

**Soil Cleanup Levels
WAC 173-340-740 & -745**

**Equations and Default Values
for calculating
Concentrations Protective of Human Health**

**Direct Contact Pathway
(Ingestion ONLY)**

Noncarcinogens: Equation 740-1 (Method B) & Equation 745-1 (Method C)

$$\text{Soil Cleanup Level (mg / kg)} = \frac{RfD_o \times ABW \times UCF \times HQ \times AT}{SIR \times AB1 \times EF \times ED}$$

Parameter		Default Value		Units
		Method B	Method C	
Risk				
• Hazard Quotient	HQ	1	1	unitless
Toxicological Parameters				
• Oral Reference Dose	RfD _o	Chemical-specific	Chemical-specific	mg/kg-day
Exposure Parameters – General				
• Average Body Weight	ABW	16	70	kg
• Averaging Time	AT	6	20	years
• Exposure Duration	ED	6	20	years
• Exposure Frequency	EF	1	0.4	unitless
Exposure Parameters – Ingestion				
• Soil Ingestion Rate	SIR	200	50	mg/day
• Gastrointestinal Absorption Fraction	AB1	1.0	1.0	unitless
Unit Conversion Factors				
• Unit Conversion Factor	UCF	1,000,000	1,000,000	mg/kg

NOTE: Default values highlighted in green differ for Method B and Method C.

Carcinogens: Equation 740-2 (Method B) & Equation 745-2 (Method C)

$$\text{Soil Cleanup Level (mg / kg)} = \frac{RISK \times ABW \times AT \times UCF}{CPF_o \times SIR \times AB1 \times ED \times EF}$$

Parameter		Default Value		Units
		Method B	Method C	
Risk				
• Carcinogenic Risk	RISK	1 x 10 ⁻⁶	1 x 10 ⁻⁵	unitless
Toxicological Parameters				
• Oral Cancer Potency Factor	CPF _o	Chemical-specific	Chemical-specific	kg-day/mg
Exposure Parameters – General				
• Average Body Weight	ABW	16	70	kg
• Averaging Time	AT	75	75	years
• Exposure Duration	ED	6	20	years
• Exposure Frequency	EF	1	0.4	unitless
Exposure Parameters – Ingestion				
• Soil Ingestion Rate	SIR	200	50	mg/day
• Gastrointestinal Absorption Fraction	AB1	1.0	1.0	unitless
Unit Conversion Factors				
• Unit Conversion Factor	UCF	1,000,000	1,000,000	mg/kg

NOTE: Default values highlighted in green differ for Method B and Method C.

Soil Cleanup Levels

Summary of Default Values for calculating Concentrations Protective of Human Health

Direct Contact Pathway (Ingestion ONLY)

Parameter		Default Value				Modifiable?	
		Method B		Method C			
		Noncarcinogen	Carcinogen	Noncarcinogen	Carcinogen	Cleanup Level	Remediation Level
Risk – Noncarcinogens							
Hazard Quotient (Single)	HQ	1 (unitless)	—	1 (unitless)	—		
Hazard Index (Total)	HI	1 (unitless)	—	1 (unitless)	—		
Risk – Carcinogens							
Carcinogenic Risk (Single)	RISK	—	1×10^{-6} (unitless)	—	1×10^{-5} (unitless)		
Carcinogenic Risk (Total)	—	—	1×10^{-5} (unitless)	—	1×10^{-5} (unitless)		
Toxicological Parameters							
Oral Reference Dose	RfD _o	Chemical-specific	—	Chemical-specific	—	x	x
Oral Cancer Potency Factor	CPF _o	—	Chemical-specific	—	Chemical-specific	x	x
Exposure Parameters – General							
Average Body Weight	ABW	16 kg	16 kg	70 kg	70 kg		x
Averaging Time	AT	6 years	75 years	20 years	75 years		x
Exposure Duration	ED	6 years	6 years	20 years	20 years		x
Exposure Frequency	EF	1 (unitless)	1 (unitless)	0.4 (unitless)	0.4 (unitless)		x
Exposure Parameters – Ingestion							
Soil Ingestion Rate	SIR	200 mg/day	200 mg/day	50 mg/day	50 mg/day		x
Gastrointestinal Absorption Fraction	AB1	1.0 (unitless)	1.0 (unitless)	1.0 (unitless)	1.0 (unitless)	x	x
Unit Conversion Factors							
Unit Conversion Factor	UCF	1,000,000 mg/kg	1,000,000 mg/kg	1,000,000 mg/kg	1,000,000 mg/kg		

NOTE: Default values highlighted in green differ for Method B and Method C.