

**TABLE 3-5**  
**TIER 2 & 3A DEFAULT FATE AND TRANSPORT PARAMETERS**

PARAMETER	SYMBOL	UNIT	VALUE
<b>SOIL PARAMETERS</b>			
Soil Source Length	W	cm	1500
Depth to Subsurface Soil	L <sub>s</sub>	cm	30.48
Thickness of Surficial Soil	d	cm	30.48
Thickness of Capillary Fringe	h <sub>cap</sub>	cm	5
Thickness of Vadose Zone	h <sub>v</sub>	cm	295
Dry Soil Bulk Density	ρ <sub>s</sub>	g/cm <sup>3</sup>	1.5
Fractional Organic Carbon Content	f <sub>oc</sub>	g-C/g-soil	0.01
Total Soil Porosity	θ <sub>T</sub>	cm <sup>3</sup> /cm <sup>3</sup> -soil	0.43
Volumetric Water Content in Capillary Fringe	θ <sub>wcap</sub>	cm <sup>3</sup> /cm <sup>3</sup>	0.39
Volumetric Water Content in Vadose Zone	θ <sub>ws</sub>	cm <sup>3</sup> /cm <sup>3</sup>	0.15
Volumetric Water Content in Foundation or Wall Cracks	θ <sub>wcrack</sub>	cm <sup>3</sup> /cm <sup>3</sup>	0.15
Volumetric Air Content in Capillary Fringe	θ <sub>acap</sub>	cm <sup>3</sup> /cm <sup>3</sup>	0.04
Volumetric Air Content in Vadose Zone	θ <sub>as</sub>	cm <sup>3</sup> /cm <sup>3</sup>	0.28
Volumetric Air Content in Foundation or Wall Cracks	θ <sub>acrack</sub>	cm <sup>3</sup> /cm <sup>3</sup>	0.28
<b>GROUNDWATER PARAMETERS</b>			
Depth to Groundwater	L <sub>gw</sub>	cm	300
Hydraulic Conductivity	K	cm/year	90000
Hydraulic Gradient	i	cm/cm	0.01
Groundwater Darcy Velocity	U <sub>gw</sub>	cm/year	900
Groundwater Mixing Zone Length	L <sub>mz</sub>	cm	1500
Groundwater Mixing Zone Thickness	δ <sub>gw</sub>	cm	200
Groundwater Mixing Zone Width	W <sub>gw</sub>	cm	1500
Infiltration Rate	I	cm/year	30
<b>AMBIENT AIR PARAMETERS</b>			
Breathing Zone Height	δ <sub>a</sub>	cm	200
Wind Speed Within the Breathing Zone	U <sub>a</sub>	cm/s	225
<b>ENCLOSED SPACE PARAMETERS</b>			
Enclosed Space Air Exchange Rate			
Residential	ER	1/sec	0.00014
Commercial/Construction Worker	ER	1/sec	0.00023
Enclosed Space Volume/Infiltration Area Ratio			
Residential	L <sub>b</sub>	cm	200
Commercial/Construction Worker	L <sub>b</sub>	cm	300
Enclosed Space Foundation or Wall Thickness			
Residential	L <sub>crack</sub>	cm	15
Commercial/Construction Worker	L <sub>crack</sub>	cm	15
Areal Fraction of Cracks in Foundation or Walls			
Residential	η	cm <sup>2</sup> /cm <sup>2</sup>	0.005
Commercial/Construction Worker	η	cm <sup>2</sup> /cm <sup>2</sup>	0.005
<b>PARTICULATE EMISSION</b>			
Particulate Emission Factor	PEF	m <sup>3</sup> /kg	1.18x10 <sup>6</sup>
<b>AVERAGING TIME FOR VAPOR FLUX</b>			
Resident Child	τ	sec	1.89x10 <sup>8</sup>
Resident Adult	τ	sec	9.46x10 <sup>8</sup>
Commercial Worker	τ	sec	7.88x10 <sup>8</sup>
Construction Worker	τ	sec	3.15x10 <sup>6</sup>
<b>GROUNDWATER USE</b>			
Distance to the Point of Exposure (X <sub>poe</sub> )	X <sub>poe</sub>	ft	500
Longitudinal Dispersivity	a <sub>x</sub>	ft	50
Transverse Dispersivity	a <sub>y</sub>	ft	16.67
Vertical Dispersivity	a <sub>z</sub>	ft	2.5
Distance to the Point of Compliance (X <sub>poc</sub> )	X <sub>poc</sub>	ft	10
Longitudinal Dispersivity	a <sub>x</sub>	ft	1
Transverse Dispersivity	a <sub>y</sub>	ft	0.33
Vertical Dispersivity	a <sub>z</sub>	ft	0.05