

SL-SCREEN
Version 3.1, 02/01

Reset to
Defaults

DATA ENTRY SHEET

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
Initial
soil
conc.,
 C_a
($\mu\text{g}/\text{kg}$)

Chemical

100414 Ethylbenzene

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 floor, L_t (cm)	ENTER Average soil temperature, T_s (°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
↓

ENTER Vadose zone SCS soil type Lockup Soil Parameters	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm ³)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm ³ /cm ³)	ENTER Vadose zone soil organic carbon fraction, f_{oc}^V (unitless)	ENTER 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
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ENTER Averaging time for carcinogens, ATc (yrs)	ENTER Averaging time for noncarcinogens, ATnc (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

Used to calculate risk-based
soil concentration.

END

RESULTS SHEET

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen ($\mu\text{g}/\text{kg}$)	Indoor exposure soil conc., noncarcinogen ($\mu\text{g}/\text{kg}$)	Risk-based indoor exposure soil conc., ($\mu\text{g}/\text{kg}$)	Soil saturation conc., ($\mu\text{g}/\text{kg}$)	Final indoor exposure soil conc., ($\mu\text{g}/\text{kg}$)
NA	$1.76\text{E}+04$	$1.76\text{E}+04$	$1.47\text{E}+05$	$1.76\text{E}+04$

MESSAGE SUMMARY BELOW:

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

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

END

Reset to
Defaults

DATA ENTRY SHEET

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.	ENTER Initial soil conc., C_r ($\mu\text{g}/\text{kg}$)	Chemical
(numbers only, no dashes)		Ethylbenzene

MORE
↓

ENTER Depth below grade of enclosed space floor, L_f (15 or 200 cm)	ENTER Depth below grade to top of soil contamination, L_c (cm)	ENTER Average soil temperature, T_s (°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	800	15	SC		

MORE
↓

ENTER Vadose zone SCS soil type Parameters	ENTER Vadose zone soil dry bulk density, ρ_b (g/cm^3)	ENTER Vadose zone soil total porosity, n^v (unitless)	ENTER Vadose zone soil water-filled porosity, θ_v (cm^3/cm^3)	ENTER Vadose zone soil organic carbon fraction, f_{oc} (unitless)	ENTER 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 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 ($\mu\text{g}/\text{kg}$)	Indoor exposure soil conc., noncarcinogen ($\mu\text{g}/\text{kg}$)	Risk-based indoor exposure soil conc., ($\mu\text{g}/\text{kg}$)	Soil saturation conc., C_{sat} ($\mu\text{g}/\text{kg}$)	Final indoor exposure soil conc., ($\mu\text{g}/\text{kg}$)
NA	3.48E+04	3.48E+04	1.47E+05	3.48E+04

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

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	ENTER	ENTER	ENTER
Chemical CAS NO.	Initial soil conc., C_0 ($\mu\text{g}/\text{kg}$)	Chemical	
(numbers only, no dashes)			
108383		m-Xylene	

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

MORE $\downarrow$

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

Q_{vbl} (L/m)
5

ENTER	ENTER	ENTER	ENTER	ENTER
Vadose zone SCS soil type	Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	Vadose zone soil total porosity, n^V (unitless)	Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	Vadose zone soil organic carbon fraction, f_{oc}^V (unitless)
SC	1.63	0.385	0.197	0.002

MORE $\downarrow$

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
Used to calculate risk-based soil concentration.					

MORE $\downarrow$

END

RESULTS SHEET

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

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	1.40E+03	1.40E+03	1.54E+05	1.40E+03

MESSAGE SUMMARY BELOW:
MESSAGE: The values of C_{source} and C_{building} on the INTERCALC5 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)

SI-SCREEN
Version 3.1; 02/01

Reset to
Defaults

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

Chemical

108383

m-Xylene

ENTER	ENTER	ENTER	ENTER	ENTER
Depth below grade to bottom of enclosed space floor, if contamination temperature, T_s ($^\circ\text{C}$)	Depth below grade to top of enclosed space floor, if contamination temperature, T_s ($^\circ\text{C}$)	Average soil porosity, n_v (unitless)	Vadose zone soil type used to estimate soil vapor permeability, k_v (cm^2)	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)

Q_{vbl}
(L/m)

5

ENTER	ENTER	ENTER	ENTER	ENTER
Vadose zone soil type SCS soil dry bulk density, ρ_b (g/cm^3)	Vadose zone soil total porosity, n_v (unitless)	Vadose zone soil water-filled porosity, n_{vw} (cm^3/cm^3)	Vadose zone soil organic carbon fraction, f_{oc} (unitless)	
SC	1.63	0.305	0.197	0.002

MORE
↓

ENTER	ENTER	ENTER	ENTER	ENTER
Averaging time for carcinogens, ATC (YRS)	Averaging time for noncarcinogens, ATNC (YRS)	Exposure duration, ED (YRS)	Exposure frequency, EF (days/yr)	Target hazard quotient for carcinogens, noncarcinogens, THQ (unitless)
70	30	30	350	1

MORE
↓

Used to calculate risk-based
soil concentration.

END