

DATA ENTRY SHEET

SL-SCREEN
Version 3.1; 02/01

Reset to
Defaults

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 Chemical CAS No. (numbers only, no dashes)	ENTER Initial soil conc., C_R ($\mu\text{g/g}$)	Chemical
71432		Benzene

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 layer, 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	250	15	SC		

MORE
↓

ENTER Vadose zone SCS soil type	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_w (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_{air} (L/m^2)
SC	1.63	0.385	0.197	0.002	5

MORE
↓

ENTER Averaging time for carcinogens, AT_c (Yr)	ENTER Averaging time for noncarcinogens, AT_{nc} (Yr)	ENTER Exposure duration, ED (Yr)	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., ($\mu\text{g}/\text{kg}$)
1.07E+01	1.07E+02	1.07E+01	4.57E+05	1.07E+01

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

DATA ENTRY SHEET

SL-SCREEN
Version 3.1; 02/01

Reset to
Defaults

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	ENTER	ENTER	ENTER
Chemical CAS No.	Initial soil conc., C_r ($\mu\text{g}/\text{kg}$)	Chemical	
(numbers only, no dashes)			
71432		Benzene	

MORE

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 of contamination, L_t (cm)	Average soil temperature, T_s ($^{\circ}\text{C}$)	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)

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Vadose zone SCS soil type	Vadose zone soil dry bulk density, ρ_d^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)	Average vapor flow rate into bldg. (leave blank to calculate)
SC	1.63	0.305	0.197	0.002	5

MORE

ENTER	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 risk for carcinogens, TR (unitless)	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

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)
1.68E+01	1.68E+02	1.68E+01	4.57E+05	1.68E+01

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

SL-SCREEN
Version 3.1; 02/01

Reset to
Defaults

YES ☒ OR

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

YES ☐

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Chemical CAS No.	Initial soil conc., C _a (µg/g)	Chemical			
(numbers only, no dashes)					
71432		Benzene			

ENTER	ENTER	ENTER	ENTER	ENTER
Depth below grade to bottom of enclosed space floor, L _t (15 or 200 cm)	Depth below grade to top of enclosed space floor, L _t (cm)	Average soil temperature, T _s (°C)	Vadose zone SCS soil type used to estimate soil vapor permeability, k _v (cm ²)	User-defined vadose zone soil vapor permeability, k _v (cm ²)
15	800	15	SC	

MORE
↓

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Vadose zone SCS soil type Leachate Soil Permeability	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)	Average vapor flow rate into bldg. (Leave blank to calculate) Q _{air} (L/m)
SC	1.63	0.385	0.197	0.002	5

MORE
↓

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 ($\mu\text{g}/\text{kg}$)	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., ($\mu\text{g}/\text{kg}$)
3.31E+01	3.31E+02	3.31E+01	4.57E+05	3.31E+01

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

DATA ENTRY SHEET

CALCULATE RISK-BASED SOIL CONCENTRATION ENTER "X" IN "YES" BOX

SL-SCREEN
Version 3.1; 02/01

Reset to
Defaults

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

Chemical
Toluene

108883

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_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	250	15	SC		

MORE
↓

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

Q_{soil}
(L/m)
5

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)
SC	1.63	0.385	0.197	0.002

MORE
↓

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

MORE
↓

END

Used to calculate risk-based
soil concentration.