

Soil Quality Standards

Soil Quality Standards for Habitat and Agriculture			
Parameter	Unit	Standard Value	Analytical Methods
1. Volatile Organic Compound			
1) Benzene	mg/kg	Not exceed 6.5	Gas Chromatography or Gas Chromatography/Mass Spectrometry (GC/MS) or other methods approved by PCD
2) Carbon Tetrachloride	"	Not exceed 2.5	"
3) 1,2-Dichloroethane	"	Not exceed 3.5	"
4) 1,1-Dichloroethylene	"	Not exceed 0.5	"
5) cis-1,2-Dichloroethylene	"	Not exceed 43	"
6) trans-1,2-Dichloroethylene	"	Not exceed 63	"
7) Dichloromethane	"	Not exceed 89	"
8) Ethylbenzene	"	Not exceed 230	"
9) Styrene	"	Not exceed 1,700	"
10) Tetrachloroethylene	"	Not exceed 57	"
11) Toluene	"	Not exceed 520	"
12) Trichloroethylene	"	Not exceed 28	"
13) 1,1,1-Trichloroethane	"	Not exceed 630	"
14) 1,1,2-Trichloroethane	"	Not exceed 8.4	"
15) Total Xylenes	"	Not exceed 210	"
2. Heavy metals			
1) Arsenic	mg/kg	Not exceed 3.9	Inductively Coupled Plasma-Atomic Emission Spectrometry or Inductively Coupled Plasma-Mass Spectrometry or Atomic Absorption, Furnace Technique or Atomic Absorption, Gaseous Hydride or Atomic Absorption, Borohydride Reduction or other Methods

2) Cadmium and compounds	"	Not exceed 37	Approved by Pollution Control Department Inductively Coupled Plasma-Atomic Emission Spectrometry or Inductively Coupled Plasma-Mass Spectrometry or Atomic Absorption, Direct Aspiration or Atomic Absorption, Furnace Technique or other Methods Approved by Pollution Control Department
3) Hexavalent Chromium	"	Not exceed 300	Coprecipitation or Colorimetric or Chelation/Extraction or other Methods Approved by Pollution Control Department
4) Lead	"	Not exceed 400	Inductively Coupled Plasma-Atomic Emission Spectrometry or Inductively Coupled Plasma-Mass Spectrometry or Atomic Absorption, Direct Aspiration or Atomic Absorption, Furnace Technique or other Methods Approved by Pollution Control Department
5) Manganese and compounds	"	Not exceed 1,800	"
6) Mercury and compounds	"	Not exceed 23	Cold-Vapor Technique or other Methods Approved by Pollution Control Department
7) Nickel, soluble salts	"	Not exceed 1,600	Inductively Coupled Plasma-Atomic Emission Spectrometry or Inductively Coupled Plasma-Mass Spectrometry or Atomic Absorption, Direct Aspiration or Atomic Absorption, Furnace Technique or other Methods Approved by Pollution Control Department
8) Selenium	"	Not exceed 390	Inductively Coupled Plasma-Atomic Emission Spectrometry or Atomic Absorption, Furnace Technique or Atomic Absorption, Gaseous Hydride or Atomic Absorption, Borohydride Reduction or other Methods Approved by Pollution Control Department
3. Pesticides			
1) Atrazine	mg/kg	Not exceed 22	Gas Chromatography or other Methods Approved by Pollution Control Department
2) Chlordane	"	Not exceed 16	Gas Chromatography/Mass Spectrometry (GC/MS) or other Methods Approved by Pollution Control Department
3) 2,4-D	"	Not exceed 690	Gas Chromatography or High Performance Liquid Chromatography/Thermal Extraction/Gas Chromatography/Mass Spectrometry (TE/GC/MS) or other Methods Approved by Pollution Control Department
4) DDT	"	Not exceed 17	Gas Chromatography or Gas Chromatography/Mass Spectrometry (GC/MS) or other Methods Approved by Pollution Control Department
5) Dieldrin	"	Not exceed 0.3	"
6) Heptachlor	"	Not exceed 1.1	"

7) Heptachlor Epoxide	"	Not exceed 0.5	"
8) Lindane	"	Not exceed 4.4	"
9) Pentachlorophenol	"	Not exceed 30	Gas Chromatography or Gas Chromatography/Mass Spectrometry (GC/MS) or Gas Chromatography/Fourier Transform Infrared (GC/FT-IR) Spectrometry or other Methods Approved by Pollution Control Department
4. Other Chemicals			
1) Benzo (a) pyrene	mg/Kg	Not exceed 0.6	Gas Chromatography/Mass Spectrometry (GC/MS), or Thermal Extraction/Gas Chromatography/Mass Spectrometry (TE/GC/MS), or Gas Chromatography/Fourier Transform Infrared (GC/FT-IR) Spectrometry, or other Methods Approved by Pollution Control Department
2) Cyanide and compounds	"	Not exceed 11	Total and Amenable Cyanide: Distillation, or Total Amenable Cyanide (Automated Colorimetric, with off-line Distillation), or Cyanide Extraction Procedure for Solids and Oils or other Methods Approved by Pollution Control Department
3) PCBs	"	Not exceed 2.2	Gas Chromatography or other methods approved by PCD
4) Vinyl Chloride	"	Not exceed 1.5	Gas Chromatography or Gas Chromatography/Mass Spectrometry (GC/MS) or other methods approved by PCD

1 Test Methods of Evaluating Solid Waste, Physical/Chemical Methods (SW-846) (United States Environmental Protection Agency)

2 Soil Sampling and Preservation Methods must be as specified

Soil Quality Standard Soil Quality Standard for Other Purposes			
Parameter	Unit	Standard Value	Analytical Methods
1. Volatile Organic Compounds			
1) Benzene	mg/kg	Not exceed 15	Gas Chromatography or Gas Chromatography/Mass Spectrometry (GC/MS) or other methods approved by PCD
2) Carbon Tetrachloride	"	Not exceed 5.3	"
3) 1,2-Dichloroethane	"	Not exceed 7.6	"
4) 1,1-Dichloroethylene	"	Not exceed	"

		1.2	
5) cis-1,2-Dichloroethylene	"	Not exceed 150	"
6) trans-1,2-Dichloroethylene	"	Not exceed 210	"
7) Dichloromethane	"	Not exceed 210	"
8) Ethylbenzene	"	Not exceed 230	"
9) Styrene	"	Not exceed 1,700	"
10) Tetrachloroethylene	"	Not exceed 190	"
11) Toluene	"	Not exceed 520	"
12) Trichloroethylene	"	Not exceed 61	"
13) 1,1,1-Trichloroethane	"	Not exceed 1,400	"
14) 1,1,2-Trichloroethane	"	Not exceed 19	"
15) Total Xylenes	"	Not exceed 210	"
2. Heavy metals			
1) Arsenic	mg/kg	Not exceed 27	Inductively Coupled Plasma-Atomic Emission Spectrometry or Inductively Coupled Plasma-Mass Spectrometry or Atomic Absorption, Furnace Technique or Atomic Absorption, Gaseous Hydride or Atomic Absorption, Borohydride Reduction or other methods approved by PCD
2) Cadmium and compounds	"	Not exceed 810	Inductively Coupled Plasma-Atomic Emission Spectrometry or Inductively Coupled Plasma-Mass Spectrometry or Atomic Absorption, Direct Aspiration or Atomic Absorption, Furnace Technique or other methods approved by PCD
3) Hexavalent Chromium	"	Not exceed 640	Coprecipitation or Colorimetric or Chelation/Extraction or other methods approved by PCD 11
4) Lead	"	Not exceed750	Inductively Coupled Plasma-Atomic Emission Spectrometry or Inductively Coupled Plasma-Mass Spectrometry or Atomic Absorption, Direct Aspiration or Atomic Absorption, Furnace Technique or other methods approved by PCD
5) Manganese and compounds	"	Not exceed 32,000	"
6) Mercury and compounds	"	Not exceed	Cold-Vapor Technique or other methods

7) Nickel, soluble salts	"	610 Not exceed 41,000	approved by PCD Inductively Coupled Plasma-Atomic Emission Spectrometry or Inductively Coupled Plasma-Mass Spectrometry or Atomic Absorption, Direct Aspiration or Atomic Absorption, Furnace Technique or other methods approved by PCD
8) Selenium	"	Not exceed 10,000	Inductively Coupled Plasma-Atomic Emission Spectrometry or Atomic Absorption, Furnace Technique or Atomic Absorption, Gaseous Hydride or Atomic Absorption, Borohydride Reduction or other methods approved by PCD
3. Pesticides			
1) Atrazine	mg/kg	Not exceed 110	Gas Chromatography or other methods approved by PCD
2) Chlordane	"	Not exceed 110	Gas Chromatography/Mass Spectrometry (GC/MS) or other methods approved by PCD
3) 2,4-D	"	Not exceed 12,000	Gas Chromatography or High Performance Liquid Chromatography/Thermal Extraction/Gas Chromatography/Mass Spectrometry (TE/GC/MS) or other methods approved by PCD
4) DDT	"	Not exceed 120	Gas Chromatography or Gas Chromatography/Mass Spectrometry (GC/MS) or other methods approved by PCD
5) Dieldrin	"	Not exceed 1.5	"
6) Heptachlor	"	Not exceed 5.5	"
7) Heptachlor Epoxide	"	Not exceed 2.7	"
8) Lindane	"	Not exceed 29	"
9) Pentachlorophenol	"	Not exceed 110	Gas Chromatography or Gas Chromatography/Mass Spectrometry (GC/MS) or Gas Chromatography/Fourier Transform Infrared (GC/FT-IR) Spectrometry or other methods approved by PCD
4. Others			
1) Benzo (a) pyrene	mg/kg	Not exceed 2.9	Gas Chromatography/Mass Spectrometry (GC/MS) or Thermal Extraction/Gas Chromatography/Mass Spectrometry (TE/GC/MS) or Gas Chromatography/Fourier Transform Infrared (GC/FT-IR) Spectrometry or other methods approved by PCD
2) Cyanide and compounds	"	Not exceed 35	Total and Amenable Cyanide: Distillation or Total Amenable Cyanide (Automated Colorimetric, with off-line Distillation) or Cyanide Extraction Procedure for Solids and Oils or other methods approved by PCD

3) PCBs	"	Not exceed10	Gas Chromatography or other methods approved by PCD
4) Vinyl Chloride	"	Not exceed 8.3	Purge and Trap Gas Chromatography or Purge and Trap Gas Chromatography Mass Spectrometry or other methods approved by PCD

1 Test Methods of Evaluating Solid Waste, Physical/Chemical Methods (SW-846) (United States Environmental Protection Agency)

2 Soil Sampling and Preservation Methods must be as specified

Soil Sample Preservation Method			
Parameter	Container	Preservative	Holding Time
1. Volatile Organic Compounds	Glass	Fridge 4° ±2 °C	14 Days
2) Heavy metals (Except Hexavalent Chromium and Mercury and compounds)	Plastic/Glass	"	180 Days
3) Hexavalent Chromium	"	"	- 30 Days before sample preparation -4 Days after sample preparation
4) Mercury and compounds	"	"	28 Days
5) Pesticides	Glass	"	- 14 Days before sample preparation - 40 Days after sample preparation
6) Benzo (a) pyrene	"	"	- 14 Days before sample preparation - 40 Days after sample preparation
7) Cyanide and compounds	Plastic/Glass	"	14 Days before sample preparation
8) PCBs	Glass	"	- 14 Days before sample preparation - 40 Days after sample preparation
9) Vinyl Chloride	"	"	14 Days

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