symbol	Definition (units)	Default	Reference
<b>Subchronic Volatilization Factor for Unlimited Source and Mass-limit Equations</b>			
$VF_{ulim-sc}$	Subchronic Volatilization Factor ( $m^3/kg$ )	Contaminant-specific	U.S. EPA 2002 Equation 5-14
$Q/C_{sa}$	Inverse of the ratio of the 1-h geometric mean air concentration to the volatilization flux at the center of a square source ( $g/m^2-s$ per $kg/m^3$ )	14.31 (for 0.5 acre site)	U.S. EPA 2002 Equation 5-14
A	Dispersion constant unitless	2.4538	U.S. EPA 2002 Equation 5-15
$A_c$	Areal extent of the site soil contamination (acres)	0.5 (range 0.5 to 500 )	U.S. EPA 2002 Equation 5-15
B	Dispersion constant unitless	17.566	U.S. EPA 2002 Equation 5-15
C	Dispersion constant unitless	189.0426	U.S. EPA 2002 Equation 5-15
$D_A$	Apparent Diffusivity ( $cm^2/s$ )	Contaminant-specific	U.S. EPA 2002 Equation 5-14
T	Total time over which construction occurs (s)	Site-Specific	U.S. EPA 2002 Equation 5-14
$\rho_b$	Dry soil bulk density ( $g/cm^3$ )	1.5	U.S. EPA 2002 Equation 5-14
$F_D$	Dispersion correction factor (unitless)	0.185	U.S. EPA 2002 Equation 5-14
$\theta_a$	Air-filled soil porosity ( $L_{air}/L_{soil}$ ) ( $n-\theta_w$ )	0.28	U.S. EPA 2002 Equation 5-14
n	Total soil porosity ( $L_{pore}/L_{soil}$ ) ( $1-(\rho_b/\rho_s)$ )	0.43	U.S. EPA 2002 Equation 5-14
$\theta_w$	Water-filled soil porosity ( $L_{water}/L_{soil}$ )	0.15	U.S. EPA 2002 Equation 5-14
$\rho_s$	Soil particle density ( $g/cm^3$ )	2.65	U.S. EPA 2002 Equation 5-14
$D_{ia}$	Diffusivity in air ( $cm^2/s$ )	Contaminant-specific	U.S. EPA 2001
H'	Dimensionless Henry's Law Constant	Contaminant-specific	See Chemical-specific hierarchy
$D_{iw}$	Diffusivity in water ( $cm^2/s$ )	Contaminant-specific	U.S. EPA 2001
$K_d$	Soil-water partition coefficient (L/kg) ( $K_{oc} \times f_{oc}$ )	= $K_{oc} \times f_{oc}$ for organics	See Chemical-specific hierarchy
$K_{oc}$	Soil organic carbon-water partition coefficient (L/kg)	Contaminant-specific	See Chemical-specific hierarchy
$f_{oc}$	Organic carbon content of soil (g/g)	0.006 (0.6%)	U.S. EPA 2002 Equation 5-14
T	Total time over which construction occurs (year)	Site-Specific (T=ED)	U.S. EPA 2002 Equation 5-17
$d_s$	Average source depth (m)	Site-Specific	U.S. EPA 2002 Equation 5-17

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