

DATA ENTRY SHEET

SL-ADV
Version 3.1; 02/04

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

YES
OR

Reset to
Defaults

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

YES

ENTER ENTER
Chemical
CAS No.
(numbers only,
no dashes)
 C_s
($\mu\text{g}/\text{kg}$)

71432

Chemical
Benzene

ENTER ENTER ENTER ENTER
Depth Depth Depth Depth
below grade below grade grade to bottom
to bottom of enclosed of contamination, of soil
of space floor, space floor, (enter value of 0
if value is unknown)
 T_s L_f L_i L_b
($^{\circ}\text{C}$) (cm) (cm) (cm)

10 15 610 640

ENTER ENTER ENTER	Totals must add up to value of L_t (cell G28)		
Thickness of soil stratum A,	Thickness of soil stratum B,	Thickness of soil stratum C,	Soil stratum A SCS soil type (used to estimate soil vapor permeability)
h_A (cm)	h_B (cm)	h_C (cm)	OR User-defined stratum A soil vapor permeability, k_v (cm^2)
610	0	0	1.00E-08

ENTER ENTER
Stratum A Stratum A Stratum A Stratum A Stratum A Stratum B Stratum B Stratum B Stratum B Stratum C Stratum C Stratum C
SCS soil dry soil total soil water-filled soil organic SCS soil dry soil total soil water-filled SCS Stratum C Stratum C
soil type bulk density, porosity, porosity, carbon fraction, soil type bulk density, porosity, water-filled soil type soil total soil water-filled
 p_b^A (g/cm^3) (n^A) (cm^3/cm^3) (cm^3/cm^3) (g/cm^3) (g/cm^3) (n^B) (cm^3/cm^3) (g/cm^3) (n^C) (cm^3/cm^3)

Lookup Soil
Parameters

1.65 0.439 0.045 0.002

ENTER ENTER ENTER ENTER ENTER ENTER ENTER
Enclosed Enclosed Enclosed Enclosed Enclosed Indoor Average vapor
space space space space space air exchange flow rate into bldg.
floor floor floor floor floor rate, OR
thickness, differential, length, width, seam crack ER
 L_{crack} ΔP L_b W_b width, (cm) (cm) ($1/\text{h}$)

10 40 1000 1000 244 0.1 0.25

ENTER ENTER ENTER ENTER ENTER ENTER
Averaging Averaging Exposure Exposure Target Target hazard
time for time for duration, frequency, risk for quotient for
carcinogens, noncarcinogens, ED EF carcinogens, noncarcinogens,
 AT_c AT_{NC} (yrs) (yrs) (days/yr) (unitless) (unitless)

70 30 30 350 1.0E-05 1

Used to calculate risk-based
soil concentration.

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D _a (cm ² /s)	Diffusivity in water, D _w (cm ² /s)	Henry's law constant at reference temperature, H (atm-m ³ /mol)	Henry's law constant reference temperature, T _R (°C)	Enthalpy of vaporization at the normal boiling point, ΔH _{v,b} (cal/mol)	Normal boiling point, T _B (°K)	Critical temperature, T _c (°K)	Organic carbon partition coefficient, K _{oc} (cm ³ /g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF (μg/m ³) ⁻¹	Reference conc., RfC (mg/m ³)	Physical state at soil temperature, (S,L,G)
8.80E-02	9.80E-06	5.54E-03	25	7.342	353.24	562.16	5.89E+01	1.79E+03	7.8E-06	3.0E-02	L
END											

RESULTS SHEET

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

INCREMENTAL RISK 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 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)
9.53E+02	9.56E+03	9.53E+02	3.09E+05	9.53E+02	NA	NA

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

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

SCROLL
DOWN
TO "END"

END

