

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	$2.52\text{E}+03$	$2.52\text{E}+03$	$2.65\text{E}+05$	$2.52\text{E}+03$

MESSAGE SUMMARY BELOW:
MESSAGE: The values of Csource and Cbuilding on the INTERCALC 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; 02/01

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

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
Chemical CAS No.	Initial soil conc., C_0 ($\mu\text{g}/\text{kg}$)	Chemical			
(numbers only, no dashes)					
108883		TOLUENE			

MORE

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 of contamination, 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	200	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 (Lookup Soil Parameters)	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)
SC	1.63	0.385	0.197	0.002	

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

Q_{soil} (l/m)

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

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure carcinogen soil conc., (µg/kg)	Indoor exposure soil conc., (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	3.97E+03	3.97E+03	2.65E+05	3.97E+03

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

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 ☒ OR

Reset to Defaults

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

YES ☐

ENTER Chemical CAS No. Initial soil conc., C_0 ($\mu\text{g}/\text{kg}$) no dashes	ENTER Chemical Toluene
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ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Depth below grade to top of soil contamination temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone soil type SCS soil vapor permeability, k_v (cm^2)	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	800	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^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, n^V (unitless)	ENTER Vadose zone soil organic carbon fraction, f_{oc}^V (unitless)	ENTER Average vapor flow rate into bldg. (leave blank to calculate) C_{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

MORE
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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	7.82E+03	7.82E+03	2.65E+05	7.82E+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

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	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Chemical CAS NO. (numbers only, no dashes)	Initial soil conc., C_R ($\mu\text{g}/\text{kg}$)	Depth below grade to top of enclosed space floor, L_r (15 or 200 cm)	Depth below grade to top of enclosed space floor, 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)
100414			250	15	SC	
Chemical Ethylbenzene						

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

ENTER
Q_{soil} (L/m)
5

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Vadose zone SCS soil type (Look-up Soil Parameters)	Vadose zone soil dry bulk density, ρ_b (g/cm^3)	Vadose zone soil total porosity, n^v (unitless)	Vadose zone soil water-filled porosity, n_w^v (cm^3/cm^3)	Vadose zone soil organic carbon fraction, f_{oc} (unitless)	Vadose zone soil vapor permeability, k_v (cm^2)	Vadose zone soil vapor permeability, k_v (cm^2)
SC	1.65	0.385	0.197	0.002		

MORE
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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)	Target hazard quotient for carcinogens, TR (unitless)
70	30	30	350	1.0E-05	1	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	1.11E+04	1.11E+04	1.47E+05	1.11E+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