

DATA ENTRY SHEET

SL-SCREEN
Version 3.1; 02/04

Reset to
Defaults

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES ☒ OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES ☐

ENTER Chemical CAS No. numbers only, no dashes)	ENTER Initial soil conc., C_0 ($\mu\text{g}/\text{kg}$)	Chemical
95476		O-Xylene

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Depth below grade to top of contamination space floor, L_t (cm)	ENTER Average soil temperature, T_b (°C)	ENTER Vadose zone SCS soil type used to estimate soil vapor permeability	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	400	15	SC		

MORE
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ENTER Vadose zone SCS soil type Look-up Soil Parameters	ENTER Vadose zone soil dry bulk density, ρ_b (g/cm^3)	ENTER Vadose zone soil total porosity, n (unitless)	ENTER Vadose zone soil water-filled porosity, θ_{wv} (unitless)	ENTER Vadose zone soil organic carbon fraction, f_{oc} (unitless)	ENTER Average vapor flow rate into bldg. (leave blank to calculate) Q_{pit} (L/m)
SC	1.63	0.385	0.197	0.002	5

MORE
↓

ENTER Averaging time for carcinogens, AT_c (Yrs)	ENTER Averaging time for noncarcinogens, AT_{nc} (Yrs)	ENTER Exposure duration, ED (Yrs)	ENTER Exposure frequency, EF (days/Yr)	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)
70	30	30	350	1.0E-05	1

END

Used to calculate risk-based
soil concentration.

RESULTS SHEET

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen ($\mu\text{g/kg}$)	Indoor exposure soil conc., noncarcinogen ($\mu\text{g/kg}$)	Risk-based indoor exposure soil conc., ($\mu\text{g/kg}$)	Soil saturation conc., C_{sat} ($\mu\text{g/kg}$)	Final indoor exposure soil conc., ($\mu\text{g/kg}$)
NA	$2.33\text{E}+03$	$2.33\text{E}+03$	$1.53\text{E}+05$	$2.33\text{E}+03$

MESSAGE SUMMARY BELOW:
MESSAGE: The values of Csource and Cbuilding on the INTERCALCS worksheet are based on unity and do not represent actual values.

END

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA

DATA ENTRY SHEET

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

SL-SCREEN
Version 3.1; 02/01

YES ☒ X
OR

Reset to
Defaults

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES ☐

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Chemical CAS No. numbers only, no dashes)	Initial soil conc., C_p ($\mu\text{g}/\text{kg}$)	Chemical							
95476		O-Xylene							

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	Depth below grade to top soil contamination temperature, T_s ($^{\circ}\text{C}$)	Average soil type used to estimate soil vapor permeability)	Vadose zone SCS soil type used to estimate soil vapor permeability)	OR	User-defined vadose zone soil vapor permeability, k_v (cm^2)			
15	800	15	SC					

MORE
↓

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Vadose zone SCS soil type Lookup Soil Parameters	Vadose zone soil dry bulk density, ρ_d^A (g/cm^3)	Vadose zone soil total porosity, n^y (unitless)	Vadose zone soil water-filled porosity, n_w^y (cm^3/cm^3)	Vadose zone soil organic carbon fraction, f_{oc}^y (unitless)	Average vapor flow rate into bldg. (Leave blank to calculate)			
					Q_{soil} (L/m)			
SC	1.63	0.385	0.197	0.002				5

MORE
↓

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Averaging time for carcinogens, AT_c (yrs)	Averaging time for noncarcinogens, AT_{nc} (yrs)	Exposure duration, ED (yrs)	Exposure frequency, EF (days/yr)	Target risk for carcinogens, TR (unitless)	Target hazard quotient for noncarcinogens, THQ (unitless)			
70	30	30	350	1.0E-05	1			

MORE
↓

END

Used to calculate risk-based
soil concentration.

RESULTS SHEET

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen (µg/kg)	Indoor exposure soil conc., noncarcinogen (µg/kg)	Risk-based indoor exposure soil conc., (µg/kg)	Soil saturation conc., C _{sat} (µg/kg)	Final indoor exposure soil conc., (µg/kg)
NA	4.60E+03	4.60E+03	1.53E+05	4.60E+03

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA

MESSAGE SUMMARY BELOW:

MESSAGE: The values of C_{source} and C_{building} on the INTERCALC worksheet are based on unity and do not represent actual values.

END

DATA ENTRY SHEET

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "x" in "YES" box)

YES

X

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "x" in "YES" box and initial soil conc. below)

YES

ENTER

Initial

soil

conc.,

C_a

($\mu\text{g}/\text{kg}$)

Chemical

106423

p-Xylene

MORE

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ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Depth below grade to bottom of enclosed space floor, L_p (15 or 200 cm)	Depth below grade to top of contamination floor, L_t (cm)	Average soil temperature, T_s ($^{\circ}\text{C}$)	Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	250	15	SC		

MORE

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ENTER
Average vapor flow rate into bldg. (leave blank to calculate)

Q_{soil}

(L/m)

5

ENTER

Vadose zone SCS soil type

ENTER

Vadose zone soil water-filled porosity, θ_w

ENTER

Vadose zone soil organic carbon fraction, f_{oc}

ENTER

Vadose zone soil porosity, n^v (unitless)

ENTER

Vadose zone soil total porosity, n^v (unitless)

ENTER

Vadose zone soil bulk density, ρ_b^h (g/cm^3)

ENTER

Vadose zone soil dry bulk density, ρ_b^d (g/cm^3)

ENTER

Vadose zone soil porosity, n^v (unitless)

ENTER

Vadose zone soil water-filled porosity, θ_w

ENTER

Vadose zone soil organic carbon fraction, f_{oc}

ENTER

Vadose zone soil porosity, n^v (unitless)

ENTER

Vadose zone soil total porosity, n^v (unitless)

ENTER

Vadose zone soil bulk density, ρ_b^h (g/cm^3)

ENTER

Vadose zone soil dry bulk density, ρ_b^d (g/cm^3)

ENTER

Vadose zone soil porosity, n^v (unitless)

ENTER

Vadose zone soil water-filled porosity, θ_w

ENTER

Vadose zone soil organic carbon fraction, f_{oc}

ENTER

MORE

↓

ENTER

Averaging time for carcinogens, AT_c (yrs)

ENTER

Averaging time for noncarcinogens, AT_{nc} (yrs)

ENTER

Exposure duration, ED (hrs)

ENTER

Exposure frequency, EF (days/yr)

ENTER

Target risk for carcinogens, noncarcinogens, THQ

ENTER

Target hazard quotient for carcinogens, noncarcinogens, THQ

ENTER

Used to calculate risk-based soil concentration.

1.0E-05

1

70

30

30

350

1.0E-05

1

END

RESULTS SHEET

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen ($\mu\text{g/kg}$)	Indoor exposure soil conc., noncarcinogen ($\mu\text{g/kg}$)	Risk-based Indoor exposure soil conc., ($\mu\text{g/kg}$)	Soil saturation conc., C_{sat} ($\mu\text{g/kg}$)	Final Indoor exposure soil conc., ($\mu\text{g/kg}$)
NA	1.19E+03	1.19E+03	1.70E+05	1.19E+03

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA

MESSAGE SUMMARY BELOW:
MESSAGE: The values of Csource and Cbuilding on the INTERCALCS worksheet are based on unity and do not represent actual values.

END

SL-SCREEN
Version 3.1; 02/04

Reset to Defaults

YES ☐ NO ☐

OR

YES ☐

ENTER	ENTER
Chemical	Initial
CAS NO.	soil
numbers only,	conc.,
no dashes	C _g
	(µg/kg)

Chemical

o-Xylene

MORE ↓

ENTER	ENTER	ENTER	ENTER	OR	ENTER
Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	Depth below grade to top of contamination space floor, L_t (cm)	Average soil temperature, T_s (°C)	Vadose zone SCS soil type (used to estimate soil vapor permeability)		User-defined vadose zone soil vapor permeability, k_v (cm ²)
15	400	15	SC		

**↑
MORE**

ENTER
Average vapor
flow rate into bldg.
(leave blank to calculate)

Cl₅₀₁
(10/7)

5

**↑
MORE**

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Averaging time for carcinogens, noncarcinogens, AT _C (YRS)	Averaging time for carcinogens, noncarcinogens, AT _{NC} (YRS)	Exposure duration, ED (YRS)	Exposure frequency, EF (days/yr)	Target risk for carcinogens, noncarcinogens, TR	Target hazard quotient for carcinogens, noncarcinogens, THQ	ENTER
70	30	30	350	1.0E-05	1	
						used to calculate risk-based soil concentration

END