

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	$1.88\text{E}+03$	$1.88\text{E}+03$	$1.70\text{E}+05$	$1.88\text{E}+03$

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 utility and do not represent actual values.

END

SL-SCREEN
Version 3.1; 02/01

Reset to Defaults

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

YES	X	OR
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OR

OR

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

ENTER	YES
Initial soil conc.	
C ₀	
(μg/kg)	

Chemical

p-Xylene

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 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	800	15	SC	

MORE

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

Q₅₀₁

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5

MORE 

ENTER	ENTER	ENTER	ENTER	ENTER	ENTER	ENTER
Averaging time for carcinogens, ATC (yr)	Averaging time for noncarcinogens, AT _{nc} (yr)	Exposure duration, ED (yr)	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 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)	Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	3.72E+03	3.72E+03	1.70E+05	3.72E+03	NA	NA

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

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_p ($\mu\text{g/kg}$)	Chemical	
91203		Naphthalene	

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 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	250	15	SC	

MORE

ENTER	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, n_w^V (cm^2/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	Q_{avg} (L/m)	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

used to calculate risk-based soil concentration.

MORE

END

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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	$3.73\text{E}+03$	$3.73\text{E}+03$	$1.28\text{E}+05$	$3.73\text{E}+03$

MESSAGE SUMMARY BELOW:

MESSAGE: The values of C_{source} and building 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

SI-SCREEN
Version 3.1; 02/04

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
Initial
Chemical CAS No. soil conc.,
C_s
(μg/kg)
Chemical
Naphthalene

91203

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 (°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	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 _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	5

MORE
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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.

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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	$5.94\text{E}+03$	$5.94\text{E}+03$	$1.28\text{E}+05$	$5.94\text{E}+03$

MESSAGE SUMMARY BELOW:

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

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