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The Risk Assessment Information System Compendium of Ecological Screening Benchmarks for Chemicals and Radionuclides (2025) (Volume II – Chemicals for Soil)

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OAK RIDGE National Laboratory

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Environmental Sciences Division

THE RISK ASSESSMENT INFORMATION SYSTEM COMPENDIUM OF ECOLOGICAL SCREENING BENCHMARKS FOR CHEMICALS AND RADIONUCLIDES (2025) (VOLUME II – CHEMICALS FOR SOIL)

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2. CHEMICAL BENCHMARKS FOR SOIL

Table 1: Benchmark Values for Acenaphthene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
83−32−9	Canada	Soil Residential/Parkland	Not specified		36
83−32−9	Canada	Soil Industrial	Not specified		36
83−32−9	Canada	Soil Commercial	Not specified		36
83−32−9	Canada	Soil Agricultural	Not specified		36
83−32−9	EPA Region 4	Soil Plants	Not specified	0.25	
83−32−9	EPA Region 4	Soil Invertebrates	Not specified	0.38	
83−32−9	EPA Region 4	Soil All Receptors	Not specified	29	
83−32−9	EPA Region 4	Soil Mammals	Not specified	130	
83−32−9	EPA Region 5	EPA RCRA Soil	Not specified	682	
83−32−9	Florida	Soil Leachability Freshwater and Marine	Not specified	0.3	
83−32−9	LANL ECORISK	Soil No Effect ESL	Generic Plant	0.25	
83−32−9	LANL ECORISK	Soil Low Effect ESL	Generic Plant	2	
83−32−9	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	130	
83−32−9	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	160	
83−32−9	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	530	
83−32−9	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	1300	
83−32−9	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1600	
83−32−9	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	5300	
83−32−9	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	29000	
83−32−9	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	290000	
83−32−9	ORNL	Soil Screening − Plants	Not specified	20	

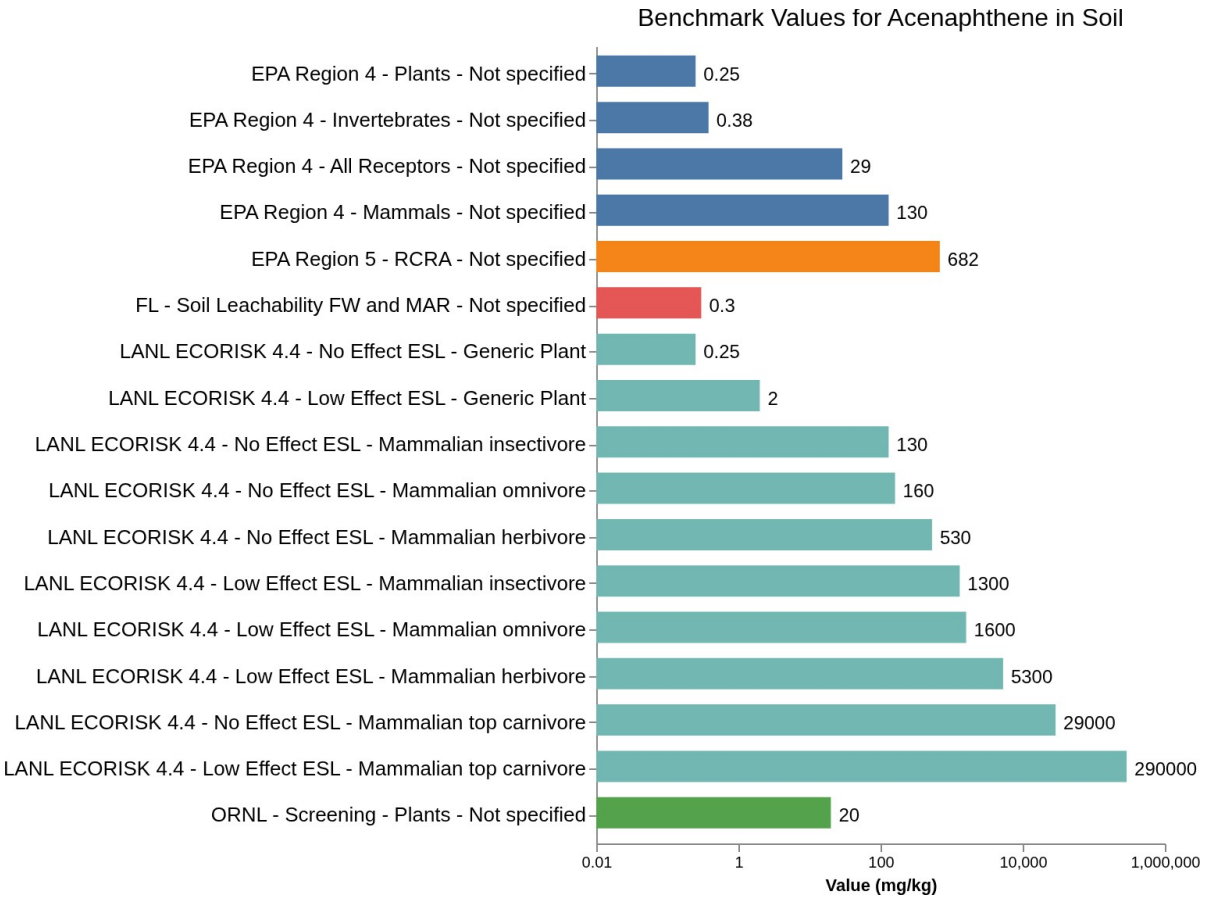

Benchmark Values for Acenaphthene in Soil
EPA Region 4 - Plants - Not specified
0.25
EPA Region 4 - Invertebrates - Not specified
0.38
EPA Region 4 - All Receptors - Not specified
29
EPA Region 4 - Mammals - Not specified
130
EPA Region 5 - RCRA - Not specified
682
FL - Soil Leachability FW and MAR - Not specified
0.3
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
0.25
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
2
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
130
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
160
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
530
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
1300
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
1600
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
5300
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
29000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
290000
ORNL - Screening - Plants - Not specified
20
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 2: Benchmark Values for Acenaphthylene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
208−96−8	Canada	Soil Residential/Parkland	Not specified		36
208−96−8	Canada	Soil Agricultural	Not specified		36
208−96−8	Canada	Soil Commercial	Not specified		36
208−96−8	Canada	Soil Industrial	Not specified		36
208−96−8	EPA Region 4	Soil Invertebrates	Not specified	0.34	
208−96−8	EPA Region 4	Soil All Receptors	Not specified	29	
208−96−8	EPA Region 4	Soil Mammals	Not specified	120	
208−96−8	EPA Region 5	EPA RCRA Soil	Not specified	682	
208−96−8	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	120	
208−96−8	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	160	
208−96−8	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	540	
208−96−8	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	1200	
208−96−8	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1600	
208−96−8	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	5400	
208−96−8	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	28000	
208−96−8	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	280000	

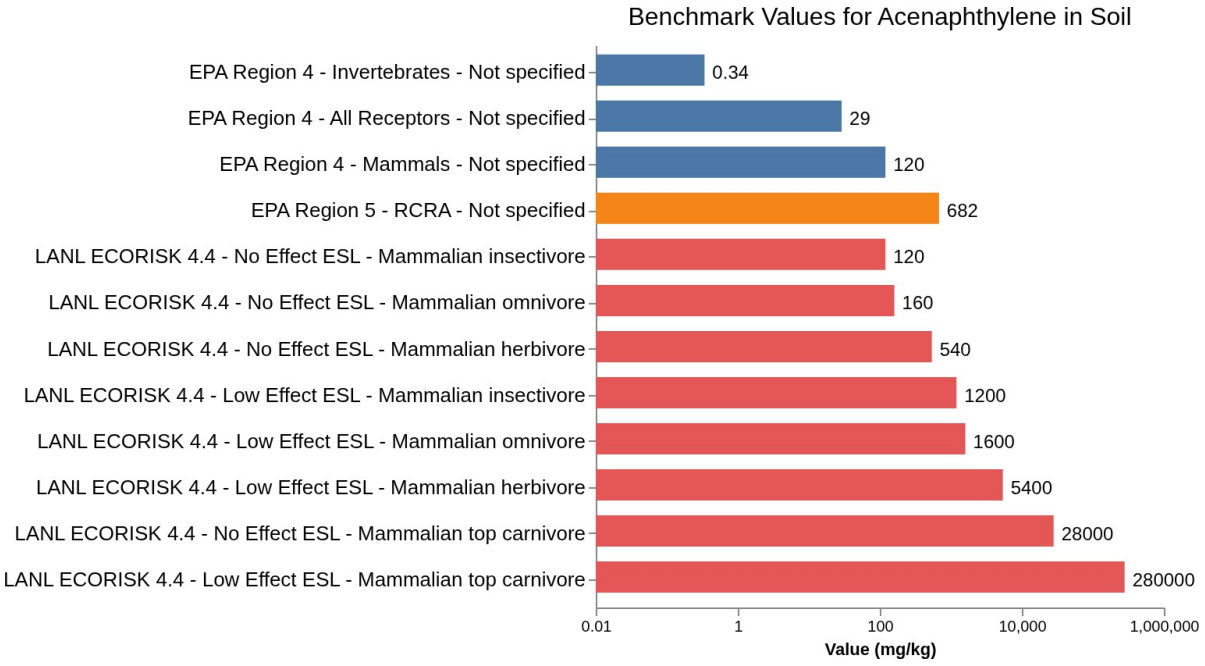


Table 3: Benchmark Values for Acephate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
30560−19−1	Florida	Soil Leachability Freshwater and Marine	Not specified	0.8

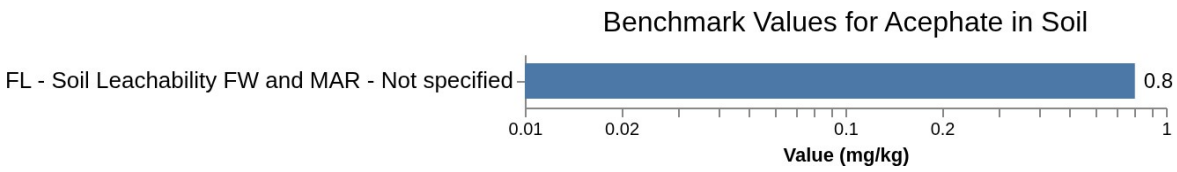


Table 4: Benchmark Values for Acetic acid, 2−(4−Chloro−2−methylphenoxy) (MCPA) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
94−74−6	Dutch Soil Protection Act	Background	Not specified	0.55	71
94−74−6	Dutch Soil Protection Act	Intervention Value	Not specified	4.00	
94−74−6	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	95.00	
94−74−6	Florida	Soil Leachability Freshwater and Marine	Not specified	0.40	

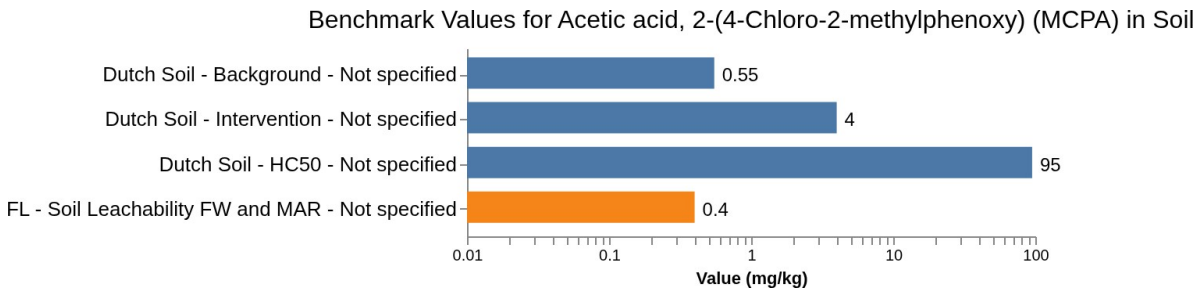


Table 5: Benchmark Values for Acetone in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
67−64−1	EPA Region 4	Soil Invertebrates	Not specified	0.04
67−64−1	EPA Region 4	Soil All Receptors	Not specified	1.20
67−64−1	EPA Region 4	Soil Mammals	Not specified	1.20
67−64−1	EPA Region 4	Soil Avians	Not specified	7.50
67−64−1	EPA Region 5	EPA RCRA Soil	Not specified	2.50
67−64−1	Florida	Soil Leachability Freshwater and Marine	Not specified	6.80
67−64−1	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	1.20
67−64−1	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	1.60
67−64−1	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	6.30
67−64−1	LANL ECORISK	Soil No Effect ESL	Avian herbivore	7.50
67−64−1	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	8.00
67−64−1	LANL ECORISK	Soil No Effect ESL	Avian omnivore	14.00
67−64−1	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	15.00
67−64−1	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	75.00
67−64−1	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	79.00
67−64−1	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	140.00
67−64−1	LANL ECORISK	Soil No Effect ESL	Avian insectivore	170.00
67−64−1	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	840.00
67−64−1	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	1700.00
67−64−1	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	7800.00
67−64−1	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	8400.00
67−64−1	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	39000.00
67−64−1	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	66000.00
67−64−1	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	660000.00

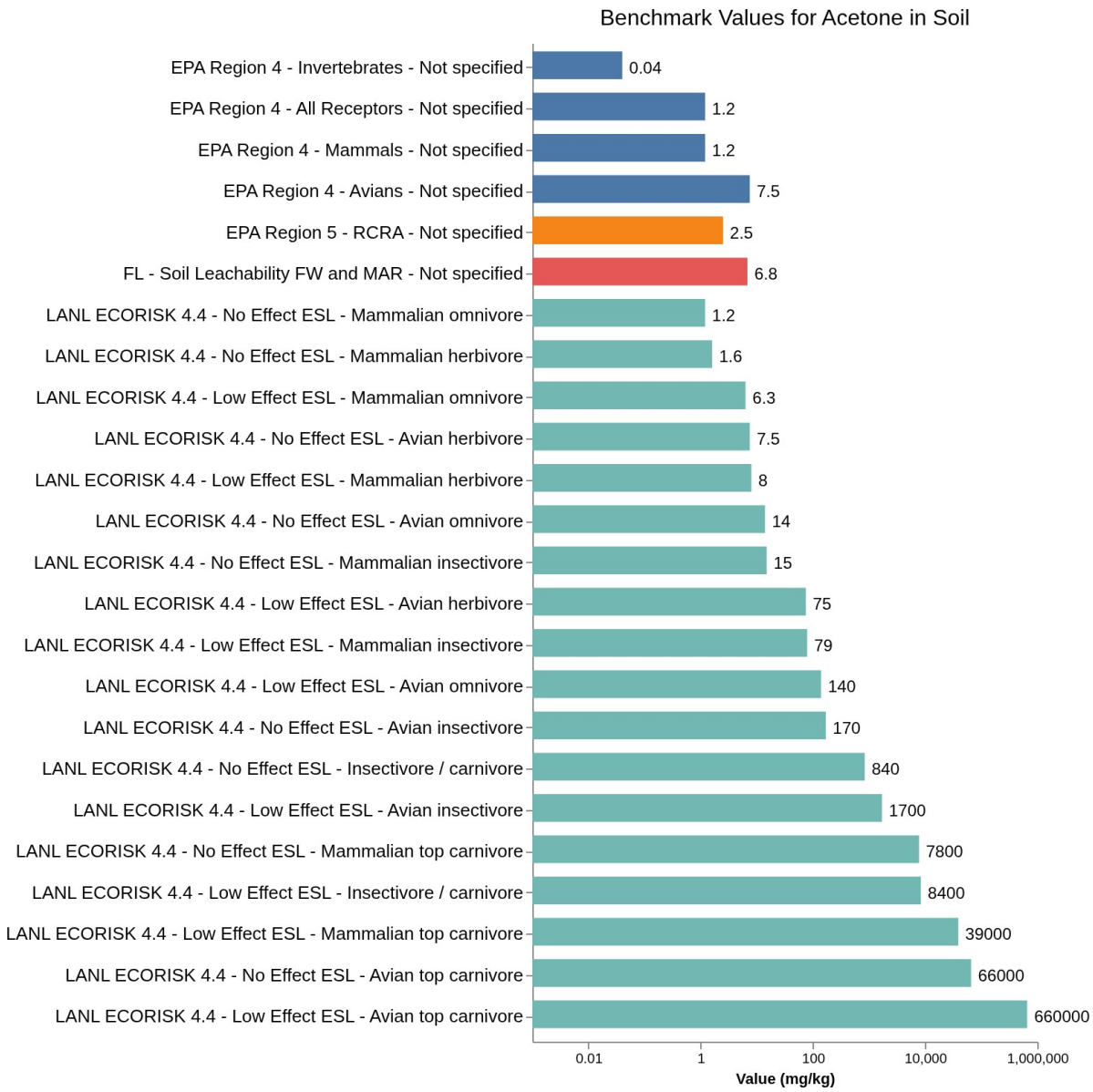


Table 6: Benchmark Values for Acetonitrile in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
75−05−8	EPA Region 5	EPA RCRA Soil	Not specified	1.37

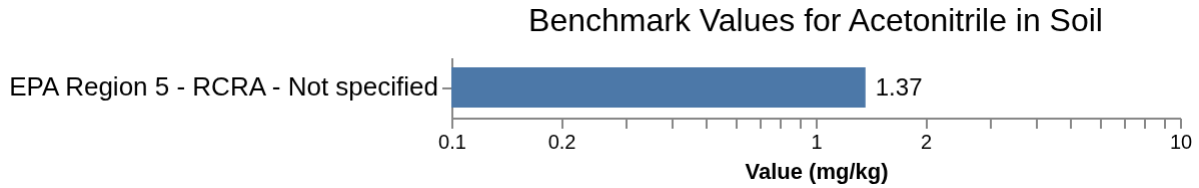


Table 7: Benchmark Values for Acetophenone in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
98−86−2	EPA Region 5	EPA RCRA Soil	Not specified	300
98−86−2	Florida	Soil Leachability Freshwater and Marine	Not specified	44

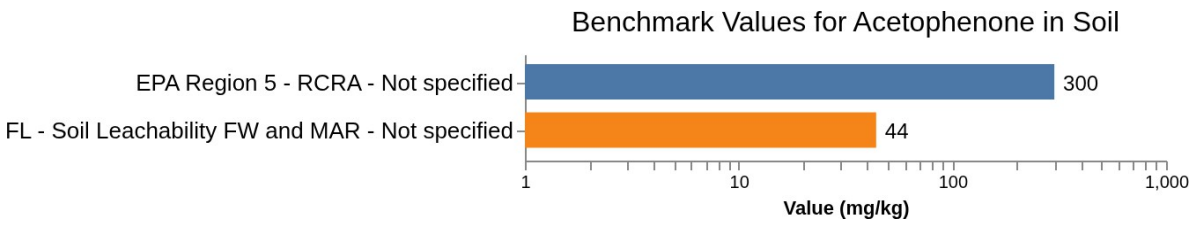


Table 8: Benchmark Values for Acetylaminofluorene, 2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
53−96−3	EPA Region 5	EPA RCRA Soil	Not specified	0.596

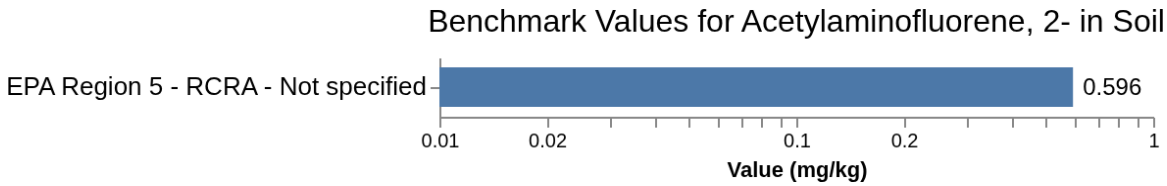


Table 9: Benchmark Values for Acrolein in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
107−02−8	EPA Region 4	Soil All Receptors	Not specified	0.0003
107−02−8	EPA Region 4	Soil Invertebrates	Not specified	0.0003
107−02−8	EPA Region 4	Soil Mammals	Not specified	5.2700
107−02−8	EPA Region 5	EPA RCRA Soil	Not specified	5.2700
107−02−8	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0020

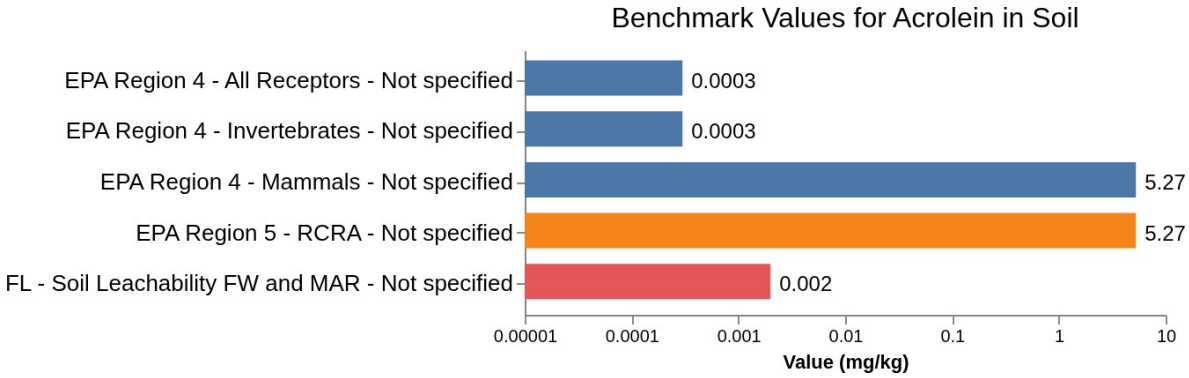


Table 10: Benchmark Values for Acrylamide in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
79−06−1	Florida	Soil Leachability Freshwater and Marine	Not specified	0.001

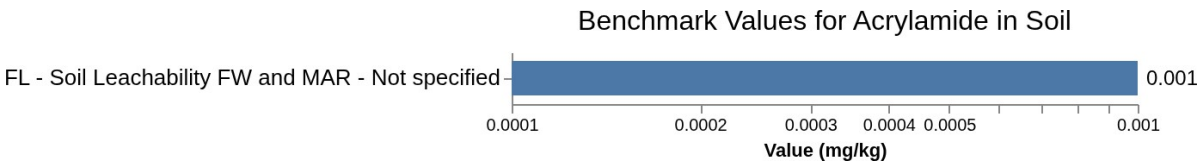


Table 11: Benchmark Values for Acrylonitrile in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
107−13−1	Dutch Soil Protection Act	Background	Not specified	0.1000	71
107−13−1	Dutch Soil Protection Act	Intervention Value	Not specified	0.1000	73
107−13−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	1.3000	
107−13−1	EPA Region 5	EPA RCRA Soil	Not specified	0.0239	
107−13−1	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0010	
107−13−1	ORNL	Soil Screening − Microbes	Not specified	1000.0000	

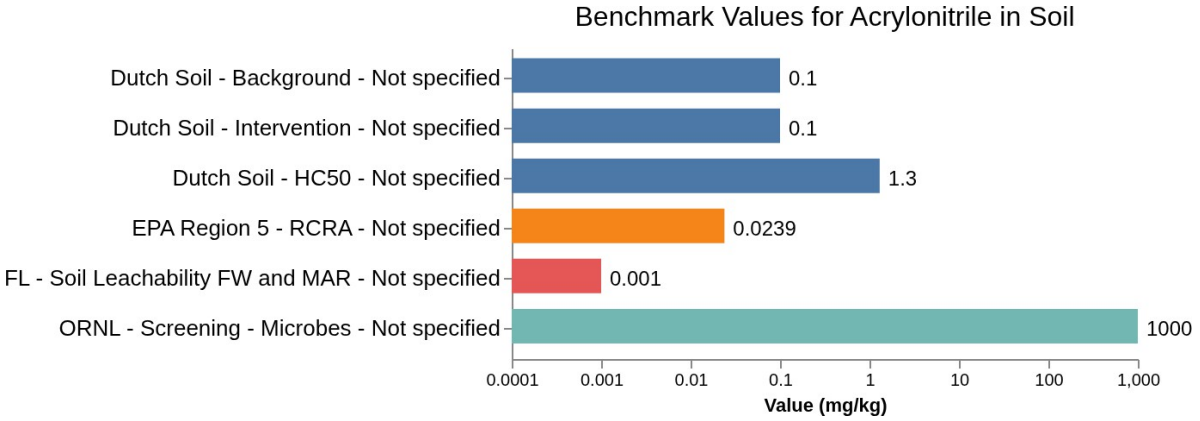


Table 12: Benchmark Values for Alachlor in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
15972−60−8	Florida	Soil Leachability Freshwater and Marine	Not specified	0.005

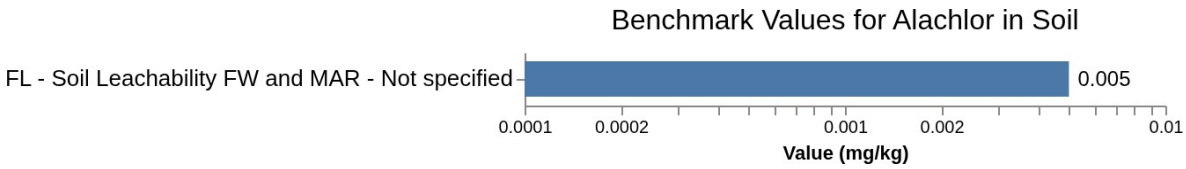


Table 13: Benchmark Values for Aldicarb in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
116−06−3	Florida	Soil Leachability Freshwater and Marine	Not specified	0.004

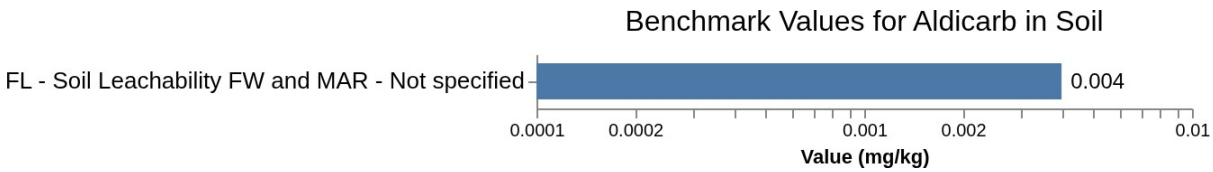


Table 14: Benchmark Values for Aldrin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
309−00−2	Dutch Soil Protection Act	Intervention Value	Not specified	0.32000	
309−00−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	0.35000	
309−00−2	EPA Region 4	Soil All Receptors	Not specified	0.03000	7
309−00−2	EPA Region 4	Soil Invertebrates	Not specified	0.03000	7
309−00−2	EPA Region 4	Soil Mammals	Not specified	0.03700	7
309−00−2	EPA Region 5	EPA RCRA Soil	Not specified	0.00332	
309−00−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.01000	
309−00−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.03700	
309−00−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.07400	
309−00−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	0.18000	
309−00−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	0.37000	
309−00−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	12.00000	
309−00−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	13.00000	
309−00−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	60.00000	
309−00−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	66.00000	
309−00−2	Washington	Soil Wildlife	Not specified	0.10000	

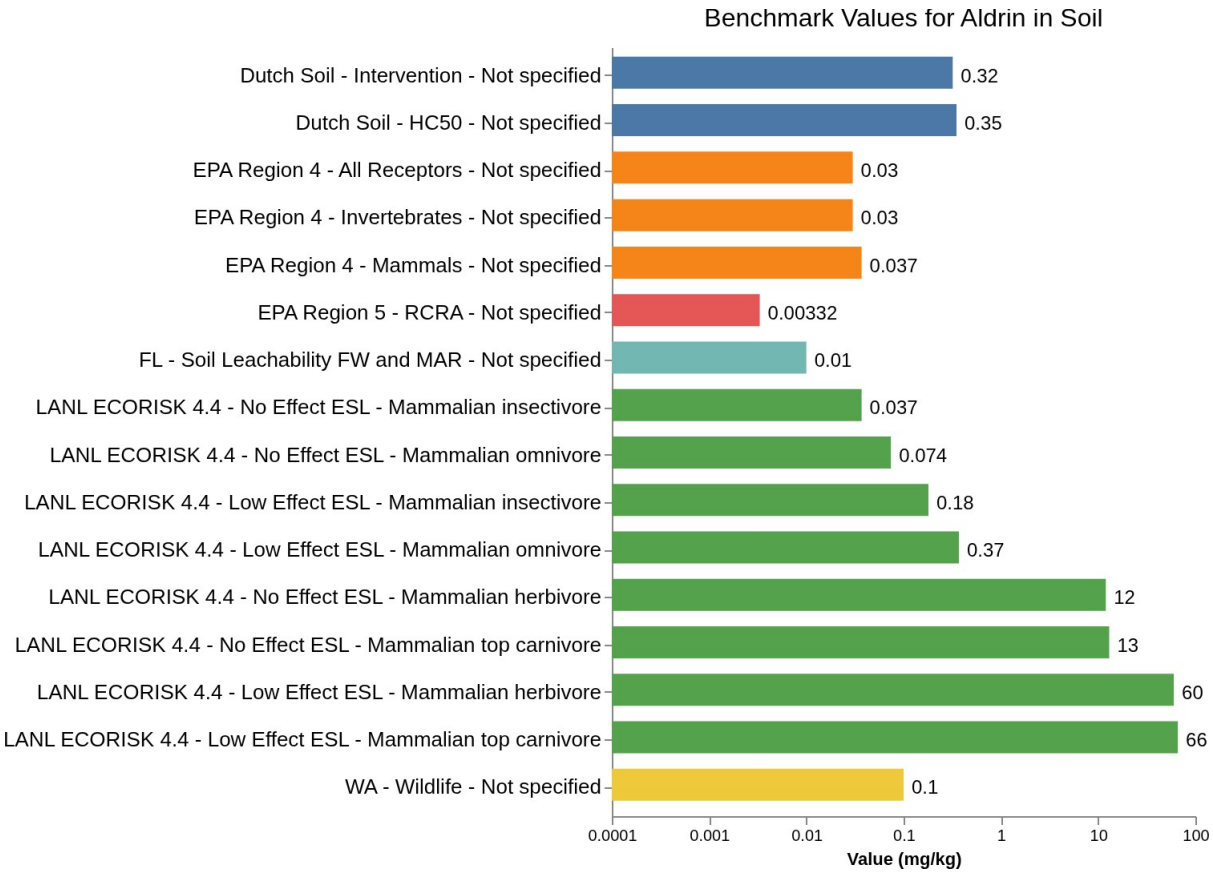

Benchmark Values for Aldrin in Soil
Dutch Soil - Intervention - Not specified
0.32
Dutch Soil - HC50 - Not specified
0.35
EPA Region 4 - All Receptors - Not specified
0.03
EPA Region 4 - Invertebrates - Not specified
0.03
EPA Region 4 - Mammals - Not specified
0.037
EPA Region 5 - RCRA - Not specified
0.00332
FL - Soil Leachability FW and MAR - Not specified
0.01
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
0.037
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
0.074
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
0.18
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
0.37
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
12
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
13
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
60
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
66
WA - Wildlife - Not specified
0.1
0.0001
0.001
0.01
0.1
1
10
100
Value (mg/kg)

Table 15: Benchmark Values for Aliphatics nonchlorinated (each) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−16−0	Canada	Soil Agricultural	Not specified	0.3

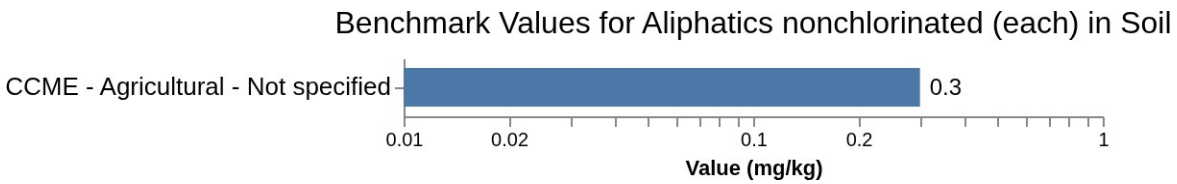


Table 16: Benchmark Values for Allyl Alcohol in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
107−18−6	Florida	Soil Leachability Freshwater and Marine	Not specified	0.02

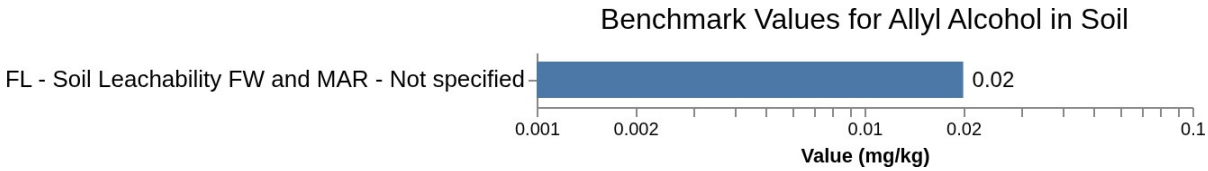


Table 17: Benchmark Values for Allyl Chloride in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
107−05−1	EPA Region 5	EPA RCRA Soil	Not specified	0.0134

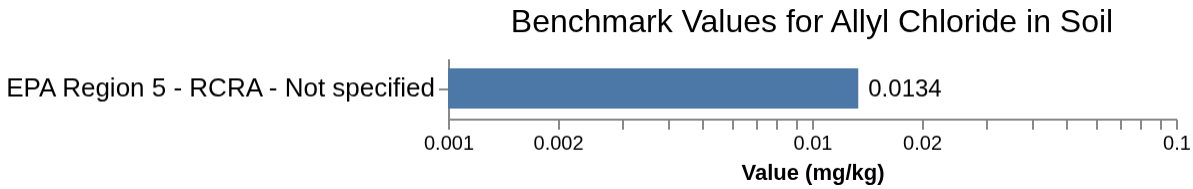


Table 18: Benchmark Values for Aluminum in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
7429−90−5	EPA Region 4	Soil Plants	Not specified		231
7429−90−5	EPA Region 4	Soil Invertebrates	Not specified		231
7429−90−5	EPA Region 4	Soil All Receptors	Not specified		231
7429−90−5	EPA Region 6	Soil Plants	Not specified		15
7429−90−5	EPA Region 6	Soil Invertebrates	Not specified		15
7429−90−5	LANL ECORISK	Soil Low Effect ESL	Generic Plant		182
7429−90−5	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore		182
7429−90−5	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore		182
7429−90−5	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore		182
7429−90−5	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore		182
7429−90−5	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore		182
7429−90−5	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate		182
7429−90−5	LANL ECORISK	Soil No Effect ESL	Avian herbivore		182
7429−90−5	LANL ECORISK	Soil No Effect ESL	Avian insectivore		182
7429−90−5	LANL ECORISK	Soil No Effect ESL	Avian omnivore		182
7429−90−5	LANL ECORISK	Soil No Effect ESL	Avian top carnivore		182
7429−90−5	LANL ECORISK	Soil No Effect ESL	Generic Plant		182
7429−90−5	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore		182
7429−90−5	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore		182
7429−90−5	LANL ECORISK	Soil Low Effect ESL	Avian omnivore		182
7429−90−5	LANL ECORISK	Soil Low Effect ESL	Avian insectivore		182
7429−90−5	LANL ECORISK	Soil Low Effect ESL	Avian herbivore		182
7429−90−5	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore		182
7429−90−5	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore		182
7429−90−5	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate		182
7429−90−5	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore		182
7429−90−5	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore		182
7429−90−5	ORNL	Soil Screening − Plants	Not specified	50	
7429−90−5	ORNL	Soil Screening − Microbes	Not specified	600	

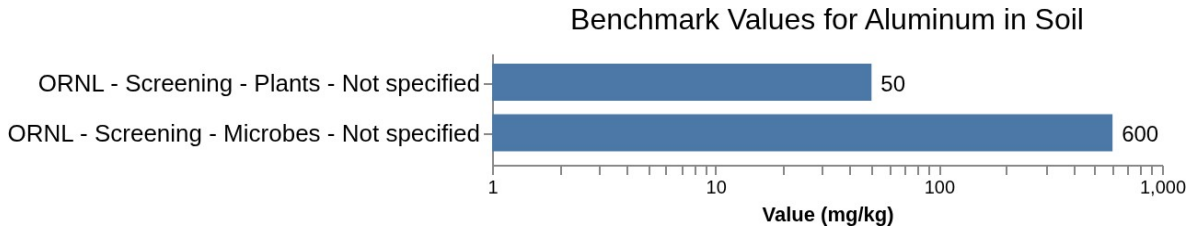


Table 19: Benchmark Values for Ametryn in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
834−12−8	Florida	Soil Leachability Freshwater and Marine	Not specified	0.08

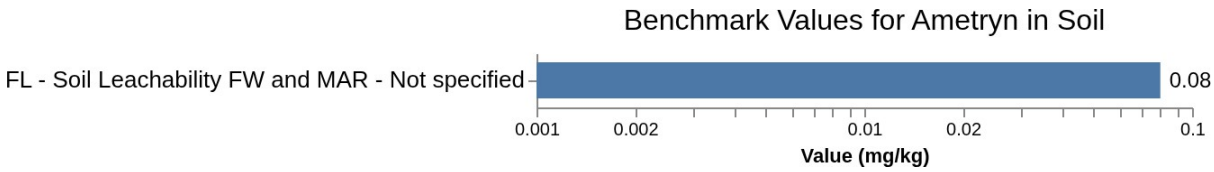


Table 20: Benchmark Values for Aminobiphenyl, 4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
92−67−1	EPA Region 5	EPA RCRA Soil	Not specified	0.00305

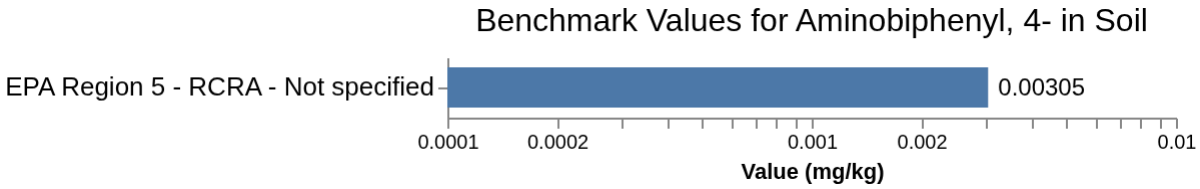


Table 21: Benchmark Values for Aniline in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
62−53−3	EPA Region 5	EPA RCRA Soil	Not specified	0.0568
62−53−3	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0200

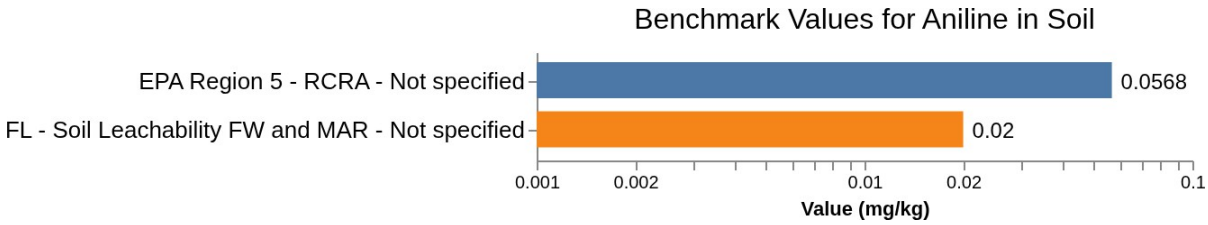


Table 22: Benchmark Values for Anthracene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
120−12−7	Canada	Soil Agricultural	Not specified		36
120−12−7	Canada	Soil Commercial	Not specified		36
120−12−7	Canada	Soil Industrial	Not specified		36
120−12−7	Canada	Soil Residential/Parkland	Not specified		36
120−12−7	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	1.6	
120−12−7	EPA Region 4	Soil Invertebrates	Not specified	0.0015	
120−12−7	EPA Region 4	Soil Plants	Not specified	6.8	
120−12−7	EPA Region 4	Soil All Receptors	Not specified	29	
120−12−7	EPA Region 4	Soil Mammals	Not specified	210	
120−12−7	EPA Region 5	EPA RCRA Soil	Not specified	1480	
120−12−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.4	
120−12−7	LANL ECORISK	Soil No Effect ESL	Generic Plant	6.8	
120−12−7	LANL ECORISK	Soil Low Effect ESL	Generic Plant	9	
120−12−7	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	210	
120−12−7	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	300	
120−12−7	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	1200	
120−12−7	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	2100	
120−12−7	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	3000	
120−12−7	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	12000	
120−12−7	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	38000	
120−12−7	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	380000	

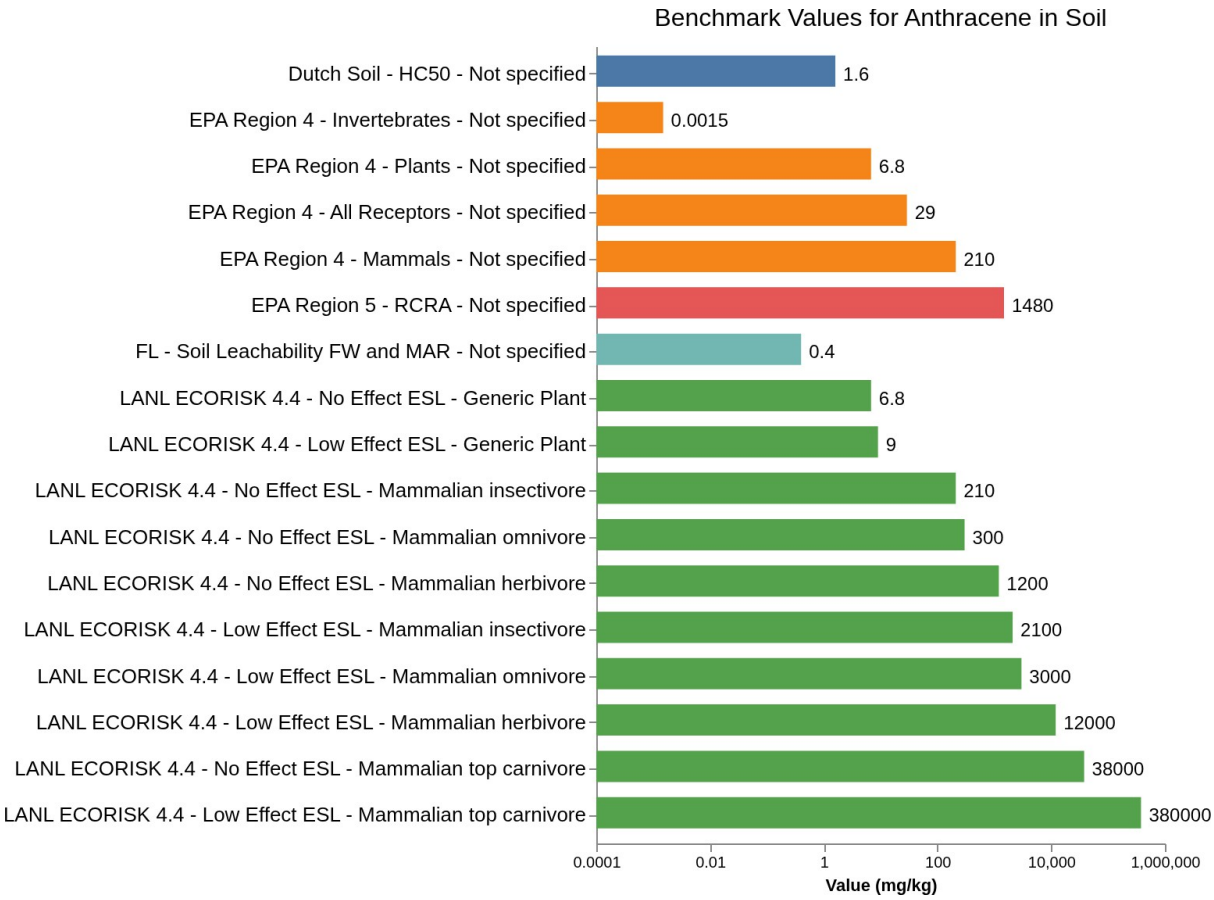

Benchmark Values for Anthracene in Soil
Dutch Soil - HC50 - Not specified
1.6
EPA Region 4 - Invertebrates - Not specified
0.0015
EPA Region 4 - Plants - Not specified
6.8
EPA Region 4 - All Receptors - Not specified
29
EPA Region 4 - Mammals - Not specified
210
EPA Region 5 - RCRA - Not specified
1480
FL - Soil Leachability FW and MAR - Not specified
0.4
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
6.8
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
9
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
210
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
300
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
1200
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
2100
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
3000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
12000
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
38000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
380000
0.0001
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 23: Benchmark Values for Antimony (metallic) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
7440−36−0	Canada	Soil Agricultural	Not specified	20.000	
7440−36−0	Canada	Soil Residential/Parkland	Not specified	20.000	
7440−36−0	Canada	Soil Commercial	Not specified	40.000	
7440−36−0	Canada	Soil Industrial	Not specified	40.000	
7440−36−0	Dutch Soil Protection Act	Background	Not specified	4.000	72
7440−36−0	Dutch Soil Protection Act	Intervention Value	Not specified	22.000	
7440−36−0	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	2894.000	
7440−36−0	EPA ECO−SSL	Mammalian	Not specified	0.270	
7440−36−0	EPA ECO−SSL	Soil Invertebrates	Not specified	78.000	
7440−36−0	EPA Region 4	Soil Mammals	Not specified	0.270	
7440−36−0	EPA Region 4	Soil All Receptors	Not specified	0.270	
7440−36−0	EPA Region 4	Soil Plants	Not specified	5.000	
7440−36−0	EPA Region 4	Soil Invertebrates	Not specified	78.000	
7440−36−0	EPA Region 5	EPA RCRA Soil	Not specified	0.142	
7440−36−0	EPA Region 6	Soil Plants	Not specified	5.000	
7440−36−0	EPA Region 6	Soil Invertebrates	Not specified	78.000	
7440−36−0	Florida	Soil Leachability Freshwater and Marine	Not specified	3900.000	211
7440−36−0	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	2.300	
7440−36−0	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	2.700	
7440−36−0	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	7.900	
7440−36−0	LANL ECORISK	Soil No Effect ESL	Generic Plant	11.000	
7440−36−0	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	23.000	
7440−36−0	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	27.000	
7440−36−0	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	46.000	
7440−36−0	LANL ECORISK	Soil Low Effect ESL	Generic Plant	58.000	
7440−36−0	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	78.000	
7440−36−0	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	79.000	
7440−36−0	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	460.000	
7440−36−0	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	780.000	
7440−36−0	ORNL	Soil Screening − Plants	Not specified	5.000	
7440−36−0	UK	Soil Screening Values	Not specified	37.000	

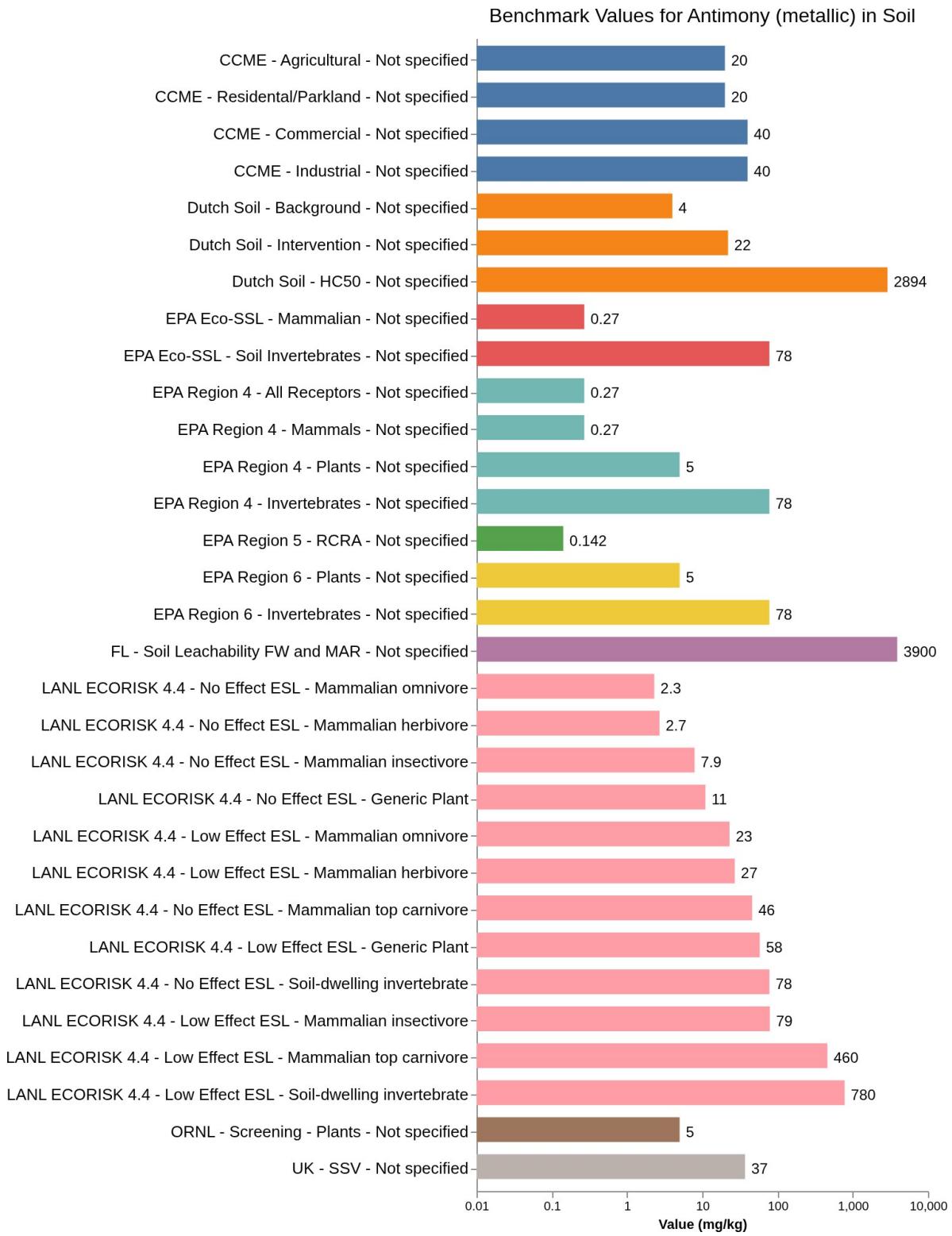

Benchmark Values for Antimony (metallic) in Soil
CCME - Agricultural - Not specified
20
CCME - Residental/Parkland - Not specified
20
CCME - Commercial - Not specified
40
CCME - Industrial - Not specified
40
Dutch Soil - Background - Not specified
4
Dutch Soil - Intervention - Not specified
22
Dutch Soil - HC50 - Not specified
2894
EPA Eco-SSL - Mammalian - Not specified
0.27
EPA Eco-SSL - Soil Invertebrates - Not specified
78
EPA Region 4 - All Receptors - Not specified
0.27
EPA Region 4 - Mammals - Not specified
0.27
EPA Region 4 - Plants - Not specified
5
EPA Region 4 - Invertebrates - Not specified
78
EPA Region 5 - RCRA - Not specified
0.142
EPA Region 6 - Plants - Not specified
5
EPA Region 6 - Invertebrates - Not specified
78
FL - Soil Leachability FW and MAR - Not specified
3900
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
2.3
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
2.7
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
7.9
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
11
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
23
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
27
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
46
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
58
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
78
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
79
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
460
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
780
ORNL - Screening - Plants - Not specified
5
UK - SSV - Not specified
37
0.01
0.1
1
10
100
1,000
10,000
Value (mg/kg)

Table 24: Benchmark Values for Aroclor 1016 in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
12674−11−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	1.1
12674−11−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	2.0
12674−11−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	3.1
12674−11−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	5.9
12674−11−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	48.0
12674−11−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	130.0
12674−11−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	250.0
12674−11−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	720.0

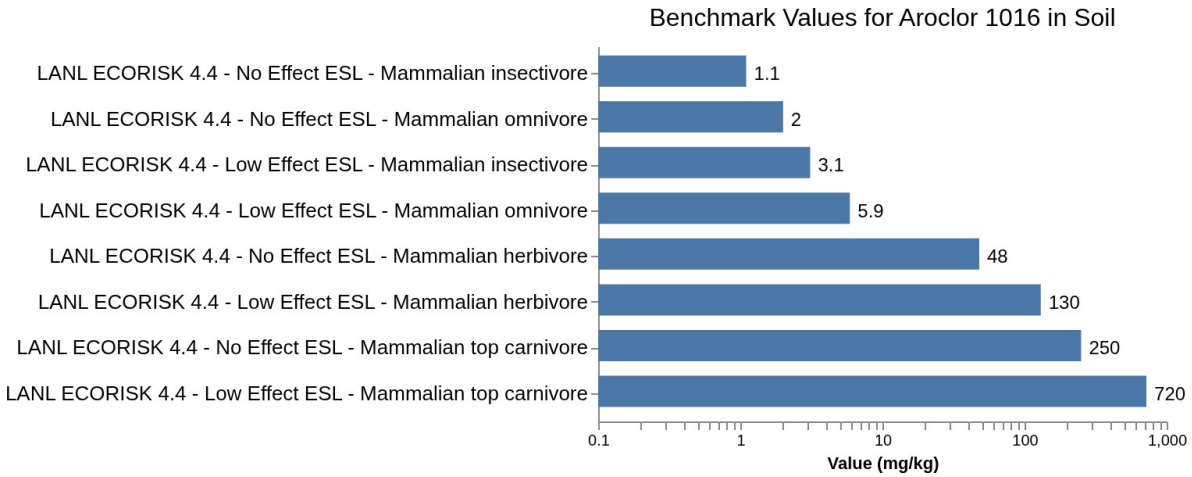


Table 25: Benchmark Values for Aroclor 1242 in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
53469−21−9	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.26
53469−21−9	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.39
53469−21−9	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.51
53469−21−9	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.75
53469−21−9	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	1.00
53469−21−9	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	1.20
53469−21−9	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	1.50
53469−21−9	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	1.90
53469−21−9	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	3.00
53469−21−9	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	4.70
53469−21−9	LANL ECORISK	Soil No Effect ESL	Avian herbivore	6.00
53469−21−9	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	22.00
53469−21−9	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	27.00
53469−21−9	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	40.00
53469−21−9	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	100.00
53469−21−9	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	110.00
53469−21−9	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	150.00
53469−21−9	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	400.00

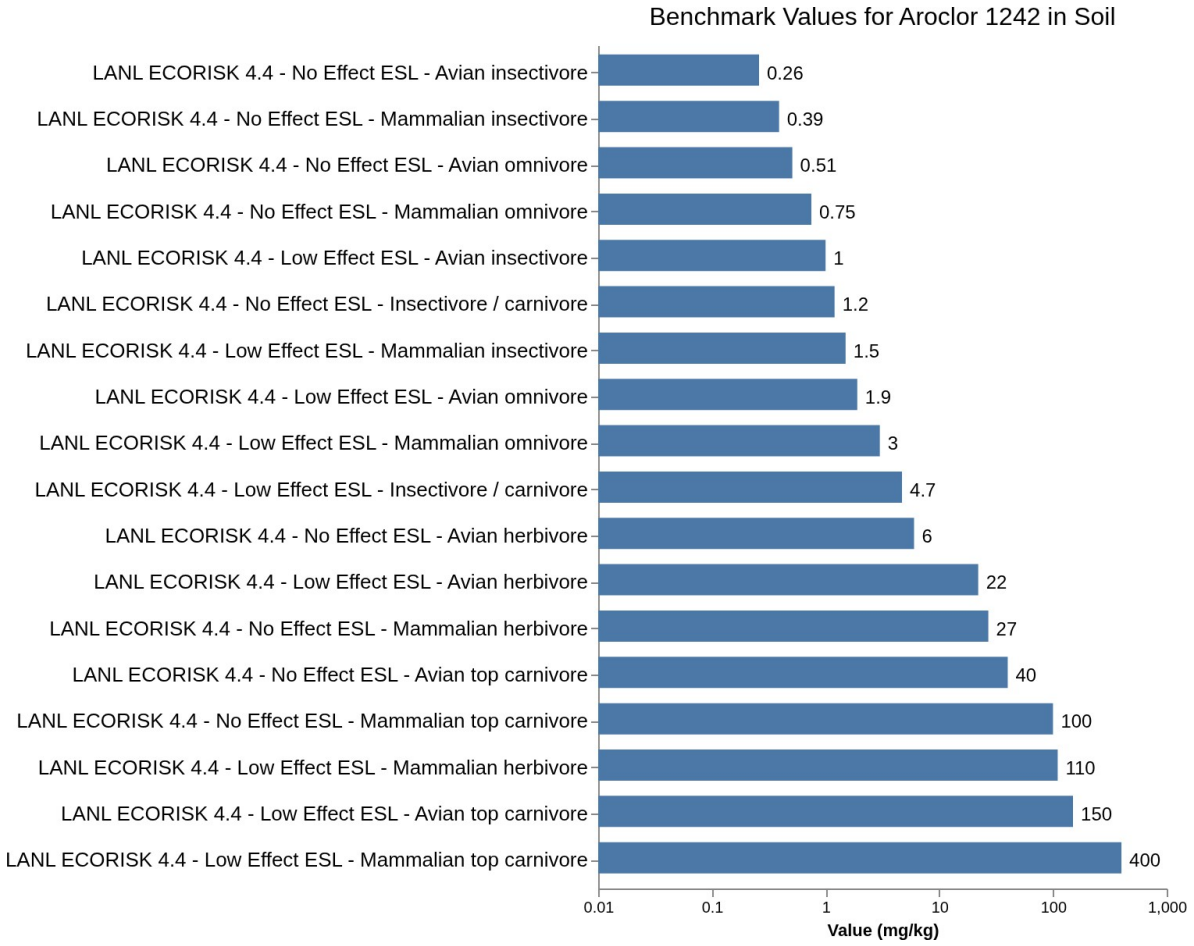

Benchmark Values for Aroclor 1242 in Soil
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
0.26
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
0.39
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
0.51
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
0.75
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
1
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
1.2
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
1.5
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
1.9
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
3
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
4.7
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
6
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
22
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
27
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
40
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
100
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
110
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
150
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
400
0.01
0.1
1
10
100
1,000
Value (mg/kg)

Table 26: Benchmark Values for Aroclor 1248 in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
12672−29−6	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.0073
12672−29−6	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.0140
12672−29−6	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.0410
12672−29−6	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	0.0730
12672−29−6	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.0780
12672−29−6	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	0.1400
12672−29−6	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	0.1900
12672−29−6	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	0.4100
12672−29−6	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	0.5300
12672−29−6	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	0.7800
12672−29−6	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.9400
12672−29−6	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	1.9000
12672−29−6	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	1.9000
12672−29−6	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	5.3000
12672−29−6	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	6.3000
12672−29−6	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	9.4000
12672−29−6	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	19.0000
12672−29−6	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	63.0000

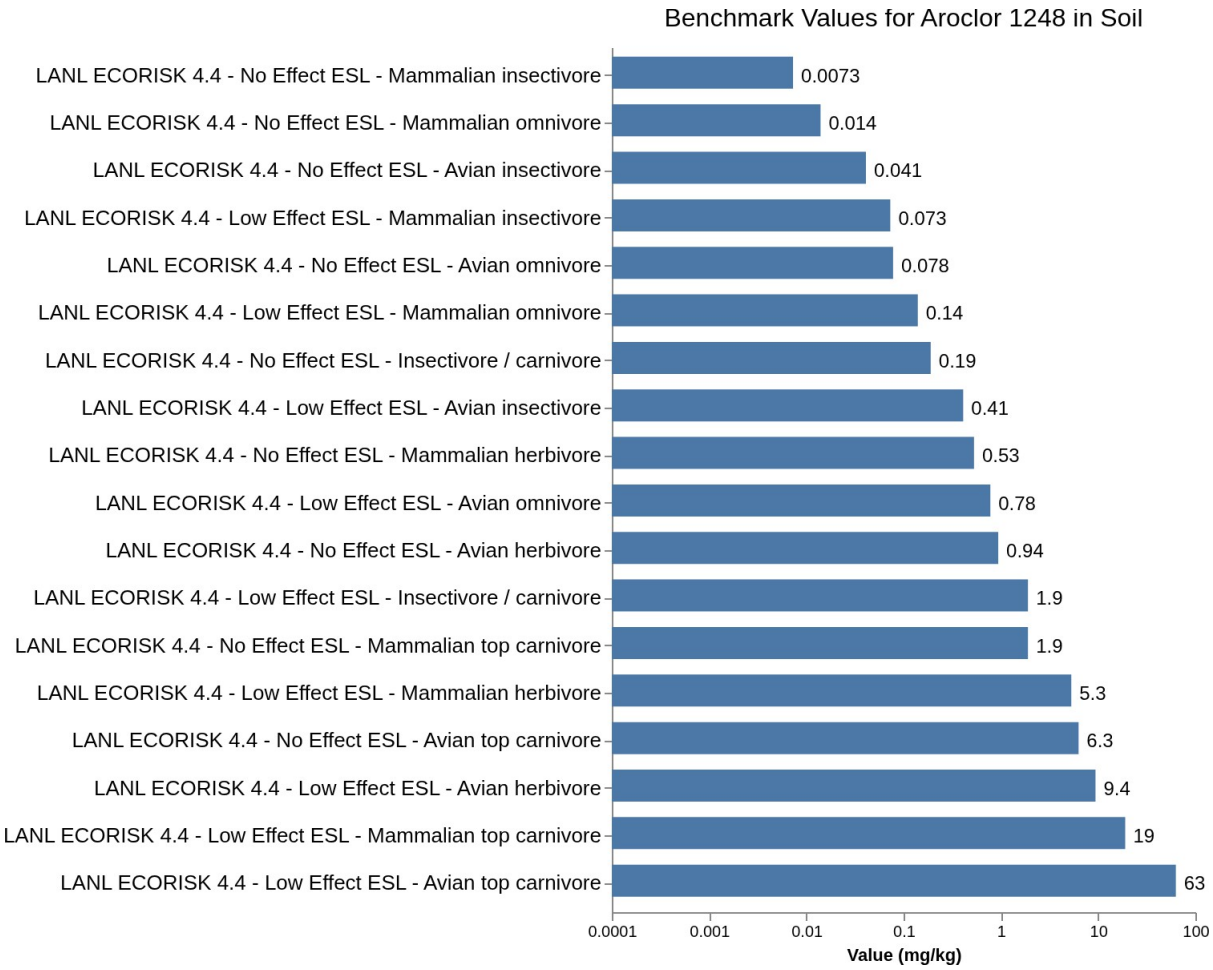

Benchmark Values for Aroclor 1248 in Soil
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
0.0073
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
0.014
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
0.041
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
0.073
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
0.078
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
0.14
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
0.19
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
0.41
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
0.53
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
0.78
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
0.94
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
1.9
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
1.9
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
5.3
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
6.3
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
9.4
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
19
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
63
0.0001
0.001
0.01
0.1
1
10
100
Value (mg/kg)

Table 27: Benchmark Values for Aroclor 1254 in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
11097−69−1	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.041
11097−69−1	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.079
11097−69−1	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	0.190
11097−69−1	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	0.410
11097−69−1	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.450
11097−69−1	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	0.790
11097−69−1	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.870
11097−69−1	LANL ECORISK	Soil No Effect ESL	Avian herbivore	1.100
11097−69−1	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	1.900
11097−69−1	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	2.400
11097−69−1	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	4.800
11097−69−1	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	7.600
11097−69−1	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	11.000
11097−69−1	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	30.000
11097−69−1	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	44.000
11097−69−1	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	76.000
11097−69−1	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	120.000
11097−69−1	LANL ECORISK	Soil No Effect ESL	Generic Plant	160.000
11097−69−1	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	240.000
11097−69−1	LANL ECORISK	Soil Low Effect ESL	Generic Plant	620.000
11097−69−1	ORNL	Soil Screening − Plants	Not specified	40.000

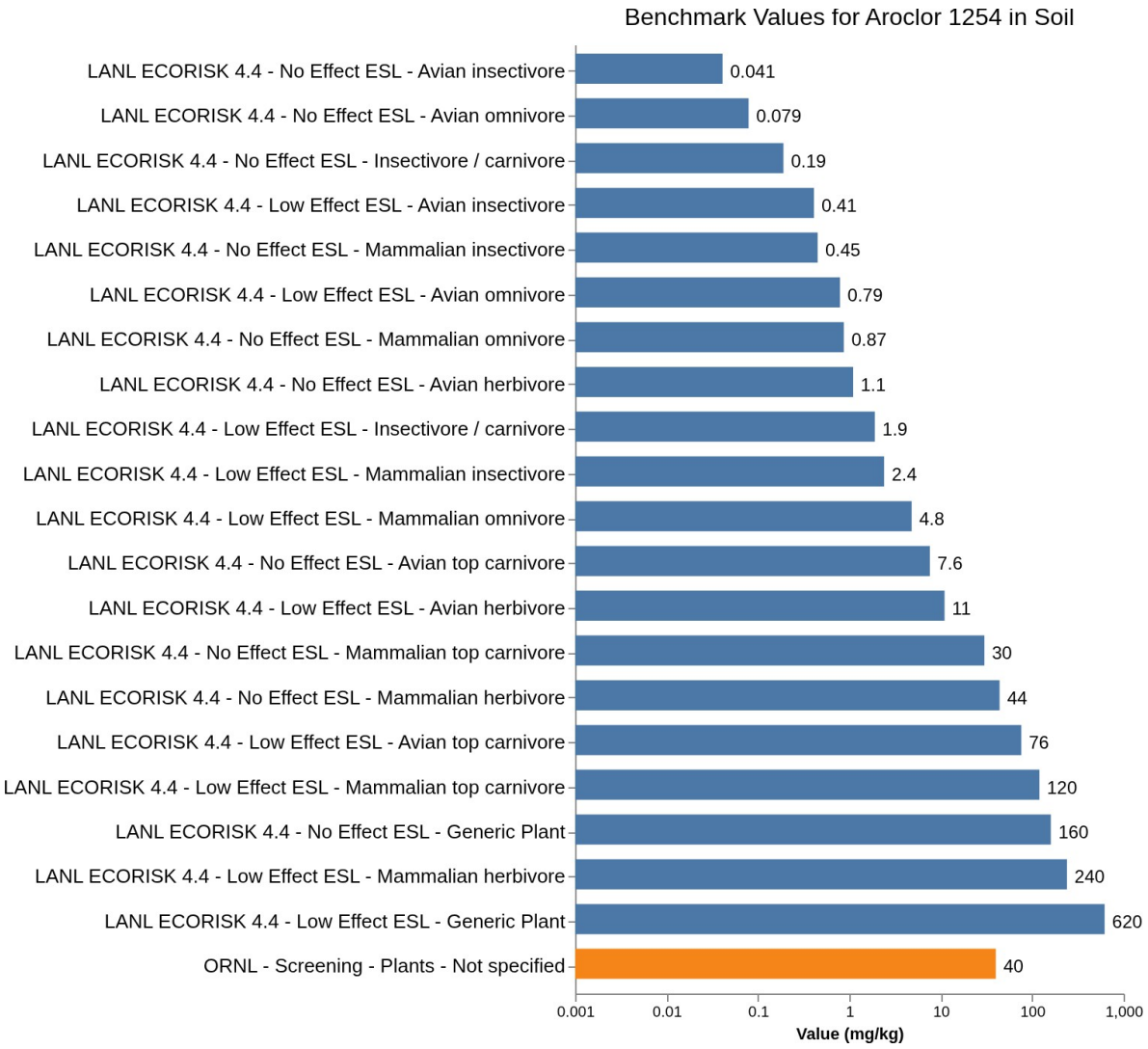

Benchmark Values for Aroclor 1254 in Soil
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
0.041
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
0.079
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
0.19
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
0.41
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
0.45
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
0.79
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
0.87
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
1.1
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
1.9
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
2.4
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
4.8
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
7.6
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
11
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
30
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
44
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
76
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
120
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
160
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
240
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
620
ORNL - Screening - Plants - Not specified
40
0.001
0.01
0.1
1
10
100
1,000
Value (mg/kg)

Table 28: Benchmark Values for Aroclor 1260 in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
11096−82−5	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.88
11096−82−5	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	1.20
11096−82−5	LANL ECORISK	Soil No Effect ESL	Avian omnivore	1.70
11096−82−5	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	2.40
11096−82−5	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	4.20
11096−82−5	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	5.90
11096−82−5	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	10.00
11096−82−5	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	15.00
11096−82−5	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	20.00
11096−82−5	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	24.00
11096−82−5	LANL ECORISK	Soil No Effect ESL	Avian herbivore	37.00
11096−82−5	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	48.00
11096−82−5	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	52.00
11096−82−5	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	150.00
11096−82−5	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	400.00
11096−82−5	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	560.00
11096−82−5	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	1800.00
11096−82−5	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	4500.00

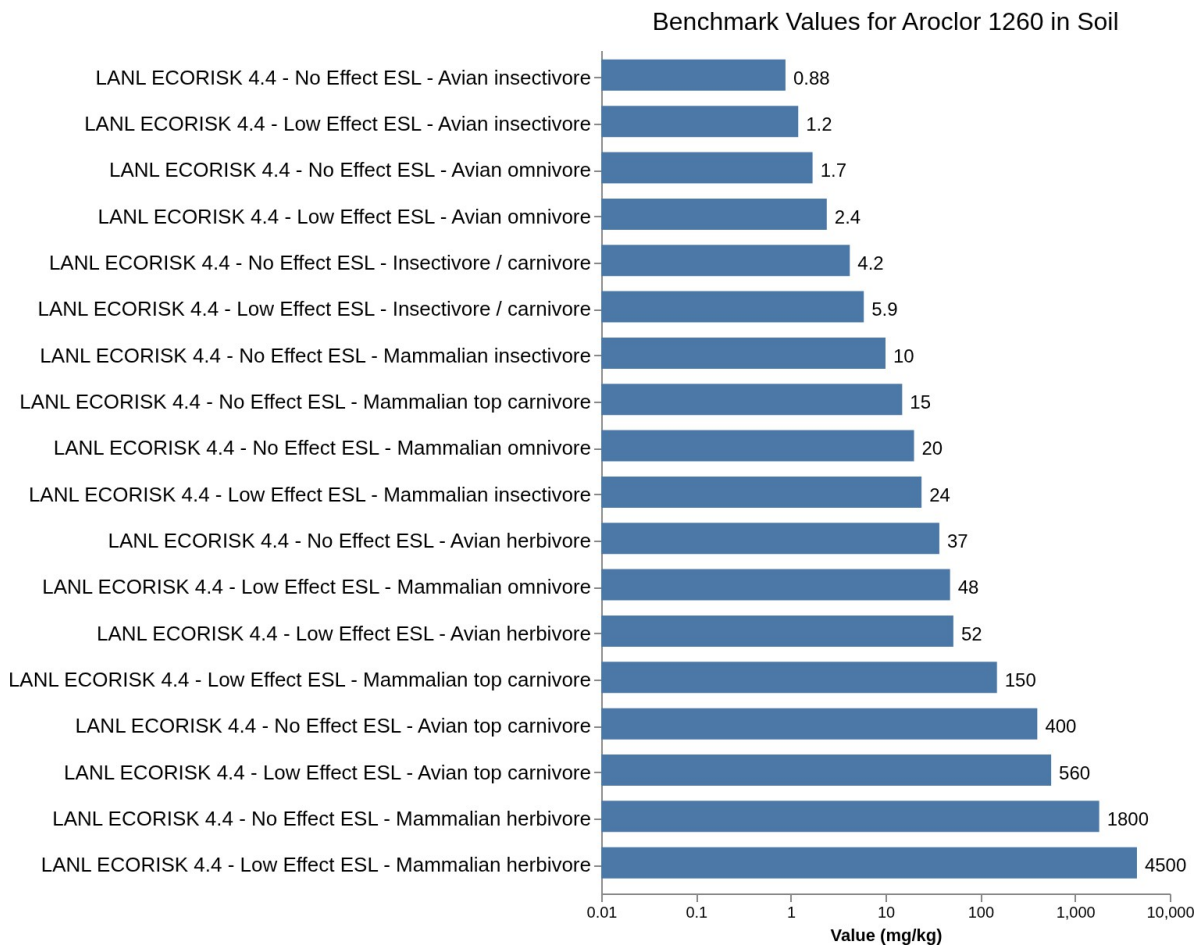

Benchmark Values for Aroclor 1260 in Soil
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
0.88
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
1.2
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
1.7
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
2.4
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
4.2
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
5.9
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
10
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
15
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
20
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
24
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
37
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
48
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
52
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
150
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
400
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
560
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
1800
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
4500
0.01
0.1
1
10
100
1,000
10,000
Value (mg/kg)

Table 29: Benchmark Values for Arsenic (III) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
22541−54−4	Washington	Soil Wildlife	Not specified	7

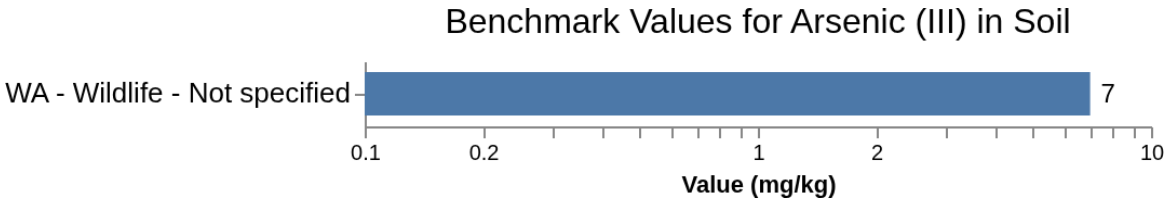


Table 30: Benchmark Values for Arsenic V in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
17428−41−0	Washington	Soil Wildlife	Not specified	132

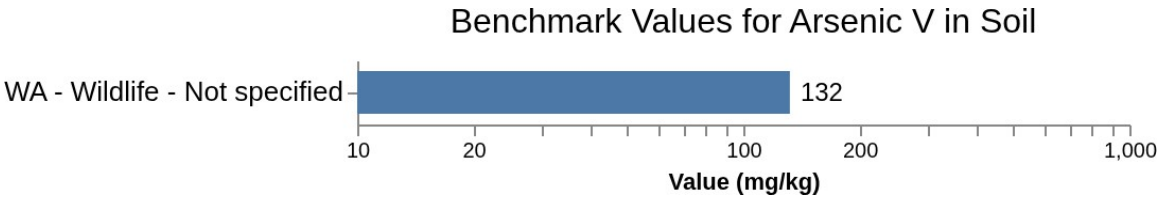


Table 31: Benchmark Values for Arsenic, Inorganic in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7440−38−2	Canada	Soil Residential/Parkland	Not specified	12.0
7440−38−2	Canada	Soil Commercial	Not specified	12.0
7440−38−2	Canada	Soil Agricultural	Not specified	12.0
7440−38−2	Canada	Soil Industrial	Not specified	12.0
7440−38−2	Dutch Soil Protection Act	Background	Not specified	20.0
7440−38−2	Dutch Soil Protection Act	Intervention Value	Not specified	76.0
7440−38−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	76.0
7440−38−2	EPA ECO−SSL	Plants	Not specified	18.0
7440−38−2	EPA ECO−SSL	Avian	Not specified	43.0
7440−38−2	EPA ECO−SSL	Mammalian	Not specified	46.0
7440−38−2	EPA Region 4	Soil Invertebrates	Not specified	6.8
7440−38−2	EPA Region 4	Soil Plants	Not specified	18.0
7440−38−2	EPA Region 4	Soil All Receptors	Not specified	18.0
7440−38−2	EPA Region 4	Soil Avians	Not specified	43.0
7440−38−2	EPA Region 4	Soil Mammals	Not specified	46.0
7440−38−2	EPA Region 5	EPA RCRA Soil	Not specified	5.7
7440−38−2	EPA Region 6	Soil Plants	Not specified	18.0
7440−38−2	EPA Region 6	Soil Invertebrates	Not specified	60.0
7440−38−2	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	6.8
7440−38−2	LANL ECORISK	Soil No Effect ESL	Avian insectivore	15.0
7440−38−2	LANL ECORISK	Soil No Effect ESL	Generic Plant	18.0
7440−38−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	19.0
7440−38−2	LANL ECORISK	Soil No Effect ESL	Avian omnivore	21.0
7440−38−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	31.0
7440−38−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	32.0
7440−38−2	LANL ECORISK	Soil No Effect ESL	Avian herbivore	34.0
7440−38−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	51.0
7440−38−2	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	68.0
7440−38−2	LANL ECORISK	Soil Low Effect ESL	Generic Plant	91.0
7440−38−2	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	100.0
7440−38−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	110.0
7440−38−2	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	150.0
7440−38−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	180.0
7440−38−2	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	210.0
7440−38−2	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	340.0
7440−38−2	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	740.0
7440−38−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	820.0
7440−38−2	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	1000.0
7440−38−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	1300.0
7440−38−2	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	7400.0
7440−38−2	ORNL	Soil Screening − Plants	Not specified	10.0
7440−38−2	ORNL	Soil Screening − Invertebrates	Not specified	60.0
7440−38−2	ORNL	Soil Screening − Microbes	Not specified	100.0

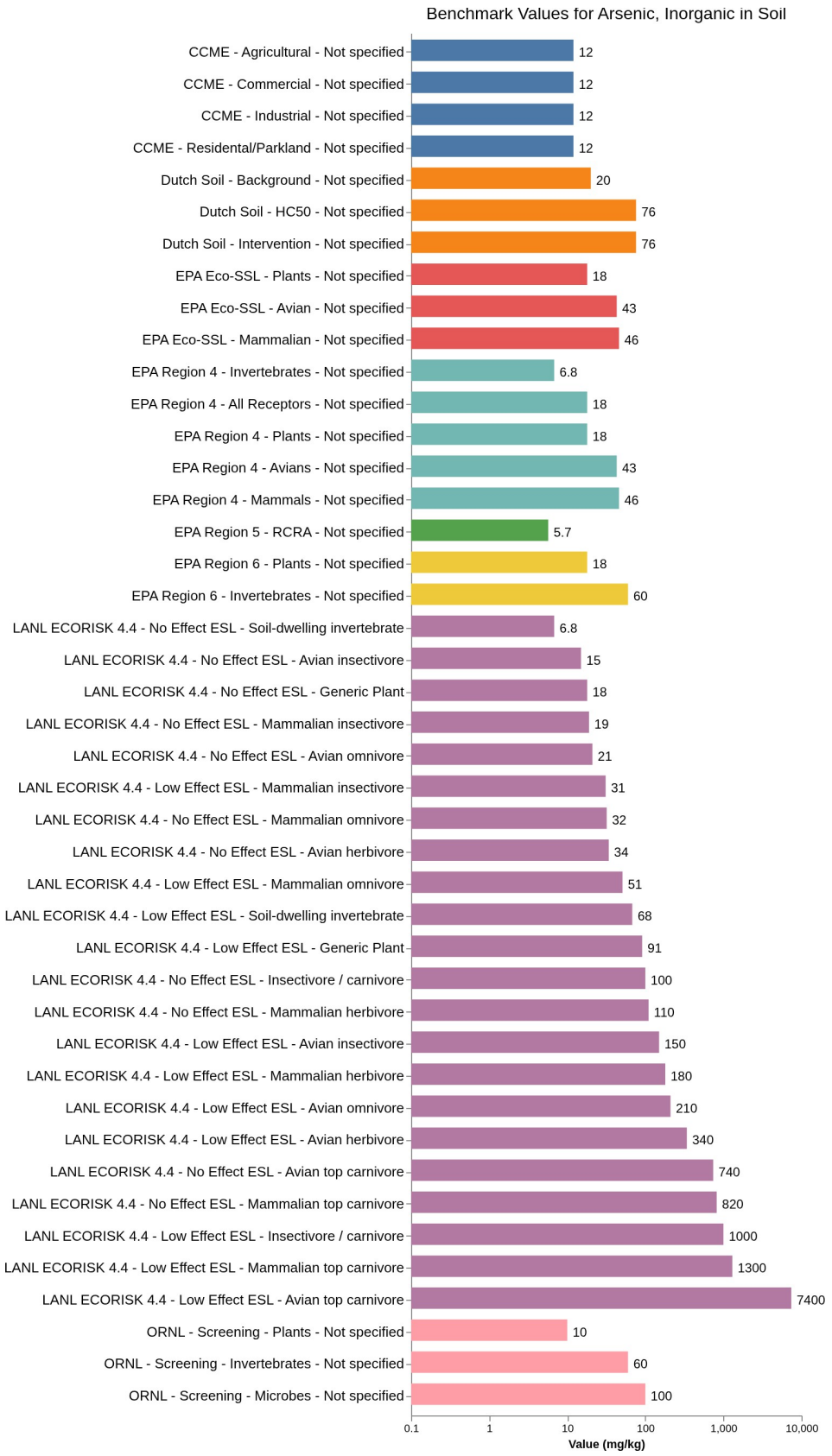

Benchmark Values for Arsenic, Inorganic in Soil
CCME - Agricultural - Not specified 12
CCME - Commercial - Not specified 12
CCME - Industrial - Not specified 12
CCME - Residental/Parkland - Not specified 12
Dutch Soil - Background - Not specified 20
Dutch Soil - HC50 - Not specified 76
Dutch Soil - Intervention - Not specified 76
EPA Eco-SSL - Plants - Not specified 18
EPA Eco-SSL - Avian - Not specified 43
EPA Eco-SSL - Mammalian - Not specified 46
EPA Region 4 - Invertebrates - Not specified 6.8
EPA Region 4 - All Receptors - Not specified 18
EPA Region 4 - Plants - Not specified 18
EPA Region 4 - Avians - Not specified 43
EPA Region 4 - Mammals - Not specified 46
EPA Region 5 - RCRA - Not specified 5.7
EPA Region 6 - Plants - Not specified 18
EPA Region 6 - Invertebrates - Not specified 60
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate 6.8
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore 15
LANL ECORISK 4.4 - No Effect ESL - Generic Plant 18
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore 19
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore 21
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore 31
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore 32
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore 34
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore 51
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate 68
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant 91
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore 100
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore 110
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore 150
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore 180
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore 210
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore 340
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore 740
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore 820
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore 1000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore 1300
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore 7400
ORNL - Screening - Plants - Not specified 10
ORNL - Screening - Invertebrates - Not specified 60
ORNL - Screening - Microbes - Not specified 100
0.1
1
10
100
1,000
10,000
Value (mg/kg)

Table 32: Benchmark Values for Asbestos (units in fibers) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
1332−21−4	Dutch Soil Protection Act	Intervention Value	Not specified	100

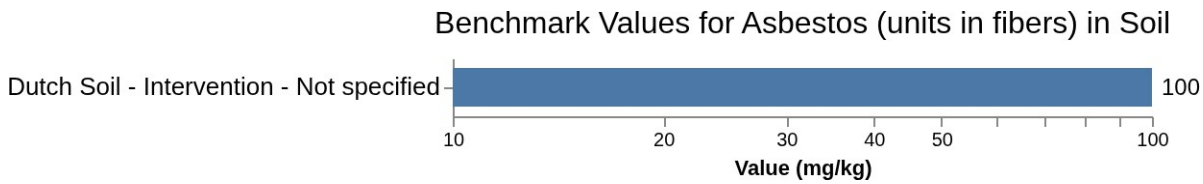


Table 33: Benchmark Values for Atrazine in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
1912−24−9	Dutch Soil Protection Act	Background	Not specified	0.03500	71
1912−24−9	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	0.71000	
1912−24−9	Dutch Soil Protection Act	Intervention Value	Not specified	0.71000	
1912−24−9	EPA Region 4	Soil Invertebrates	Not specified	0.00000	
1912−24−9	EPA Region 4	Soil All Receptors	Not specified	0.00005	
1912−24−9	Florida	Soil Leachability Freshwater and Marine	Not specified	0.04000	

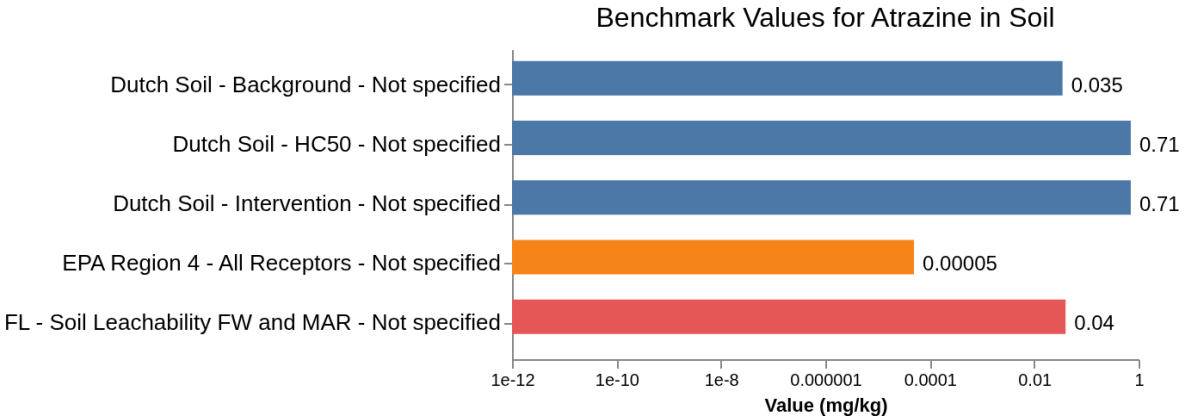


Table 34: Benchmark Values for Azinphos−methyl in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
86−50−0	Dutch Soil Protection Act	Background	Not specified	0.00750	71
86−50−0	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	1.50000	
86−50−0	Dutch Soil Protection Act	Intervention Value	Not specified	2.00000	73
86−50−0	EPA Region 4	Soil All Receptors	Not specified	0.00006	
86−50−0	EPA Region 4	Soil Invertebrates	Not specified	0.00006	
86−50−0	Florida	Soil Leachability Freshwater and Marine	Not specified	0.00020	

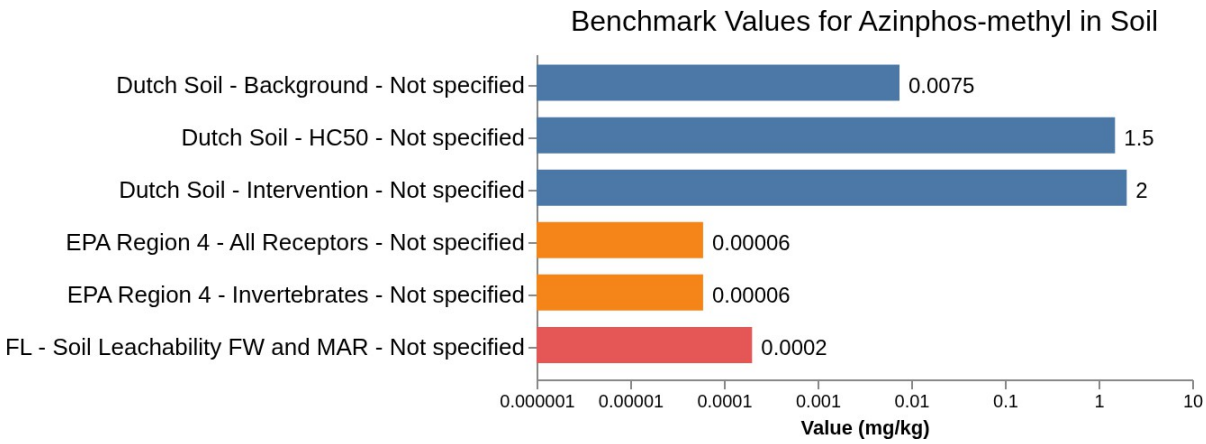


Table 35: Benchmark Values for Azobenzene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
103−33−3	Florida	Soil Leachability Freshwater and Marine	Not specified	0.4

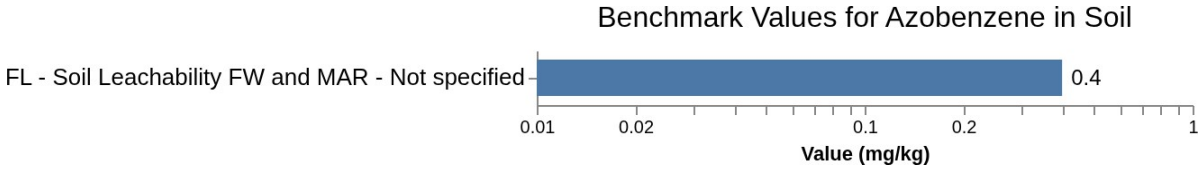


Table 36: Benchmark Values for Barium in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7440−39−3	Canada	Soil Residential/Parkland	Not specified	500.00
7440−39−3	Canada	Soil Agricultural	Not specified	750.00
7440−39−3	Canada	Soil Commercial	Not specified	2000.00
7440−39−3	Canada	Soil Industrial	Not specified	2000.00
7440−39−3	Dutch Soil Protection Act	Background	Not specified	190.00
7440−39−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	920.00
7440−39−3	Dutch Soil Protection Act	Intervention Value	Not specified	920.00
7440−39−3	EPA ECO−SSL	Soil Invertebrates	Not specified	330.00
7440−39−3	EPA ECO−SSL	Mammalian	Not specified	2000.00
7440−39−3	EPA Region 4	Soil Plants	Not specified	110.00
7440−39−3	EPA Region 4	Soil All Receptors	Not specified	330.00
7440−39−3	EPA Region 4	Soil Invertebrates	Not specified	330.00
7440−39−3	EPA Region 4	Soil Avians	Not specified	820.00
7440−39−3	EPA Region 4	Soil Mammals	Not specified	2000.00
7440−39−3	EPA Region 5	EPA RCRA Soil	Not specified	1.04
7440−39−3	EPA Region 6	Soil Invertebrates	Not specified	330.00
7440−39−3	EPA Region 6	Soil Plants	Not specified	500.00
7440−39−3	LANL ECORISK	Soil No Effect ESL	Generic Plant	110.00
7440−39−3	LANL ECORISK	Soil Low Effect ESL	Generic Plant	260.00
7440−39−3	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	330.00
7440−39−3	LANL ECORISK	Soil No Effect ESL	Avian herbivore	720.00
7440−39−3	LANL ECORISK	Soil No Effect ESL	Avian omnivore	770.00
7440−39−3	LANL ECORISK	Soil No Effect ESL	Avian insectivore	820.00
7440−39−3	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	1200.00
7440−39−3	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	1300.00
7440−39−3	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	1400.00
7440−39−3	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	1800.00
7440−39−3	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	2100.00
7440−39−3	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	2900.00
7440−39−3	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	3200.00
7440−39−3	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	7500.00
7440−39−3	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	8700.00
7440−39−3	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	10000.00
7440−39−3	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	13000.00
7440−39−3	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	14000.00
7440−39−3	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	24000.00
7440−39−3	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	41000.00
7440−39−3	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	44000.00
7440−39−3	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	190000.00
7440−39−3	ORNL	Soil Screening − Plants	Not specified	500.00
7440−39−3	ORNL	Soil Screening − Microbes	Not specified	3000.00
7440−39−3	Washington	Soil Wildlife	Not specified	102.00

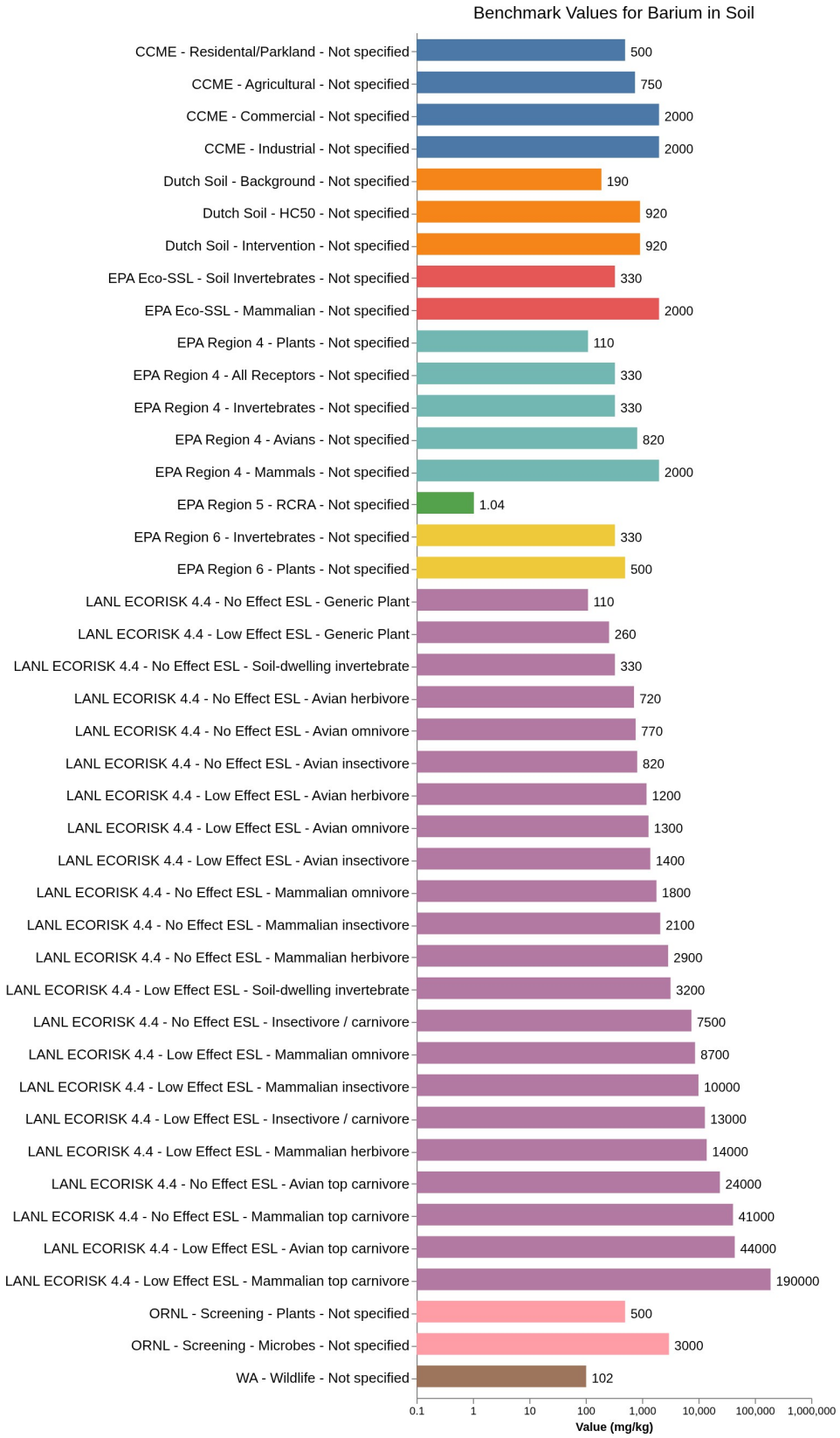

Benchmark Values for Barium in Soil
CCME - Residental/Parkland - Not specified
500
CCME - Agricultural - Not specified
750
CCME - Commercial - Not specified
2000
CCME - Industrial - Not specified
2000
Dutch Soil - Background - Not specified
190
Dutch Soil - HC50 - Not specified
920
Dutch Soil - Intervention - Not specified
920
EPA Eco-SSL - Soil Invertebrates - Not specified
330
EPA Eco-SSL - Mammalian - Not specified
2000
EPA Region 4 - Plants - Not specified
110
EPA Region 4 - All Receptors - Not specified
330
EPA Region 4 - Invertebrates - Not specified
330
EPA Region 4 - Avians - Not specified
820
EPA Region 4 - Mammals - Not specified
2000
EPA Region 5 - RCRA - Not specified
1.04
EPA Region 6 - Invertebrates - Not specified
330
EPA Region 6 - Plants - Not specified
500
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
110
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
260
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
330
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
720
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
770
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
820
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
1200
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
1300
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
1400
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
1800
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
2100
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
2900
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
3200
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
7500
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
8700
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
10000
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
13000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
14000
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
24000
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
41000
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
44000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
190000
ORNL - Screening - Plants - Not specified
500
ORNL - Screening - Microbes - Not specified
3000
WA - Wildlife - Not specified
102
0.1
1
10
100
1,000
10,000
100,000
1,000,000
Value (mg/kg)

Table 37: Benchmark Values for Benomyl in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
17804−35−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.03

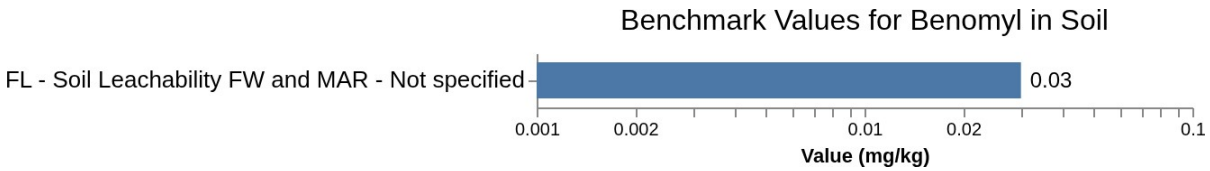


Table 38: Benchmark Values for Benz[a]anthracene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
56−55−3	Canada	Soil Industrial	Not specified		36
56−55−3	Canada	Soil Commercial	Not specified		36
56−55−3	Canada	Soil Agricultural	Not specified		36
56−55−3	Canada	Soil Residential/Parkland	Not specified		36
56−55−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	2.5	
56−55−3	EPA Region 4	Soil Avians	Not specified	0.73	7
56−55−3	EPA Region 4	Soil All Receptors	Not specified	1.1	7
56−55−3	EPA Region 4	Soil Mammals	Not specified	3.4	7
56−55−3	EPA Region 4	Soil Invertebrates	Not specified	4.69	7
56−55−3	EPA Region 4	Soil Plants	Not specified	18	7
56−55−3	EPA Region 5	EPA RCRA Soil	Not specified	5.21	
56−55−3	Florida	Soil Leachability Freshwater and Marine	Not specified	36	
56−55−3	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.73	
56−55−3	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.8	
56−55−3	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.88	
56−55−3	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	3.4	
56−55−3	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	4	
56−55−3	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	6.1	
56−55−3	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	6.4	
56−55−3	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	7.3	
56−55−3	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	8	
56−55−3	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	8.8	
56−55−3	LANL ECORISK	Soil No Effect ESL	Generic Plant	18	
56−55−3	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	28	
56−55−3	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	34	
56−55−3	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	40	
56−55−3	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	61	
56−55−3	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	64	
56−55−3	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	110	
56−55−3	LANL ECORISK	Soil Low Effect ESL	Generic Plant	180	
56−55−3	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	280	
56−55−3	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	1100	

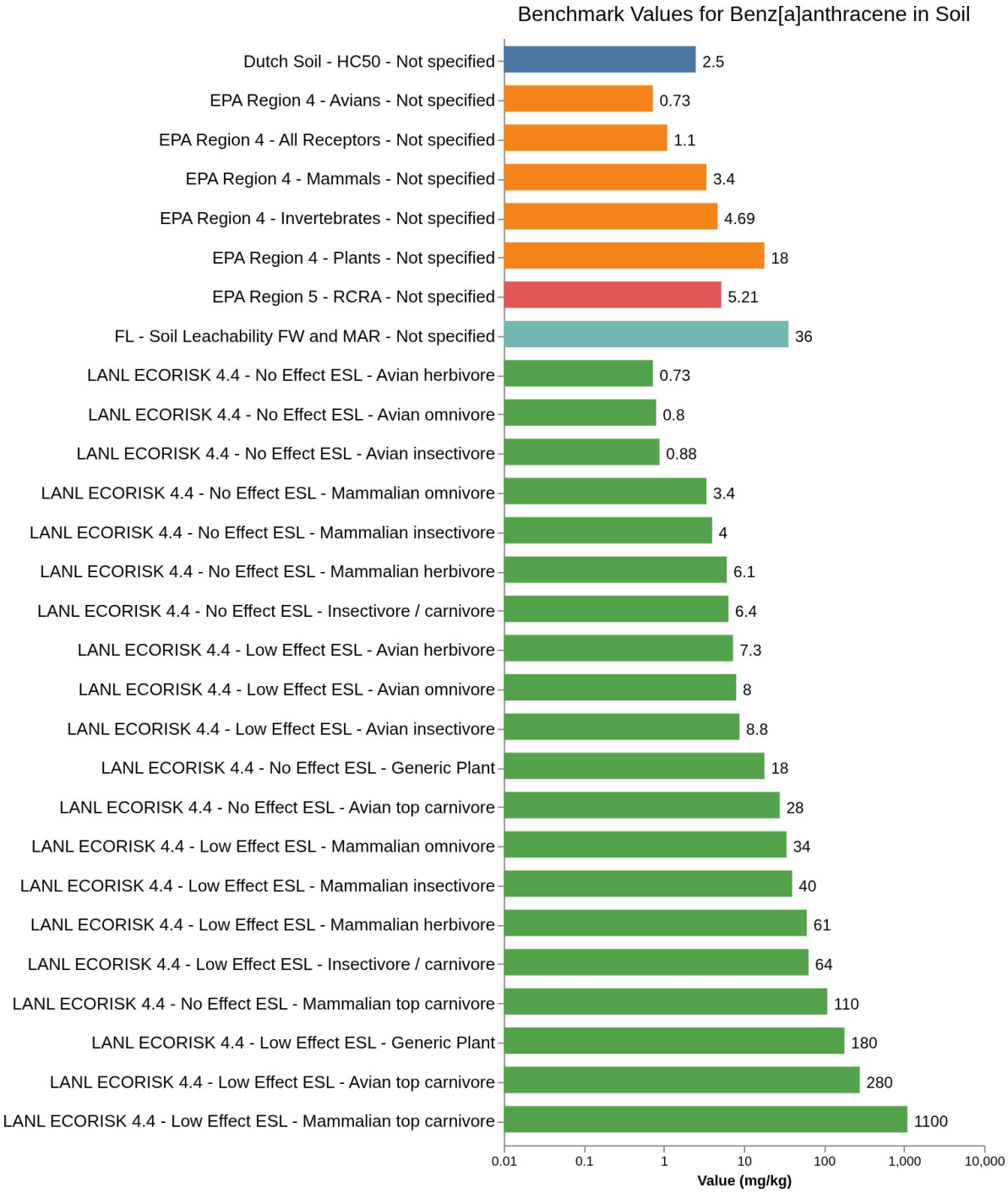

Benchmark Values for Benz[a]anthracene in Soil
Dutch Soil - HC50 - Not specified
2.5
EPA Region 4 - Avians - Not specified
0.73
EPA Region 4 - All Receptors - Not specified
1.1
EPA Region 4 - Mammals - Not specified
3.4
EPA Region 4 - Invertebrates - Not specified
4.69
EPA Region 4 - Plants - Not specified
18
EPA Region 5 - RCRA - Not specified
5.21
FL - Soil Leachability FW and MAR - Not specified
36
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
0.73
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
0.8
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
0.88
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
3.4
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
4
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
6.1
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
6.4
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
7.3
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
8
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
8.8
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
18
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
28
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
34
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
40
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
61
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
64
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
110
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
180
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
280
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
1100
0.01
0.1
1
10
100
1,000
10,000
Value (mg/kg)

Table 39: Benchmark Values for Benzaldehyde in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
100−52−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.4

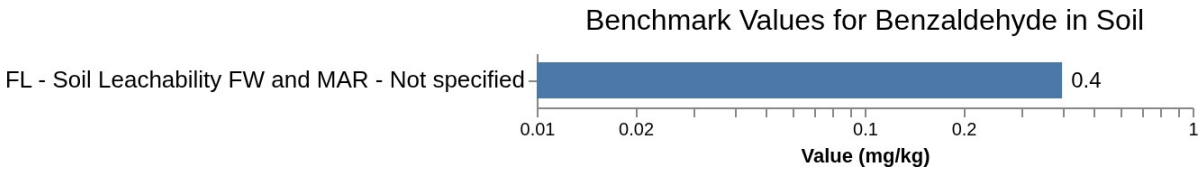


Table 40: Benchmark Values for Benzene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
71−43−2	Canada	Soil Agricultural	Not specified		44
71−43−2	Canada	Soil Commercial	Not specified		42
71−43−2	Canada	Soil Residential/Parkland	Not specified		44
71−43−2	Canada	Soil Industrial	Not specified		42
71−43−2	Dutch Soil Protection Act	Background	Not specified	0.2	71
71−43−2	Dutch Soil Protection Act	Intervention Value	Not specified	1.1	
71−43−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	130	
71−43−2	EPA Region 4	Soil All Receptors	Not specified	0.12	
71−43−2	EPA Region 4	Soil Invertebrates	Not specified	0.12	
71−43−2	EPA Region 4	Soil Mammals	Not specified	24	
71−43−2	EPA Region 5	EPA RCRA Soil	Not specified	0.255	
71−43−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.5	
71−43−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	24	
71−43−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	38	
71−43−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	49	
71−43−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	240	
71−43−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	380	
71−43−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	490	
71−43−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	18000	
71−43−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	180000	

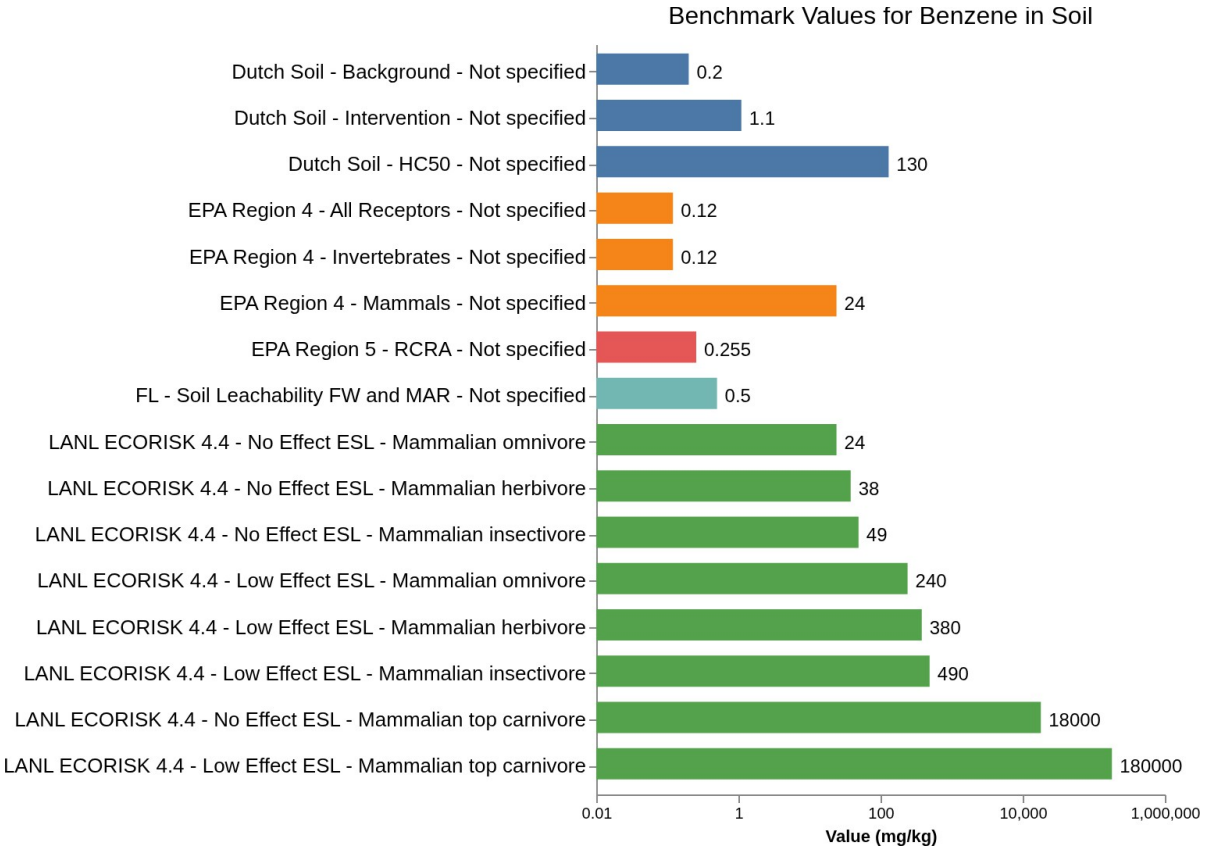


Table 41: Benchmark Values for Benzidine in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
92−87−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.00002

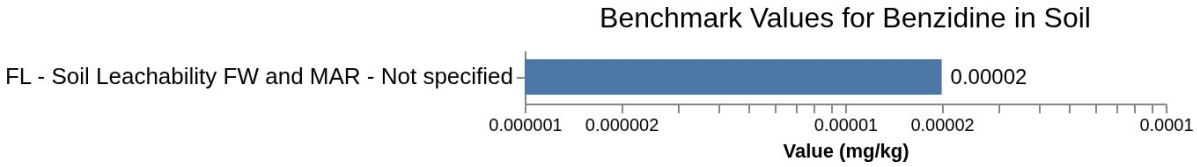


Table 42: Benchmark Values for Benzo[a]pyrene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
50−32−8	Canada	Soil Agricultural	Not specified	0.10	36
50−32−8	Canada	Soil Residential/Parkland	Not specified	0.70	36
50−32−8	Canada	Soil Industrial	Not specified	0.70	36
50−32−8	Canada	Soil Commercial	Not specified	0.70	36
50−32−8	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	7.00	
50−32−8	EPA Region 4	Soil Invertebrates	Not specified	0.13	7
50−32−8	EPA Region 4	Soil All Receptors	Not specified	1.10	7
50−32−8	EPA Region 4	Soil Mammals	Not specified	62.00	7
50−32−8	EPA Region 5	EPA RCRA Soil	Not specified	1.52	
50−32−8	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	62.00	
50−32−8	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	84.00	
50−32−8	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	190.00	
50−32−8	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	260.00	
50−32−8	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	260.00	
50−32−8	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	830.00	
50−32−8	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	3400.00	
50−32−8	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	11000.00	
50−32−8	UK	Soil Screening Values	Not specified	0.15	
50−32−8	Washington	Soil Wildlife	Not specified	12.00	

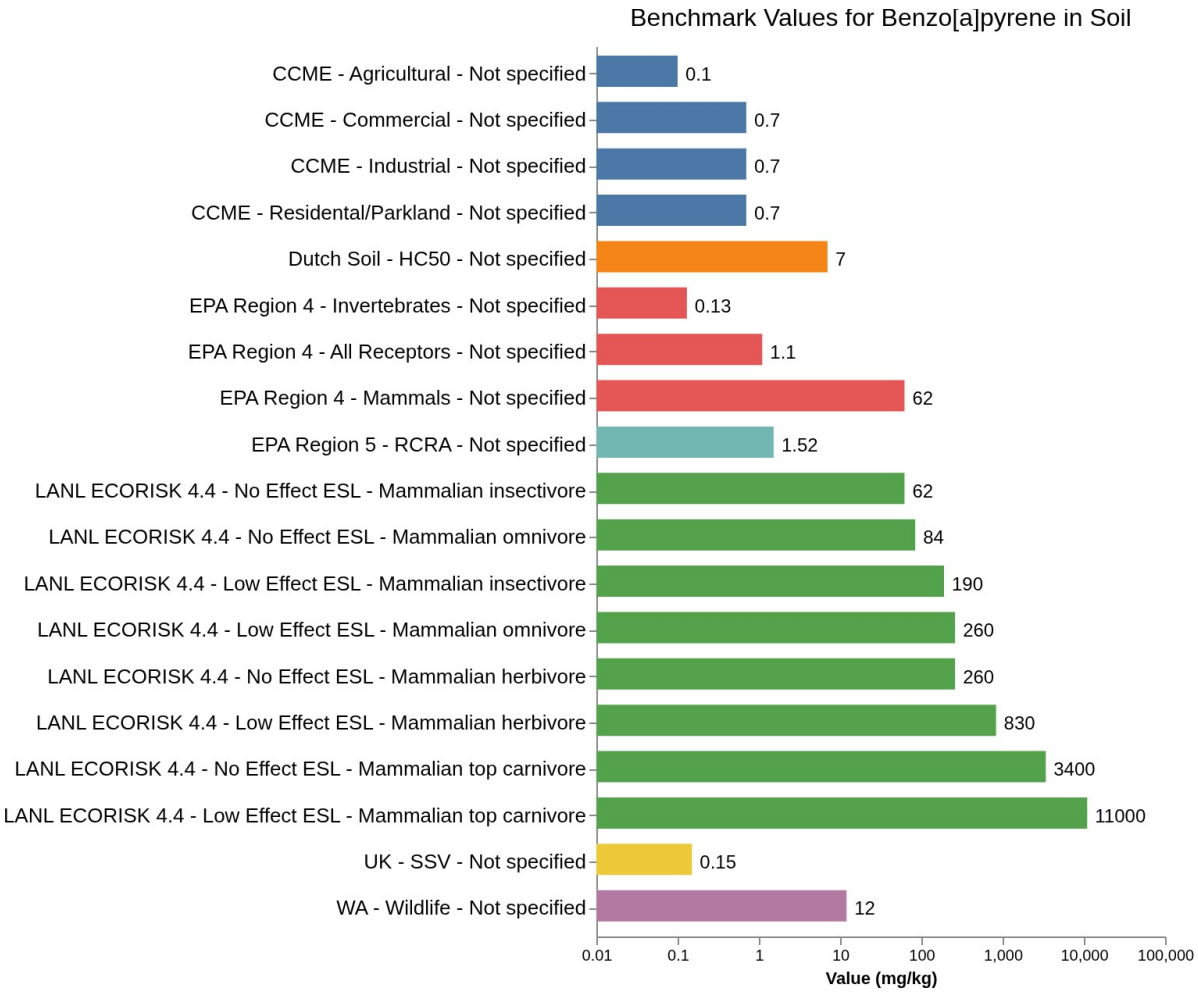

Benchmark Values for Benzo[a]pyrene in Soil
CCME - Agricultural - Not specified
0.1
CCME - Commercial - Not specified
0.7
CCME - Industrial - Not specified
0.7
CCME - Residental/Parkland - Not specified
0.7
Dutch Soil - HC50 - Not specified
7
EPA Region 4 - Invertebrates - Not specified
0.13
EPA Region 4 - All Receptors - Not specified
1.1
EPA Region 4 - Mammals - Not specified
62
EPA Region 5 - RCRA - Not specified
1.52
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
62
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
84
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
190
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
260
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
260
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
830
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
3400
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
11000
UK - SSV - Not specified
0.15
WA - Wildlife - Not specified
12
0.01
0.1
1
10
100
1,000
10,000
100,000
Value (mg/kg)

Table 43: Benchmark Values for Benzo[b]fluoranthene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
205−99−2	Canada	Soil Commercial	Not specified		36
205−99−2	Canada	Soil Industrial	Not specified		36
205−99−2	Canada	Soil Agricultural	Not specified		36
205−99−2	Canada	Soil Residential/Parkland	Not specified		36
205−99−2	EPA Region 4	Soil All Receptors	Not specified	1.1	7
205−99−2	EPA Region 4	Soil Invertebrates	Not specified	2.7	7
205−99−2	EPA Region 4	Soil Plants	Not specified	18	7
205−99−2	EPA Region 4	Soil Mammals	Not specified	44	7
205−99−2	EPA Region 5	EPA RCRA Soil	Not specified	59.8	
205−99−2	LANL ECORISK	Soil No Effect ESL	Generic Plant	18	
205−99−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	44	
205−99−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	51	
205−99−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	130	
205−99−2	LANL ECORISK	Soil Low Effect ESL	Generic Plant	180	
205−99−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	440	
205−99−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	510	
205−99−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1300	
205−99−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	2400	
205−99−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	24000	

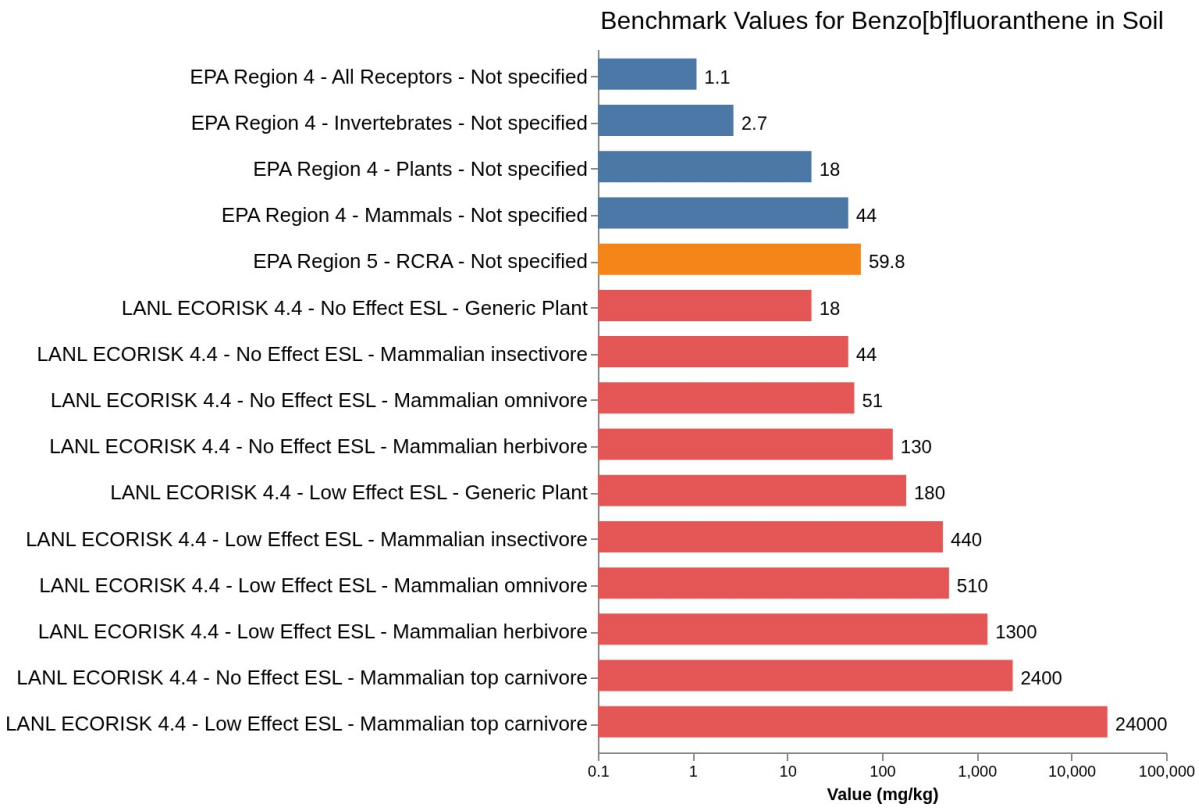

Benchmark Values for Benzo[b]fluoranthene in Soil
EPA Region 4 - All Receptors - Not specified
1.1
EPA Region 4 - Invertebrates - Not specified
2.7
EPA Region 4 - Plants - Not specified
18
EPA Region 4 - Mammals - Not specified
44
EPA Region 5 - RCRA - Not specified
59.8
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
18
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
44
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
51
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
130
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
180
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
440
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
510
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
1300
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
2400
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
24000
0.1
1
10
100
1,000
10,000
100,000
Value (mg/kg)

Table 44: Benchmark Values for Benzo[e]pyrene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
192−97−2	EPA Region 4	Soil Invertebrates	Not specified	0.25	7
192−97−2	EPA Region 4	Soil All Receptors	Not specified	1.10	7

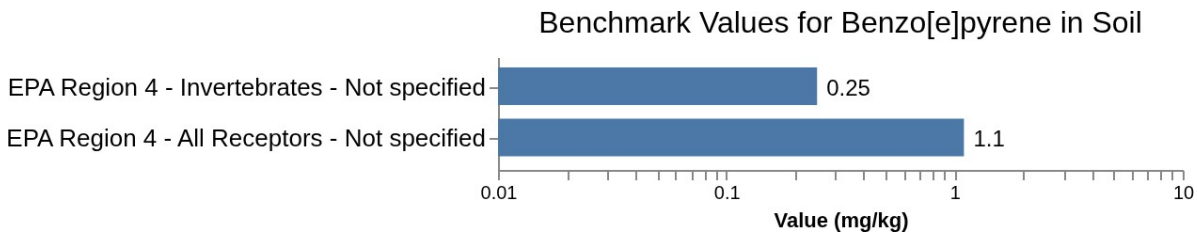


Table 45: Benchmark Values for Benzo[g,h,i]perylene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
191−24−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	33.00	
191−24−2	EPA Region 4	Soil Invertebrates	Not specified	0.07	7
191−24−2	EPA Region 4	Soil All Receptors	Not specified	1.10	7
191−24−2	EPA Region 4	Soil Mammals	Not specified	25.00	7
191−24−2	EPA Region 5	EPA RCRA Soil	Not specified	119.00	
191−24−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	25.00	
191−24−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	46.00	
191−24−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	250.00	
191−24−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	460.00	
191−24−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	470.00	
191−24−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	3600.00	
191−24−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	4700.00	
191−24−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	36000.00	

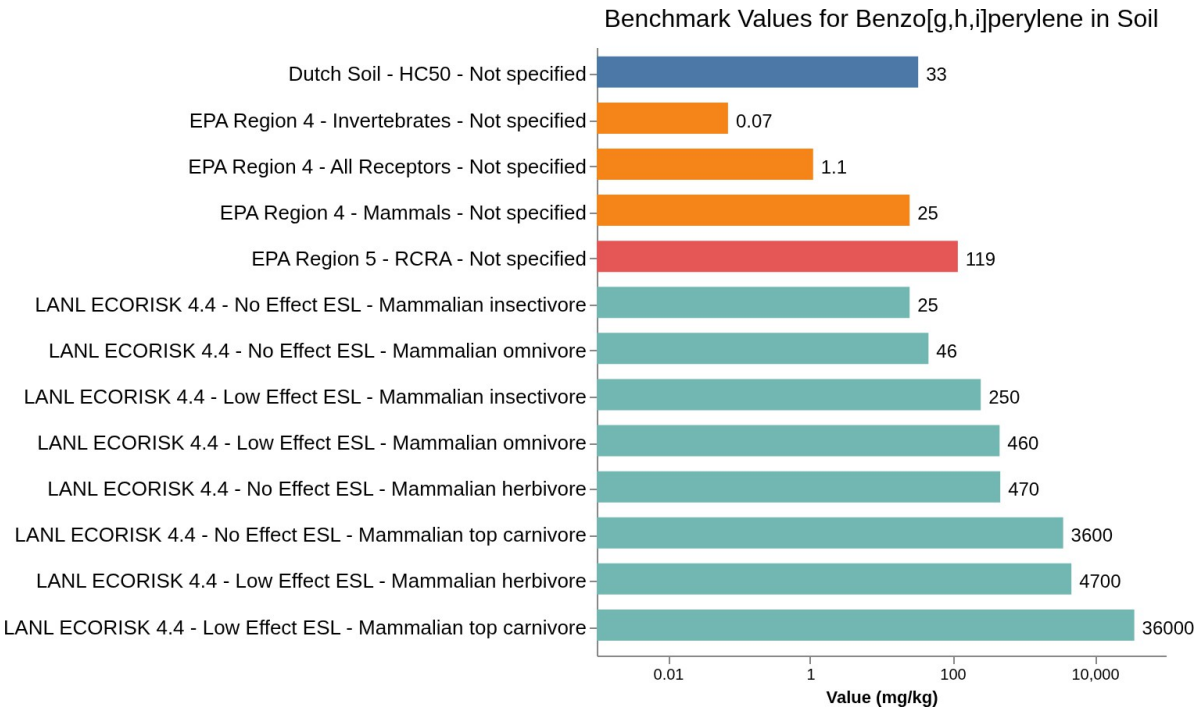

Benchmark Values for Benzo[g,h,i]perylene in Soil
Dutch Soil - HC50 - Not specified
33
EPA Region 4 - Invertebrates - Not specified
0.07
EPA Region 4 - All Receptors - Not specified
1.1
EPA Region 4 - Mammals - Not specified
25
EPA Region 5 - RCRA - Not specified
119
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
25
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
46
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
250
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
460
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
470
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
3600
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
4700
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
36000
0.01
1
100
10,000
Value (mg/kg)

Table 46: Benchmark Values for Benzo[k]fluoranthene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
207−08−9	Canada	Soil Agricultural	Not specified		36
207−08−9	Canada	Soil Commercial	Not specified		36
207−08−9	Canada	Soil Industrial	Not specified		36
207−08−9	Canada	Soil Residential/Parkland	Not specified		36
207−08−9	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	38	
207−08−9	EPA Region 4	Soil Invertebrates	Not specified	0.13	7
207−08−9	EPA Region 4	Soil All Receptors	Not specified	1.1	7
207−08−9	EPA Region 4	Soil Mammals	Not specified	71	7
207−08−9	EPA Region 5	EPA RCRA Soil	Not specified	148	
207−08−9	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	71	
207−08−9	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	99	
207−08−9	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	330	
207−08−9	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	710	
207−08−9	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	990	
207−08−9	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	3300	
207−08−9	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	4300	
207−08−9	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	43000	

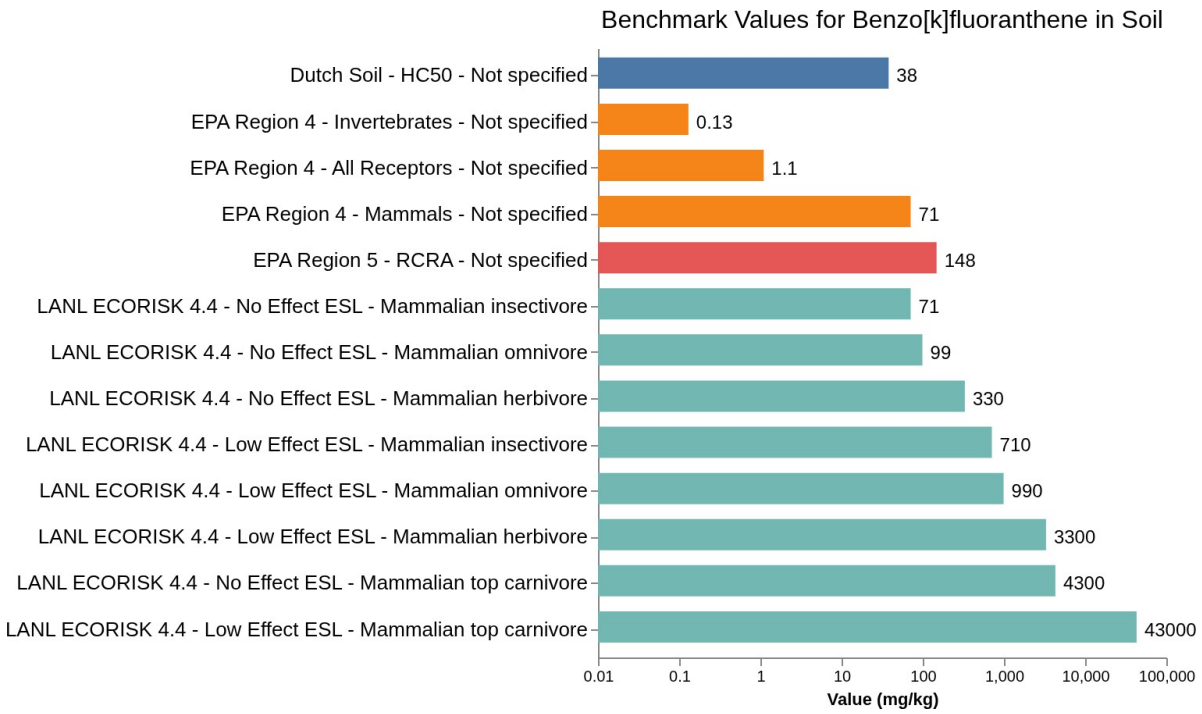


Table 47: Benchmark Values for Benzoic Acid in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
65−85−0	EPA Region 4	Soil All Receptors	Not specified	0.01
65−85−0	EPA Region 4	Soil Invertebrates	Not specified	0.01
65−85−0	EPA Region 4	Soil Mammals	Not specified	1.00
65−85−0	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	1.00
65−85−0	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	1.30
65−85−0	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	4.60
65−85−0	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	10.00
65−85−0	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	13.00
65−85−0	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	46.00
65−85−0	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	2000.00
65−85−0	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	20000.00

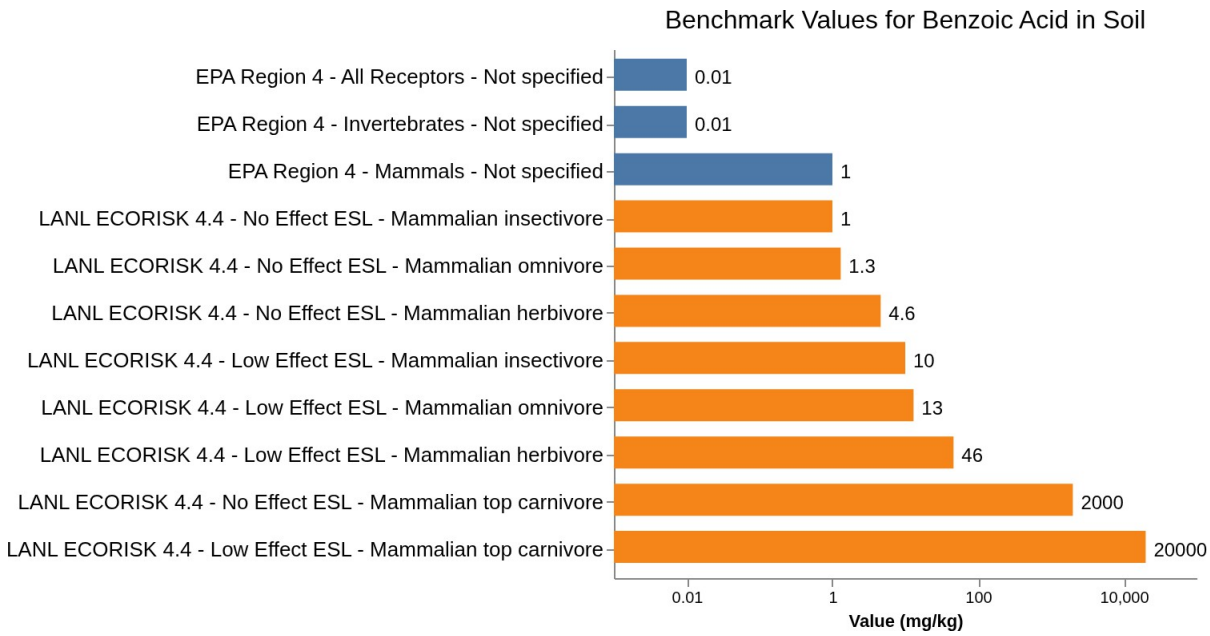


Table 48: Benchmark Values for Benzotrichloride in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
98−07−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.00008

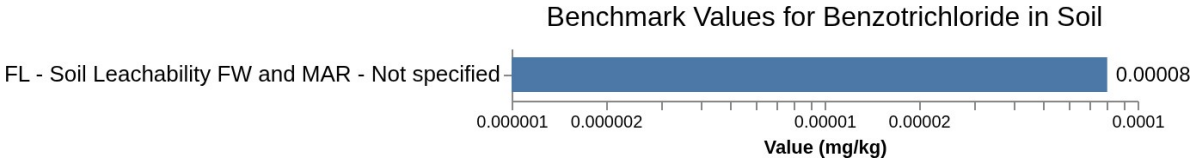


Table 49: Benchmark Values for Benzyl Alcohol in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
100−51−6	EPA Region 4	Soil Invertebrates	Not specified	0.002
100−51−6	EPA Region 4	Soil All Receptors	Not specified	0.002
100−51−6	EPA Region 4	Soil Mammals	Not specified	120
100−51−6	EPA Region 5	EPA RCRA Soil	Not specified	65.8
100−51−6	Florida	Soil Leachability Freshwater and Marine	Not specified	2.3
100−51−6	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	120
100−51−6	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	190
100−51−6	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	270
100−51−6	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1200
100−51−6	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1900
100−51−6	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	2700
100−51−6	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	110000
100−51−6	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	1.10e+06

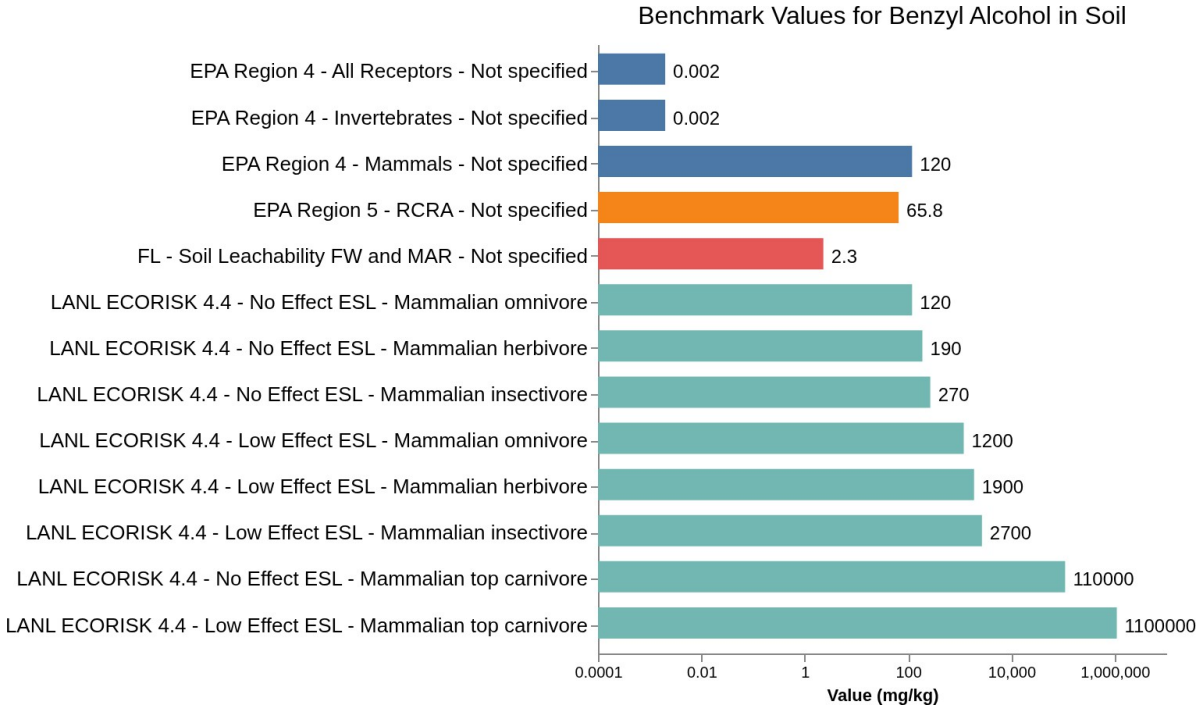


Table 50: Benchmark Values for Benzyl Chloride in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
100−44−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.02

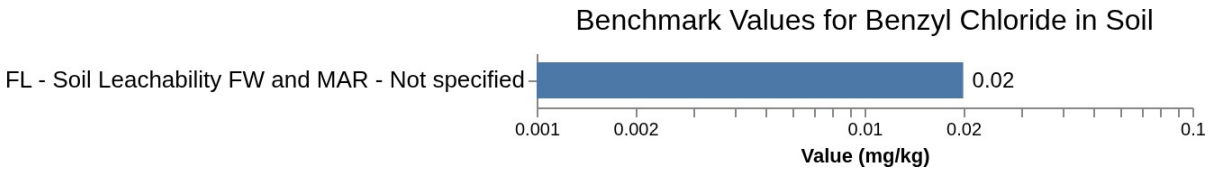


Table 51: Benchmark Values for Beryllium and compounds in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
7440−41−7	Canada	Soil Residential/Parkland	Not specified	4.00	
7440−41−7	Canada	Soil Agricultural	Not specified	4.00	
7440−41−7	Canada	Soil Industrial	Not specified	8.00	
7440−41−7	Canada	Soil Commercial	Not specified	8.00	
7440−41−7	Dutch Soil Protection Act	Intervention Value	Not specified	30.00	73
7440−41−7	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	31.00	
7440−41−7	EPA ECO−SSL	Mammalian	Not specified	21.00	
7440−41−7	EPA ECO−SSL	Soil Invertebrates	Not specified	40.00	
7440−41−7	EPA Region 4	Soil Plants	Not specified	2.50	
7440−41−7	EPA Region 4	Soil All Receptors	Not specified	2.50	
7440−41−7	EPA Region 4	Soil Mammals	Not specified	21.00	
7440−41−7	EPA Region 4	Soil Invertebrates	Not specified	40.00	
7440−41−7	EPA Region 5	EPA RCRA Soil	Not specified	1.06	
7440−41−7	EPA Region 6	Soil Plants	Not specified	10.00	
7440−41−7	EPA Region 6	Soil Invertebrates	Not specified	40.00	
7440−41−7	Florida	Soil Leachability Freshwater and Marine	Not specified	2.10	211
7440−41−7	LANL ECORISK	Soil No Effect ESL	Generic Plant	2.50	
7440−41−7	LANL ECORISK	Soil Low Effect ESL	Generic Plant	25.00	
7440−41−7	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	35.00	
7440−41−7	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	40.00	
7440−41−7	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	56.00	
7440−41−7	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	89.00	
7440−41−7	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	350.00	
7440−41−7	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	400.00	
7440−41−7	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	420.00	
7440−41−7	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	560.00	
7440−41−7	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	890.00	
7440−41−7	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	4200.00	
7440−41−7	ORNL	Soil Screening − Plants	Not specified	10.00	

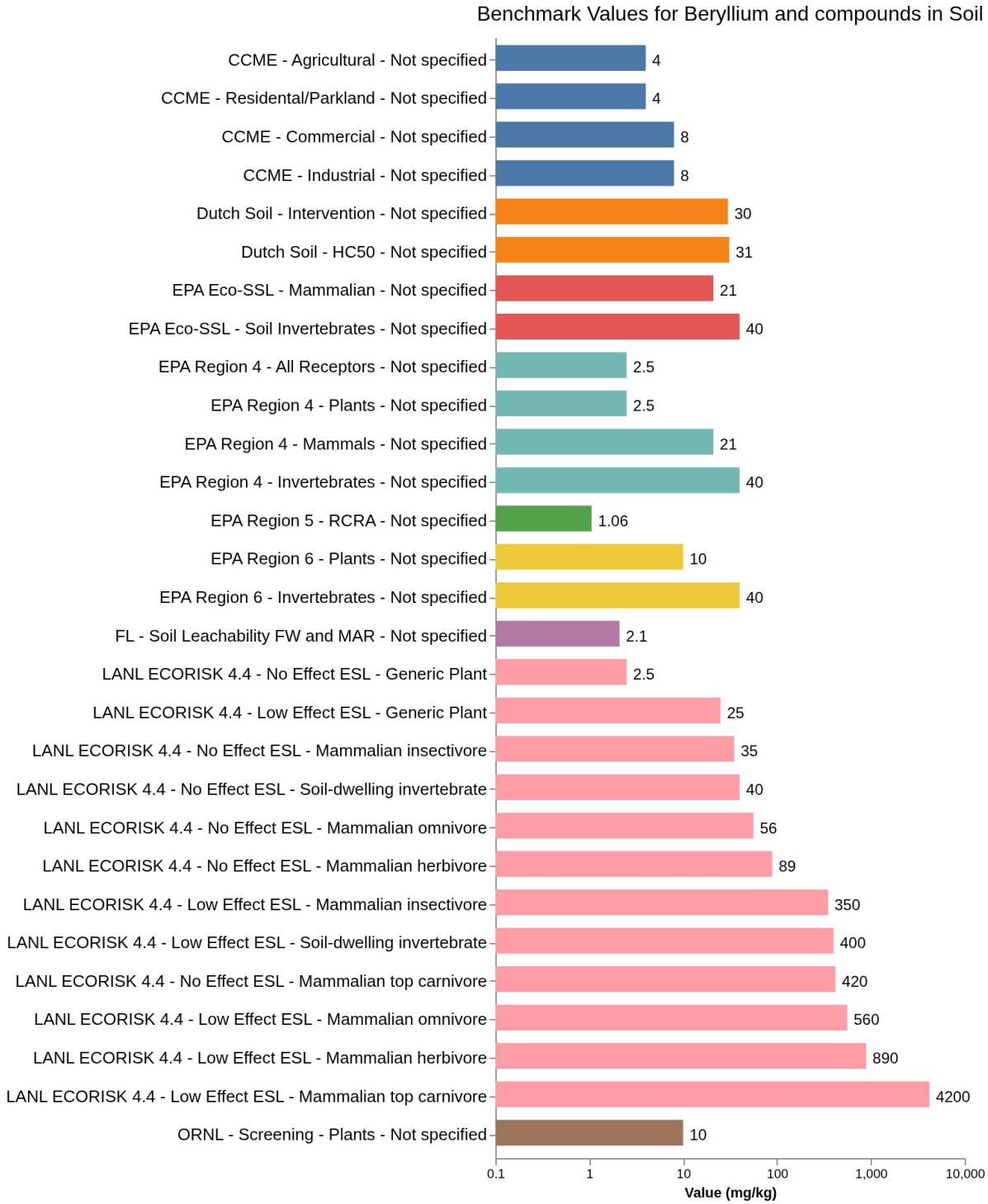

Benchmark Values for Beryllium and compounds in Soil
CCME - Agricultural - Not specified
4
CCME - Residental/Parkland - Not specified
4
CCME - Commercial - Not specified
8
CCME - Industrial - Not specified
8
Dutch Soil - Intervention - Not specified
30
Dutch Soil - HC50 - Not specified
31
EPA Eco-SSL - Mammalian - Not specified
21
EPA Eco-SSL - Soil Invertebrates - Not specified
40
EPA Region 4 - All Receptors - Not specified
2.5
EPA Region 4 - Plants - Not specified
2.5
EPA Region 4 - Mammals - Not specified
21
EPA Region 4 - Invertebrates - Not specified
40
EPA Region 5 - RCRA - Not specified
1.06
EPA Region 6 - Plants - Not specified
10
EPA Region 6 - Invertebrates - Not specified
40
FL - Soil Leachability FW and MAR - Not specified
2.1
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
2.5
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
25
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
35
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
40
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
56
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
89
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
350
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
400
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
420
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
560
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
890
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
4200
ORNL - Screening - Plants - Not specified
10
0.1
1
10
100
1,000
10,000
Value (mg/kg)

Table 52: Benchmark Values for Biphenyl, 1,1'− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
92−52−4	EPA Region 4	Soil All Receptors	Not specified	0.2
92−52−4	EPA Region 4	Soil Invertebrates	Not specified	0.2
92−52−4	EPA Region 4	Soil Plants	Not specified	60.0
92−52−4	EPA Region 6	Soil Plants	Not specified	60.0
92−52−4	Florida	Soil Leachability Freshwater and Marine	Not specified	5.8
92−52−4	ORNL	Soil Screening − Plants	Not specified	60.0

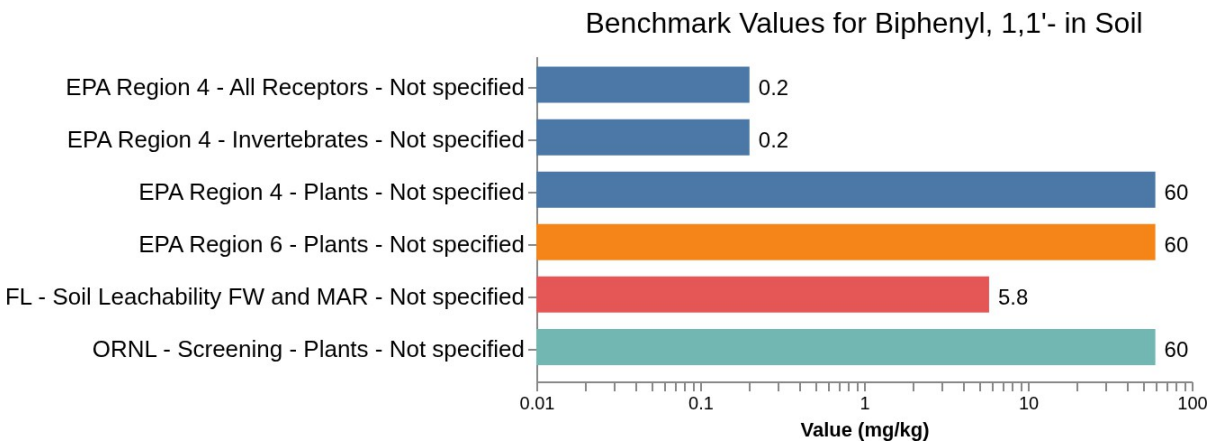


Table 53: Benchmark Values for Bis(2−chloro−1−methylethyl) ether in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
108−60−1	EPA Region 5	EPA RCRA Soil	Not specified	19.9

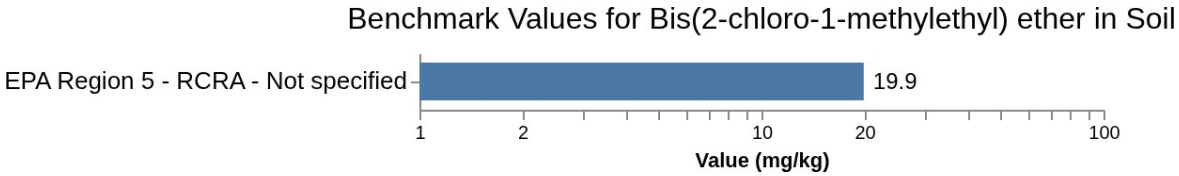


Table 54: Benchmark Values for Bis(2−chloroethoxy)methane in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
111−91−1	EPA Region 5	EPA RCRA Soil	Not specified	0.302

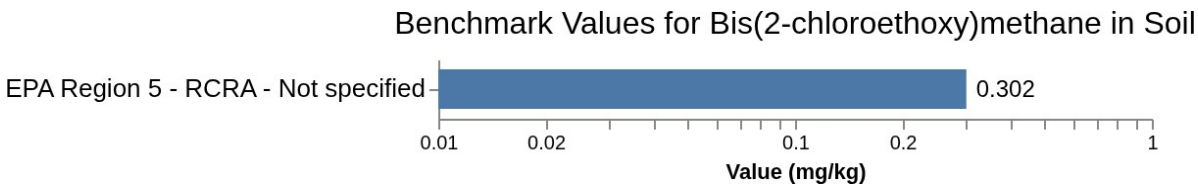


Table 55: Benchmark Values for Bis(2−chloroethyl)ether in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
111−44−4	EPA Region 5	EPA RCRA Soil	Not specified	23.700
111−44−4	Florida	Soil Leachability Freshwater and Marine	Not specified	0.002

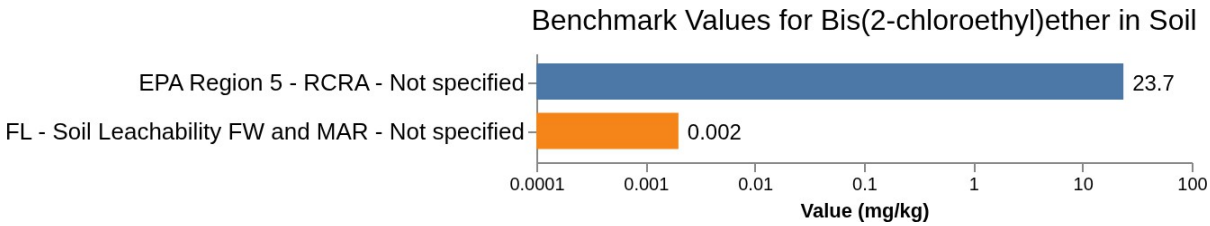


Table 56: Benchmark Values for Bis(2−ethylhexyl)phthalate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
117−81−7	Dutch Soil Protection Act	Background	Not specified	0.045	71
117−81−7	Dutch Soil Protection Act	Intervention Value	Not specified	60.000	
117−81−7	EPA Region 4	Soil Avians	Not specified	0.020	7
117−81−7	EPA Region 4	Soil All Receptors	Not specified	0.020	7
117−81−7	EPA Region 4	Soil Mammals	Not specified	0.600	7
117−81−7	EPA Region 4	Soil Invertebrates	Not specified	8.400	7
117−81−7	EPA Region 5	EPA RCRA Soil	Not specified	0.925	
117−81−7	Florida	Soil Leachability Freshwater and Marine	Not specified	1300.000	
117−81−7	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.020	
117−81−7	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.040	
117−81−7	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	0.096	
117−81−7	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	0.200	
117−81−7	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	0.400	
117−81−7	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.600	
117−81−7	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	0.960	
117−81−7	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	1.100	
117−81−7	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	6.000	
117−81−7	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	9.300	
117−81−7	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	11.000	
117−81−7	LANL ECORISK	Soil No Effect ESL	Avian herbivore	16.000	
117−81−7	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	93.000	
117−81−7	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	160.000	
117−81−7	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	500.000	
117−81−7	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	1900.000	
117−81−7	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	5000.000	
117−81−7	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	19000.000	
117−81−7	UK	Soil Screening Values	Not specified	13.000	

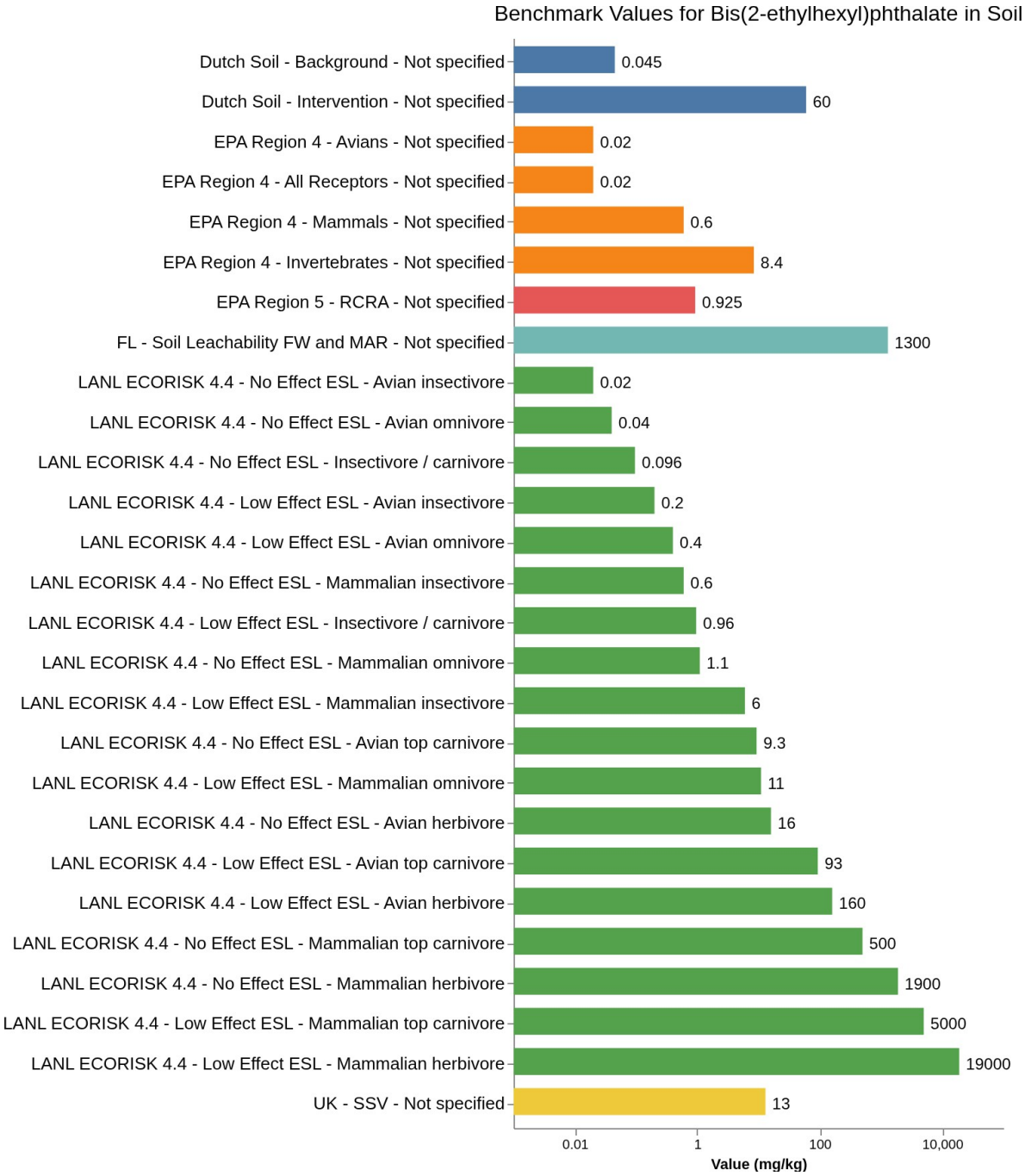


Table 57: Benchmark Values for Bisphenol A in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
80−05−7	Florida	Soil Leachability Freshwater and Marine	Not specified	1.7

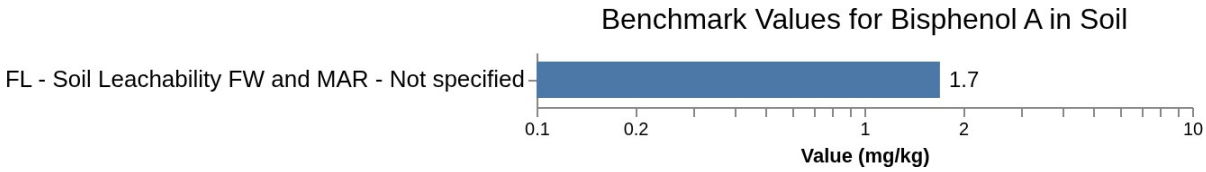


Table 58: Benchmark Values for Boron And Borates Only in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7440−42−8	Canada	Soil Agricultural	Not specified	2.0
7440−42−8	EPA Region 4	Soil Avians	Not specified	2.0
7440−42−8	EPA Region 4	Soil All Receptors	Not specified	7.5
7440−42−8	EPA Region 4	Soil Plants	Not specified	36.0
7440−42−8	EPA Region 4	Soil Mammals	Not specified	55.0
7440−42−8	EPA Region 6	Soil Plants	Not specified	0.5
7440−42−8	LANL ECORISK	Soil No Effect ESL	Avian herbivore	2.0
7440−42−8	LANL ECORISK	Soil No Effect ESL	Avian omnivore	3.1
7440−42−8	LANL ECORISK	Soil No Effect ESL	Avian insectivore	7.1
7440−42−8	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	10.0
7440−42−8	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	15.0
7440−42−8	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	35.0
7440−42−8	LANL ECORISK	Soil No Effect ESL	Generic Plant	36.0
7440−42−8	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	37.0
7440−42−8	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	55.0
7440−42−8	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	84.0
7440−42−8	LANL ECORISK	Soil Low Effect ESL	Generic Plant	86.0
7440−42−8	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	130.0
7440−42−8	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	180.0
7440−42−8	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	550.0
7440−42−8	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	840.0
7440−42−8	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	960.0
7440−42−8	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	1300.0
7440−42−8	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	4700.0
7440−42−8	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	21000.0
7440−42−8	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	210000.0
7440−42−8	ORNL	Soil Screening − Plants	Not specified	0.5
7440−42−8	ORNL	Soil Screening − Microbes	Not specified	20.0

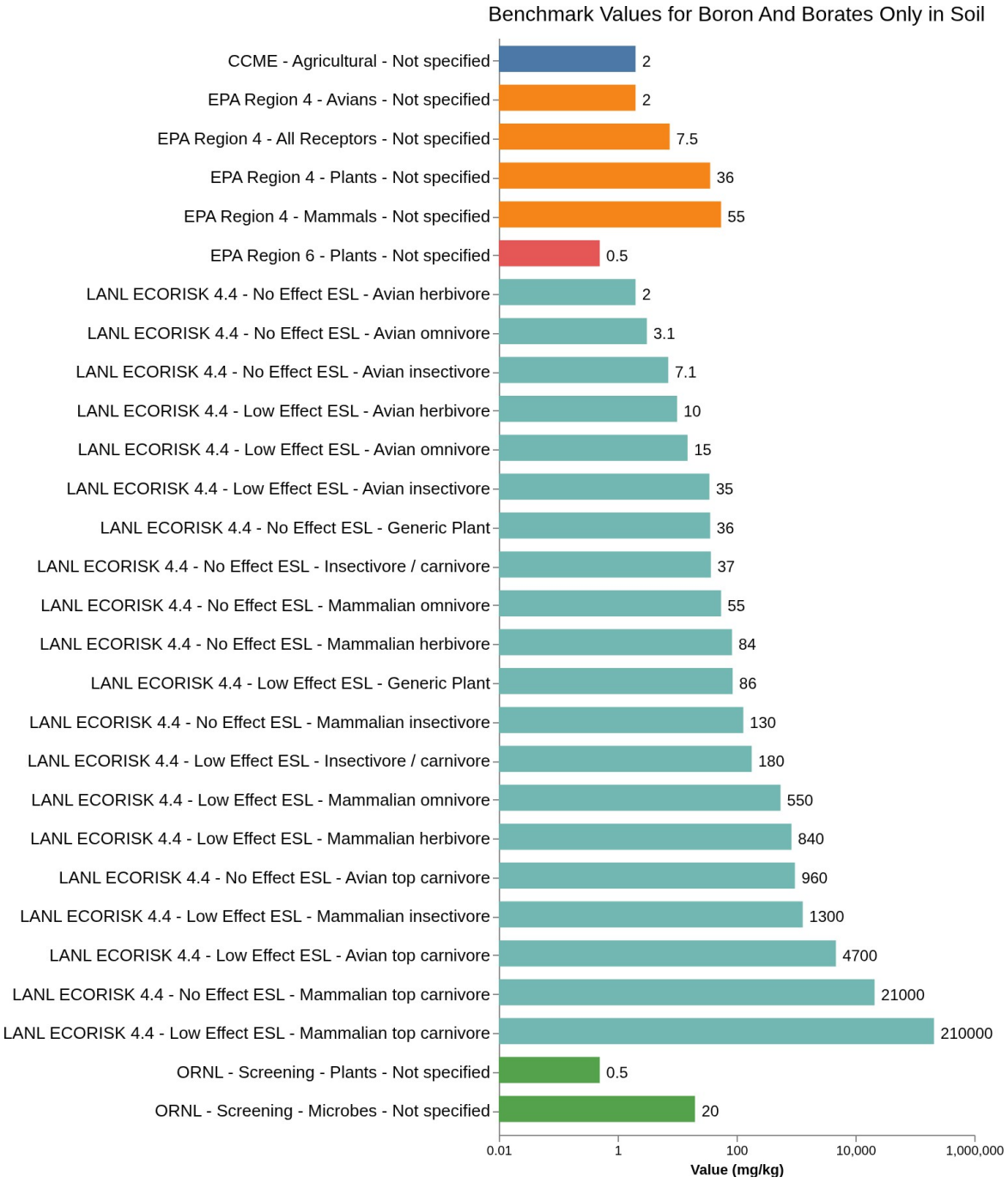

Benchmark Values for Boron And Borates Only in Soil
CCME - Agricultural - Not specified
2
EPA Region 4 - Avians - Not specified
2
EPA Region 4 - All Receptors - Not specified
7.5
EPA Region 4 - Plants - Not specified
36
EPA Region 4 - Mammals - Not specified
55
EPA Region 6 - Plants - Not specified
0.5
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
2
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
3.1
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
7.1
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
10
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
15
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
35
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
36
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
37
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
55
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
84
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
86
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
130
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
180
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
550
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
840
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
960
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
1300
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
4700
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
21000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
210000
ORNL - Screening - Plants - Not specified
0.5
ORNL - Screening - Microbes - Not specified
20
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 59: Benchmark Values for Bromacil in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
314−40−9	Florida	Soil Leachability Freshwater and Marine	Not specified	0.6

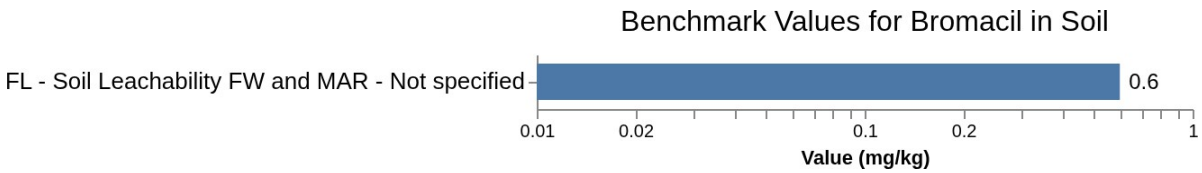


Table 60: Benchmark Values for Bromate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
15541−45−4	Florida	Soil Leachability Marine	Not specified	460.0

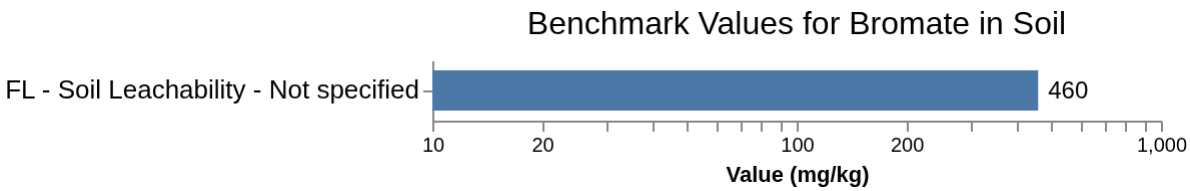


Table 61: Benchmark Values for Bromine in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7726−95−6	EPA Region 4	Soil All Receptors	Not specified	10.0
7726−95−6	EPA Region 4	Soil Plants	Not specified	10.0
7726−95−6	EPA Region 6	Soil Plants	Not specified	10.0
7726−95−6	ORNL	Soil Screening − Plants	Not specified	10.0

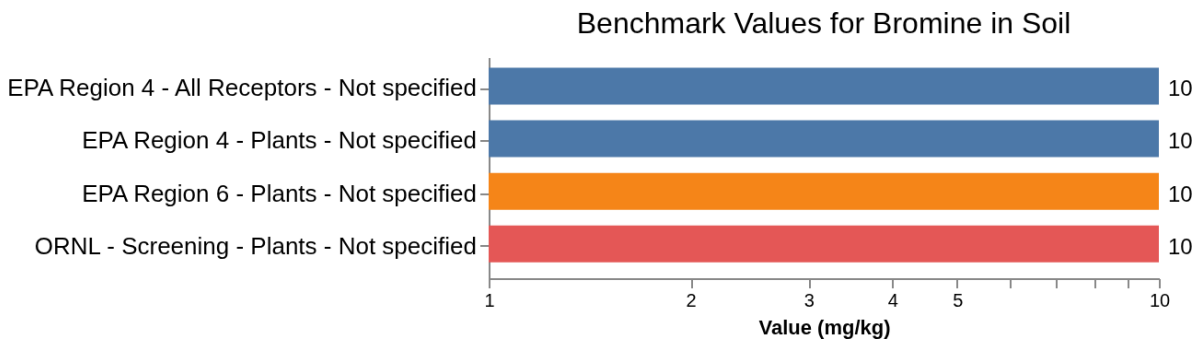


Table 62: Benchmark Values for Bromodichloromethane in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
75−27−4	EPA Region 5	EPA RCRA Soil	Not specified	0.54
75−27−4	Florida	Soil Leachability Freshwater and Marine	Not specified	0.10

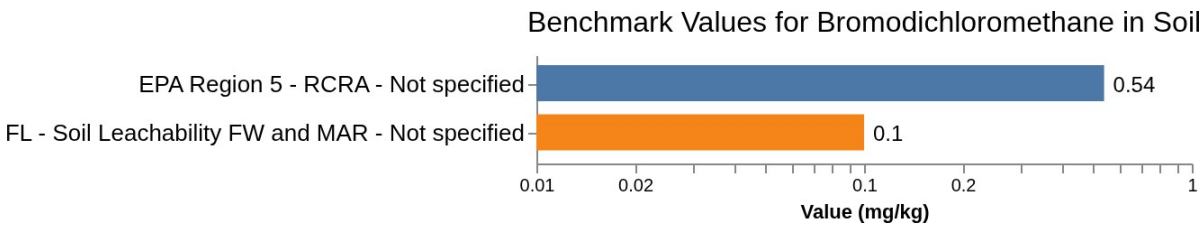


Table 63: Benchmark Values for Bromoform in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
75−25−2	Dutch Soil Protection Act	Background	Not specified	0.20	71
75−25−2	Dutch Soil Protection Act	Intervention Value	Not specified	75.00	
75−25−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	300.00	
75−25−2	EPA Region 4	Soil All Receptors	Not specified	0.07	
75−25−2	EPA Region 4	Soil Invertebrates	Not specified	0.07	
75−25−2	EPA Region 4	Soil Mammals	Not specified	15.90	
75−25−2	EPA Region 5	EPA RCRA Soil	Not specified	15.90	
75−25−2	Florida	Soil Leachability Freshwater and Marine	Not specified	2.70	

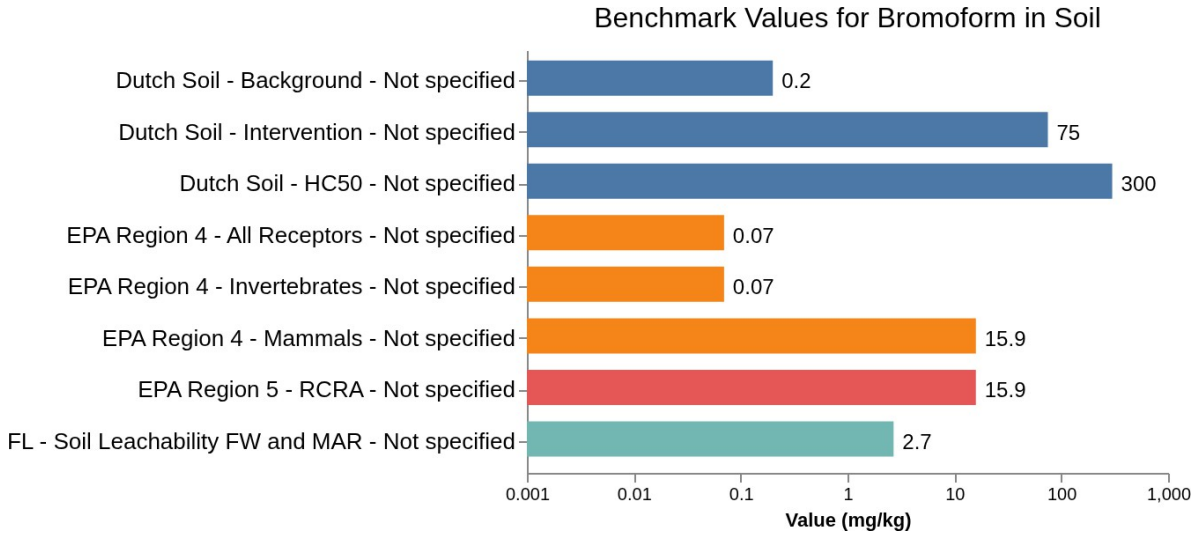


Table 64: Benchmark Values for Bromomethane in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
74−83−9	EPA Region 4	Soil Invertebrates	Not specified	0.002
74−83−9	EPA Region 4	Soil All Receptors	Not specified	0.002
74−83−9	EPA Region 4	Soil Mammals	Not specified	0.240
74−83−9	EPA Region 5	EPA RCRA Soil	Not specified	0.235
74−83−9	Florida	Soil Leachability Freshwater and Marine	Not specified	0.200

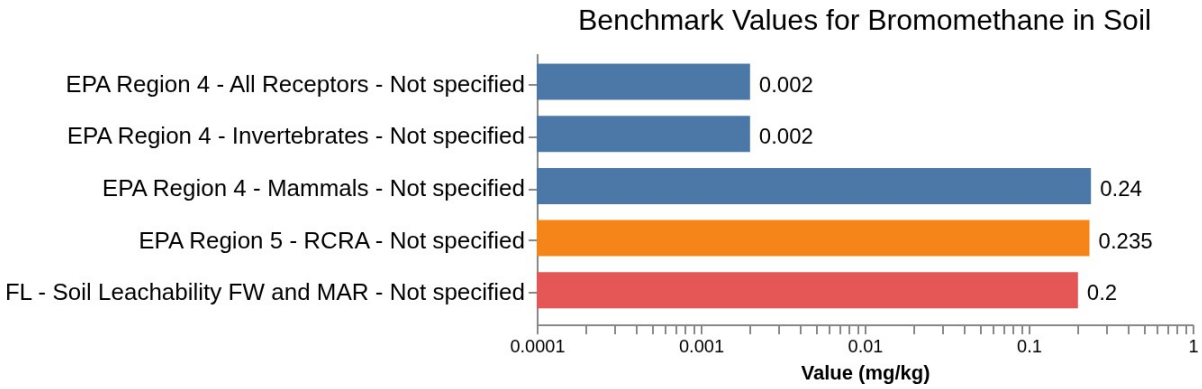


Table 65: Benchmark Values for Butanol, N− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
71−36−3	Florida	Soil Leachability Freshwater and Marine	Not specified	110.0

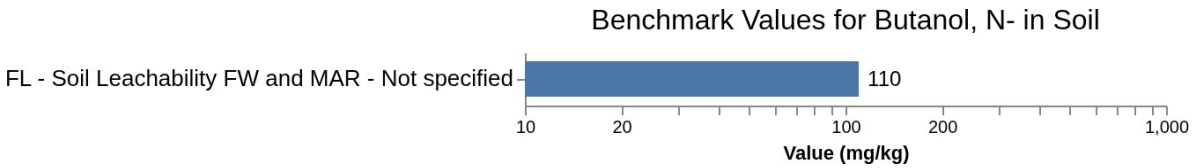


Table 66: Benchmark Values for Butanol in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
35296−72−1	Dutch Soil Protection Act	Background	Not specified	2.0	71
35296−72−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	26.0	
35296−72−1	Dutch Soil Protection Act	Intervention Value	Not specified	30.0	73

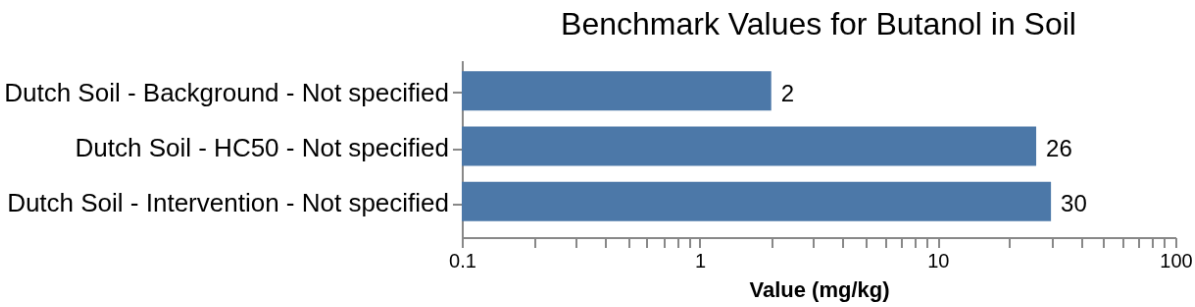


Table 67: Benchmark Values for Butyl Benzyl Phthalate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
85−68−7	Dutch Soil Protection Act	Background	Not specified	0.070	71
85−68−7	Dutch Soil Protection Act	Intervention Value	Not specified	48.000	
85−68−7	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	48.000	
85−68−7	EPA Region 4	Soil All Receptors	Not specified	0.590	
85−68−7	EPA Region 4	Soil Invertebrates	Not specified	0.590	
85−68−7	EPA Region 4	Soil Mammals	Not specified	90.000	
85−68−7	EPA Region 5	EPA RCRA Soil	Not specified	0.239	
85−68−7	Florida	Soil Leachability Freshwater and Marine	Not specified	56.000	
85−68−7	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	90.000	
85−68−7	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	160.000	
85−68−7	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	900.000	
85−68−7	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1600.000	
85−68−7	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	2400.000	
85−68−7	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	23000.000	
85−68−7	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	24000.000	
85−68−7	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	230000.000	

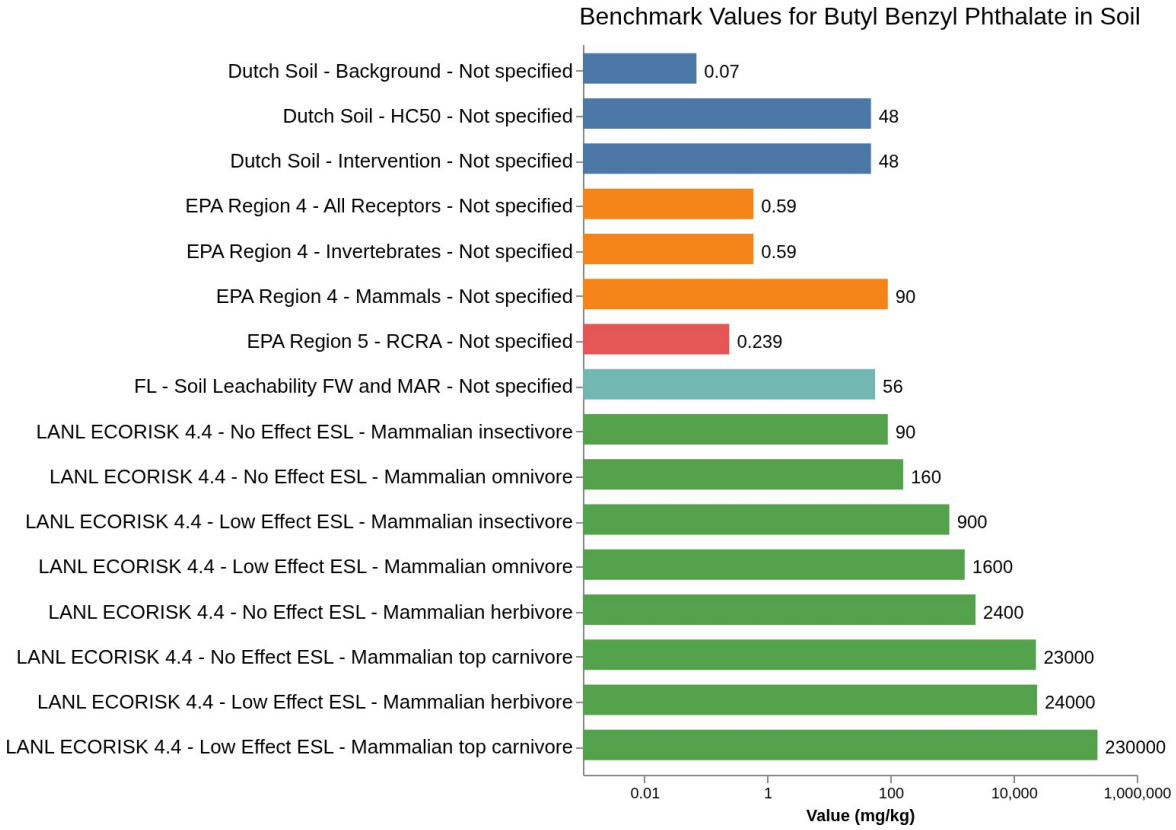

Benchmark Values for Butyl Benzyl Phthalate in Soil
Dutch Soil - Background - Not specified
0.07
Dutch Soil - HC50 - Not specified
48
Dutch Soil - Intervention - Not specified
48
EPA Region 4 - All Receptors - Not specified
0.59
EPA Region 4 - Invertebrates - Not specified
0.59
EPA Region 4 - Mammals - Not specified
90
EPA Region 5 - RCRA - Not specified
0.239
FL - Soil Leachability FW and MAR - Not specified
56
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
90
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
160
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
900
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
1600
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
2400
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
23000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
24000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
230000
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 68: Benchmark Values for Butylacetate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
123−86−4	Dutch Soil Protection Act	Background	Not specified	2.0	71
123−86−4	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	196.0	
123−86−4	Dutch Soil Protection Act	Intervention Value	Not specified	200.0	73

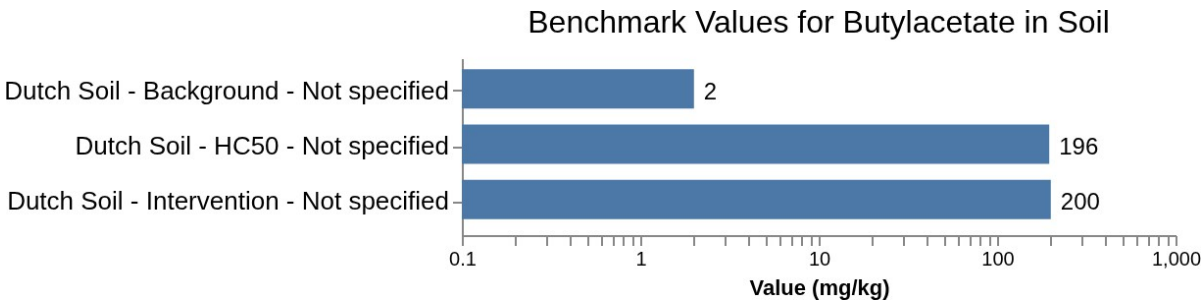


Table 69: Benchmark Values for Butylate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
2008−41−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.2

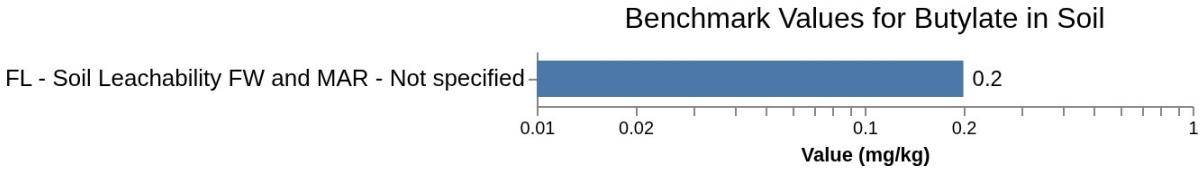


Table 70: Benchmark Values for Cadmium (Diet) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
7440−43−9	Canada	Soil Agricultural	Not specified	1.40000	
7440−43−9	Canada	Soil Residential/Parkland	Not specified	10.00000	
7440−43−9	Canada	Soil Industrial	Not specified	22.00000	
7440−43−9	Canada	Soil Commercial	Not specified	22.00000	
7440−43−9	Dutch Soil Protection Act	Background	Not specified	0.60000	
7440−43−9	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	13.00000	
7440−43−9	Dutch Soil Protection Act	Intervention Value	Not specified	13.00000	
7440−43−9	EPA ECO−SSL	Mammalian	Not specified	0.36000	
7440−43−9	EPA ECO−SSL	Avian	Not specified	0.77000	
7440−43−9	EPA ECO−SSL	Plants	Not specified	32.00000	
7440−43−9	EPA ECO−SSL	Soil Invertebrates	Not specified	140.00000	
7440−43−9	EPA Region 4	Soil All Receptors	Not specified	0.36000	
7440−43−9	EPA Region 4	Soil Mammals	Not specified	0.36000	
7440−43−9	EPA Region 4	Soil Avians	Not specified	0.77000	
7440−43−9	EPA Region 4	Soil Plants	Not specified	32.00000	
7440−43−9	EPA Region 4	Soil Invertebrates	Not specified	140.00000	
7440−43−9	EPA Region 5	EPA RCRA Soil	Not specified	0.00222	
7440−43−9	EPA Region 6	Soil Plants	Not specified	32.00000	
7440−43−9	EPA Region 6	Soil Invertebrates	Not specified	140.00000	
7440−43−9	Florida	Soil Leachability Marine	Not specified	14.00000	211, 212
7440−43−9	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.27000	
7440−43−9	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.29000	
7440−43−9	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.50000	
7440−43−9	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.54000	
7440−43−9	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	1.30000	
7440−43−9	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	1.60000	
7440−43−9	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	3.00000	
7440−43−9	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	3.60000	
7440−43−9	LANL ECORISK	Soil No Effect ESL	Avian herbivore	4.30000	
7440−43−9	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	6.80000	
7440−43−9	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	7.70000	
7440−43−9	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	10.00000	
7440−43−9	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	23.00000	
7440−43−9	LANL ECORISK	Soil No Effect ESL	Generic Plant	32.00000	
7440−43−9	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	140.00000	
7440−43−9	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	140.00000	
7440−43−9	LANL ECORISK	Soil Low Effect ESL	Generic Plant	160.00000	
7440−43−9	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	430.00000	
7440−43−9	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	550.00000	
7440−43−9	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	760.00000	
7440−43−9	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	2300.00000	
7440−43−9	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	7400.00000	
7440−43−9	ORNL	Soil Screening − Plants	Not specified	4.00000	
7440−43−9	ORNL	Soil Screening − Microbes	Not specified	20.00000	
7440−43−9	ORNL	Soil Screening − Invertebrates	Not specified	20.00000	
7440−43−9	UK	Soil Screening Values	Not specified	0.60000	
7440−43−9	Washington	Soil Wildlife	Not specified	14.00000	

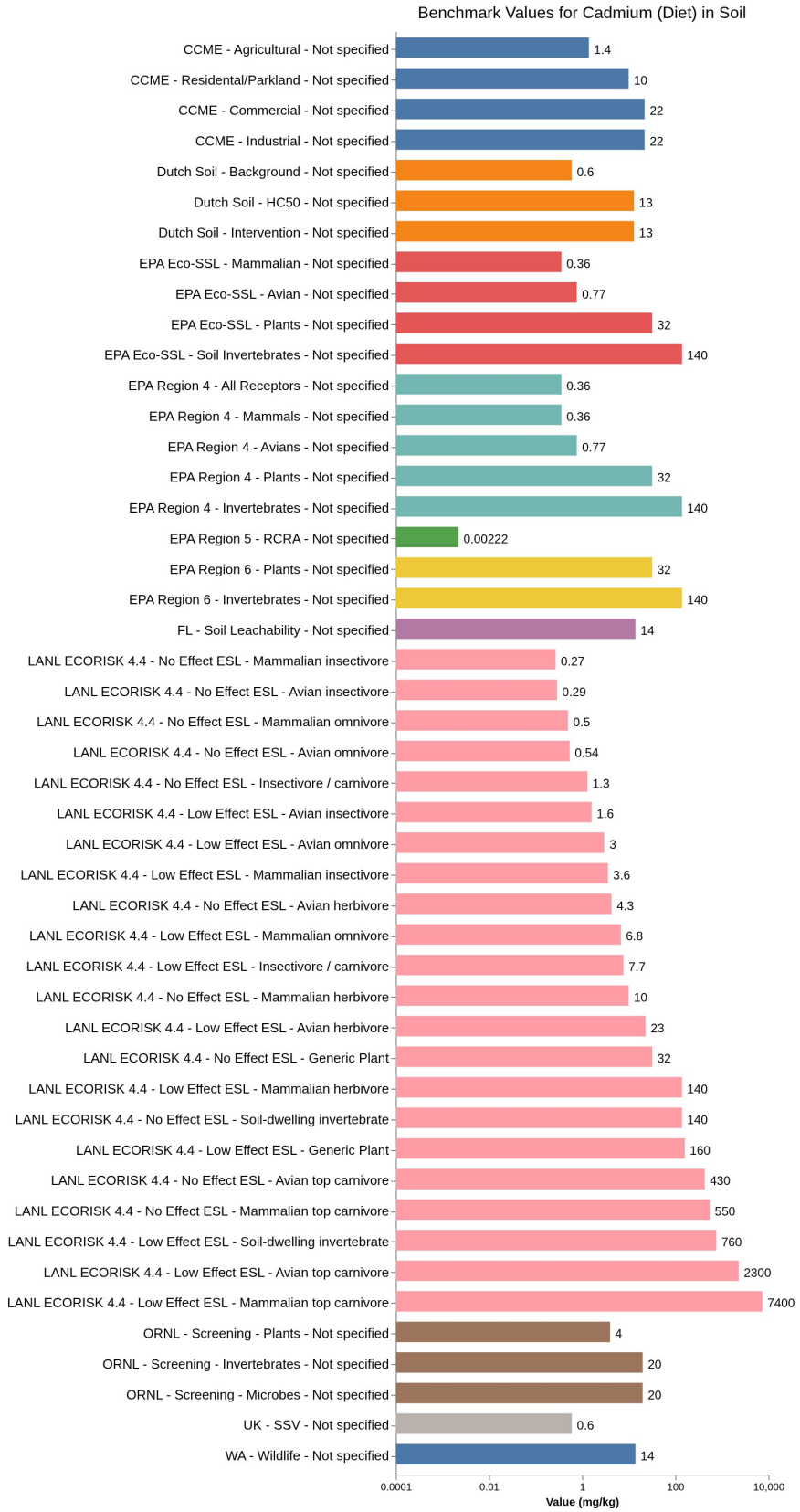

Benchmark Values for Cadmium (Diet) in Soil
CCME - Agricultural - Not specified 1.4
CCME - Residental/Parkland - Not specified 10
CCME - Commercial - Not specified 22
CCME - Industrial - Not specified 22
Dutch Soil - Background - Not specified 0.6
Dutch Soil - HC50 - Not specified 13
Dutch Soil - Intervention - Not specified 13
EPA Eco-SSL - Mammalian - Not specified 0.36
EPA Eco-SSL - Avian - Not specified 0.77
EPA Eco-SSL - Plants - Not specified 32
EPA Eco-SSL - Soil Invertebrates - Not specified 140
EPA Region 4 - All Receptors - Not specified 0.36
EPA Region 4 - Mammals - Not specified 0.36
EPA Region 4 - Avians - Not specified 0.77
EPA Region 4 - Plants - Not specified 32
EPA Region 4 - Invertebrates - Not specified 140
EPA Region 5 - RCRA - Not specified 0.00222
EPA Region 6 - Plants - Not specified 32
EPA Region 6 - Invertebrates - Not specified 140
FL - Soil Leachability - Not specified 14
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore 0.27
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore 0.29
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore 0.5
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore 0.54
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore 1.3
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore 1.6
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore 3
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore 3.6
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore 4.3
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore 6.8
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore 7.7
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore 10
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore 23
LANL ECORISK 4.4 - No Effect ESL - Generic Plant 32
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore 140
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate 140
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant 160
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore 430
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore 550
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate 760
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore 2300
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore 7400
ORNL - Screening - Plants - Not specified 4
ORNL - Screening - Invertebrates - Not specified 20
ORNL - Screening - Microbes - Not specified 20
UK - SSV - Not specified 0.6
WA - Wildlife - Not specified 14
0.0001
0.01
1
100
10,000
Value (mg/kg)

Table 71: Benchmark Values for Captafol in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
2425−06−1	Florida	Soil Leachability Freshwater and Marine	Not specified	0.1

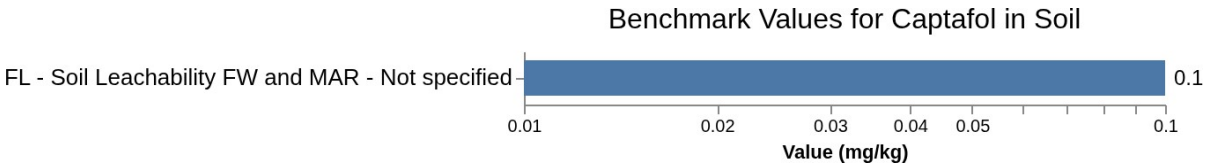


Table 72: Benchmark Values for Captan in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
133−06−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.03

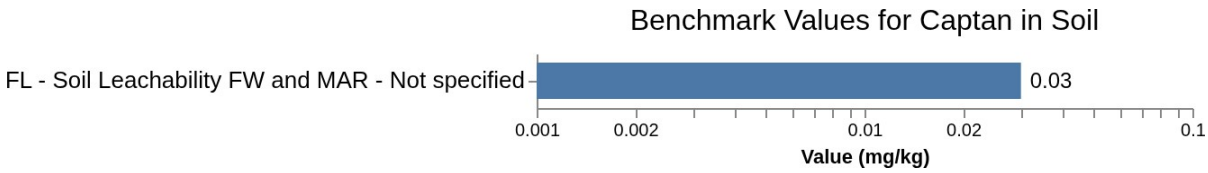


Table 73: Benchmark Values for Carbaryl in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
63−25−2	Dutch Soil Protection Act	Background	Not specified	0.1500	71
63−25−2	Dutch Soil Protection Act	Intervention Value	Not specified	0.4500	
63−25−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	0.4500	
63−25−2	EPA Region 4	Soil All Receptors	Not specified	0.0003	
63−25−2	EPA Region 4	Soil Invertebrates	Not specified	0.0003	
63−25−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0007	

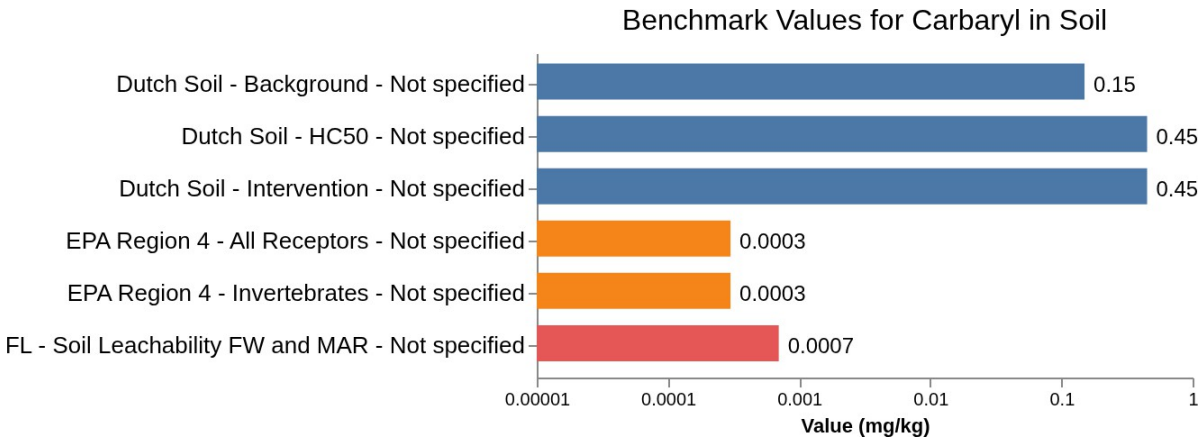


Table 74: Benchmark Values for Carbazole in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
86−74−8	EPA Region 4	Soil Invertebrates	Not specified	0.07
86−74−8	EPA Region 4	Soil All Receptors	Not specified	0.07
86−74−8	EPA Region 4	Soil Mammals	Not specified	79.00
86−74−8	Florida	Soil Leachability Freshwater and Marine	Not specified	6.50
86−74−8	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	79.00
86−74−8	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	110.00
86−74−8	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	140.00
86−74−8	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	790.00
86−74−8	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	1100.00
86−74−8	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1400.00
86−74−8	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	13000.00
86−74−8	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	130000.00

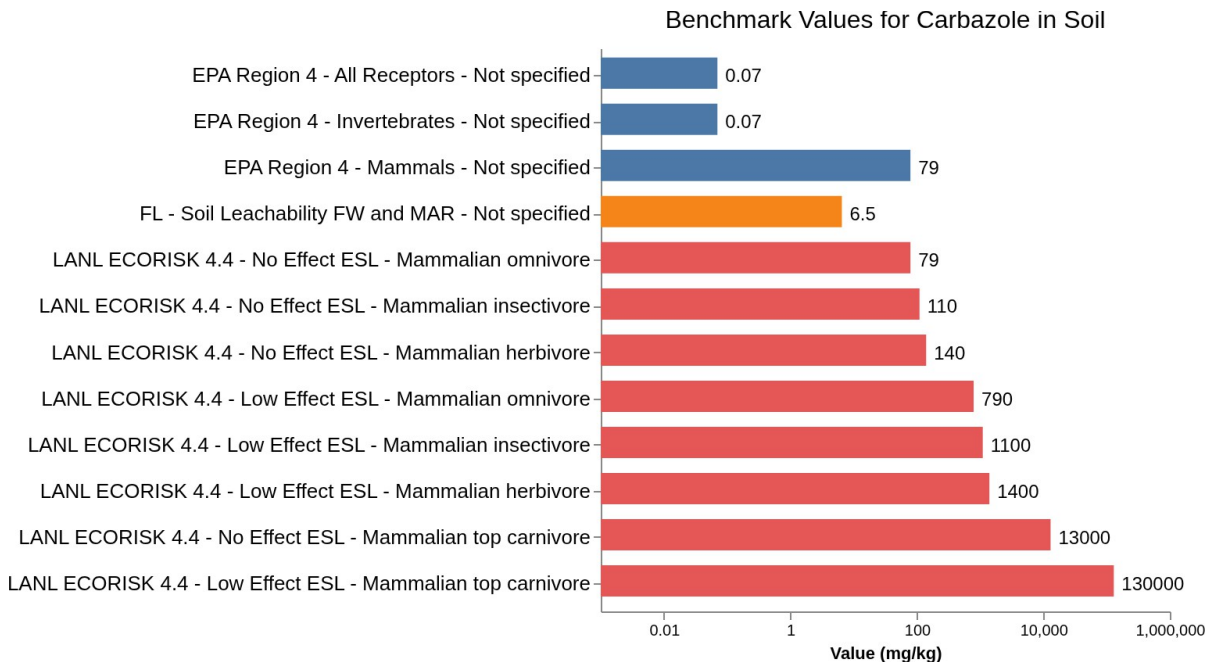


Table 75: Benchmark Values for Carbofuran in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
1563−66−2	Dutch Soil Protection Act	Background	Not specified	0.0170	71
1563−66−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	0.0170	
1563−66−2	Dutch Soil Protection Act	Intervention Value	Not specified	0.0170	
1563−66−2	EPA Region 4	Soil All Receptors	Not specified	0.0008	
1563−66−2	EPA Region 4	Soil Invertebrates	Not specified	0.0008	
1563−66−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0006	

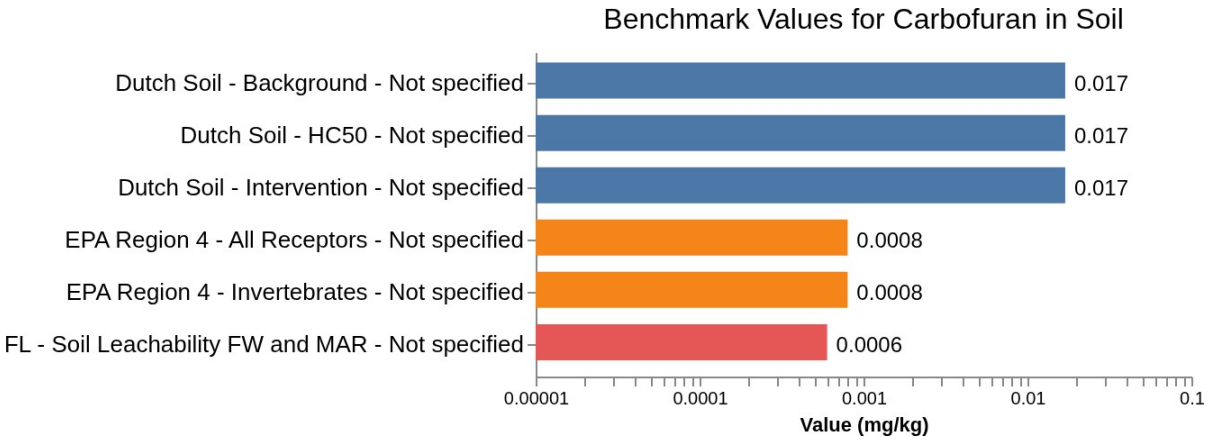


Table 76: Benchmark Values for Carbon Disulfide in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
75−15−0	EPA Region 4	Soil All Receptors	Not specified	0.0050
75−15−0	EPA Region 4	Soil Invertebrates	Not specified	0.0050
75−15−0	EPA Region 4	Soil Mammals	Not specified	0.8100
75−15−0	EPA Region 5	EPA RCRA Soil	Not specified	0.0941
75−15−0	Florida	Soil Leachability Freshwater and Marine	Not specified	0.8000
75−15−0	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.8100
75−15−0	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	1.2000
75−15−0	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	1.4000
75−15−0	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	8.1000
75−15−0	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	12.0000
75−15−0	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	14.0000
75−15−0	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	190.0000
75−15−0	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	1900.0000

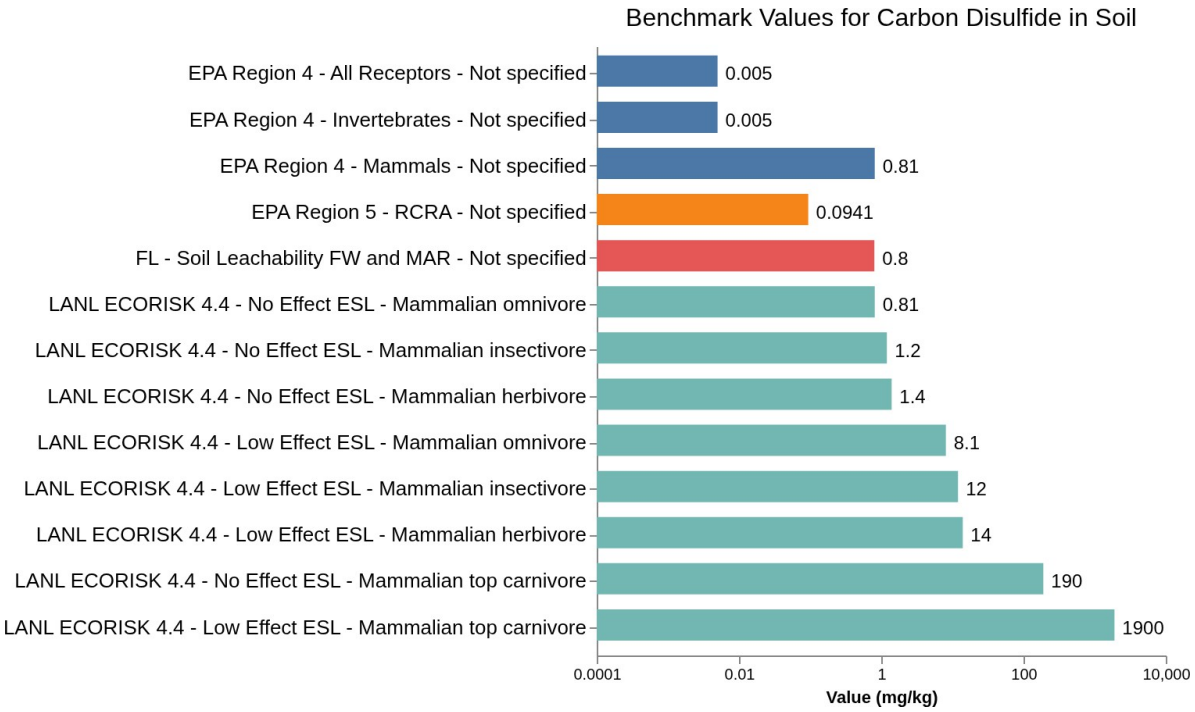


Table 77: Benchmark Values for Carbon Tetrachloride in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
56−23−5	Canada	Soil Agricultural	Not specified	0.10	
56−23−5	Canada	Soil Residential/Parkland	Not specified	5.00	
56−23−5	Canada	Soil Commercial	Not specified	50.00	
56−23−5	Canada	Soil Industrial	Not specified	50.00	
56−23−5	Dutch Soil Protection Act	Background	Not specified	0.30	71
56−23−5	Dutch Soil Protection Act	Intervention Value	Not specified	0.70	
56−23−5	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	29.00	
56−23−5	EPA Region 4	Soil Invertebrates	Not specified	0.05	
56−23−5	EPA Region 4	Soil All Receptors	Not specified	0.05	
56−23−5	EPA Region 4	Soil Mammals	Not specified	2.98	
56−23−5	EPA Region 5	EPA RCRA Soil	Not specified	2.98	
56−23−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.06	
56−23−5	ORNL	Soil Screening − Microbes	Not specified	1000.00	

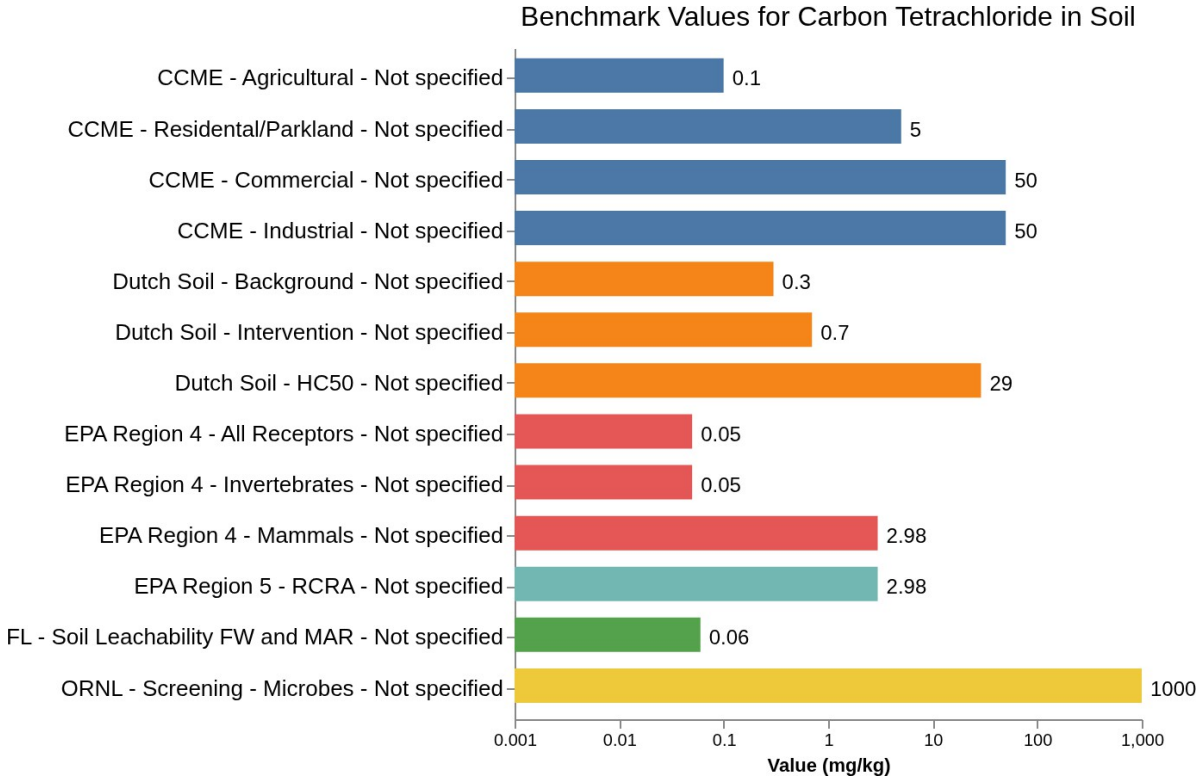


Table 78: Benchmark Values for Carboxin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
5234−68−4	Florida	Soil Leachability Freshwater and Marine	Not specified	0.4

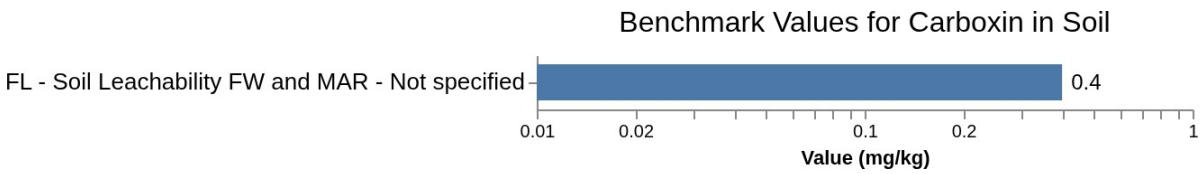


Table 79: Benchmark Values for Catechol in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
120−80−9	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	2.6	
120−80−9	Dutch Soil Protection Act	Intervention Value	Not specified	8.0	73, 75

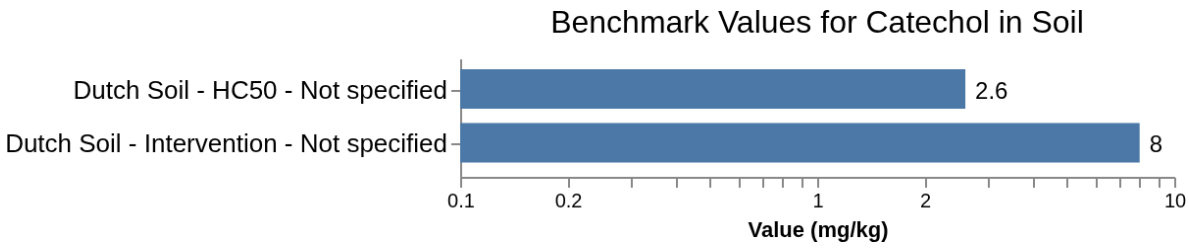


Table 80: Benchmark Values for Chlordane (alpha) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
5103−71−9	Dutch Soil Protection Act	Background	Not specified	0.0020	
5103−71−9	EPA Region 4	Soil All Receptors	Not specified	0.0029	7
5103−71−9	EPA Region 4	Soil Invertebrates	Not specified	0.0029	7
5103−71−9	EPA Region 4	Soil Avians	Not specified	0.2700	7
5103−71−9	EPA Region 4	Soil Mammals	Not specified	0.2700	7
5103−71−9	EPA Region 4	Soil Plants	Not specified	2.2000	7
5103−71−9	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.2700	
5103−71−9	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.2700	
5103−71−9	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.5300	
5103−71−9	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.5500	
5103−71−9	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	1.3000	
5103−71−9	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	1.3000	
5103−71−9	LANL ECORISK	Soil No Effect ESL	Generic Plant	2.2000	
5103−71−9	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	2.7000	
5103−71−9	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	2.7000	
5103−71−9	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	5.3000	
5103−71−9	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	6.5000	
5103−71−9	LANL ECORISK	Soil No Effect ESL	Avian herbivore	17.0000	
5103−71−9	LANL ECORISK	Soil Low Effect ESL	Generic Plant	22.0000	
5103−71−9	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	45.0000	
5103−71−9	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	54.0000	
5103−71−9	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	80.0000	
5103−71−9	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	89.0000	
5103−71−9	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	220.0000	
5103−71−9	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	540.0000	
5103−71−9	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	810.0000	

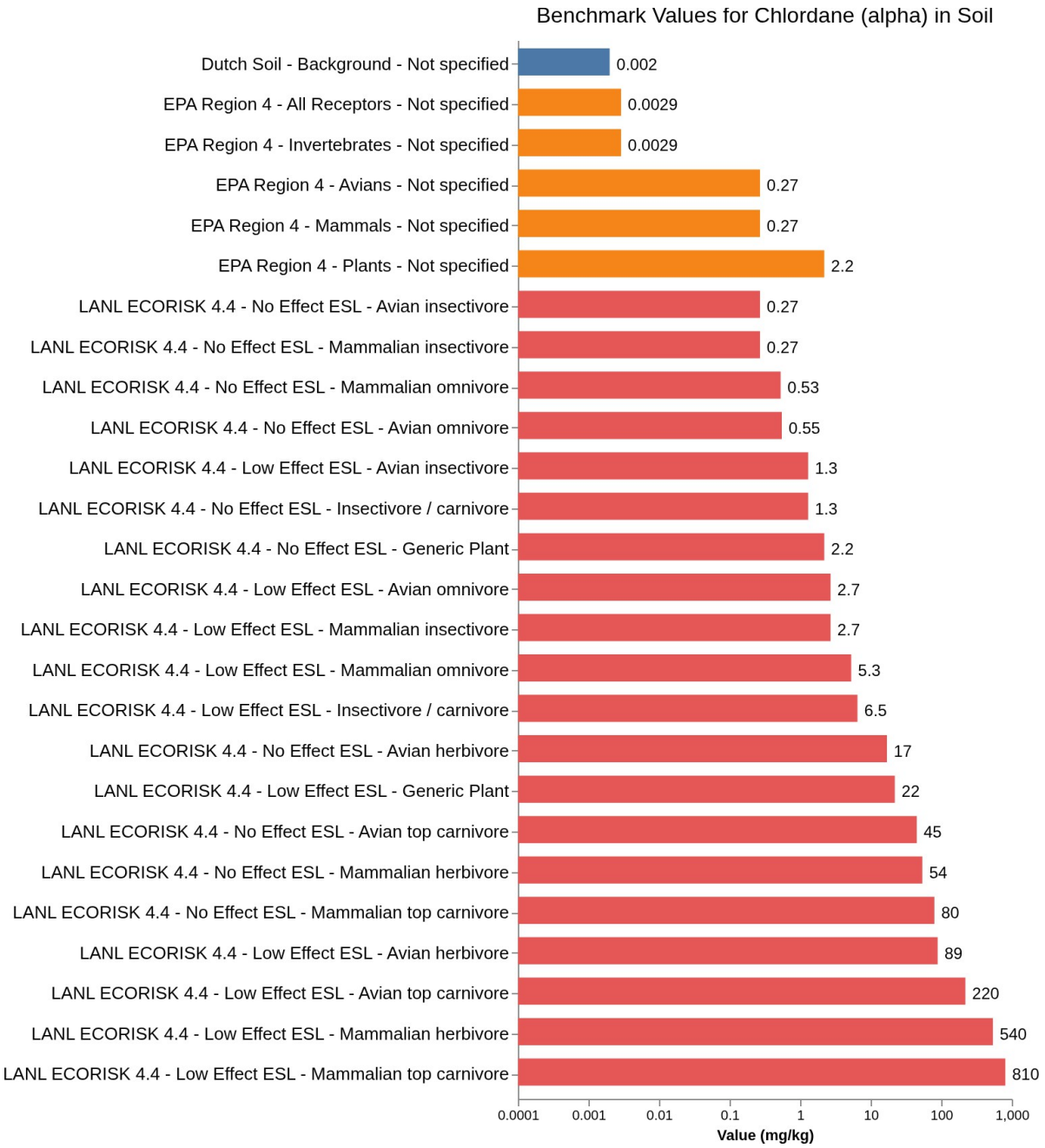

Benchmark Values for Chlordane (alpha) in Soil
Dutch Soil - Background - Not specified
0.002
EPA Region 4 - All Receptors - Not specified
0.0029
EPA Region 4 - Invertebrates - Not specified
0.0029
EPA Region 4 - Avians - Not specified
0.27
EPA Region 4 - Mammals - Not specified
0.27
EPA Region 4 - Plants - Not specified
2.2
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
0.27
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
0.27
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
0.53
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
0.55
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
1.3
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
1.3
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
2.2
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
2.7
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
2.7
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
5.3
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
6.5
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
17
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
22
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
45
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
54
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
80
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
89
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
220
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
540
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
810
0.0001
0.001
0.01
0.1
1
10
100
1,000
Value (mg/kg)

Table 81: Benchmark Values for Chlordane (gamma) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
5103−74−2	Dutch Soil Protection Act	Background	Not specified	0.002
5103−74−2	LANL ECORISK	Soil No Effect ESL	Generic Plant	2.200
5103−74−2	LANL ECORISK	Soil No Effect ESL	Avian insectivore	2.200
5103−74−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	2.300
5103−74−2	LANL ECORISK	Soil No Effect ESL	Avian omnivore	4.100
5103−74−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	4.300
5103−74−2	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	11.000
5103−74−2	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	11.000
5103−74−2	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	20.000
5103−74−2	LANL ECORISK	Soil No Effect ESL	Avian herbivore	20.000
5103−74−2	LANL ECORISK	Soil Low Effect ESL	Generic Plant	22.000
5103−74−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	23.000
5103−74−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	43.000
5103−74−2	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	56.000
5103−74−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	63.000
5103−74−2	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	100.000
5103−74−2	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	270.000
5103−74−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	420.000
5103−74−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	630.000
5103−74−2	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	1300.000
5103−74−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	4200.000

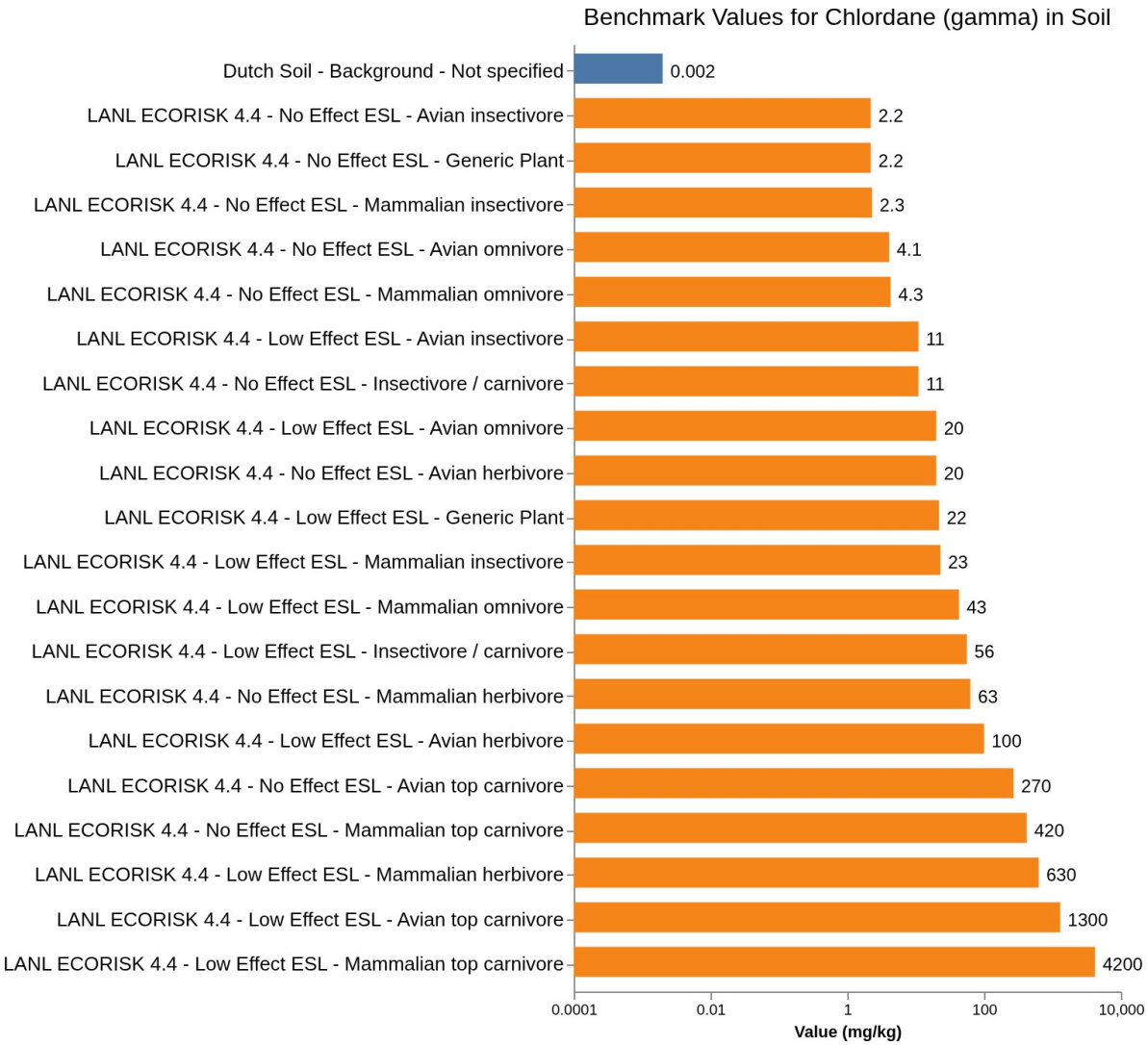

Benchmark Values for Chlordane (gamma) in Soil
Dutch Soil - Background - Not specified
0.002
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
2.2
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
2.2
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
2.3
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
4.1
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
4.3
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
11
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
11
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
20
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
20
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
22
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
23
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
43
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
56
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
63
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
100
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
270
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
420
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
630
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
1300
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
4200
0.0001
0.01
1
100
10,000
Value (mg/kg)

Table 82: Benchmark Values for Chlordane (technical mixture) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
12789−03−6	EPA Region 4	Soil All Receptors	Not specified	0.02	7
12789−03−6	EPA Region 4	Soil Invertebrates	Not specified	0.02	7
12789−03−6	EPA Region 4	Soil Plants	Not specified	2.20	7
12789−03−6	EPA Region 4	Soil Avians	Not specified	2.20	7
12789−03−6	EPA Region 4	Soil Mammals	Not specified	2.30	7

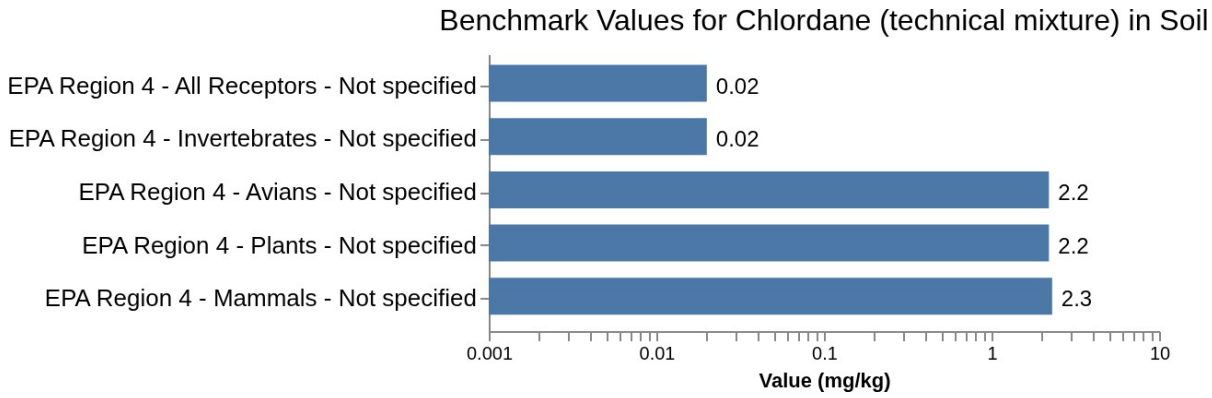


Table 83: Benchmark Values for Chlordane in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
57−74−9	Dutch Soil Protection Act	Background	Not specified	0.002
57−74−9	Dutch Soil Protection Act	Intervention Value	Not specified	4.000
57−74−9	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	5.400
57−74−9	EPA Region 5	EPA RCRA Soil	Not specified	0.224
57−74−9	Florida	Soil Leachability Freshwater and Marine	Not specified	0.003
57−74−9	Washington	Soil Wildlife	Not specified	2.700

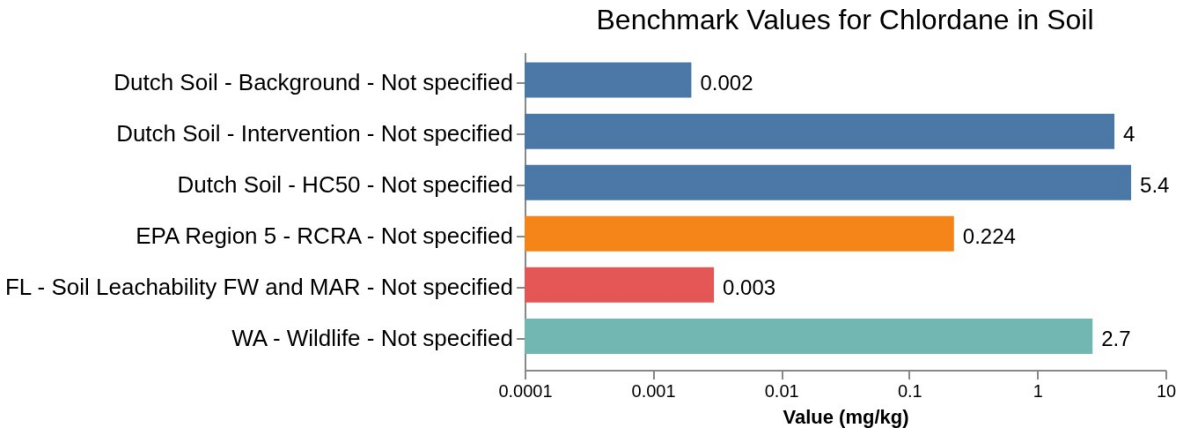


Table 84: Benchmark Values for Chlordecone (Kepone) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
143−50−0	EPA Region 4	Soil Invertebrates	Not specified	0.0170	7
143−50−0	EPA Region 4	Soil All Receptors	Not specified	0.0170	7
143−50−0	EPA Region 4	Soil Mammals	Not specified	0.0220	7
143−50−0	EPA Region 4	Soil Avians	Not specified	1.3000	7
143−50−0	EPA Region 5	EPA RCRA Soil	Not specified	0.0327	
143−50−0	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.0220	
143−50−0	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.0420	
143−50−0	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	0.1100	
143−50−0	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	0.2100	
143−50−0	LANL ECORISK	Soil No Effect ESL	Avian insectivore	1.3000	
143−50−0	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	2.1000	
143−50−0	LANL ECORISK	Soil No Effect ESL	Avian omnivore	2.5000	
143−50−0	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	2.6000	
143−50−0	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	5.1000	
143−50−0	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	5.8000	
143−50−0	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	6.1000	
143−50−0	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	10.0000	
143−50−0	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	12.0000	
143−50−0	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	29.0000	
143−50−0	LANL ECORISK	Soil No Effect ESL	Avian herbivore	46.0000	
143−50−0	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	92.0000	
143−50−0	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	190.0000	
143−50−0	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	380.0000	

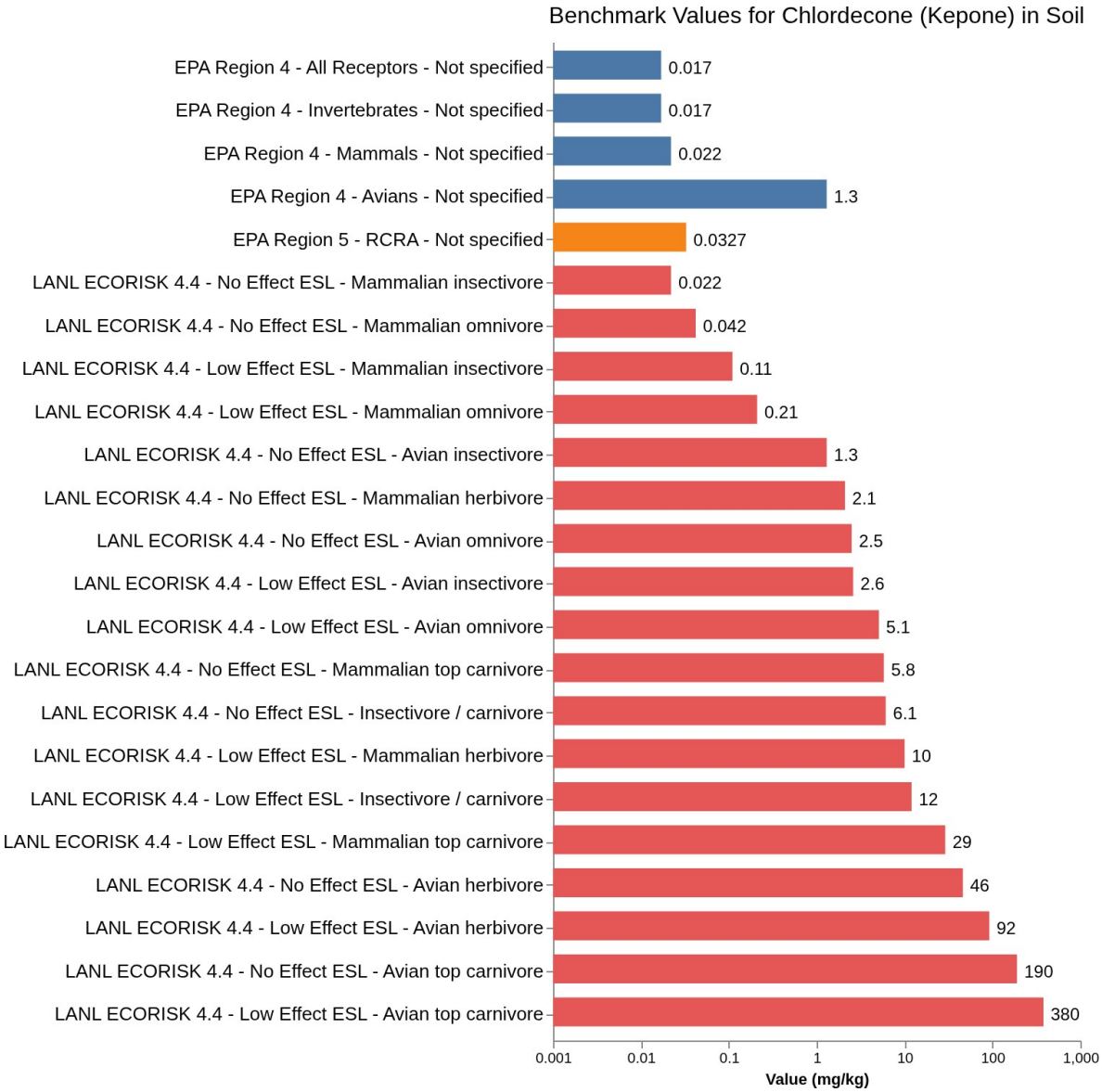


Table 85: Benchmark Values for Chloro−1,3−butadiene, 2− (Chloroprene) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
126−99−8	EPA Region 5	EPA RCRA Soil	Not specified	0.0029

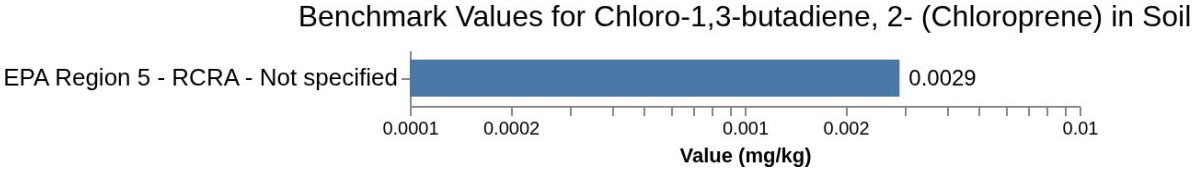


Table 86: Benchmark Values for Chloro−2−methylaniline HCl, 4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
3165−93−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	46.0	76
3165−93−3	Dutch Soil Protection Act	Intervention Value	Not specified	50.0	76

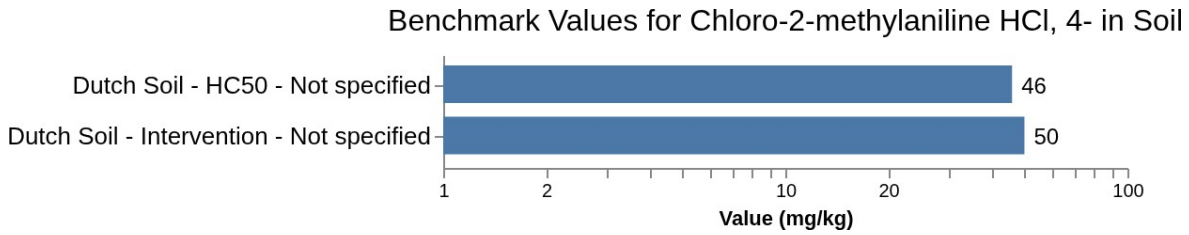


Table 87: Benchmark Values for Chloro−2−methylaniline, 4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
95−69−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	46.0	76
95−69−2	Dutch Soil Protection Act	Intervention Value	Not specified	50.0	76

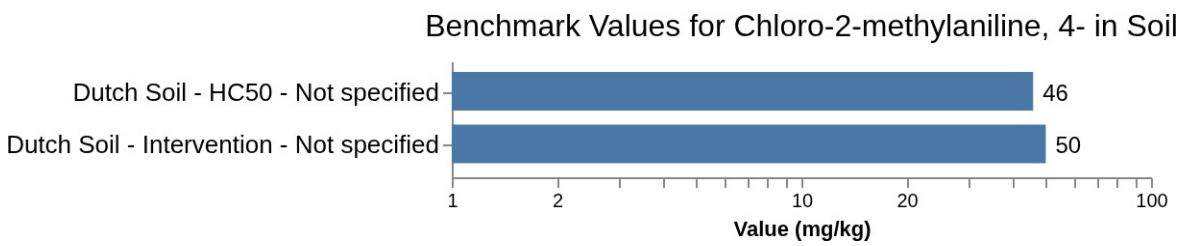


Table 88: Benchmark Values for Chloroacetamide in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
79−07−2	EPA Region 6	Soil Invertebrates	Not specified	2.0
79−07−2	ORNL	Soil Screening − Invertebrates	Not specified	2.0

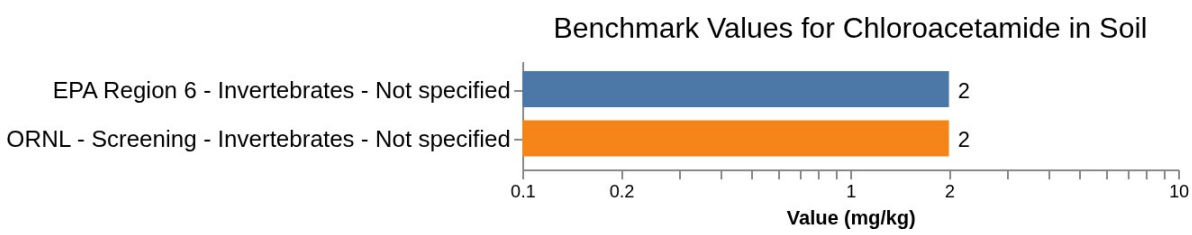


Table 89: Benchmark Values for Chloroacetic Acid in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
79−11−8	Florida	Soil Leachability Freshwater and Marine	Not specified	13.0

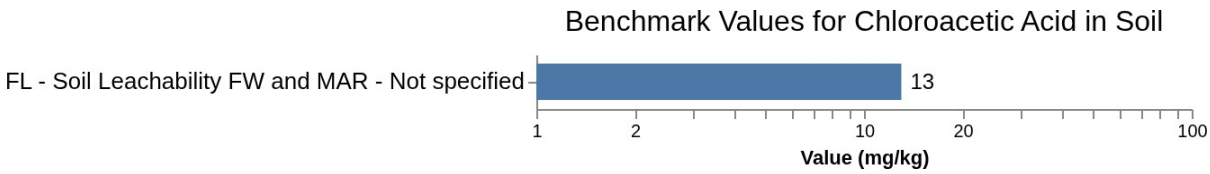


Table 90: Benchmark Values for Chloroaniline, 3− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
108−42−9	Dutch Soil Protection Act	Background	Not specified	0.2	71
108−42−9	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	46.0	76
108−42−9	Dutch Soil Protection Act	Intervention Value	Not specified	50.0	76
108−42−9	EPA Region 4	Soil All Receptors	Not specified	20.0	
108−42−9	EPA Region 4	Soil Plants	Not specified	20.0	
108−42−9	EPA Region 4	Soil Invertebrates	Not specified	30.0	
108−42−9	EPA Region 6	Soil Plants	Not specified	20.0	
108−42−9	EPA Region 6	Soil Invertebrates	Not specified	30.0	
108−42−9	ORNL	Soil Screening − Plants	Not specified	20.0	
108−42−9	ORNL	Soil Screening − Invertebrates	Not specified	30.0	

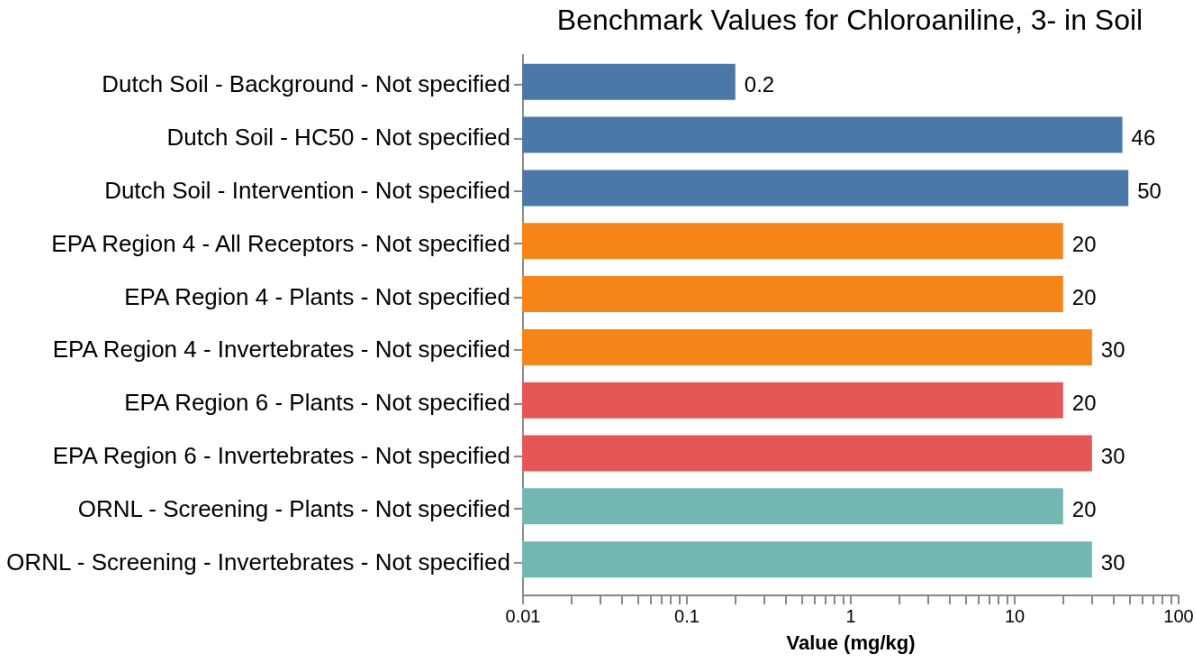


Table 91: Benchmark Values for Chloroaniline, p− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
106−47−8	Dutch Soil Protection Act	Background	Not specified	0.15	71
106−47−8	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	46.00	76
106−47−8	Dutch Soil Protection Act	Intervention Value	Not specified	50.00	76
106−47−8	EPA Region 4	Soil All Receptors	Not specified	1.00	
106−47−8	EPA Region 4	Soil Plants	Not specified	1.00	
106−47−8	EPA Region 4	Soil Mammals	Not specified	1.10	
106−47−8	EPA Region 4	Soil Invertebrates	Not specified	1.80	
106−47−8	EPA Region 5	EPA RCRA Soil	Not specified	1.10	
106−47−8	Florida	Soil Leachability Freshwater and Marine	Not specified	0.02	
106−47−8	LANL ECORISK	Soil No Effect ESL	Generic Plant	1.00	
106−47−8	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	1.80	
106−47−8	LANL ECORISK	Soil Low Effect ESL	Generic Plant	10.00	
106−47−8	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	18.00	

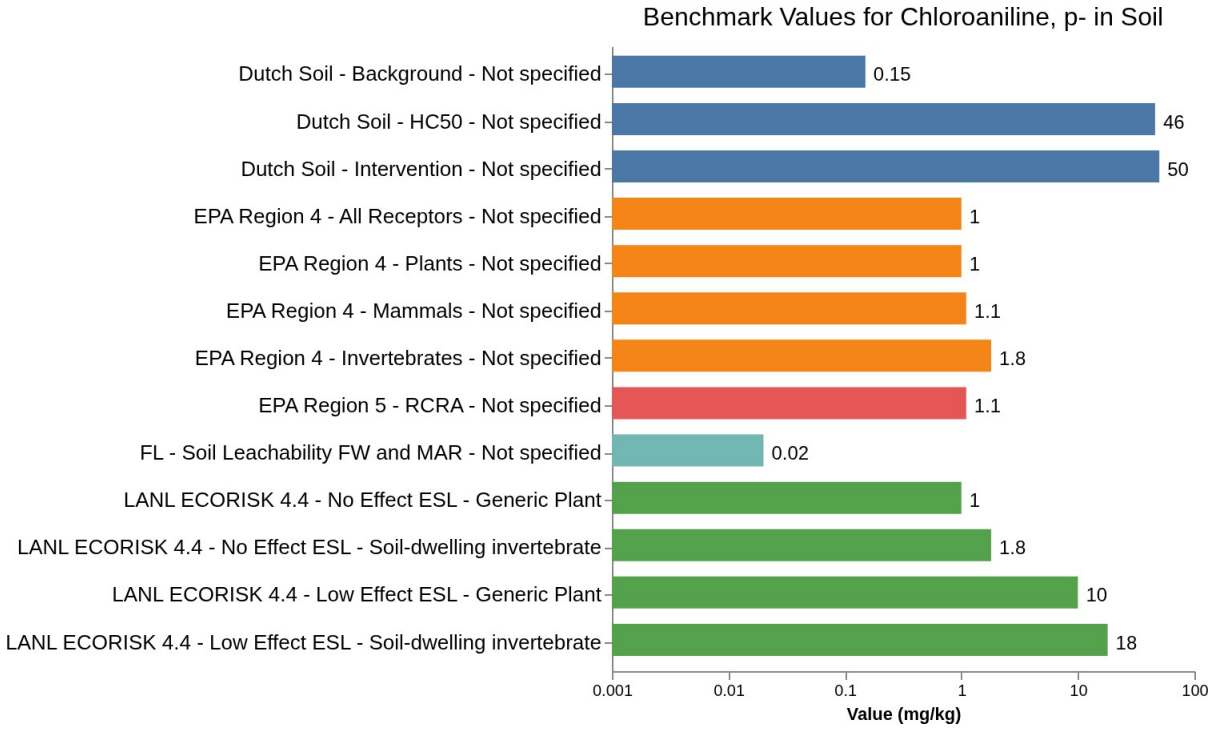


Table 92: Benchmark Values for Chloroaniline in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
27134−26−5	Dutch Soil Protection Act	Background	Not specified	0.2	71
27134−26−5	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	46.0	76
27134−26−5	Dutch Soil Protection Act	Intervention Value	Not specified	50.0	76

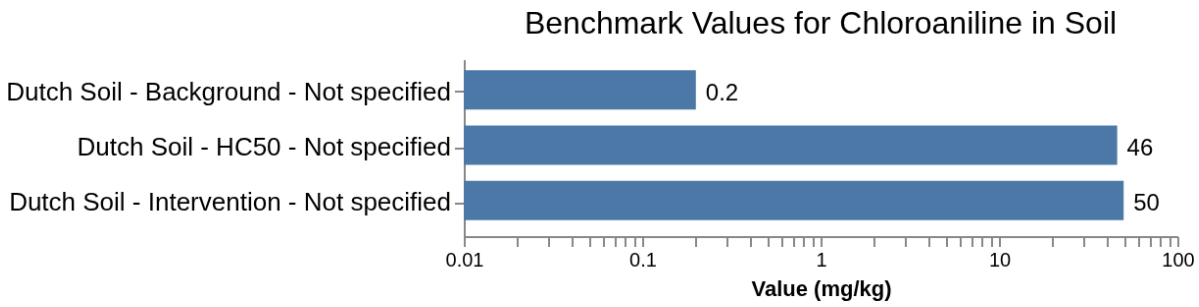


Table 93: Benchmark Values for Chlorobenzene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
108−90−7	Canada	Soil Agricultural	Not specified	0.1	
108−90−7	Canada	Soil Residential/Parkland	Not specified	1.0	
108−90−7	Canada	Soil Industrial	Not specified	10.0	
108−90−7	Canada	Soil Commercial	Not specified	10.0	
108−90−7	Dutch Soil Protection Act	Background	Not specified	0.2	71
108−90−7	Dutch Soil Protection Act	Intervention Value	Not specified	15.0	
108−90−7	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	15.0	
108−90−7	EPA Region 4	Soil All Receptors	Not specified	2.4	
108−90−7	EPA Region 4	Soil Invertebrates	Not specified	2.4	
108−90−7	EPA Region 4	Soil Mammals	Not specified	43.0	
108−90−7	EPA Region 5	EPA RCRA Soil	Not specified	13.1	
108−90−7	EPA Region 6	Soil Invertebrates	Not specified	40.0	
108−90−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.2	
108−90−7	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	2.4	
108−90−7	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	24.0	
108−90−7	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	43.0	
108−90−7	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	53.0	
108−90−7	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	170.0	
108−90−7	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	430.0	
108−90−7	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	530.0	
108−90−7	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1700.0	
108−90−7	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	25000.0	
108−90−7	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	250000.0	
108−90−7	ORNL	Soil Screening − Invertebrates	Not specified	40.0	

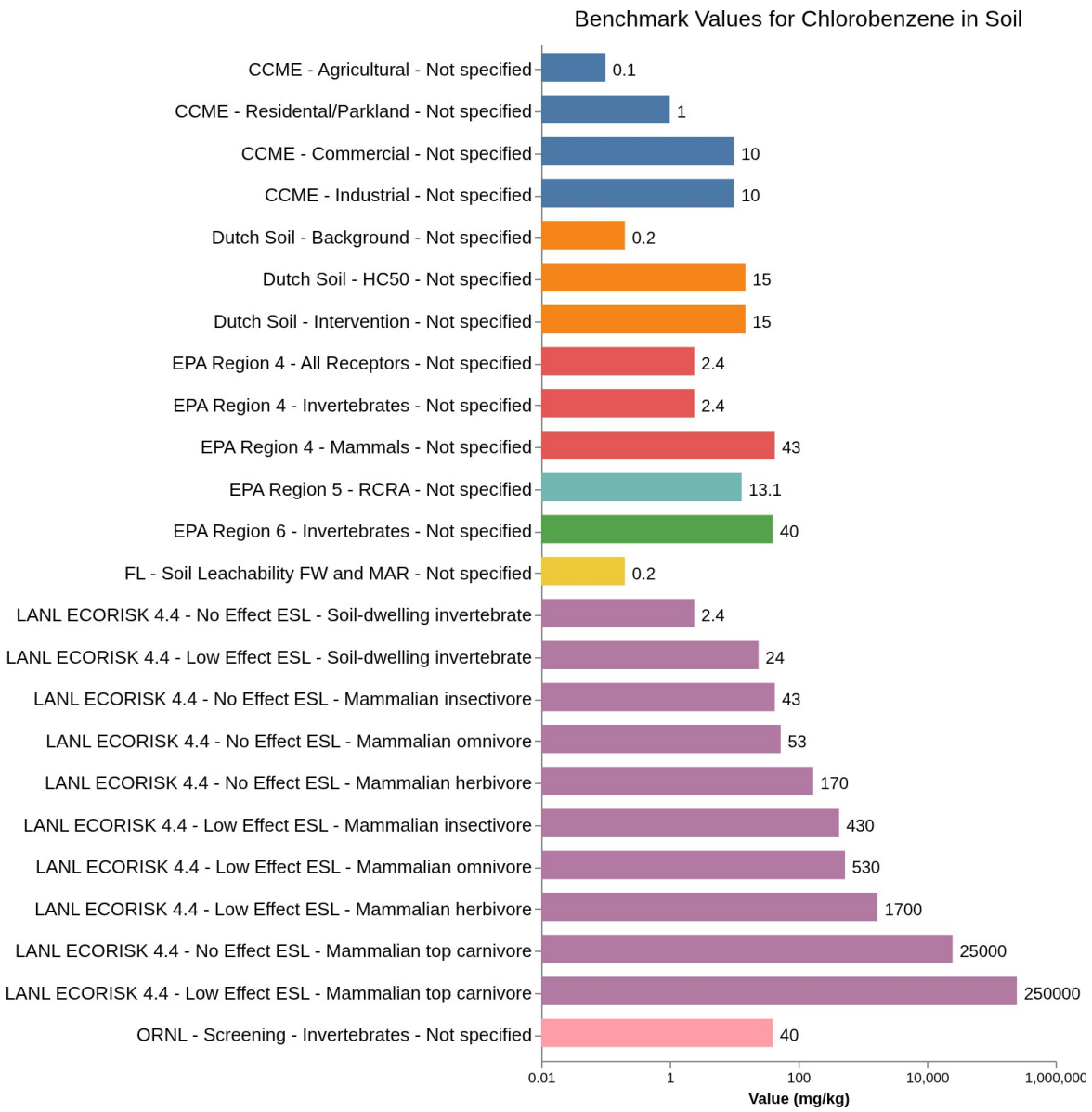

Benchmark Values for Chlorobenzene in Soil
CCME - Agricultural - Not specified
0.1
CCME - Residental/Parkland - Not specified
1
CCME - Commercial - Not specified
10
CCME - Industrial - Not specified
10
Dutch Soil - Background - Not specified
0.2
Dutch Soil - HC50 - Not specified
15
Dutch Soil - Intervention - Not specified
15
EPA Region 4 - All Receptors - Not specified
2.4
EPA Region 4 - Invertebrates - Not specified
2.4
EPA Region 4 - Mammals - Not specified
43
EPA Region 5 - RCRA - Not specified
13.1
EPA Region 6 - Invertebrates - Not specified
40
FL - Soil Leachability FW and MAR - Not specified
0.2
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
2.4
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
24
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
43
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
53
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
170
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
430
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
530
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
1700
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
25000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
250000
ORNL - Screening - Invertebrates - Not specified
40
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 94: Benchmark Values for Chlorobenzenes (total) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−05−6	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	15.0
000000−05−6	Dutch Soil Protection Act	Intervention Value	Not specified	15.0

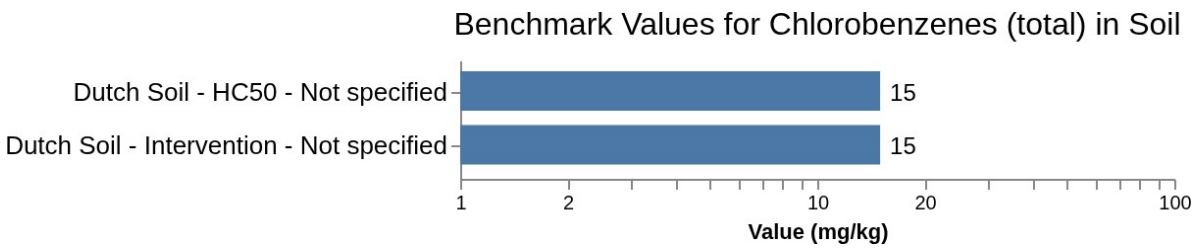


Table 95: Benchmark Values for Chlorobenzilate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
510−15−6	EPA Region 5	EPA RCRA Soil	Not specified	5.05
510−15−6	Florida	Soil Leachability Freshwater and Marine	Not specified	0.01

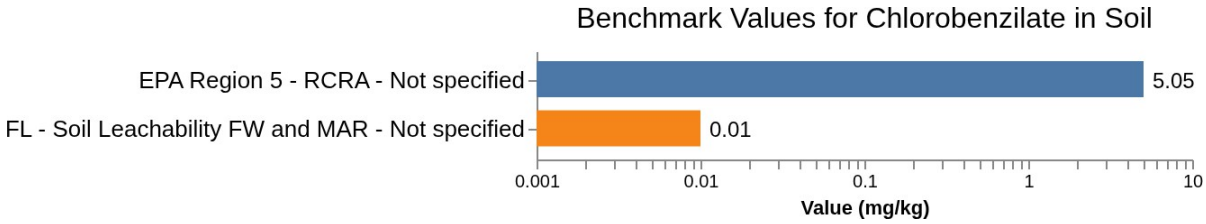


Table 96: Benchmark Values for Chloroform in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
67−66−3	Canada	Soil Agricultural	Not specified	0.10	
67−66−3	Canada	Soil Residential/Parkland	Not specified	5.00	
67−66−3	Canada	Soil Commercial	Not specified	50.00	
67−66−3	Canada	Soil Industrial	Not specified	50.00	
67−66−3	Dutch Soil Protection Act	Background	Not specified	0.25	71
67−66−3	Dutch Soil Protection Act	Intervention Value	Not specified	5.60	
67−66−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	170.00	
67−66−3	EPA Region 4	Soil All Receptors	Not specified	0.05	
67−66−3	EPA Region 4	Soil Invertebrates	Not specified	0.05	
67−66−3	EPA Region 4	Soil Mammals	Not specified	8.00	
67−66−3	EPA Region 5	EPA RCRA Soil	Not specified	1.19	
67−66−3	Florida	Soil Leachability Freshwater and Marine	Not specified	2.80	
67−66−3	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	8.00	
67−66−3	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	8.20	
67−66−3	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	19.00	
67−66−3	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	21.00	
67−66−3	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	22.00	
67−66−3	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	52.00	
67−66−3	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	8900.00	
67−66−3	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	24000.00	

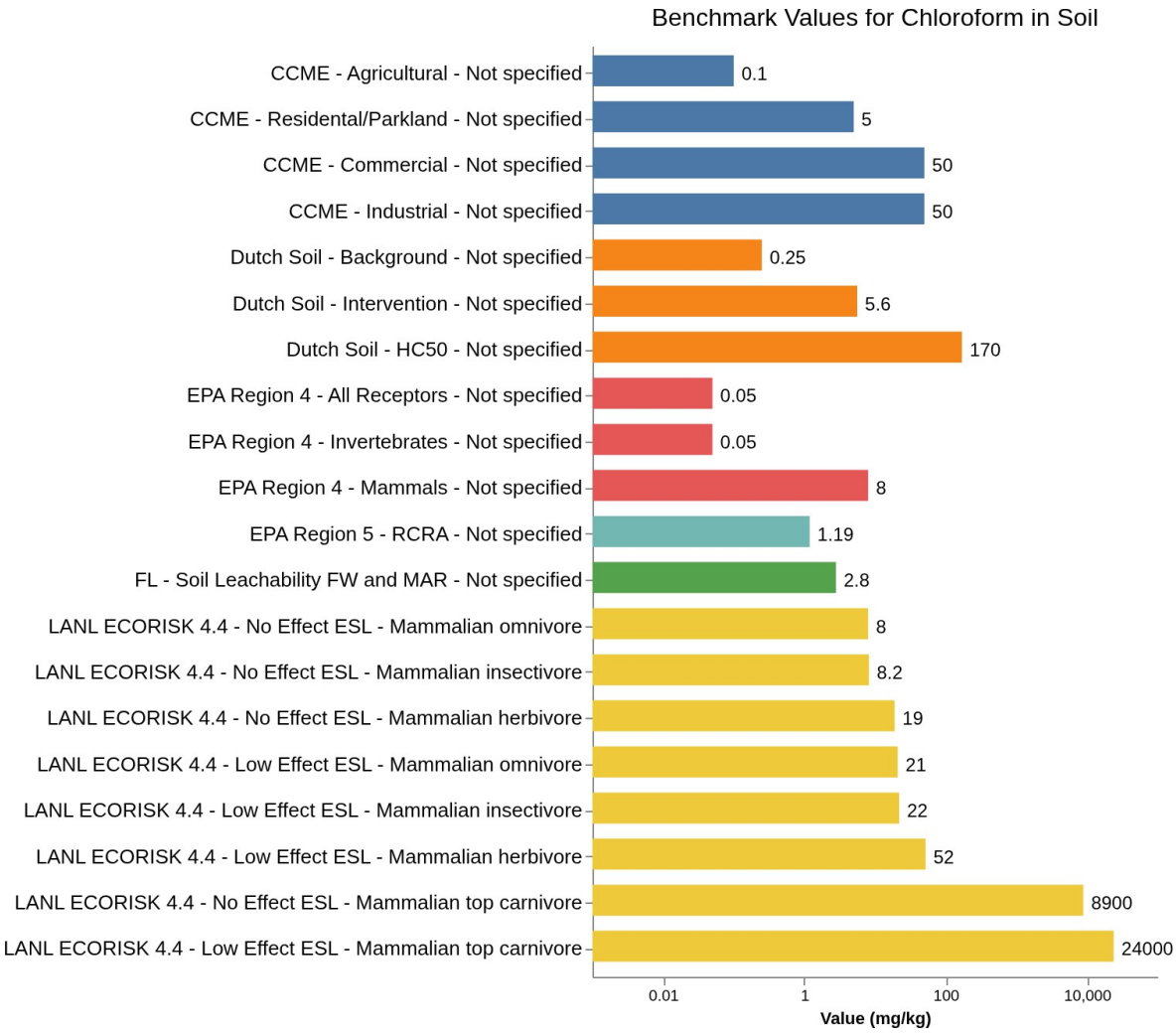


Table 97: Benchmark Values for Chloromethane in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
74−87−3	EPA Region 5	EPA RCRA Soil	Not specified	10.4
74−87−3	Florida	Soil Leachability Freshwater and Marine	Not specified	2.3

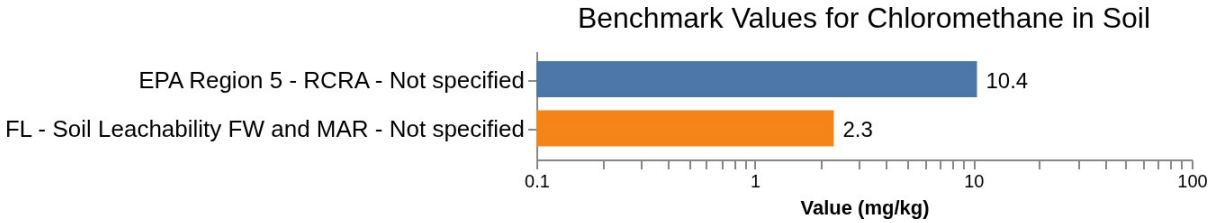


Table 98: Benchmark Values for Chloromethylphenols, 4− (sum) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
000000−16−6	Dutch Soil Protection Act	Background	Not specified	0.6	71
000000−16−6	Dutch Soil Protection Act	Intervention Value	Not specified	15.0	73

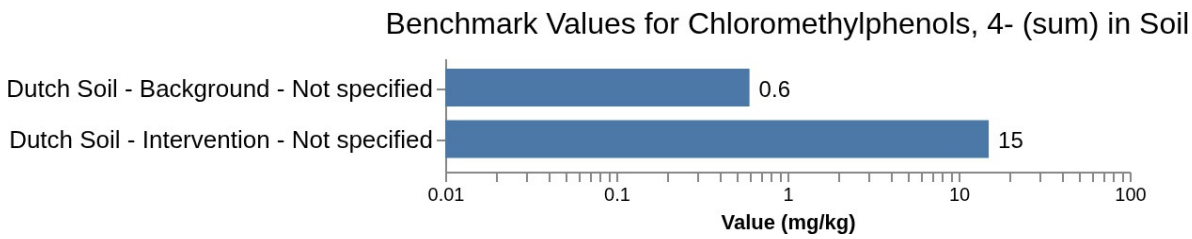


Table 99: Benchmark Values for Chloronaphthalene, alpha− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
90−13−1	Dutch Soil Protection Act	Background	Not specified	0.07	71
90−13−1	Dutch Soil Protection Act	Intervention Value	Not specified	23.00	
90−13−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	23.00	

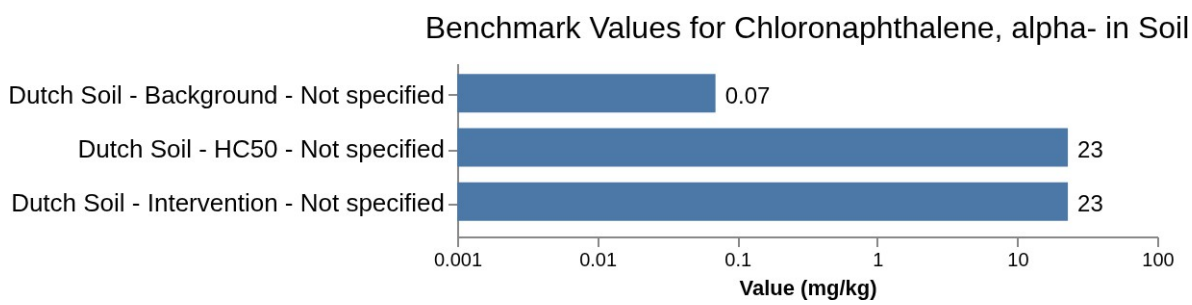


Table 100: Benchmark Values for Chloronaphthalene, Beta− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
91−58−7	Dutch Soil Protection Act	Background	Not specified	0.0700	71
91−58−7	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	23.0000	
91−58−7	Dutch Soil Protection Act	Intervention Value	Not specified	23.0000	
91−58−7	EPA Region 5	EPA RCRA Soil	Not specified	0.0122	
91−58−7	Florida	Soil Leachability Freshwater and Marine	Not specified	740.0000	

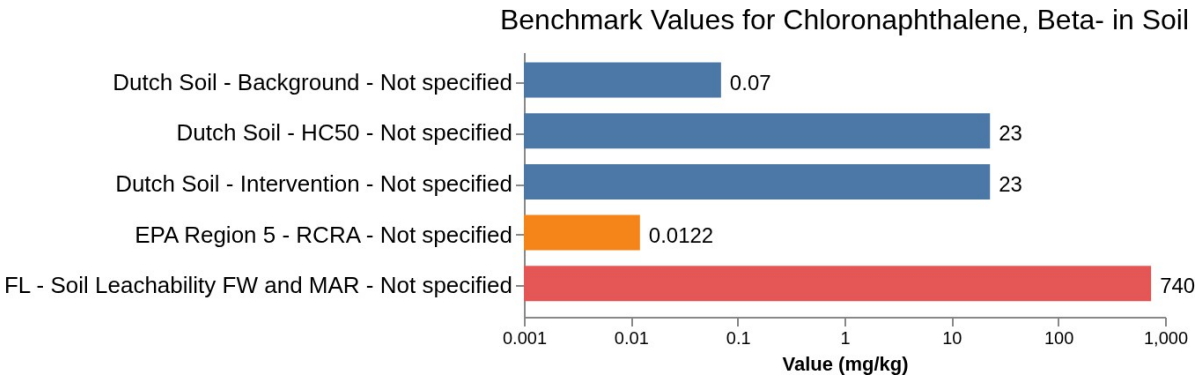


Table 101: Benchmark Values for Chloronitrobenzene, p− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
100−00−5	Florida	Soil Leachability Freshwater and Marine	Not specified	1.6

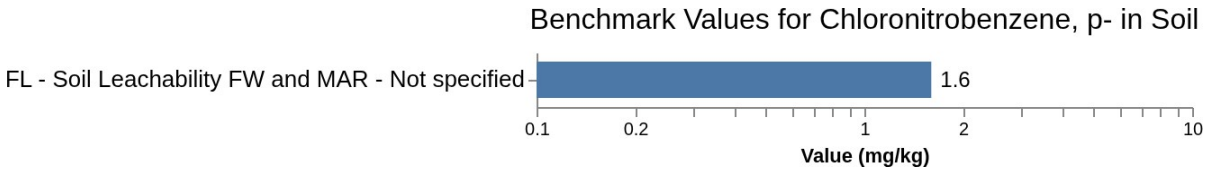


Table 102: Benchmark Values for Chlorophenol, 2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
95−57−8	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	5.400
95−57−8	EPA Region 4	Soil All Receptors	Not specified	0.060
95−57−8	EPA Region 4	Soil Invertebrates	Not specified	0.060
95−57−8	EPA Region 4	Soil Avians	Not specified	0.390
95−57−8	EPA Region 4	Soil Mammals	Not specified	0.540
95−57−8	EPA Region 5	EPA RCRA Soil	Not specified	0.243
95−57−8	Florida	Soil Leachability Freshwater and Marine	Not specified	2.500
95−57−8	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.390
95−57−8	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.540
95−57−8	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.680
95−57−8	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	0.740
95−57−8	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	2.300
95−57−8	LANL ECORISK	Soil No Effect ESL	Avian insectivore	2.600
95−57−8	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	3.900
95−57−8	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	5.400
95−57−8	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	6.800
95−57−8	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	7.400
95−57−8	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	14.000
95−57−8	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	23.000
95−57−8	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	26.000
95−57−8	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	140.000
95−57−8	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	310.000
95−57−8	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	340.000
95−57−8	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	3100.000
95−57−8	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	3400.000

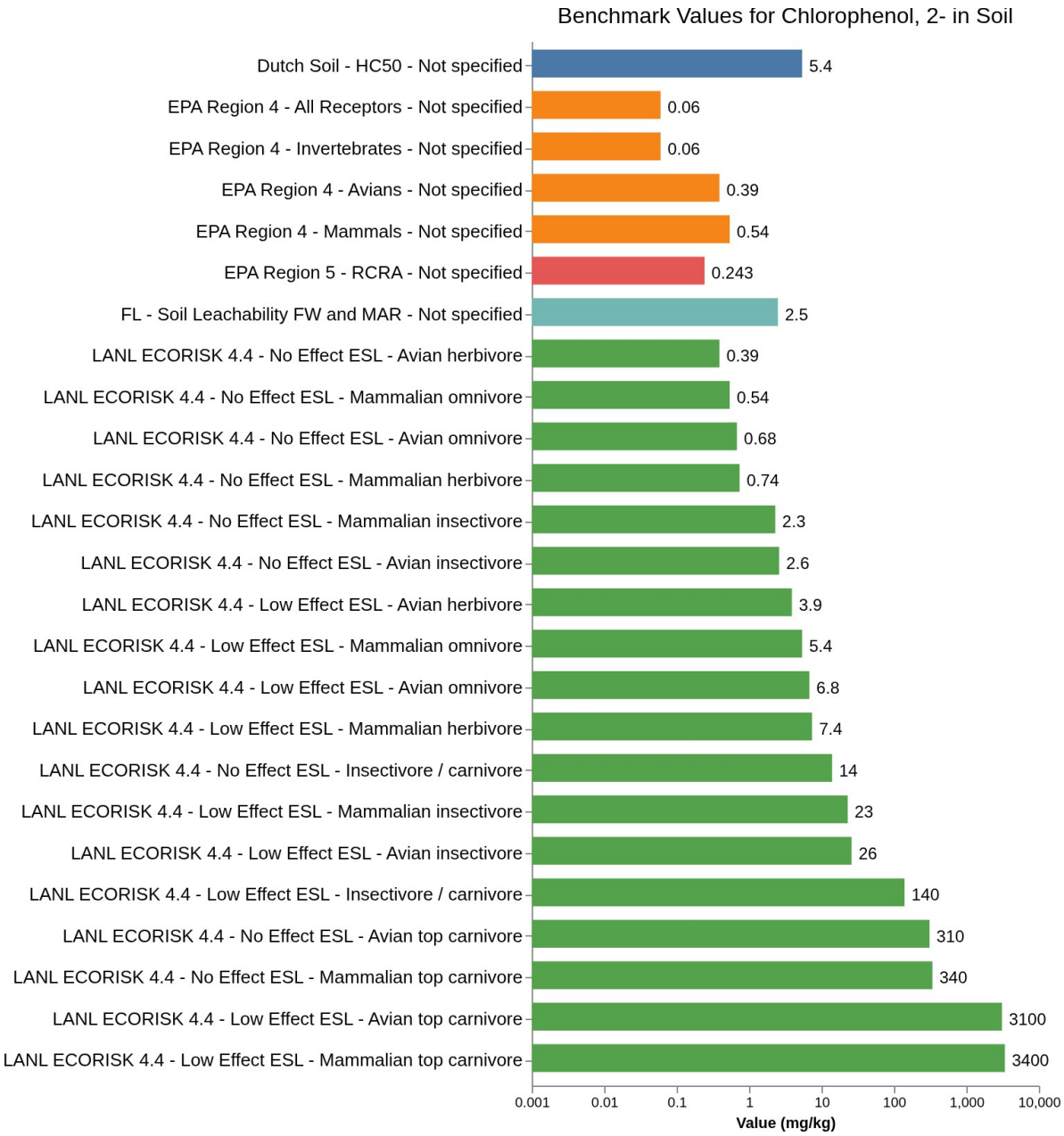

Benchmark Values for Chlorophenol, 2- in Soil
Dutch Soil - HC50 - Not specified
5.4
EPA Region 4 - All Receptors - Not specified
0.06
EPA Region 4 - Invertebrates - Not specified
0.06
EPA Region 4 - Avians - Not specified
0.39
EPA Region 4 - Mammals - Not specified
0.54
EPA Region 5 - RCRA - Not specified
0.243
FL - Soil Leachability FW and MAR - Not specified
2.5
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
0.39
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
0.54
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
0.68
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
0.74
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
2.3
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
2.6
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
3.9
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
5.4
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
6.8
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
7.4
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
14
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
23
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
26
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
140
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
310
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
340
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
3100
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
3400
0.001
0.01
0.1
1
10
100
1,000
10,000
Value (mg/kg)

Table 103: Benchmark Values for Chlorophenol, 3− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
108−43−0	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	5.4
108−43−0	EPA Region 4	Soil All Receptors	Not specified	7.0
108−43−0	EPA Region 4	Soil Plants	Not specified	7.0
108−43−0	EPA Region 4	Soil Invertebrates	Not specified	10.0
108−43−0	EPA Region 6	Soil Plants	Not specified	7.0
108−43−0	EPA Region 6	Soil Invertebrates	Not specified	10.0
108−43−0	Florida	Soil Leachability Freshwater and Marine	Not specified	3.1
108−43−0	ORNL	Soil Screening − Plants	Not specified	7.0
108−43−0	ORNL	Soil Screening − Invertebrates	Not specified	10.0

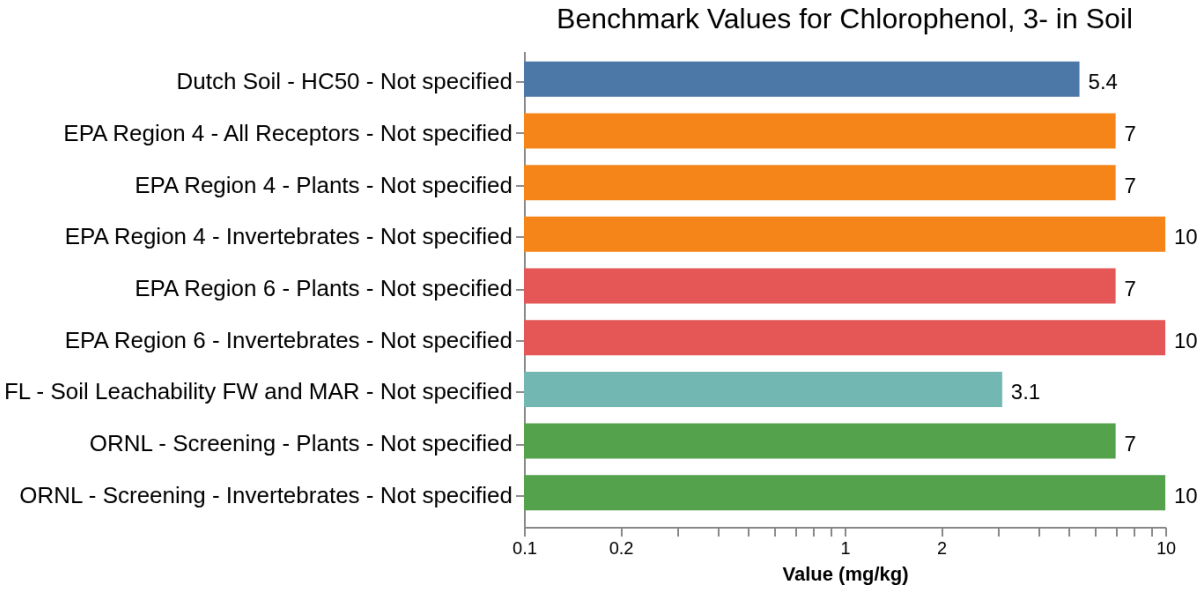


Table 104: Benchmark Values for Chlorophenol, 4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
106−48−9	Florida	Soil Leachability Freshwater and Marine	Not specified	1.2

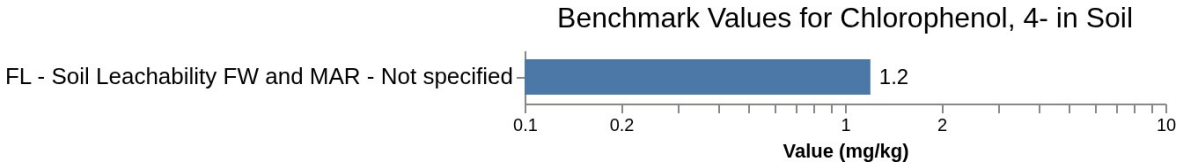


Table 105: Benchmark Values for Chlorophenols (each) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−04−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	5.4
000000−04−3	Dutch Soil Protection Act	Intervention Value	Not specified	5.4

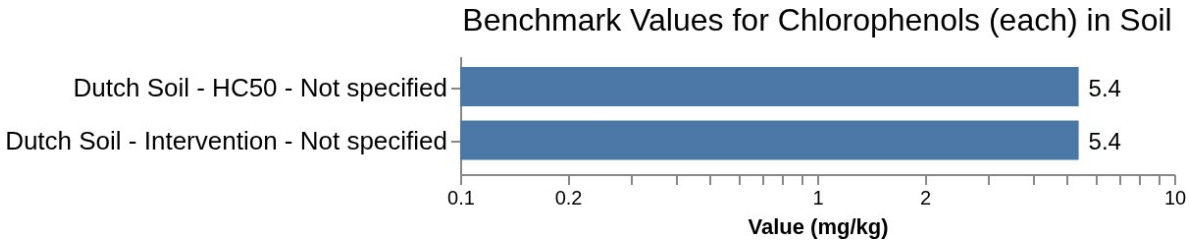


Table 106: Benchmark Values for Chlorophenols (total) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−04−4	Dutch Soil Protection Act	Intervention Value	Not specified	5.4
000000−04−4	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	5.4
000000−04−4	ORNL	Soil Screening − Plants	Not specified	7.0

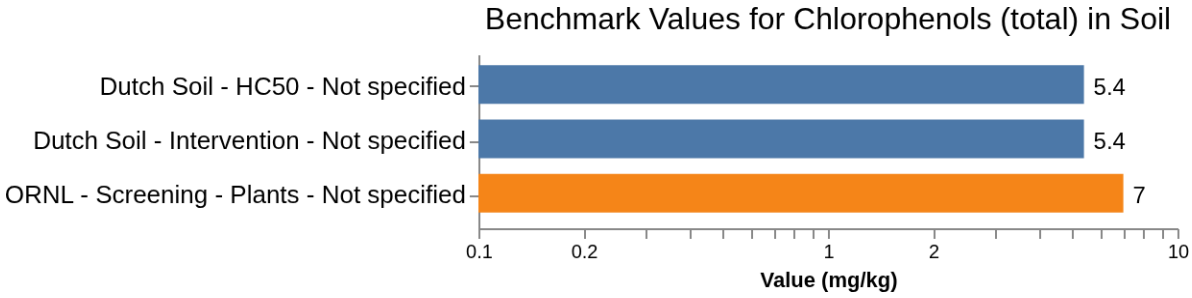


Table 107: Benchmark Values for Chlorothalonil in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
1897−45−6	Florida	Soil Leachability Freshwater and Marine	Not specified	0.06

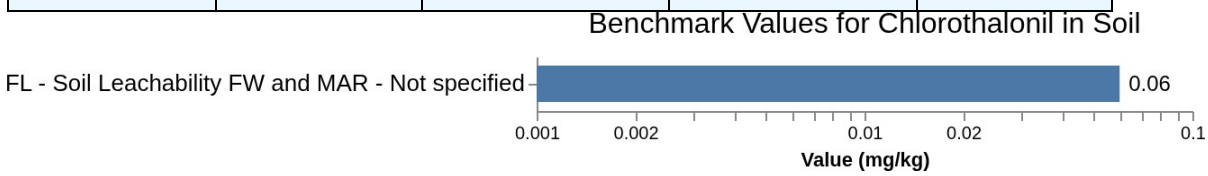


Table 108: Benchmark Values for Chlorotoluene, o− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
95−49−8	Florida	Soil Leachability Freshwater and Marine	Not specified	7.7

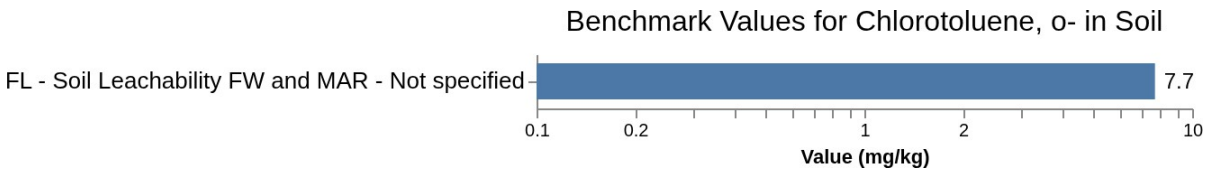


Table 109: Benchmark Values for Chlorpropham in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
101−21−3	Florida	Soil Leachability Freshwater and Marine	Not specified	7

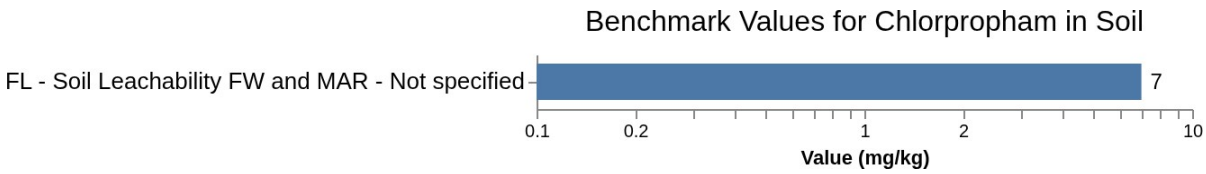


Table 110: Benchmark Values for Chlorpyrifos in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
2921−88−2	EPA Region 4	Soil All Receptors	Not specified	0.003
2921−88−2	EPA Region 4	Soil Invertebrates	Not specified	0.003
2921−88−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.001

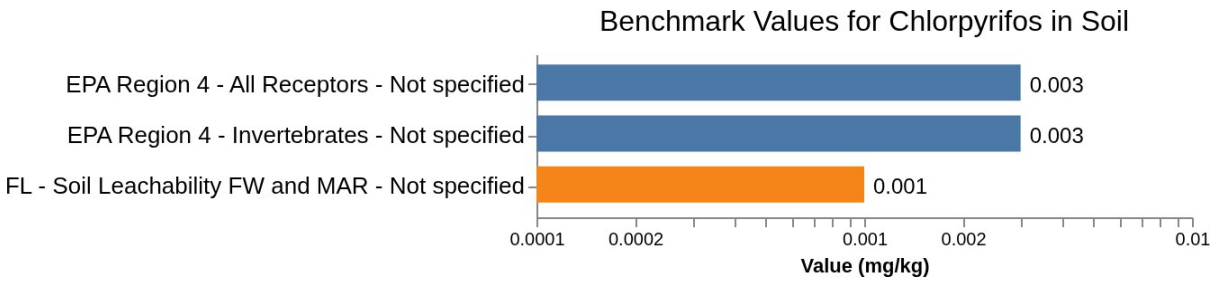


Table 111: Benchmark Values for Chromium(III), (Insoluble Salts) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
16065−83−1	Dutch Soil Protection Act	Background	Not specified	55
16065−83−1	Dutch Soil Protection Act	Intervention Value	Not specified	180
16065−83−1	EPA ECO−SSL	Avian	Not specified	26
16065−83−1	EPA ECO−SSL	Mammalian	Not specified	34
16065−83−1	EPA Region 4	Soil Avians	Not specified	26
16065−83−1	EPA Region 4	Soil All Receptors	Not specified	26
16065−83−1	EPA Region 4	Soil Mammals	Not specified	34

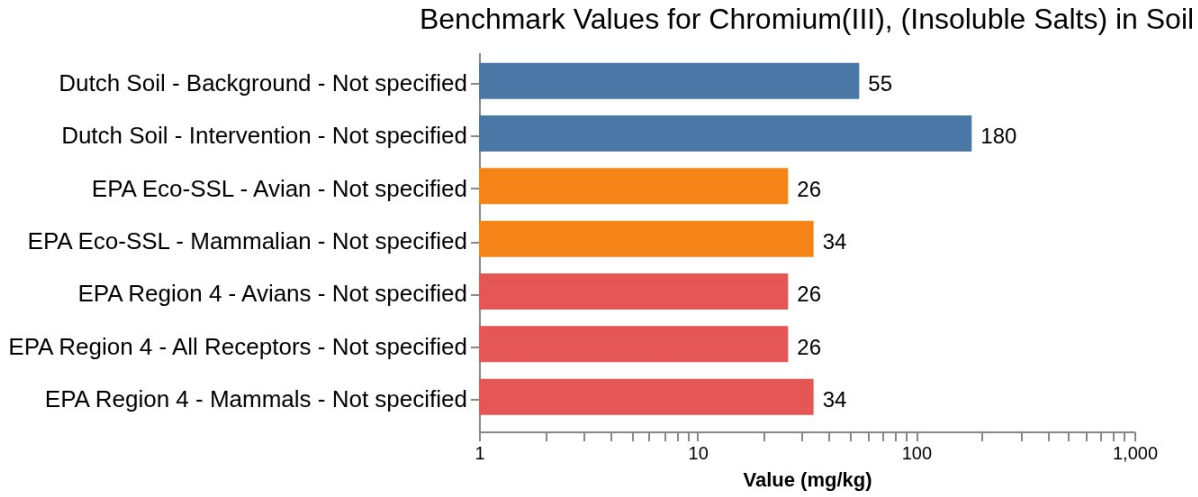


Table 112: Benchmark Values for Chromium(VI) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
18540−29−9	Canada	Soil Agricultural	Not specified	0.40	
18540−29−9	Canada	Soil Residential/Parkland	Not specified	0.40	
18540−29−9	Canada	Soil Commercial	Not specified	1.40	
18540−29−9	Canada	Soil Industrial	Not specified	1.40	
18540−29−9	Dutch Soil Protection Act	Background	Not specified	55.00	
18540−29−9	Dutch Soil Protection Act	Intervention Value	Not specified	78.00	
18540−29−9	EPA ECO−SSL	Mammalian	Not specified	130.00	
18540−29−9	EPA Region 4	Soil All Receptors	Not specified	0.34	
18540−29−9	EPA Region 4	Soil Invertebrates	Not specified	0.34	
18540−29−9	EPA Region 4	Soil Plants	Not specified	0.35	
18540−29−9	EPA Region 4	Soil Mammals	Not specified	130.00	
18540−29−9	EPA Region 4	Soil Avians	Not specified	140.00	
18540−29−9	Florida	Soil Leachability Freshwater	Not specified	4.20	211
18540−29−9	Florida	Soil Leachability Marine	Not specified	19.00	211
18540−29−9	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	0.34	
18540−29−9	LANL ECORISK	Soil No Effect ESL	Generic Plant	0.35	
18540−29−9	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	3.40	
18540−29−9	LANL ECORISK	Soil Low Effect ESL	Generic Plant	4.00	
18540−29−9	LANL ECORISK	Soil No Effect ESL	Avian insectivore	140.00	
18540−29−9	LANL ECORISK	Soil No Effect ESL	Avian omnivore	160.00	
18540−29−9	LANL ECORISK	Soil No Effect ESL	Avian herbivore	210.00	
18540−29−9	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	510.00	
18540−29−9	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	850.00	
18540−29−9	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	1400.00	
18540−29−9	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	1400.00	
18540−29−9	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	1600.00	
18540−29−9	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	1600.00	
18540−29−9	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	2100.00	
18540−29−9	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	3300.00	
18540−29−9	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	3600.00	
18540−29−9	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	5500.00	
18540−29−9	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	7200.00	
18540−29−9	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	10000.00	
18540−29−9	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	14000.00	
18540−29−9	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	36000.00	
18540−29−9	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	46000.00	
18540−29−9	ORNL	Soil Screening − Invertebrates	Not specified	0.40	
18540−29−9	ORNL	Soil Screening − Plants	Not specified	1.00	

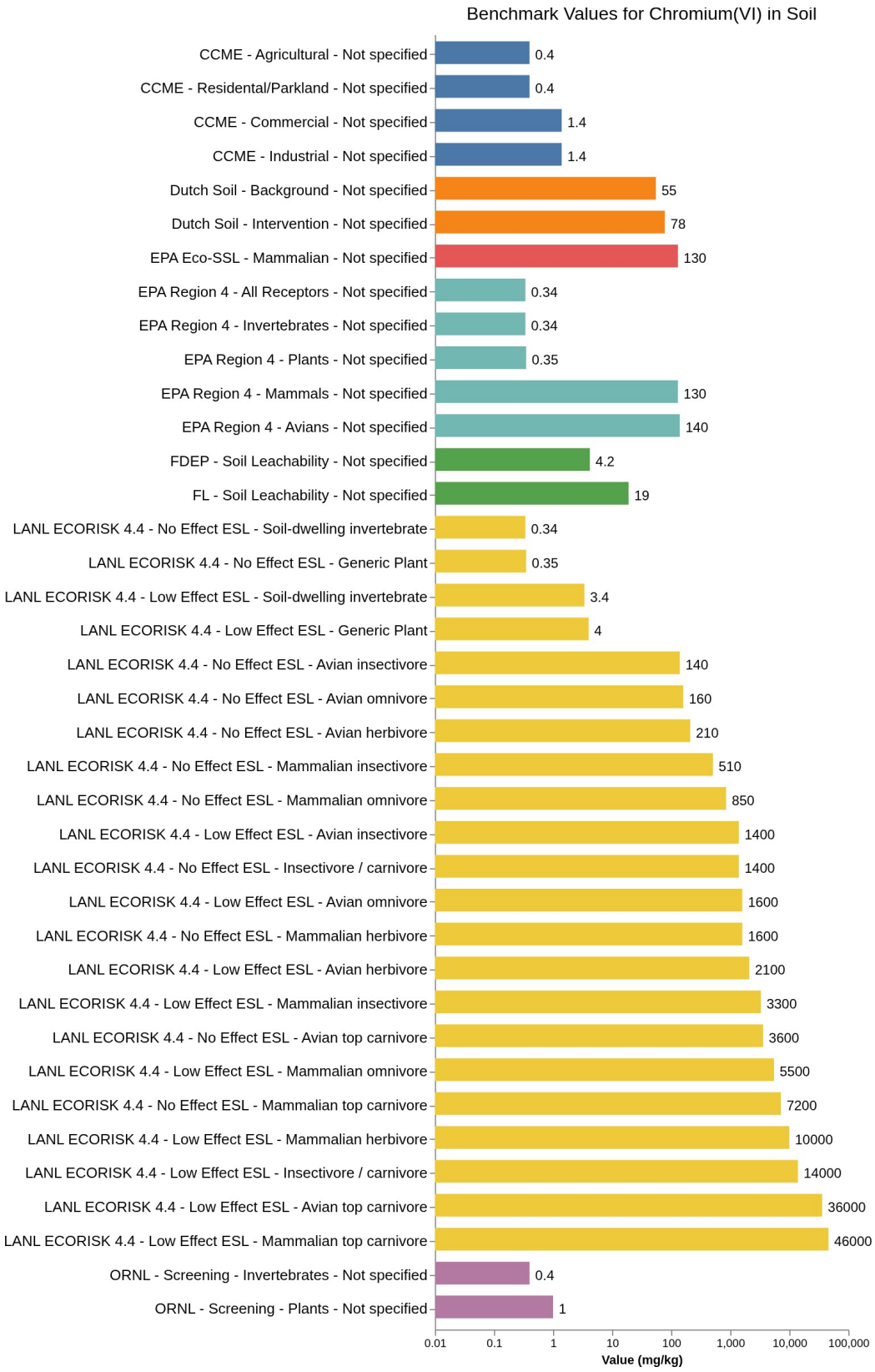

Benchmark Values for Chromium(VI) in Soil
CCME - Agricultural - Not specified 0.4
CCME - Residental/Parkland - Not specified 0.4
CCME - Commercial - Not specified 1.4
CCME - Industrial - Not specified 1.4
Dutch Soil - Background - Not specified 55
Dutch Soil - Intervention - Not specified 78
EPA Eco-SSL - Mammalian - Not specified 130
EPA Region 4 - All Receptors - Not specified 0.34
EPA Region 4 - Invertebrates - Not specified 0.34
EPA Region 4 - Plants - Not specified 0.35
EPA Region 4 - Mammals - Not specified 130
EPA Region 4 - Avians - Not specified 140
FDEP - Soil Leachability - Not specified 4.2
FL - Soil Leachability - Not specified 19
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate 0.34
LANL ECORISK 4.4 - No Effect ESL - Generic Plant 0.35
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate 3.4
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant 4
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore 140
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore 160
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore 210
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore 510
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore 850
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore 1400
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore 1400
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore 1600
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore 1600
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore 2100
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore 3300
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore 3600
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore 5500
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore 7200
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore 10000
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore 14000
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore 36000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore 46000
ORNL - Screening - Invertebrates - Not specified 0.4
ORNL - Screening - Plants - Not specified 1
0.01
0.1
1
10
100
1,000
10,000
100,000
Value (mg/kg)

Table 113: Benchmark Values for Chromium, Total in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
7440−47−3	Canada	Soil Agricultural	Not specified	64.0	
7440−47−3	Canada	Soil Residential/Parkland	Not specified	64.0	
7440−47−3	Canada	Soil Industrial	Not specified	87.0	
7440−47−3	Canada	Soil Commercial	Not specified	87.0	
7440−47−3	Dutch Soil Protection Act	Background	Not specified	55.0	
7440−47−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	175.0	
7440−47−3	EPA Region 4	Soil Avians	Not specified	23.0	
7440−47−3	EPA Region 4	Soil All Receptors	Not specified	23.0	
7440−47−3	EPA Region 4	Soil Mammals	Not specified	63.0	
7440−47−3	EPA Region 5	EPA RCRA Soil	Not specified	0.4	
7440−47−3	EPA Region 6	Soil Invertebrates	Not specified	0.4	
7440−47−3	EPA Region 6	Soil Plants	Not specified	1.0	
7440−47−3	Florida	Soil Leachability Freshwater	Not specified	4.2	211, 213
7440−47−3	Florida	Soil Leachability Marine	Not specified	19.0	211, 213
7440−47−3	LANL ECORISK	Soil No Effect ESL	Avian insectivore	23.0	
7440−47−3	LANL ECORISK	Soil No Effect ESL	Avian omnivore	32.0	
7440−47−3	LANL ECORISK	Soil No Effect ESL	Avian herbivore	51.0	
7440−47−3	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	63.0	
7440−47−3	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	73.0	
7440−47−3	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	100.0	
7440−47−3	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	110.0	
7440−47−3	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	160.0	
7440−47−3	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	170.0	
7440−47−3	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	410.0	
7440−47−3	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	560.0	
7440−47−3	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	860.0	
7440−47−3	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	1800.0	
7440−47−3	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	2700.0	
7440−47−3	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	6300.0	
7440−47−3	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	11000.0	
7440−47−3	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	41000.0	
7440−47−3	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	180000.0	
7440−47−3	ORNL	Soil Screening − Invertebrates	Not specified	0.4	
7440−47−3	ORNL	Soil Screening − Plants	Not specified	1.0	
7440−47−3	ORNL	Soil Screening − Microbes	Not specified	10.0	
7440−47−3	Washington	Soil Wildlife	Not specified	67.0	

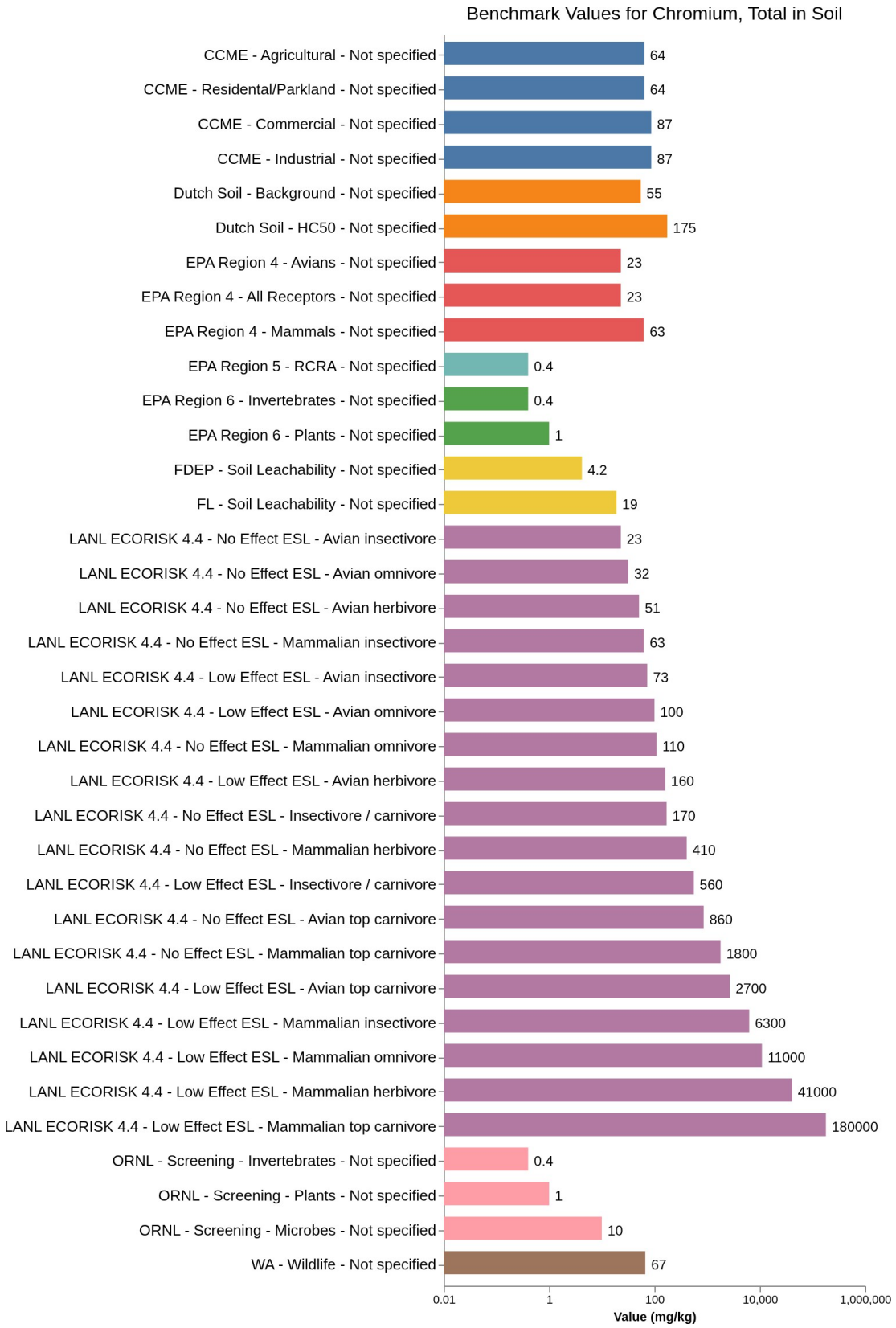

Benchmark Values for Chromium, Total in Soil
CCME - Agricultural - Not specified
64
CCME - Residental/Parkland - Not specified
64
CCME - Commercial - Not specified
87
CCME - Industrial - Not specified
87
Dutch Soil - Background - Not specified
55
Dutch Soil - HC50 - Not specified
175
EPA Region 4 - Avians - Not specified
23
EPA Region 4 - All Receptors - Not specified
23
EPA Region 4 - Mammals - Not specified
63
EPA Region 5 - RCRA - Not specified
0.4
EPA Region 6 - Invertebrates - Not specified
0.4
EPA Region 6 - Plants - Not specified
1
FDEP - Soil Leachability - Not specified
4.2
FL - Soil Leachability - Not specified
19
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
23
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
32
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
51
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
63
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
73
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
100
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
110
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
160
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
170
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
410
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
560
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
860
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
1800
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
2700
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
6300
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
11000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
41000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
180000
ORNL - Screening - Invertebrates - Not specified
0.4
ORNL - Screening - Plants - Not specified
1
ORNL - Screening - Microbes - Not specified
10
WA - Wildlife - Not specified
67
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 114: Benchmark Values for Chrysene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
218−01−9	Canada	Soil Agricultural	Not specified		36
218−01−9	Canada	Soil Commercial	Not specified		36
218−01−9	Canada	Soil Industrial	Not specified		36
218−01−9	Canada	Soil Residential/Parkland	Not specified		36
218−01−9	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	35	
218−01−9	EPA Region 4	Soil All Receptors	Not specified	1.1	7
218−01−9	EPA Region 4	Soil Mammals	Not specified	3.1	7
218−01−9	EPA Region 4	Soil Invertebrates	Not specified	5.18	7
218−01−9	EPA Region 5	EPA RCRA Soil	Not specified	4.73	
218−01−9	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	3.1	
218−01−9	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	3.1	
218−01−9	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	6.3	
218−01−9	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	31	
218−01−9	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	31	
218−01−9	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	63	
218−01−9	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	110	
218−01−9	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	1100	

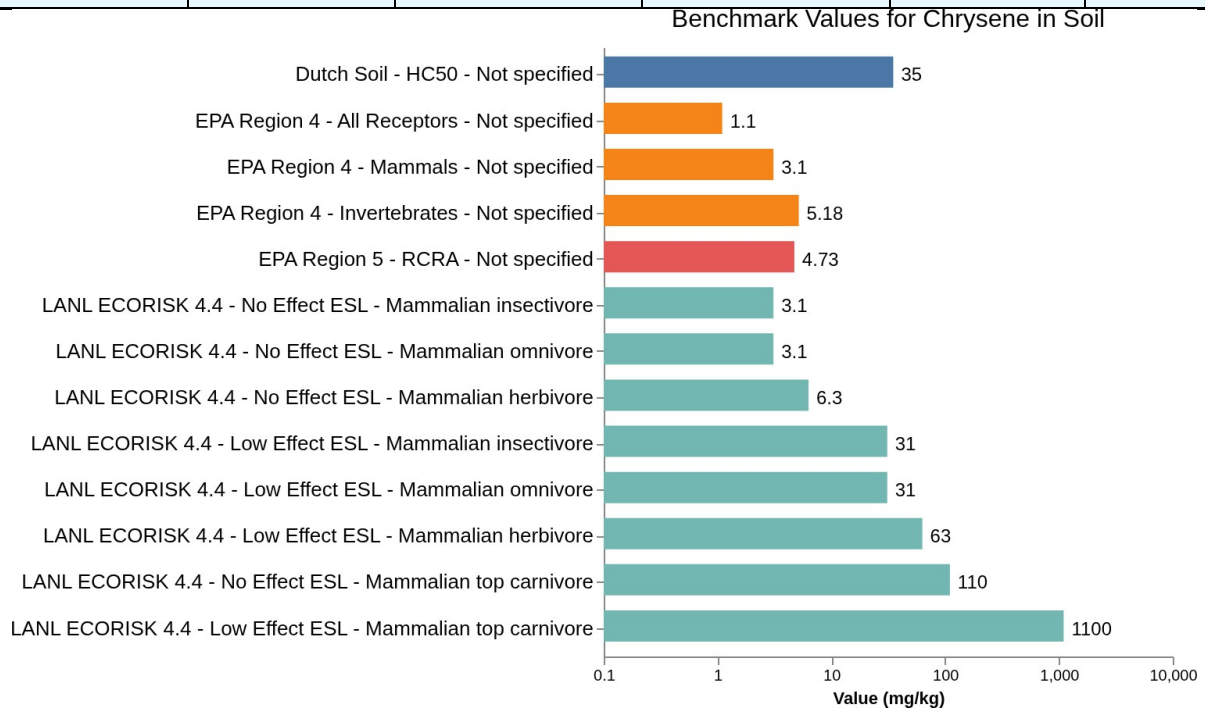


Table 115: Benchmark Values for Cobalt in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7440−48−4	Canada	Soil Agricultural	Not specified	40.00
7440−48−4	Canada	Soil Residential/Parkland	Not specified	50.00
7440−48−4	Canada	Soil Commercial	Not specified	300.00
7440−48−4	Canada	Soil Industrial	Not specified	300.00
7440−48−4	Dutch Soil Protection Act	Background	Not specified	15.00
7440−48−4	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	185.00
7440−48−4	Dutch Soil Protection Act	Intervention Value	Not specified	190.00
7440−48−4	EPA ECO−SSL	Plants	Not specified	13.00
7440−48−4	EPA ECO−SSL	Avian	Not specified	120.00
7440−48−4	EPA ECO−SSL	Mammalian	Not specified	230.00
7440−48−4	EPA Region 4	Soil All Receptors	Not specified	13.00
7440−48−4	EPA Region 4	Soil Plants	Not specified	13.00
7440−48−4	EPA Region 4	Soil Avians	Not specified	120.00
7440−48−4	EPA Region 4	Soil Mammals	Not specified	230.00
7440−48−4	EPA Region 5	EPA RCRA Soil	Not specified	0.14
7440−48−4	EPA Region 6	Soil Plants	Not specified	13.00
7440−48−4	LANL ECORISK	Soil No Effect ESL	Generic Plant	13.00
7440−48−4	LANL ECORISK	Soil No Effect ESL	Avian insectivore	76.00
7440−48−4	LANL ECORISK	Soil No Effect ESL	Avian omnivore	97.00
7440−48−4	LANL ECORISK	Soil No Effect ESL	Avian herbivore	130.00
7440−48−4	LANL ECORISK	Soil Low Effect ESL	Generic Plant	130.00
7440−48−4	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	170.00
7440−48−4	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	210.00
7440−48−4	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	240.00
7440−48−4	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	300.00
7440−48−4	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	400.00
7440−48−4	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	620.00
7440−48−4	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	640.00
7440−48−4	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1000.00
7440−48−4	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	1000.00
7440−48−4	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	1400.00
7440−48−4	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	2300.00
7440−48−4	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	2800.00
7440−48−4	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	5200.00
7440−48−4	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	5400.00
7440−48−4	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	14000.00
7440−48−4	ORNL	Soil Screening − Plants	Not specified	20.00
7440−48−4	ORNL	Soil Screening − Microbes	Not specified	1000.00
7440−48−4	UK	Soil Screening Values	Not specified	4.20

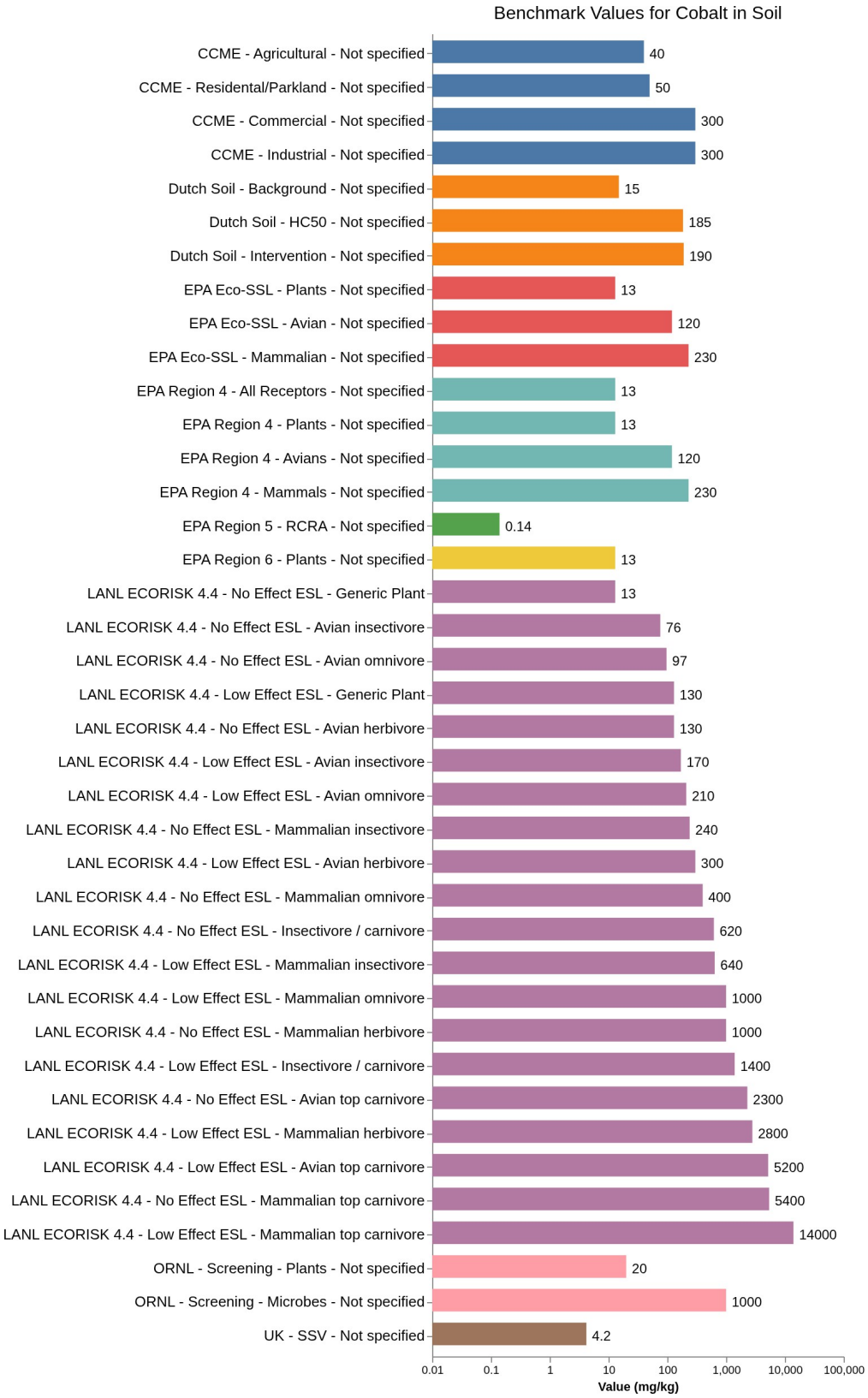

Benchmark Values for Cobalt in Soil
CCME - Agricultural - Not specified
40
CCME - Residental/Parkland - Not specified
50
CCME - Commercial - Not specified
300
CCME - Industrial - Not specified
300
Dutch Soil - Background - Not specified
15
Dutch Soil - HC50 - Not specified
185
Dutch Soil - Intervention - Not specified
190
EPA Eco-SSL - Plants - Not specified
13
EPA Eco-SSL - Avian - Not specified
120
EPA Eco-SSL - Mammalian - Not specified
230
EPA Region 4 - All Receptors - Not specified
13
EPA Region 4 - Plants - Not specified
13
EPA Region 4 - Avians - Not specified
120
EPA Region 4 - Mammals - Not specified
230
EPA Region 5 - RCRA - Not specified
0.14
EPA Region 6 - Plants - Not specified
13
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
13
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
76
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
97
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
130
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
130
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
170
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
210
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
240
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
300
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
400
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
620
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
640
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
1000
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
1000
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
1400
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
2300
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
2800
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
5200
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
5400
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
14000
ORNL - Screening - Plants - Not specified
20
ORNL - Screening - Microbes - Not specified
1000
UK - SSV - Not specified
4.2
0.01
0.1
1
10
100
1,000
10,000
100,000
Value (mg/kg)

Table 116: Benchmark Values for Copper in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7440−50−8	Canada	Soil Agricultural	Not specified	63.0
7440−50−8	Canada	Soil Residential/Parkland	Not specified	63.0
7440−50−8	Canada	Soil Commercial	Not specified	91.0
7440−50−8	Canada	Soil Industrial	Not specified	91.0
7440−50−8	Dutch Soil Protection Act	Background	Not specified	40.0
7440−50−8	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	100.0
7440−50−8	Dutch Soil Protection Act	Intervention Value	Not specified	190.0
7440−50−8	EPA ECO−SSL	Avian	Not specified	28.0
7440−50−8	EPA ECO−SSL	Mammalian	Not specified	49.0
7440−50−8	EPA ECO−SSL	Plants	Not specified	70.0
7440−50−8	EPA ECO−SSL	Soil Invertebrates	Not specified	80.0
7440−50−8	EPA Region 4	Soil Avians	Not specified	28.0
7440−50−8	EPA Region 4	Soil All Receptors	Not specified	28.0
7440−50−8	EPA Region 4	Soil Mammals	Not specified	49.0
7440−50−8	EPA Region 4	Soil Plants	Not specified	70.0
7440−50−8	EPA Region 4	Soil Invertebrates	Not specified	80.0
7440−50−8	EPA Region 5	EPA RCRA Soil	Not specified	5.4
7440−50−8	EPA Region 6	Soil Plants	Not specified	70.0
7440−50−8	EPA Region 6	Soil Invertebrates	Not specified	80.0
7440−50−8	LANL ECORISK	Soil No Effect ESL	Avian insectivore	14.0
7440−50−8	LANL ECORISK	Soil No Effect ESL	Avian omnivore	20.0
7440−50−8	LANL ECORISK	Soil No Effect ESL	Avian herbivore	34.0
7440−50−8	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	42.0
7440−50−8	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	43.0
7440−50−8	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	60.0
7440−50−8	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	63.0
7440−50−8	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	70.0
7440−50−8	LANL ECORISK	Soil No Effect ESL	Generic Plant	70.0
7440−50−8	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	80.0
7440−50−8	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	80.0
7440−50−8	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	100.0
7440−50−8	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	100.0
7440−50−8	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	240.0
7440−50−8	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	260.0
7440−50−8	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	430.0
7440−50−8	LANL ECORISK	Soil Low Effect ESL	Generic Plant	490.0
7440−50−8	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	530.0
7440−50−8	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	1100.0
7440−50−8	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	3500.0
7440−50−8	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	4000.0
7440−50−8	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	6700.0
7440−50−8	ORNL	Soil Screening − Invertebrates	Not specified	50.0
7440−50−8	ORNL	Soil Screening − Plants	Not specified	100.0
7440−50−8	ORNL	Soil Screening − Microbes	Not specified	100.0
7440−50−8	UK	Soil Screening Values	Not specified	35.1
7440−50−8	Washington	Soil Wildlife	Not specified	217.0

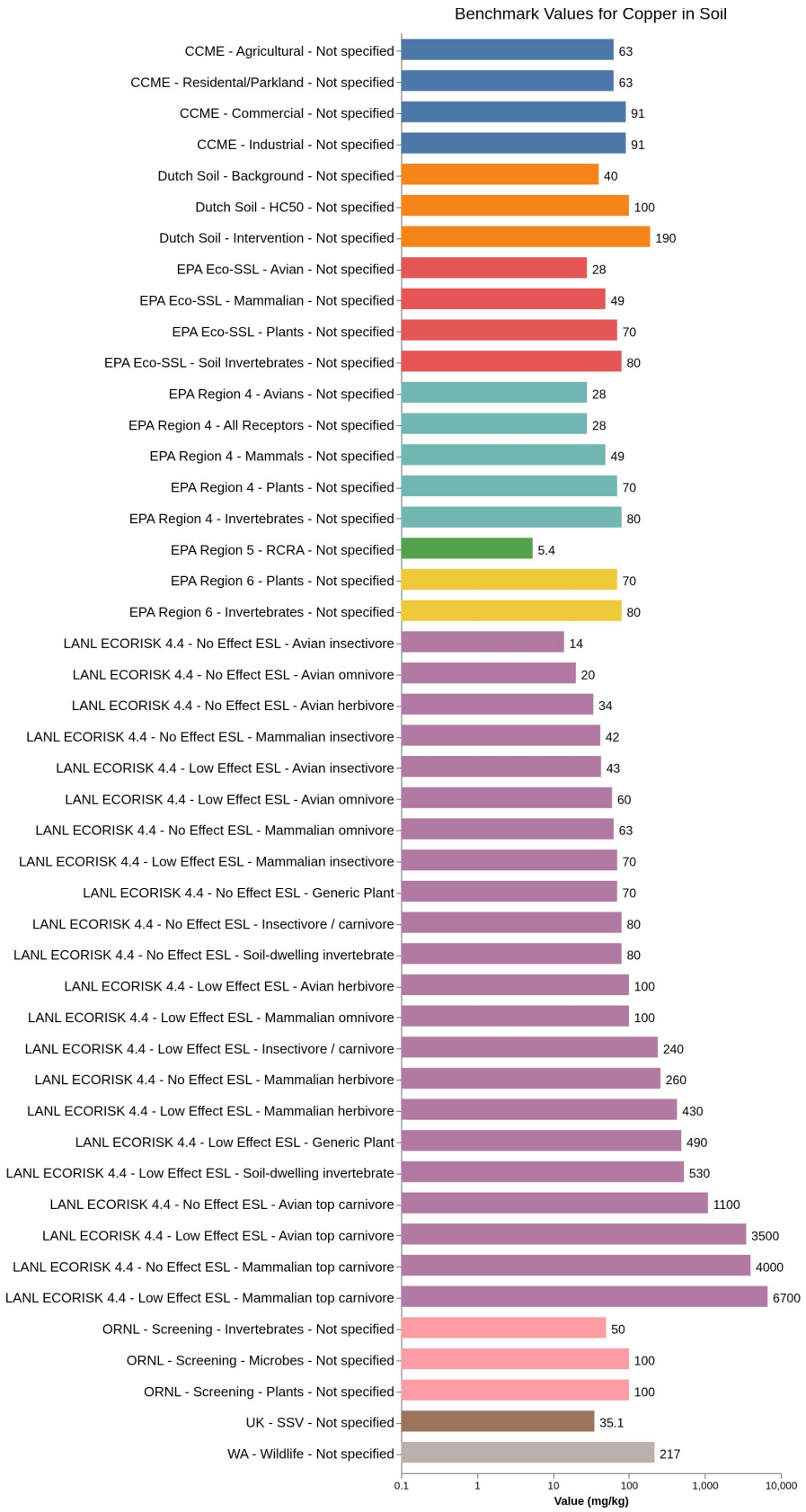

Benchmark Values for Copper in Soil
CCME - Agricultural - Not specified 63
CCME - Residental/Parkland - Not specified 63
CCME - Commercial - Not specified 91
CCME - Industrial - Not specified 91
Dutch Soil - Background - Not specified 40
Dutch Soil - HC50 - Not specified 100
Dutch Soil - Intervention - Not specified 190
EPA Eco-SSL - Avian - Not specified 28
EPA Eco-SSL - Mammalian - Not specified 49
EPA Eco-SSL - Plants - Not specified 70
EPA Eco-SSL - Soil Invertebrates - Not specified 80
EPA Region 4 - Avians - Not specified 28
EPA Region 4 - All Receptors - Not specified 28
EPA Region 4 - Mammals - Not specified 49
EPA Region 4 - Plants - Not specified 70
EPA Region 4 - Invertebrates - Not specified 80
EPA Region 5 - RCRA - Not specified 5.4
EPA Region 6 - Plants - Not specified 70
EPA Region 6 - Invertebrates - Not specified 80
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore 14
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore 20
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore 34
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore 42
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore 43
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore 60
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore 63
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore 70
LANL ECORISK 4.4 - No Effect ESL - Generic Plant 70
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore 80
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate 80
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore 100
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore 100
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore 240
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore 260
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore 430
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant 490
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate 530
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore 1100
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore 3500
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore 4000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore 6700
ORNL - Screening - Invertebrates - Not specified 50
ORNL - Screening - Microbes - Not specified 100
ORNL - Screening - Plants - Not specified 100
UK - SSV - Not specified 35.1
WA - Wildlife - Not specified 217
0.1
1
10
100
1,000
10,000
Value (mg/kg)

Table 117: Benchmark Values for Coumaphos in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
56−72−4	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0007

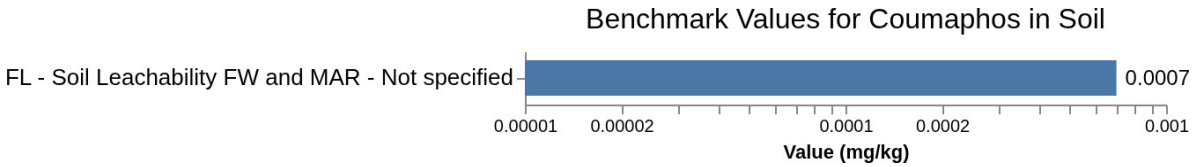


Table 118: Benchmark Values for Cresol, m− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
108−39−4	Dutch Soil Protection Act	Background	Not specified	0.30	71
108−39−4	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	13.00	
108−39−4	Dutch Soil Protection Act	Intervention Value	Not specified	13.00	
108−39−4	EPA Region 4	Soil Invertebrates	Not specified	0.09	
108−39−4	EPA Region 4	Soil All Receptors	Not specified	0.09	
108−39−4	EPA Region 4	Soil Plants	Not specified	0.69	
108−39−4	EPA Region 4	Soil Mammals	Not specified	3.49	
108−39−4	EPA Region 5	EPA RCRA Soil	Not specified	3.49	
108−39−4	Florida	Soil Leachability Freshwater and Marine	Not specified	3.30	
108−39−4	LANL ECORISK	Soil No Effect ESL	Generic Plant	0.69	
108−39−4	LANL ECORISK	Soil Low Effect ESL	Generic Plant	7.00	

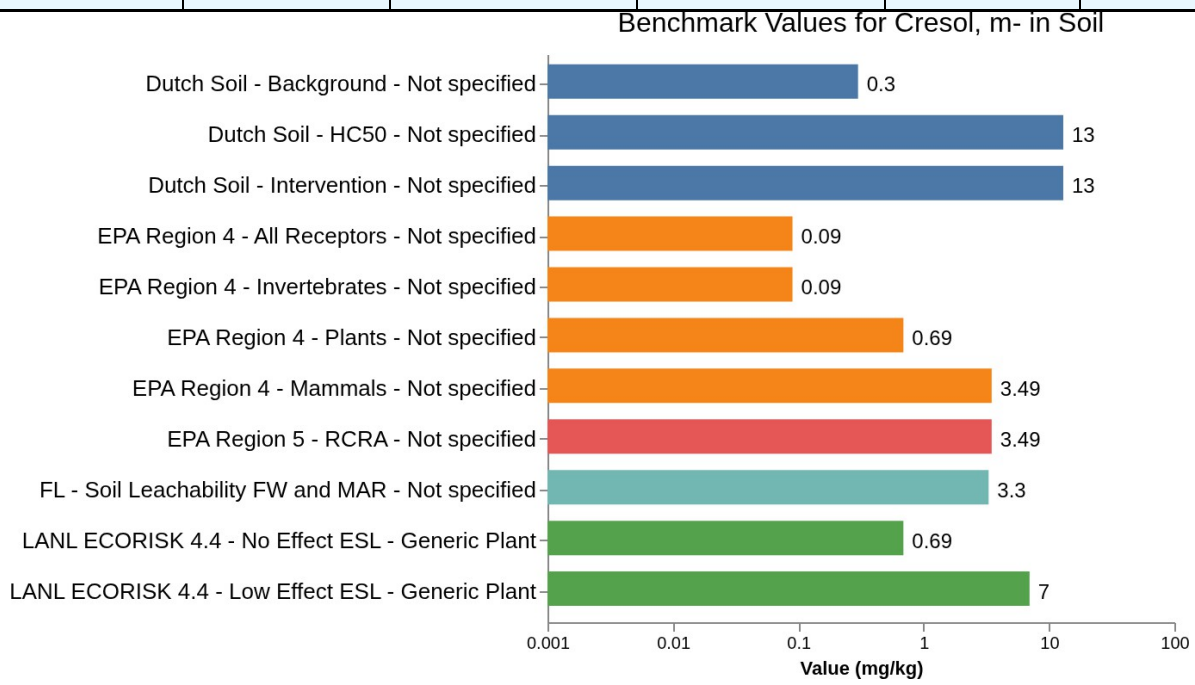


Table 119: Benchmark Values for Cresol, o− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
95−48−7	Dutch Soil Protection Act	Background	Not specified	0.3	71
95−48−7	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	13	
95−48−7	Dutch Soil Protection Act	Intervention Value	Not specified	13	
95−48−7	EPA Region 4	Soil All Receptors	Not specified	0.1	
95−48−7	EPA Region 4	Soil Invertebrates	Not specified	0.1	
95−48−7	EPA Region 4	Soil Plants	Not specified	0.67	
95−48−7	EPA Region 4	Soil Mammals	Not specified	580	
95−48−7	EPA Region 5	EPA RCRA Soil	Not specified	40.4	
95−48−7	Florida	Soil Leachability Freshwater and Marine	Not specified	1.9	
95−48−7	LANL ECORISK	Soil No Effect ESL	Generic Plant	0.67	
95−48−7	LANL ECORISK	Soil Low Effect ESL	Generic Plant	7	
95−48−7	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	580	
95−48−7	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	880	
95−48−7	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	1500	
95−48−7	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	5800	
95−48−7	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	8800	
95−48−7	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	15000	
95−48−7	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	160000	
95−48−7	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	1.60e+06	

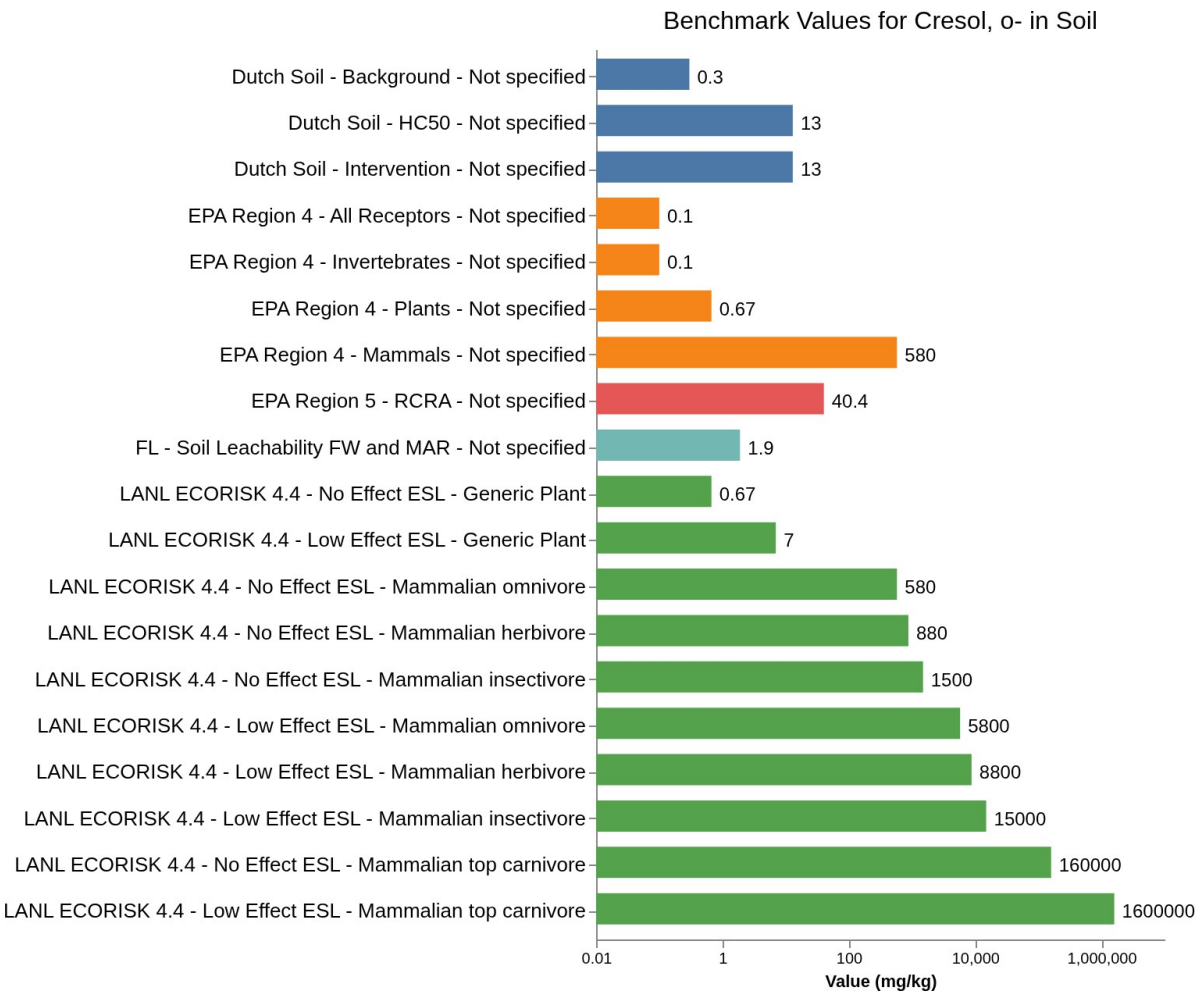

Benchmark Values for Cresol, o- in Soil
Dutch Soil - Background - Not specified
0.3
Dutch Soil - HC50 - Not specified
13
Dutch Soil - Intervention - Not specified
13
EPA Region 4 - All Receptors - Not specified
0.1
EPA Region 4 - Invertebrates - Not specified
0.1
EPA Region 4 - Plants - Not specified
0.67
EPA Region 4 - Mammals - Not specified
580
EPA Region 5 - RCRA - Not specified
40.4
FL - Soil Leachability FW and MAR - Not specified
1.9
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
0.67
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
7
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
580
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
880
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
1500
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
5800
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
8800
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
15000
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
160000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
1600000
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 120: Benchmark Values for Cresol, p− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
106−44−5	Dutch Soil Protection Act	Background	Not specified	0.30	71
106−44−5	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	13.00	
106−44−5	Dutch Soil Protection Act	Intervention Value	Not specified	13.00	
106−44−5	EPA Region 4	Soil All Receptors	Not specified	0.08	
106−44−5	EPA Region 4	Soil Invertebrates	Not specified	0.08	
106−44−5	EPA Region 4	Soil Mammals	Not specified	163.00	
106−44−5	EPA Region 5	EPA RCRA Soil	Not specified	163.00	
106−44−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.50	

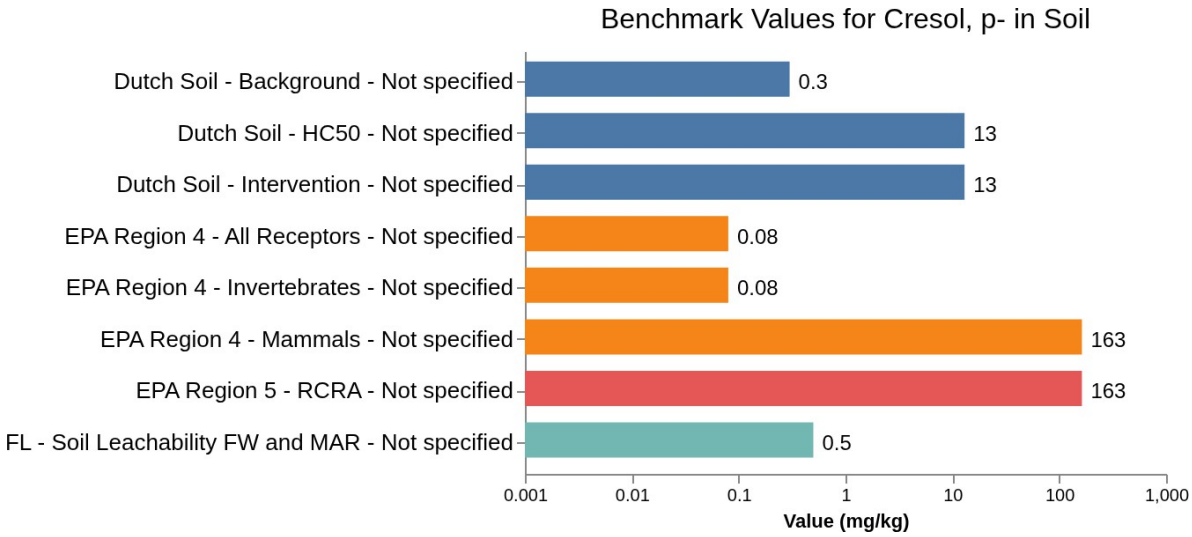


Table 121: Benchmark Values for Cresol, p−chloro−m− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
59−50−7	EPA Region 5	EPA RCRA Soil	Not specified	7.95
59−50−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.60

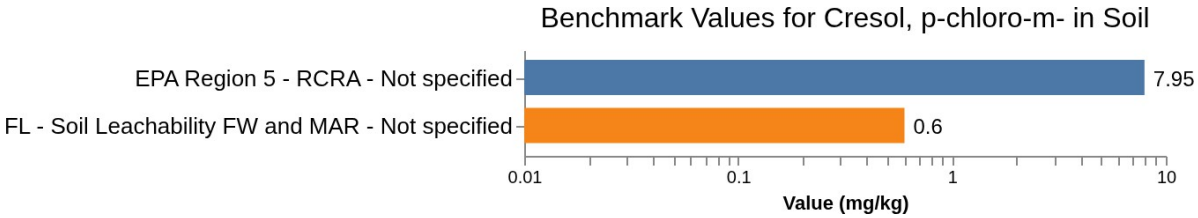


Table 122: Benchmark Values for Cresols in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
1319−77−3	Dutch Soil Protection Act	Background	Not specified	0.3	71
1319−77−3	Dutch Soil Protection Act	Intervention Value	Not specified	13.0	
1319−77−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	13.0	

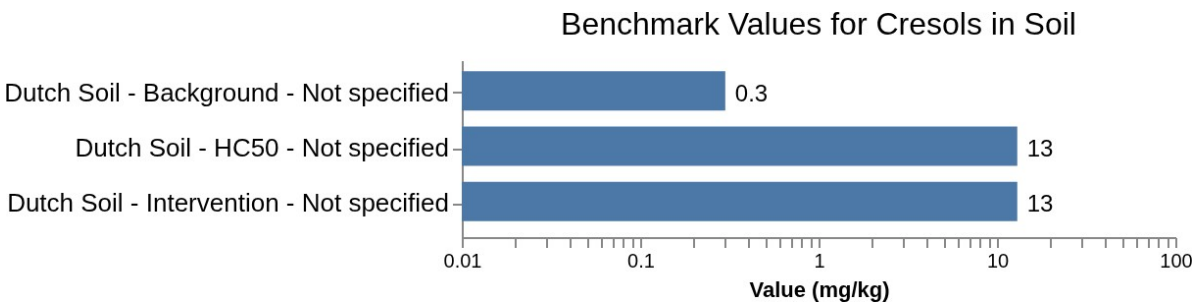


Table 123: Benchmark Values for Cumene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
98−82−8	EPA Region 4	Soil Invertebrates	Not specified	0.04
98−82−8	EPA Region 4	Soil All Receptors	Not specified	0.04
98−82−8	Florida	Soil Leachability Freshwater and Marine	Not specified	56.00

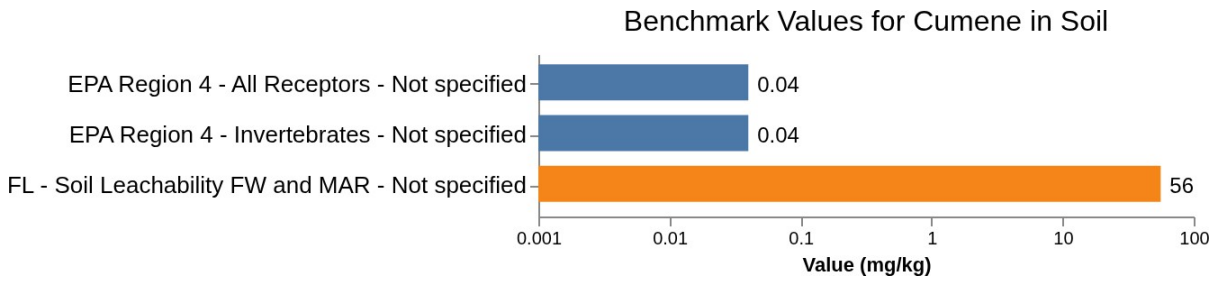


Table 124: Benchmark Values for Cyanide (CN−) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
57−12−5	Canada	Soil Agricultural	Not specified	0.900	
57−12−5	Canada	Soil Residential/Parkland	Not specified	0.900	
57−12−5	Canada	Soil Commercial	Not specified	8.000	
57−12−5	Canada	Soil Industrial	Not specified	8.000	
57−12−5	Dutch Soil Protection Act	Background	Not specified	3.000	
57−12−5	Dutch Soil Protection Act	Intervention Value	Not specified	20.000	
57−12−5	EPA Region 4	Soil Avians	Not specified	0.098	
57−12−5	EPA Region 4	Soil All Receptors	Not specified	0.100	
57−12−5	EPA Region 4	Soil Mammals	Not specified	330.000	
57−12−5	EPA Region 5	EPA RCRA Soil	Not specified	1.330	
57−12−5	Florida	Soil Leachability Marine	Not specified	0.004	211
57−12−5	Florida	Soil Leachability Freshwater	Not specified	0.020	211

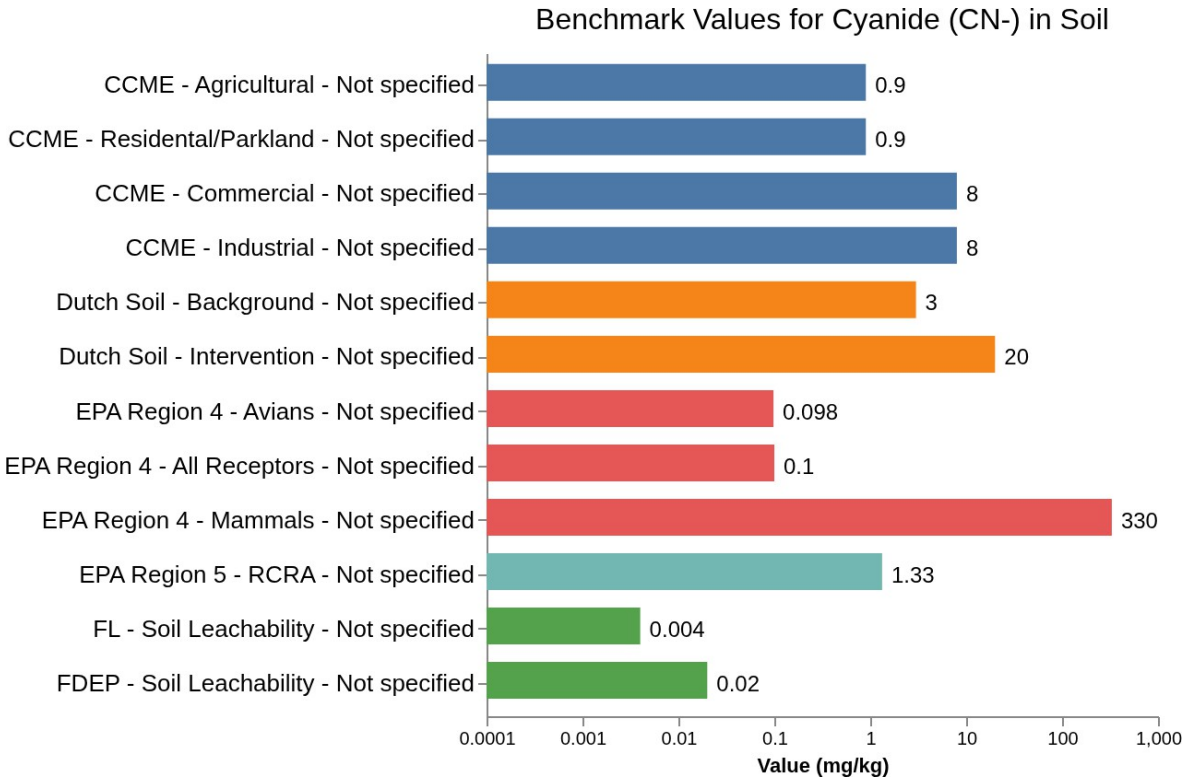


Table 125: Benchmark Values for Cyanide (total complex) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−05−9	Dutch Soil Protection Act	Background	Not specified	5.500
000000−05−9	Dutch Soil Protection Act	Intervention Value	Not specified	50.000
000000−05−9	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.098
000000−05−9	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.099
000000−05−9	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.100
000000−05−9	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	0.360
000000−05−9	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	0.590
000000−05−9	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	0.980
000000−05−9	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	0.990
000000−05−9	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	1.000
000000−05−9	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	3.600
000000−05−9	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	5.900
000000−05−9	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	330.000
000000−05−9	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	330.000
000000−05−9	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	790.000
000000−05−9	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	3300.000
000000−05−9	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	3300.000
000000−05−9	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	3300.000
000000−05−9	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	7900.000
000000−05−9	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	33000.000

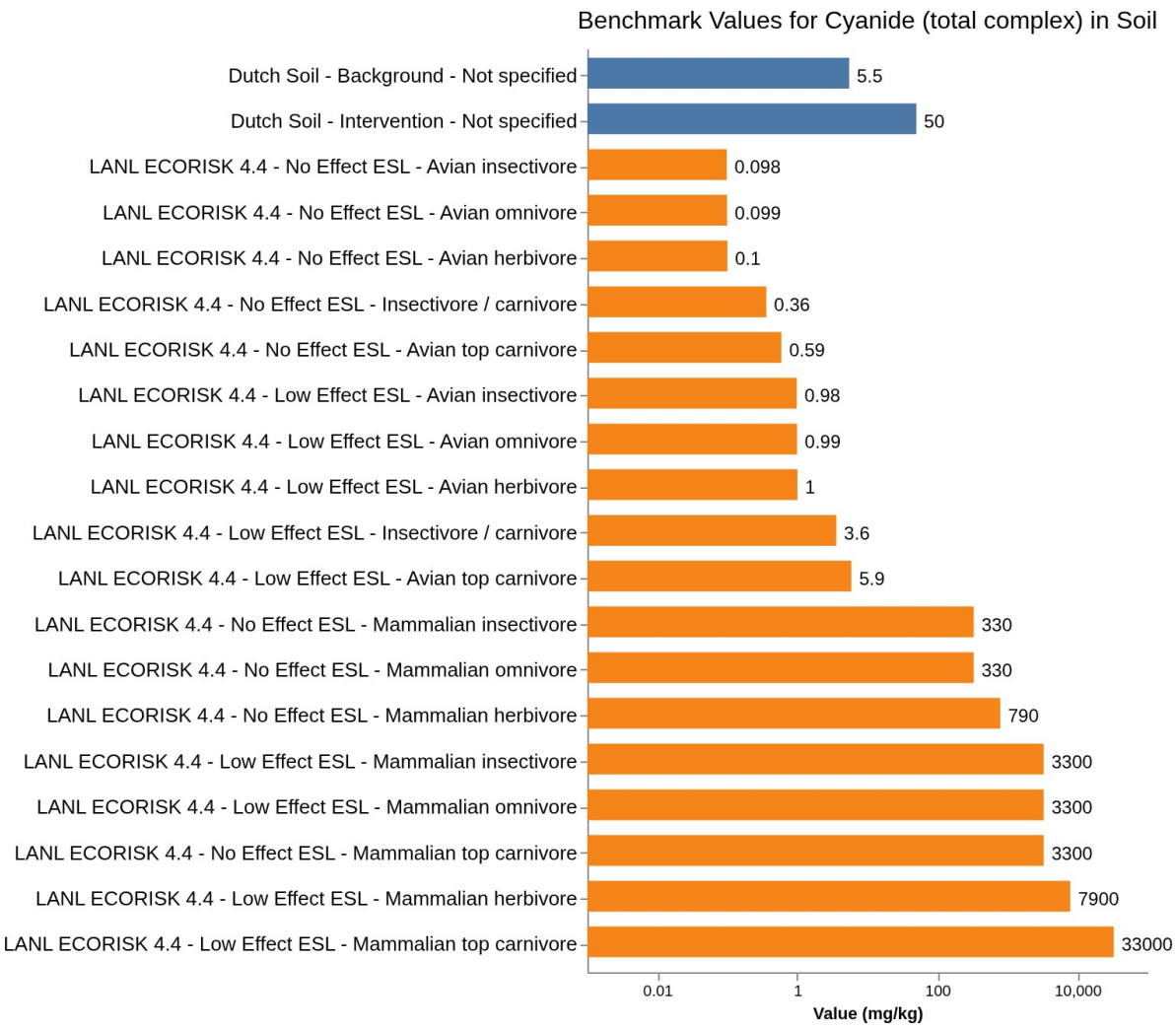

Benchmark Values for Cyanide (total complex) in Soil
Dutch Soil - Background - Not specified
5.5
Dutch Soil - Intervention - Not specified
50
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
0.098
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
0.099
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
0.1
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
0.36
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
0.59
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
0.98
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
0.99
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
1
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
3.6
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
5.9
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
330
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
330
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
790
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
3300
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
3300
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
3300
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
7900
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
33000
0.01
1
100
10,000
Value (mg/kg)

Table 126: Benchmark Values for Cyanogen Chloride in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
506−77−4	Florida	Soil Leachability Freshwater and Marine	Not specified	0.3

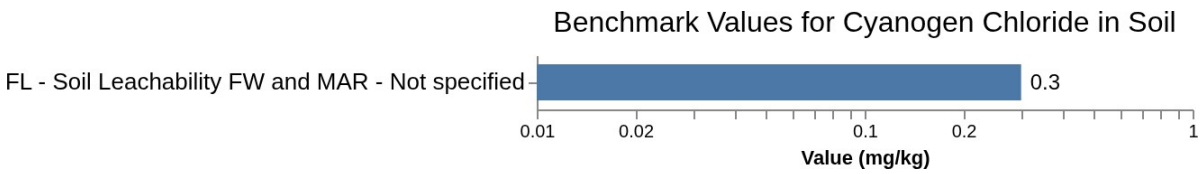


Table 127: Benchmark Values for Cycloate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
1134−23−2	Florida	Soil Leachability Freshwater and Marine	Not specified	2.5

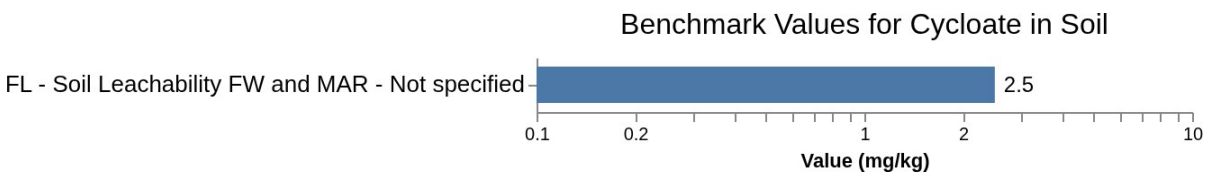


Table 128: Benchmark Values for Cyclohexanone in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
108−94−1	Dutch Soil Protection Act	Background	Not specified	2.0	71
108−94−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	150.0	
108−94−1	Dutch Soil Protection Act	Intervention Value	Not specified	150.0	
108−94−1	Florida	Soil Leachability Freshwater and Marine	Not specified	110.0	

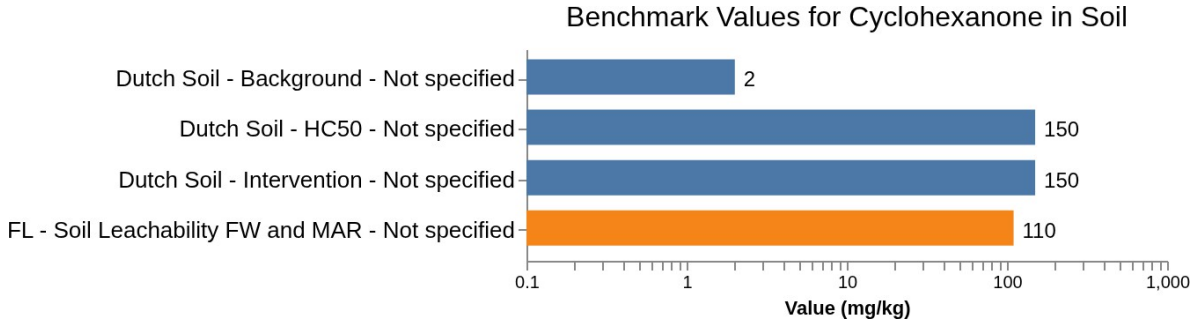


Table 129: Benchmark Values for Cyclohexylamine in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
108−91−8	Florida	Soil Leachability Freshwater and Marine	Not specified	22.0

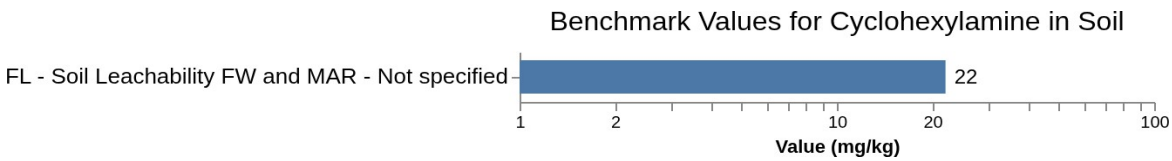


Table 130: Benchmark Values for Cyhalothrin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
68085−85−8	Florida	Soil Leachability Freshwater and Marine	Not specified	150.0

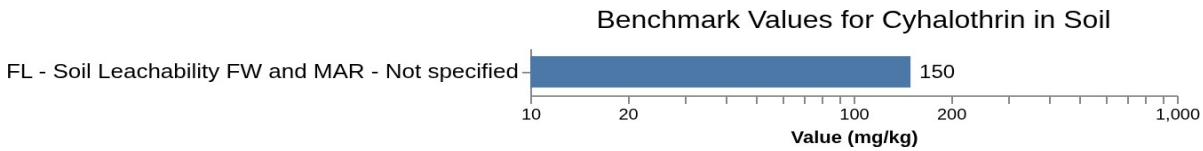


Table 131: Benchmark Values for Cypermethrin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
52315−07−8	Florida	Soil Leachability Freshwater and Marine	Not specified	0.002

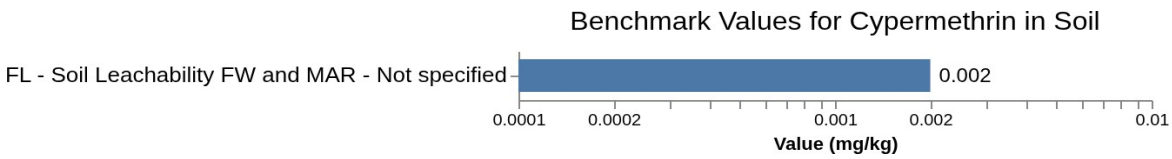


Table 132: Benchmark Values for DDT, Total in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−07−7	Dutch Soil Protection Act	Background	Not specified	0.2
000000−07−7	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	1.0
000000−07−7	Dutch Soil Protection Act	Intervention Value	Not specified	1.7

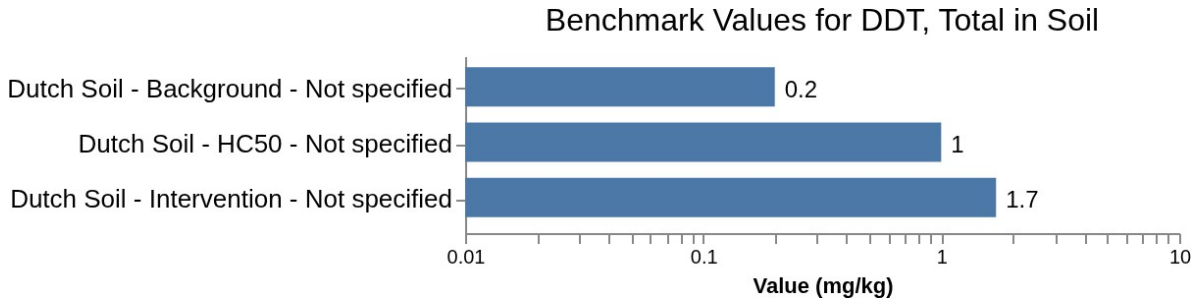


Table 133: Benchmark Values for DDT/DDE/DDD (total) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
000000−05−1	Canada	Soil Agricultural	Not specified	0.700	
000000−05−1	Canada	Soil Residential/Parkland	Not specified	0.700	
000000−05−1	Canada	Soil Industrial	Not specified	12.000	
000000−05−1	Canada	Soil Commercial	Not specified	12.000	
000000−05−1	EPA ECO−SSL	Mammalian	Not specified	0.021	
000000−05−1	EPA ECO−SSL	Avian	Not specified	0.093	
000000−05−1	EPA Region 4	Soil All Receptors	Not specified	0.021	10
000000−05−1	EPA Region 4	Soil Mammals	Not specified	0.021	10
000000−05−1	EPA Region 4	Soil Avians	Not specified	0.093	10
000000−05−1	Washington	Soil Wildlife	Not specified	0.750	

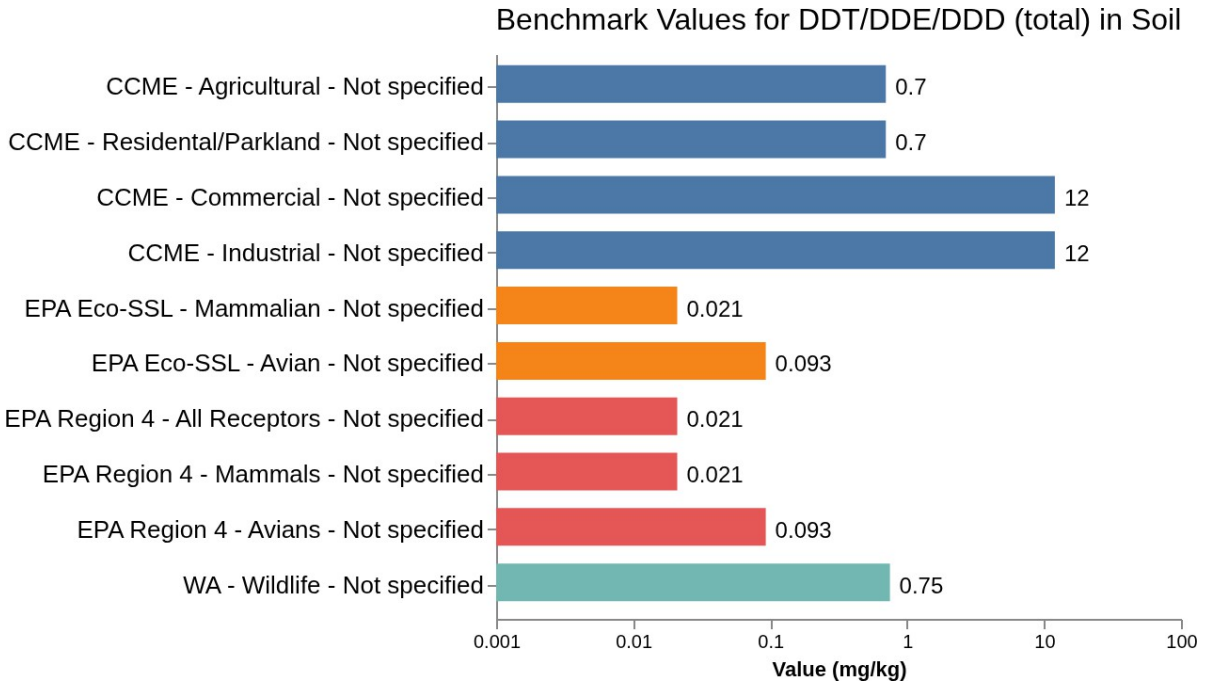


Table 134: Benchmark Values for Di(2−ethylhexyl)adipate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
103−23−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	69
103−23−1	Florida	Soil Leachability Freshwater and Marine	Not specified	64

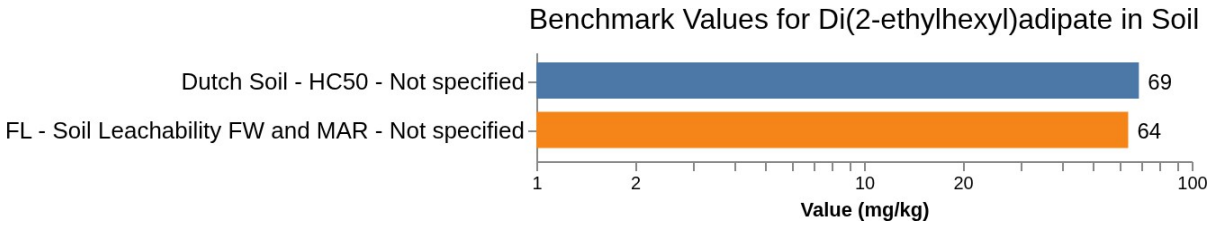


Table 135: Benchmark Values for Diallate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
2303−16−4	EPA Region 5	EPA RCRA Soil	Not specified	0.452

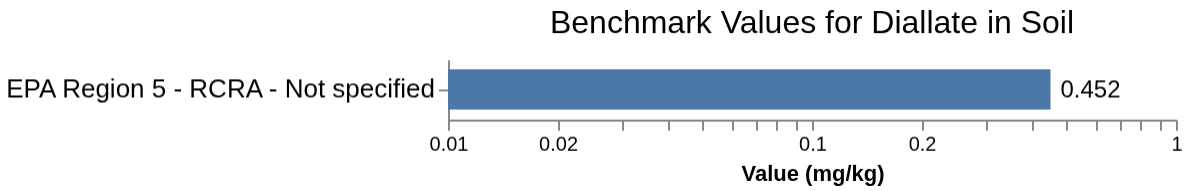


Table 136: Benchmark Values for Diazinon in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
333−41−5	EPA Region 4	Soil Invertebrates	Not specified	0.00370
333−41−5	EPA Region 4	Soil All Receptors	Not specified	0.00370
333−41−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.00005

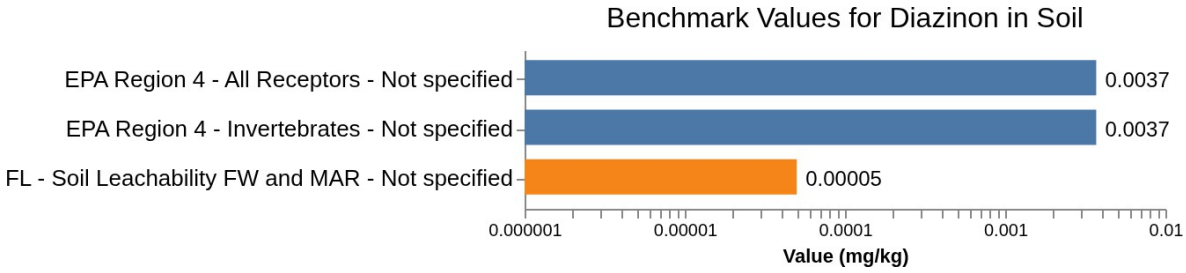


Table 137: Benchmark Values for Dibenz[a,h]anthracene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
53−70−3	Canada	Soil Residential/Parkland	Not specified		36
53−70−3	Canada	Soil Industrial	Not specified		36
53−70−3	Canada	Soil Agricultural	Not specified		36
53−70−3	Canada	Soil Commercial	Not specified		36
53−70−3	EPA Region 4	Soil Invertebrates	Not specified	0.06	7
53−70−3	EPA Region 4	Soil All Receptors	Not specified	1.1	7
53−70−3	EPA Region 4	Soil Mammals	Not specified	14	7
53−70−3	EPA Region 5	EPA RCRA Soil	Not specified	18.4	
53−70−3	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	14	
53−70−3	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	22	
53−70−3	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	84	
53−70−3	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	140	
53−70−3	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	220	
53−70−3	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	840	
53−70−3	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	850	
53−70−3	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	8500	

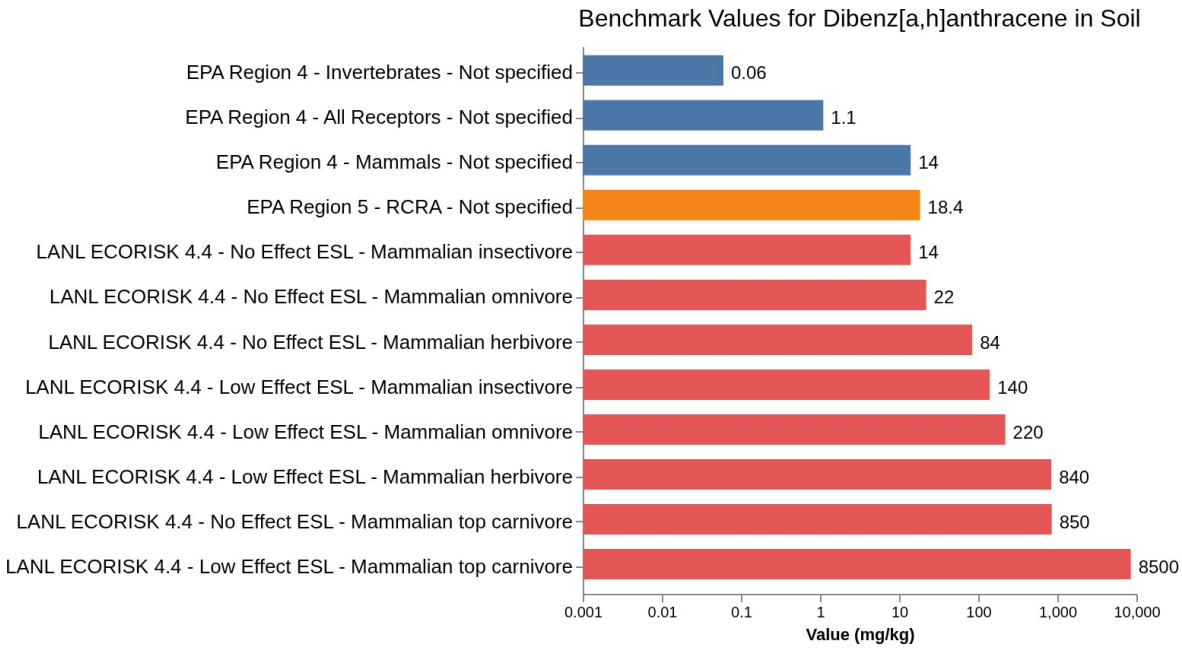


Table 138: Benchmark Values for Dibenzofuran in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
132−64−9	EPA Region 4	Soil All Receptors	Not specified	0.15
132−64−9	EPA Region 4	Soil Invertebrates	Not specified	0.15
132−64−9	EPA Region 4	Soil Plants	Not specified	6.10
132−64−9	Florida	Soil Leachability Freshwater and Marine	Not specified	36.00
132−64−9	LANL ECORISK	Soil No Effect ESL	Generic Plant	6.10
132−64−9	LANL ECORISK	Soil Low Effect ESL	Generic Plant	61.00

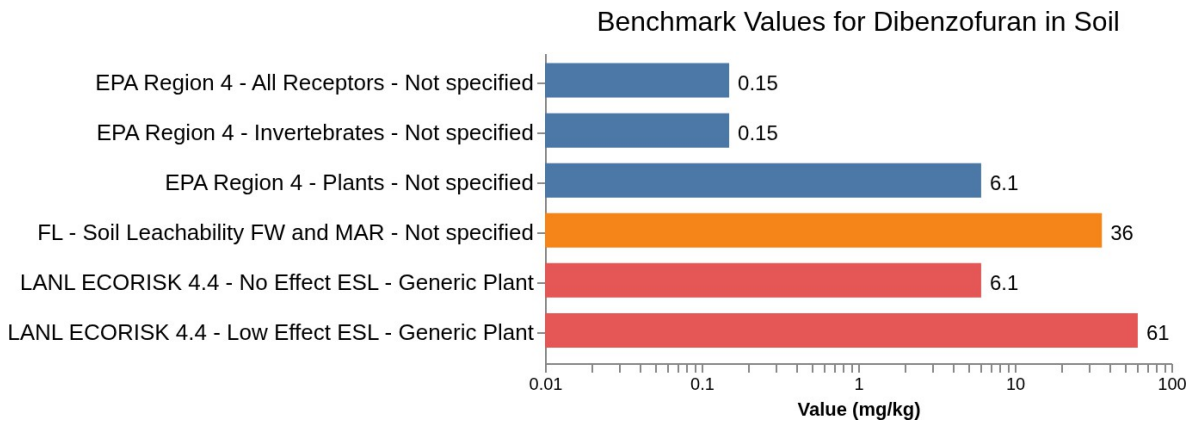


Table 139: Benchmark Values for Dibromo−3−chloropropane, 1,2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
96−12−8	EPA Region 5	EPA RCRA Soil	Not specified	0.0352

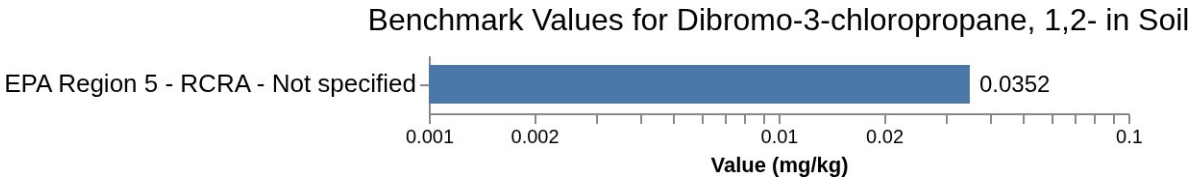


Table 140: Benchmark Values for Dibromobenzene, 1,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
106−37−6	Florida	Soil Leachability Freshwater and Marine	Not specified	27

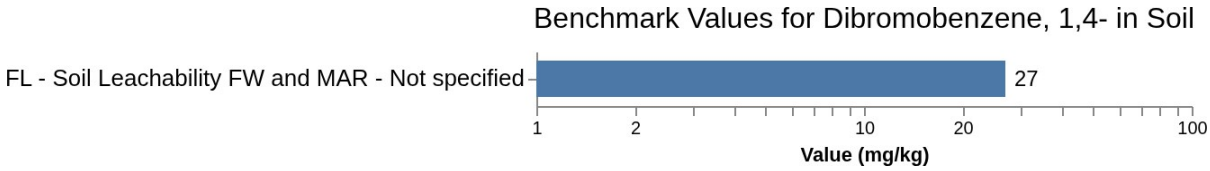


Table 141: Benchmark Values for Dibromochloromethane in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
124−48−1	EPA Region 5	EPA RCRA Soil	Not specified	2.05
124−48−1	Florida	Soil Leachability Freshwater and Marine	Not specified	0.20

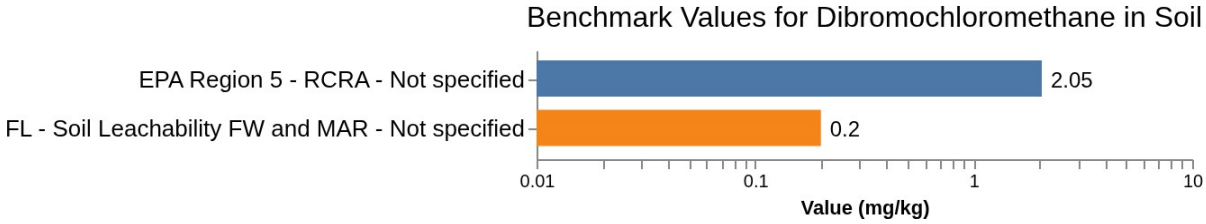


Table 142: Benchmark Values for Dibromoethane, 1,2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
106−93−4	EPA Region 5	EPA RCRA Soil	Not specified	1.23
106−93−4	Florida	Soil Leachability Freshwater and Marine	Not specified	0.07

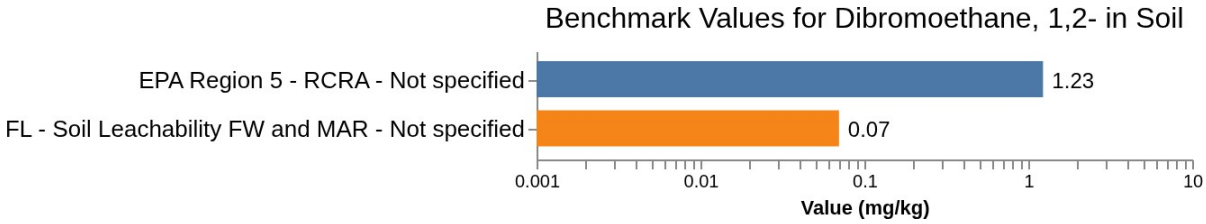


Table 143: Benchmark Values for Dibromomethane (Methylene Bromide) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
74−95−3	EPA Region 5	EPA RCRA Soil	Not specified	65

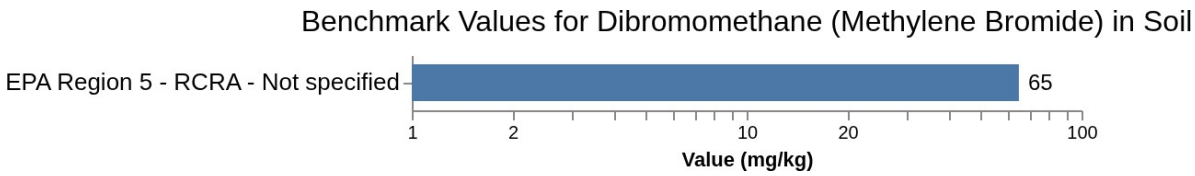


Table 144: Benchmark Values for Dibutyl Phthalate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
84−74−2	Dutch Soil Protection Act	Background	Not specified	0.070	71
84−74−2	Dutch Soil Protection Act	Intervention Value	Not specified	36.000	
84−74−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	36.000	
84−74−2	EPA Region 4	Soil All Receptors	Not specified	0.011	
84−74−2	EPA Region 4	Soil Avians	Not specified	0.011	
84−74−2	EPA Region 4	Soil Invertebrates	Not specified	0.220	
84−74−2	EPA Region 4	Soil Plants	Not specified	160.000	
84−74−2	EPA Region 4	Soil Mammals	Not specified	180.000	
84−74−2	EPA Region 5	EPA RCRA Soil	Not specified	0.150	
84−74−2	EPA Region 6	Soil Plants	Not specified	200.000	
84−74−2	Florida	Soil Leachability Freshwater and Marine	Not specified	1.500	
84−74−2	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.011	
84−74−2	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.021	
84−74−2	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	0.052	
84−74−2	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	0.110	
84−74−2	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	0.210	
84−74−2	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.380	
84−74−2	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	0.520	
84−74−2	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	2.000	
84−74−2	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	3.800	
84−74−2	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	20.000	
84−74−2	LANL ECORISK	Soil No Effect ESL	Generic Plant	160.000	
84−74−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	180.000	
84−74−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	360.000	
84−74−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	450.000	
84−74−2	LANL ECORISK	Soil Low Effect ESL	Generic Plant	600.000	
84−74−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	860.000	
84−74−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	17000.000	
84−74−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	40000.000	
84−74−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	62000.000	
84−74−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	140000.000	
84−74−2	ORNL	Soil Screening − Plants	Not specified	200.000	

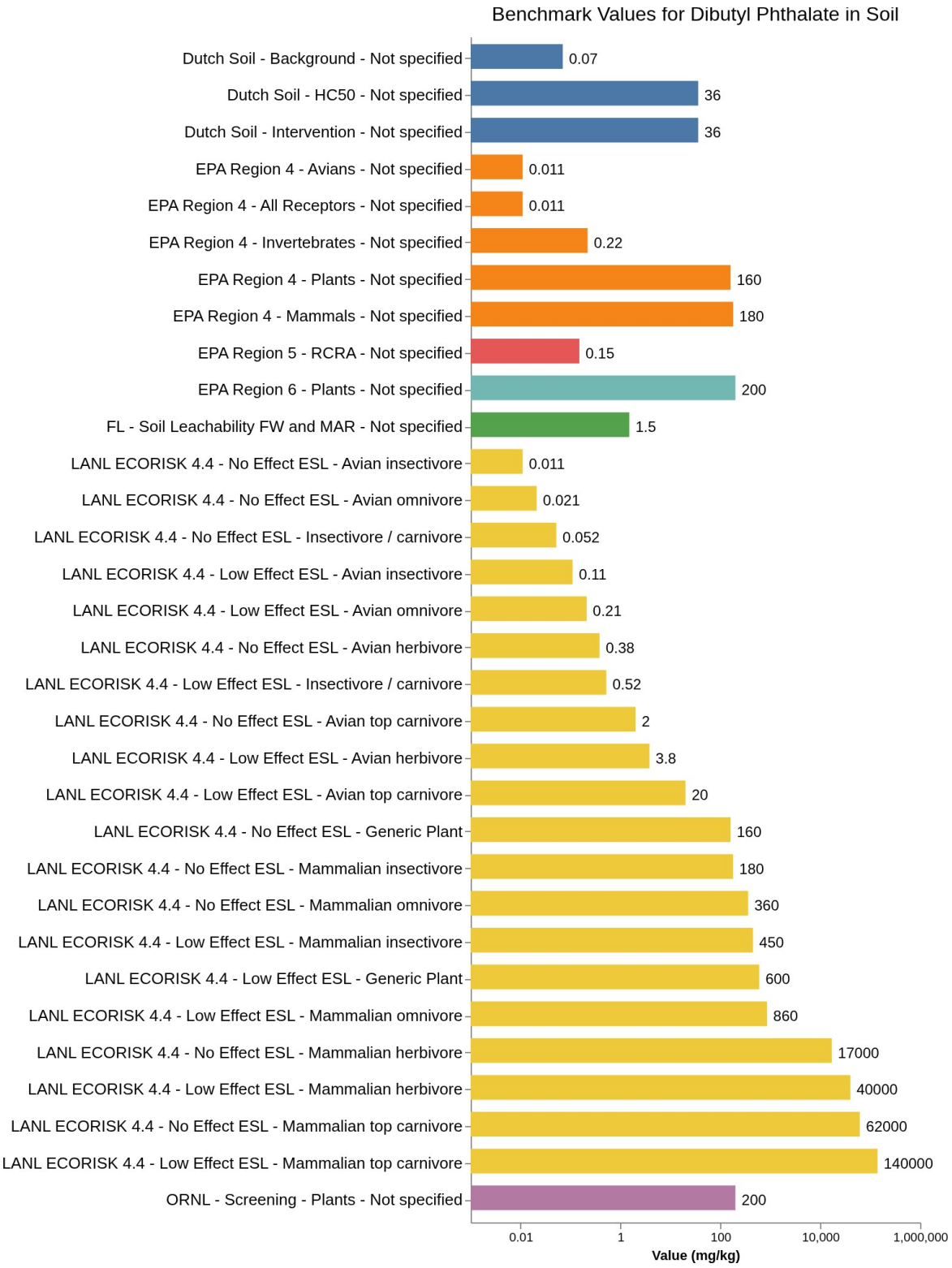

Benchmark Values for Dibutyl Phthalate in Soil
Dutch Soil - Background - Not specified
0.07
Dutch Soil - HC50 - Not specified
36
Dutch Soil - Intervention - Not specified
36
EPA Region 4 - Avians - Not specified
0.011
EPA Region 4 - All Receptors - Not specified
0.011
EPA Region 4 - Invertebrates - Not specified
0.22
EPA Region 4 - Plants - Not specified
160
EPA Region 4 - Mammals - Not specified
180
EPA Region 5 - RCRA - Not specified
0.15
EPA Region 6 - Plants - Not specified
200
FL - Soil Leachability FW and MAR - Not specified
1.5
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
0.011
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
0.021
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
0.052
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
0.11
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
0.21
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
0.38
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
0.52
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
2
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
3.8
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
20
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
160
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
180
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
360
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
450
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
600
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
860
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
17000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
40000
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
62000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
140000
ORNL - Screening - Plants - Not specified
200
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 145: Benchmark Values for Dicamba in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
1918−00−9	Florida	Soil Leachability Freshwater and Marine	Not specified	2.4

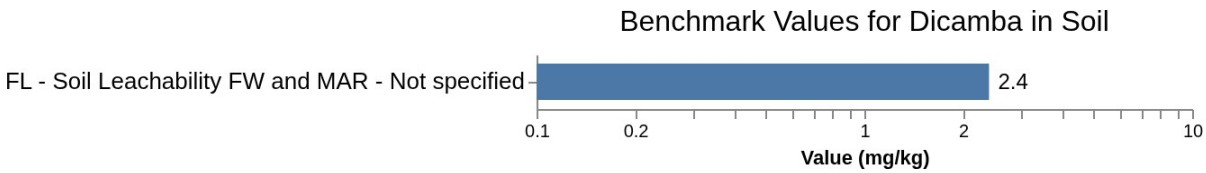


Table 146: Benchmark Values for Dichloro−2−butene, cis−1,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
1476−11−5	ORNL	Soil Screening − Microbes	Not specified	1000

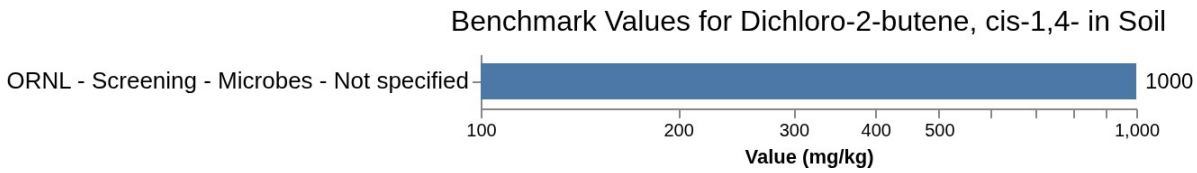


Table 147: Benchmark Values for Dichloro−2−butene, trans−1,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
110−57−6	ORNL	Soil Screening − Microbes	Not specified	1000

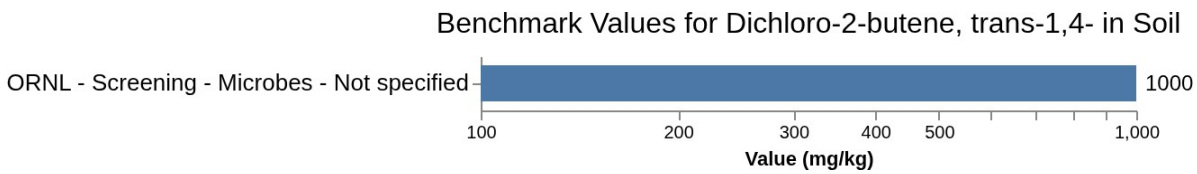


Table 148: Benchmark Values for Dichloroacetic Acid in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
79−43−6	Florida	Soil Leachability Freshwater and Marine	Not specified	8.1

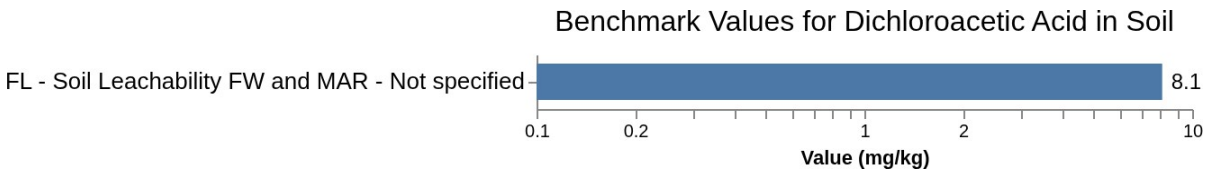


Table 149: Benchmark Values for Dichloroaniline, 2,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
554−00−7	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	43	77
554−00−7	Dutch Soil Protection Act	Intervention Value	Not specified	50	73, 77
554−00−7	EPA Region 6	Soil Invertebrates	Not specified	100	
554−00−7	ORNL	Soil Screening − Invertebrates	Not specified	100	

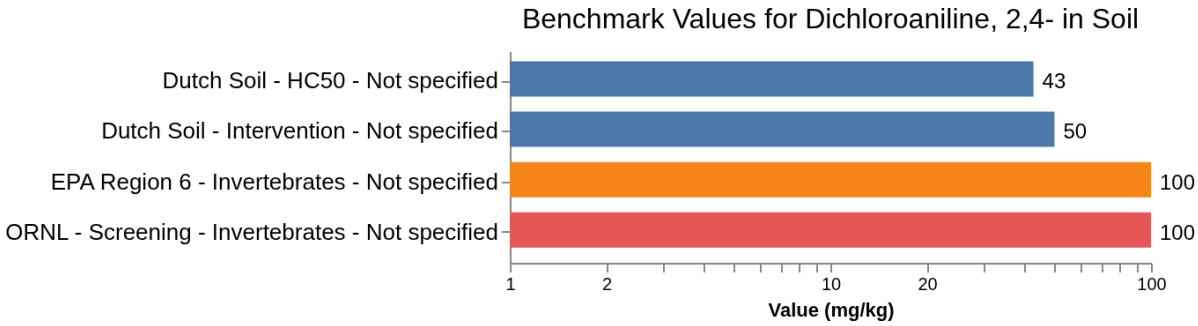


Table 150: Benchmark Values for Dichloroaniline, 3,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
95−76−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	43	77
95−76−1	Dutch Soil Protection Act	Intervention Value	Not specified	50	73, 77
95−76−1	EPA Region 4	Soil All Receptors	Not specified	20	
95−76−1	EPA Region 4	Soil Invertebrates	Not specified	20	
95−76−1	EPA Region 6	Soil Invertebrates	Not specified	20	
95−76−1	ORNL	Soil Screening − Invertebrates	Not specified	20	

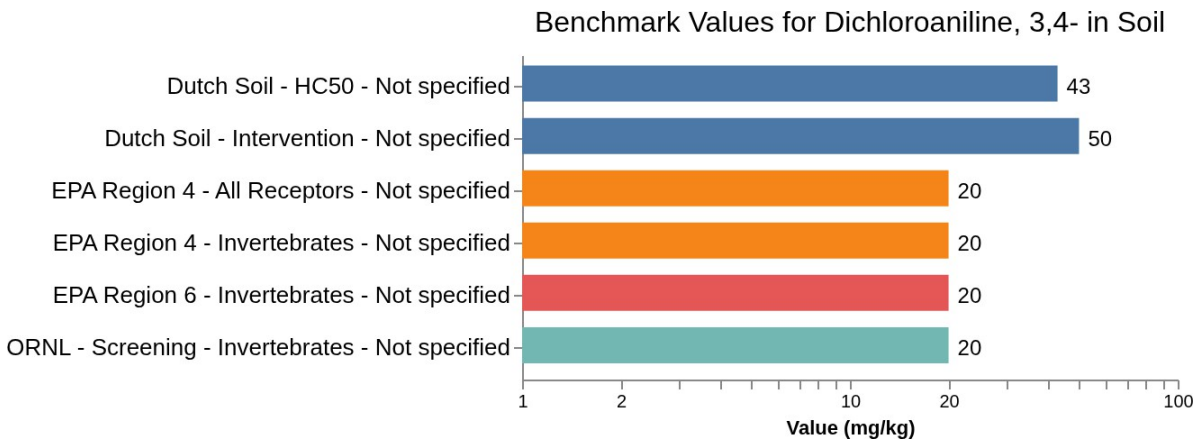


Table 151: Benchmark Values for Dichlorobenzene, 1,2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
95−50−1	Canada	Soil Agricultural	Not specified	0.10
95−50−1	Canada	Soil Residential/Parkland	Not specified	1.00
95−50−1	Canada	Soil Commercial	Not specified	10.00
95−50−1	Canada	Soil Industrial	Not specified	10.00
95−50−1	Dutch Soil Protection Act	Background	Not specified	2.00
95−50−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	19.00
95−50−1	EPA Region 4	Soil Invertebrates	Not specified	0.09
95−50−1	EPA Region 4	Soil All Receptors	Not specified	0.09
95−50−1	EPA Region 4	Soil Mammals	Not specified	0.92
95−50−1	EPA Region 5	EPA RCRA Soil	Not specified	2.96
95−50−1	Florida	Soil Leachability Freshwater and Marine	Not specified	2.80
95−50−1	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.92
95−50−1	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	1.50
95−50−1	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	9.20
95−50−1	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	12.00
95−50−1	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	15.00
95−50−1	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	120.00
95−50−1	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	480.00
95−50−1	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	4800.00

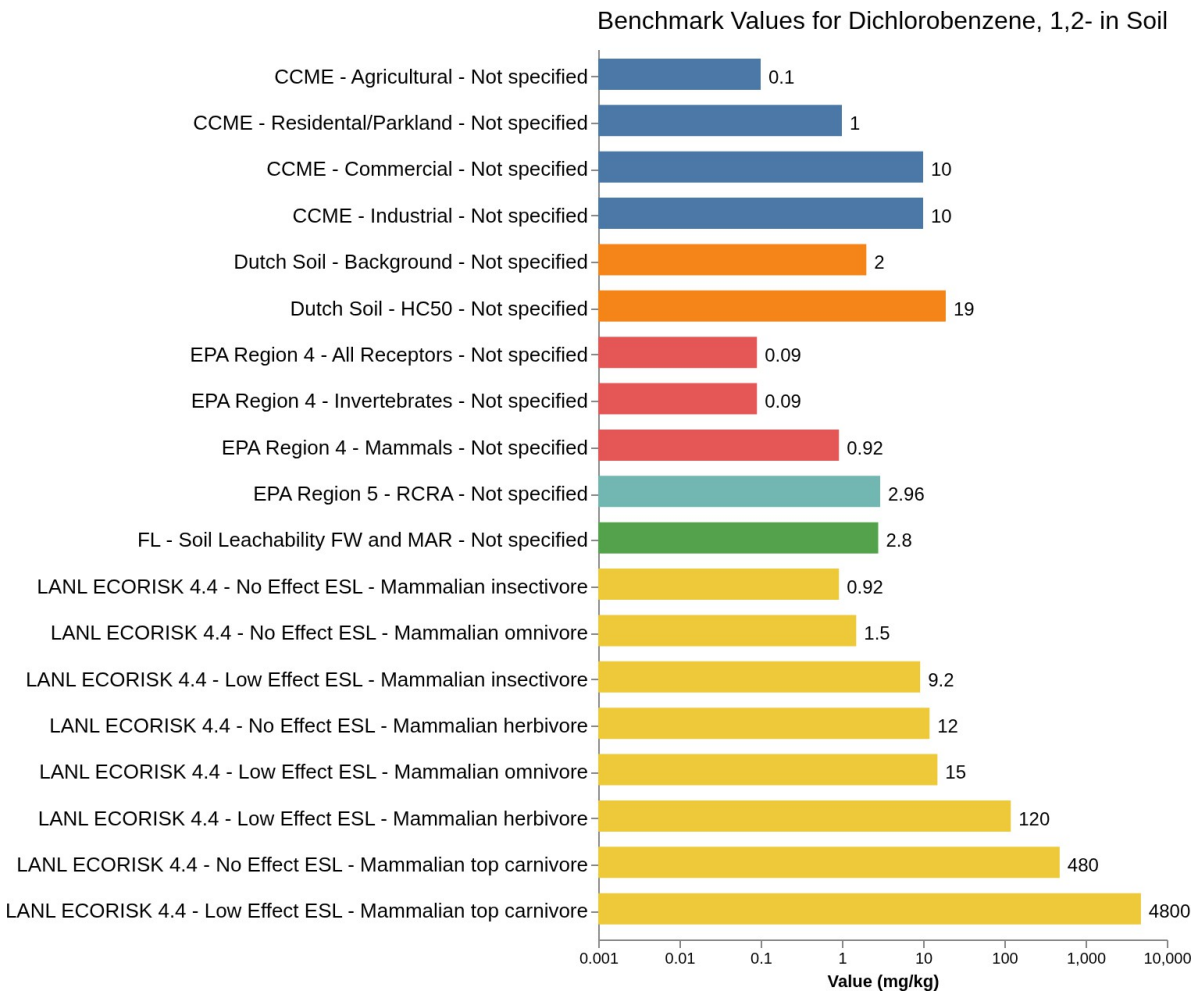

Benchmark Values for Dichlorobenzene, 1,2- in Soil
CCME - Agricultural - Not specified
0.1
CCME - Residental/Parkland - Not specified
1
CCME - Commercial - Not specified
10
CCME - Industrial - Not specified
10
Dutch Soil - Background - Not specified
2
Dutch Soil - HC50 - Not specified
19
EPA Region 4 - All Receptors - Not specified
0.09
EPA Region 4 - Invertebrates - Not specified
0.09
EPA Region 4 - Mammals - Not specified
0.92
EPA Region 5 - RCRA - Not specified
2.96
FL - Soil Leachability FW and MAR - Not specified
2.8
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
0.92
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
1.5
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
9.2
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
12
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
15
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
120
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
480
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
4800
0.001
0.01
0.1
1
10
100
1,000
10,000
Value (mg/kg)

Table 152: Benchmark Values for Dichlorobenzene, 1,3− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
541−73−1	Canada	Soil Agricultural	Not specified	0.10
541−73−1	Canada	Soil Residential/Parkland	Not specified	1.00
541−73−1	Canada	Soil Industrial	Not specified	10.00
541−73−1	Canada	Soil Commercial	Not specified	10.00
541−73−1	Dutch Soil Protection Act	Background	Not specified	2.00
541−73−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	19.00
541−73−1	EPA Region 4	Soil Invertebrates	Not specified	0.08
541−73−1	EPA Region 4	Soil All Receptors	Not specified	0.08
541−73−1	EPA Region 4	Soil Mammals	Not specified	0.74
541−73−1	EPA Region 5	EPA RCRA Soil	Not specified	37.70
541−73−1	Florida	Soil Leachability Freshwater and Marine	Not specified	2.80
541−73−1	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.74
541−73−1	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	1.20
541−73−1	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	7.40
541−73−1	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	12.00
541−73−1	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	13.00
541−73−1	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	130.00
541−73−1	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	380.00
541−73−1	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	3800.00

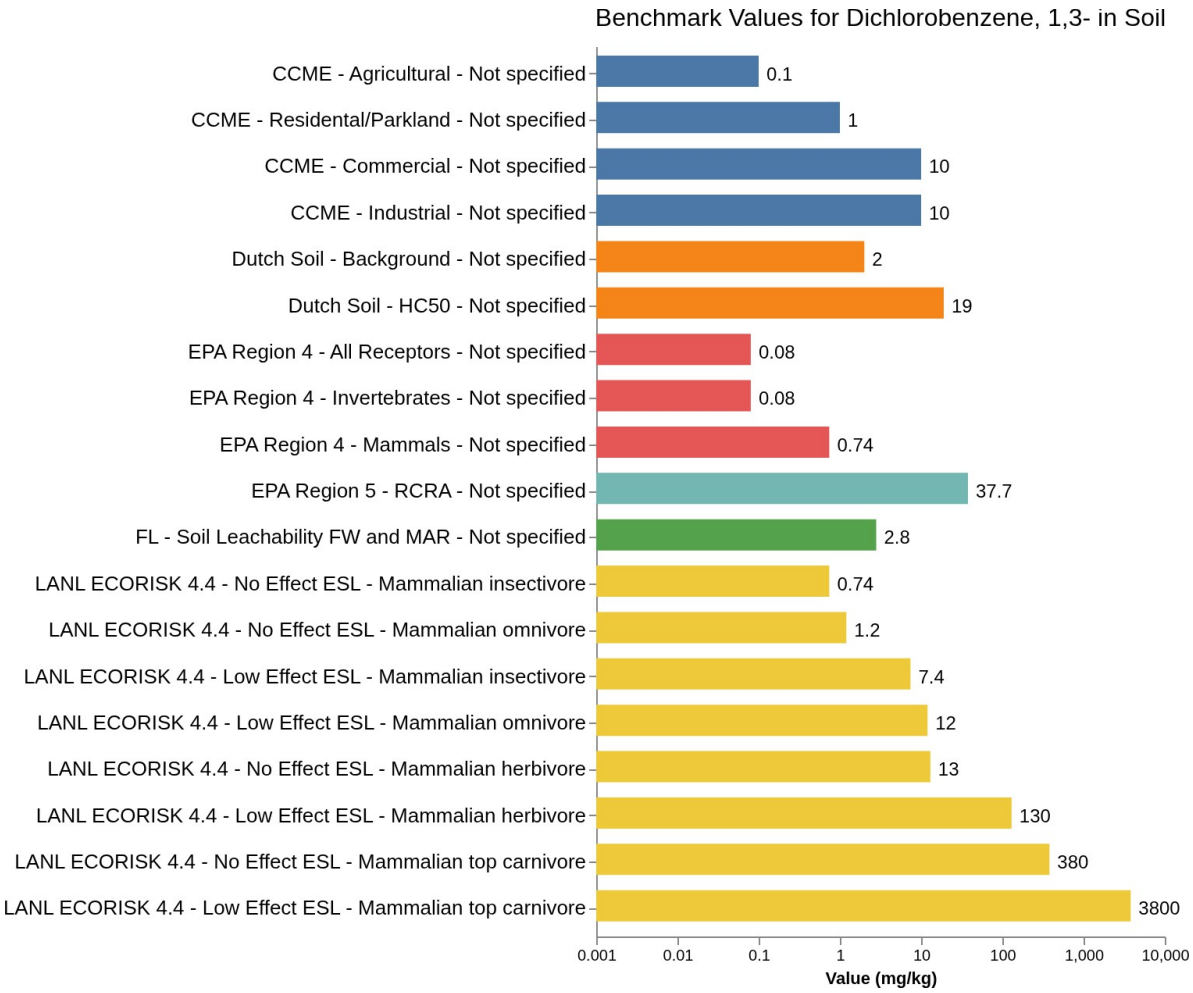

Benchmark Values for Dichlorobenzene, 1,3- in Soil
CCME - Agricultural - Not specified
0.1
CCME - Residental/Parkland - Not specified
1
CCME - Commercial - Not specified
10
CCME - Industrial - Not specified
10
Dutch Soil - Background - Not specified
2
Dutch Soil - HC50 - Not specified
19
EPA Region 4 - All Receptors - Not specified
0.08
EPA Region 4 - Invertebrates - Not specified
0.08
EPA Region 4 - Mammals - Not specified
0.74
EPA Region 5 - RCRA - Not specified
37.7
FL - Soil Leachability FW and MAR - Not specified
2.8
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
0.74
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
1.2
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
7.4
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
12
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
13
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
130
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
380
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
3800
0.001
0.01
0.1
1
10
100
1,000
10,000
Value (mg/kg)

Table 153: Benchmark Values for Dichlorobenzene, 1,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
106−46−7	Canada	Soil Agricultural	Not specified	0.100
106−46−7	Canada	Soil Residential/Parkland	Not specified	1.000
106−46−7	Canada	Soil Commercial	Not specified	10.000
106−46−7	Canada	Soil Industrial	Not specified	10.000
106−46−7	Dutch Soil Protection Act	Background	Not specified	2.000
106−46−7	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	19.000
106−46−7	EPA Region 4	Soil All Receptors	Not specified	0.880
106−46−7	EPA Region 4	Soil Mammals	Not specified	0.890
106−46−7	EPA Region 4	Soil Invertebrates	Not specified	1.200
106−46−7	EPA Region 5	EPA RCRA Soil	Not specified	0.546
106−46−7	EPA Region 6	Soil Invertebrates	Not specified	20.000
106−46−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.090
106−46−7	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.890
106−46−7	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	1.200
106−46−7	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	1.500
106−46−7	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	3.500
106−46−7	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	6.000
106−46−7	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	12.000
106−46−7	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	12.000
106−46−7	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	49.000
106−46−7	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	470.000
106−46−7	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	1800.000
106−46−7	ORNL	Soil Screening − Invertebrates	Not specified	20.000

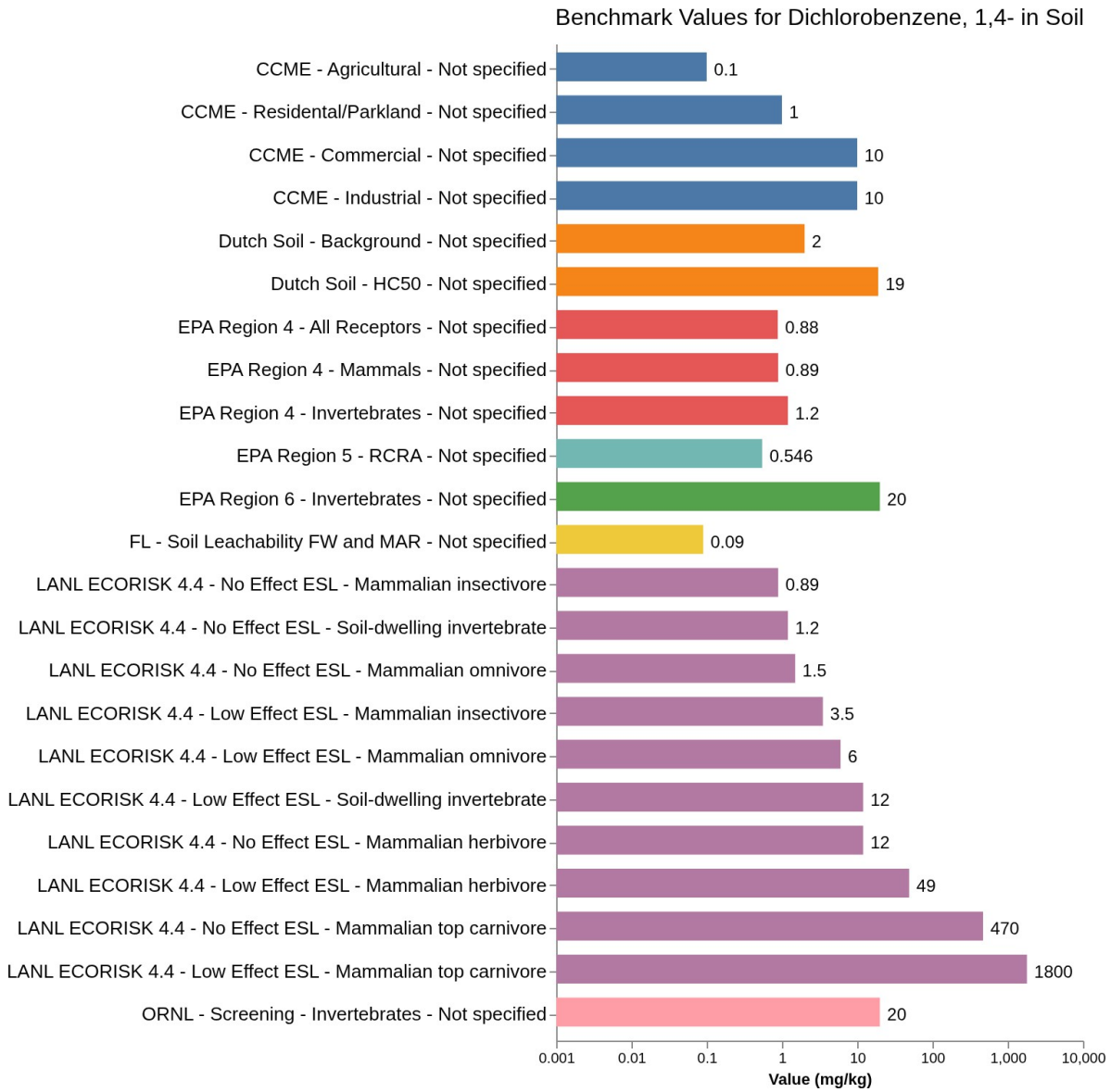

Benchmark Values for Dichlorobenzene, 1,4- in Soil
CCME - Agricultural - Not specified
0.1
CCME - Residental/Parkland - Not specified
1
CCME - Commercial - Not specified
10
CCME - Industrial - Not specified
10
Dutch Soil - Background - Not specified
2
Dutch Soil - HC50 - Not specified
19
EPA Region 4 - All Receptors - Not specified
0.88
EPA Region 4 - Mammals - Not specified
0.89
EPA Region 4 - Invertebrates - Not specified
1.2
EPA Region 5 - RCRA - Not specified
0.546
EPA Region 6 - Invertebrates - Not specified
20
FL - Soil Leachability FW and MAR - Not specified
0.09
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
0.89
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
1.2
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
1.5
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
3.5
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
6
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
12
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
12
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
49
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
470
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
1800
ORNL - Screening - Invertebrates - Not specified
20
0.001
0.01
0.1
1
10
100
1,000
10,000
Value (mg/kg)

Table 154: Benchmark Values for Dichlorobenzene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
25321−22−6	Dutch Soil Protection Act	Background	Not specified	2.0	71
25321−22−6	Dutch Soil Protection Act	Intervention Value	Not specified	19.0	
25321−22−6	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	19.0	

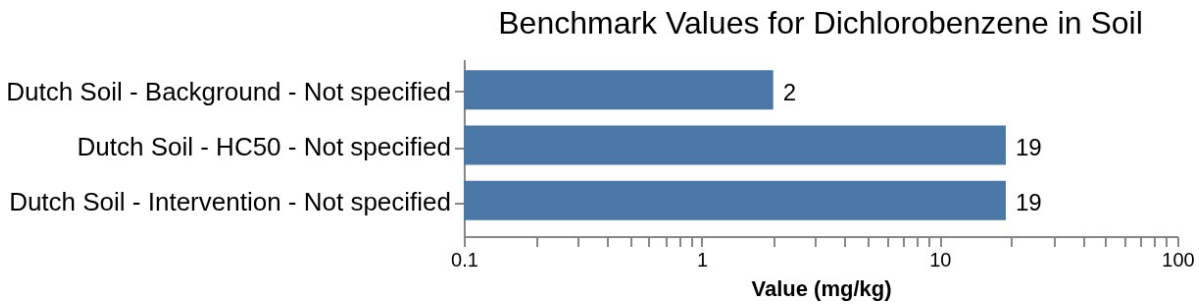


Table 155: Benchmark Values for Dichlorobenzidine, 3,3'− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
91−94−1	EPA Region 4	Soil Invertebrates	Not specified	0.0300
91−94−1	EPA Region 4	Soil All Receptors	Not specified	0.0300
91−94−1	EPA Region 4	Soil Mammals	Not specified	0.6460
91−94−1	EPA Region 5	EPA RCRA Soil	Not specified	0.6460
91−94−1	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0009

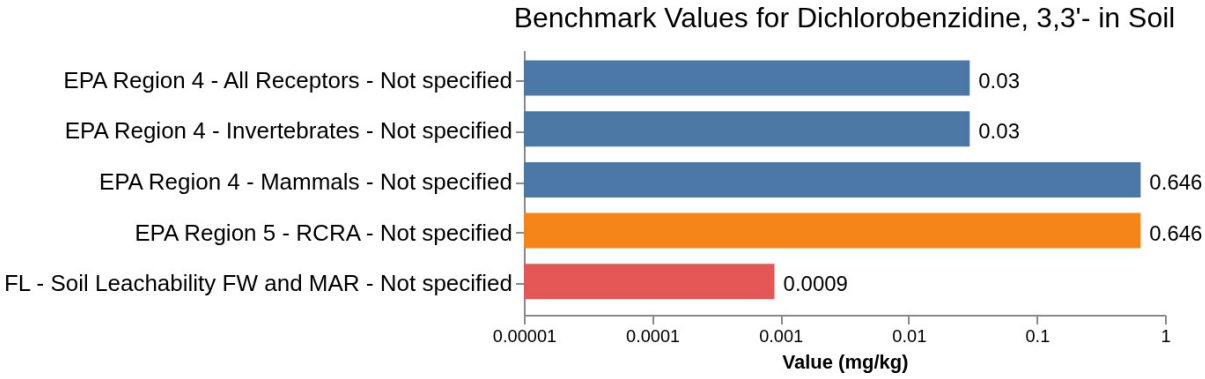


Table 156: Benchmark Values for Dichlorobenzophenone, 4,4'− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
90−98−2	Florida	Soil Leachability Freshwater and Marine	Not specified	190.0

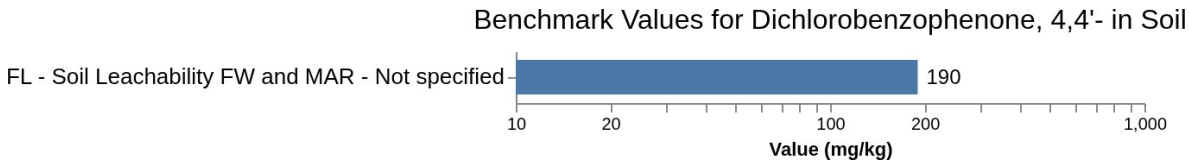


Table 157: Benchmark Values for Dichlorodifluoromethane in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
75−71−8	EPA Region 5	EPA RCRA Soil	Not specified	39.5

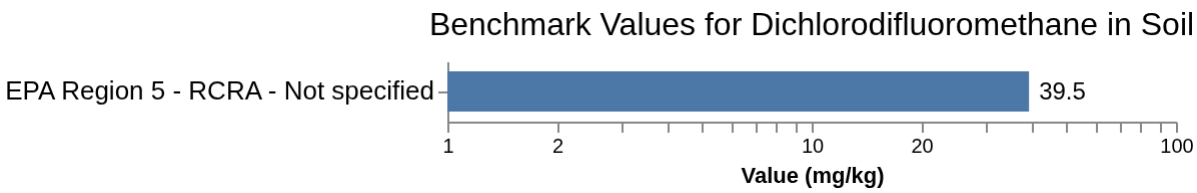


Table 158: Benchmark Values for Dichlorodiisopropyl ether, 2,2'− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
39638−32−9	Florida	Soil Leachability Freshwater and Marine	Not specified	0.4

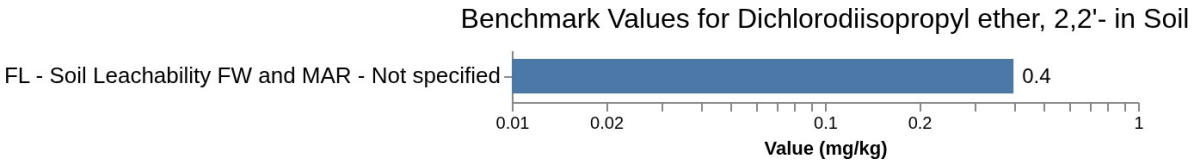


Table 159: Benchmark Values for Dichlorodiphenyldichloroethane, p,p'− (DDD) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
72−54−8	Dutch Soil Protection Act	Background	Not specified	0.0200
72−54−8	Dutch Soil Protection Act	Intervention Value	Not specified	34.0000
72−54−8	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	34.0000
72−54−8	EPA Region 5	EPA RCRA Soil	Not specified	0.7580
72−54−8	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0100
72−54−8	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.0063
72−54−8	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.0120
72−54−8	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	0.0300
72−54−8	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	0.0320
72−54−8	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	0.0620
72−54−8	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.1200
72−54−8	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	0.1500
72−54−8	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	0.6600
72−54−8	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	0.9000
72−54−8	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	4.1000
72−54−8	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	4.6000
72−54−8	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	7.9000
72−54−8	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	8.3000
72−54−8	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	15.0000
72−54−8	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	250.0000
72−54−8	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	510.0000
72−54−8	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	1000.0000
72−54−8	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	2000.0000

Benchmark Values for Dichlorodiphenyldichloroethane, p,p'- (DDD) in Soil

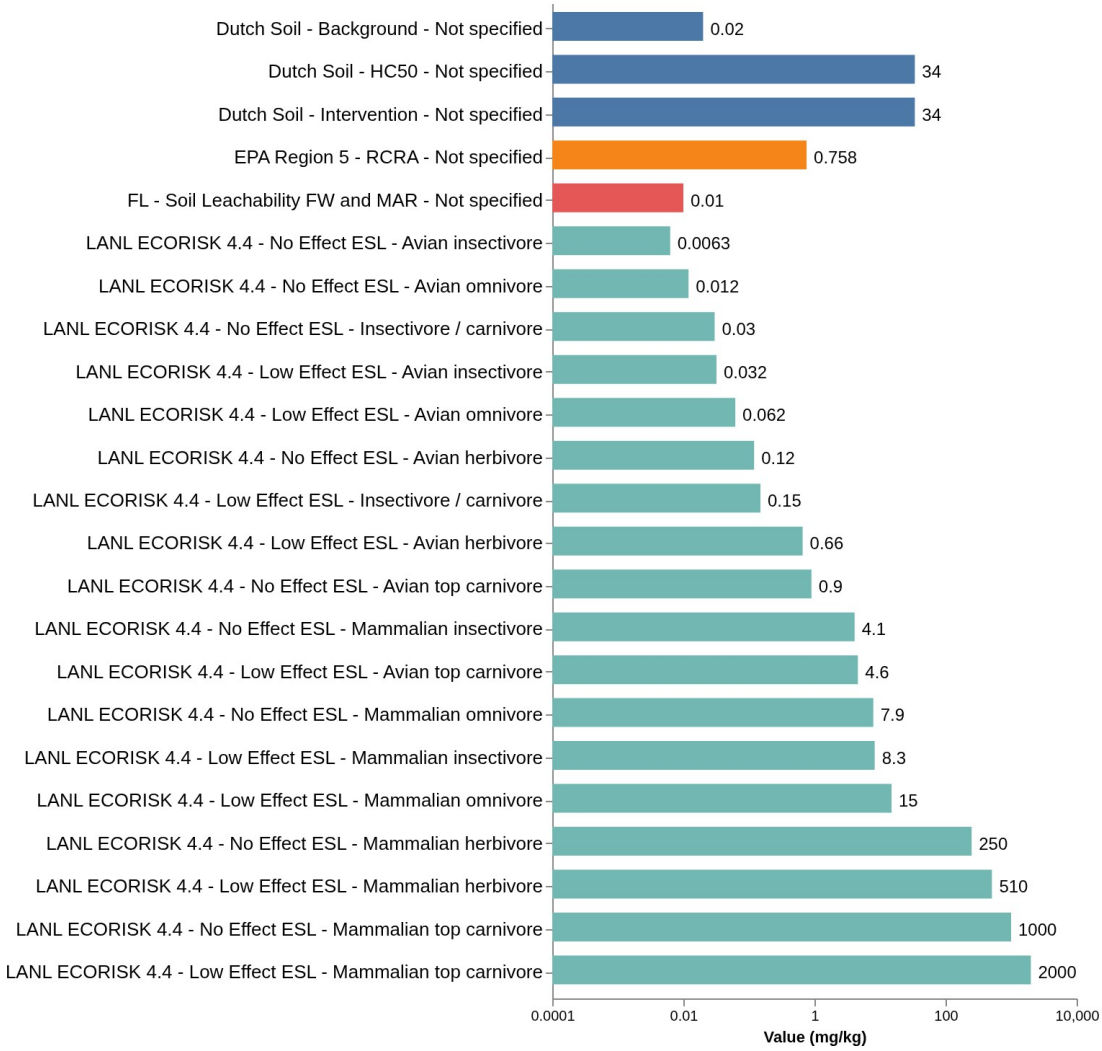


Table 160: Benchmark Values for Dichlorodiphenyldichloroethylene, p,p'− (DDE) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
72−55−9	Dutch Soil Protection Act	Background	Not specified	0.100
72−55−9	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	1.300
72−55−9	Dutch Soil Protection Act	Intervention Value	Not specified	2.300
72−55−9	EPA Region 5	EPA RCRA Soil	Not specified	0.596
72−55−9	Florida	Soil Leachability Freshwater and Marine	Not specified	0.040
72−55−9	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.110
72−55−9	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.210
72−55−9	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	0.520
72−55−9	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	0.550
72−55−9	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	1.000
72−55−9	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	2.600
72−55−9	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	3.700
72−55−9	LANL ECORISK	Soil No Effect ESL	Avian herbivore	4.900
72−55−9	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	7.200
72−55−9	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	9.300
72−55−9	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	18.000
72−55−9	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	20.000
72−55−9	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	24.000
72−55−9	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	100.000
72−55−9	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	540.000
72−55−9	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	1100.000
72−55−9	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1300.000
72−55−9	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	2900.000

Benchmark Values for Dichlorodiphenyldichloroethylene, p,p'- (DDE) in Soil

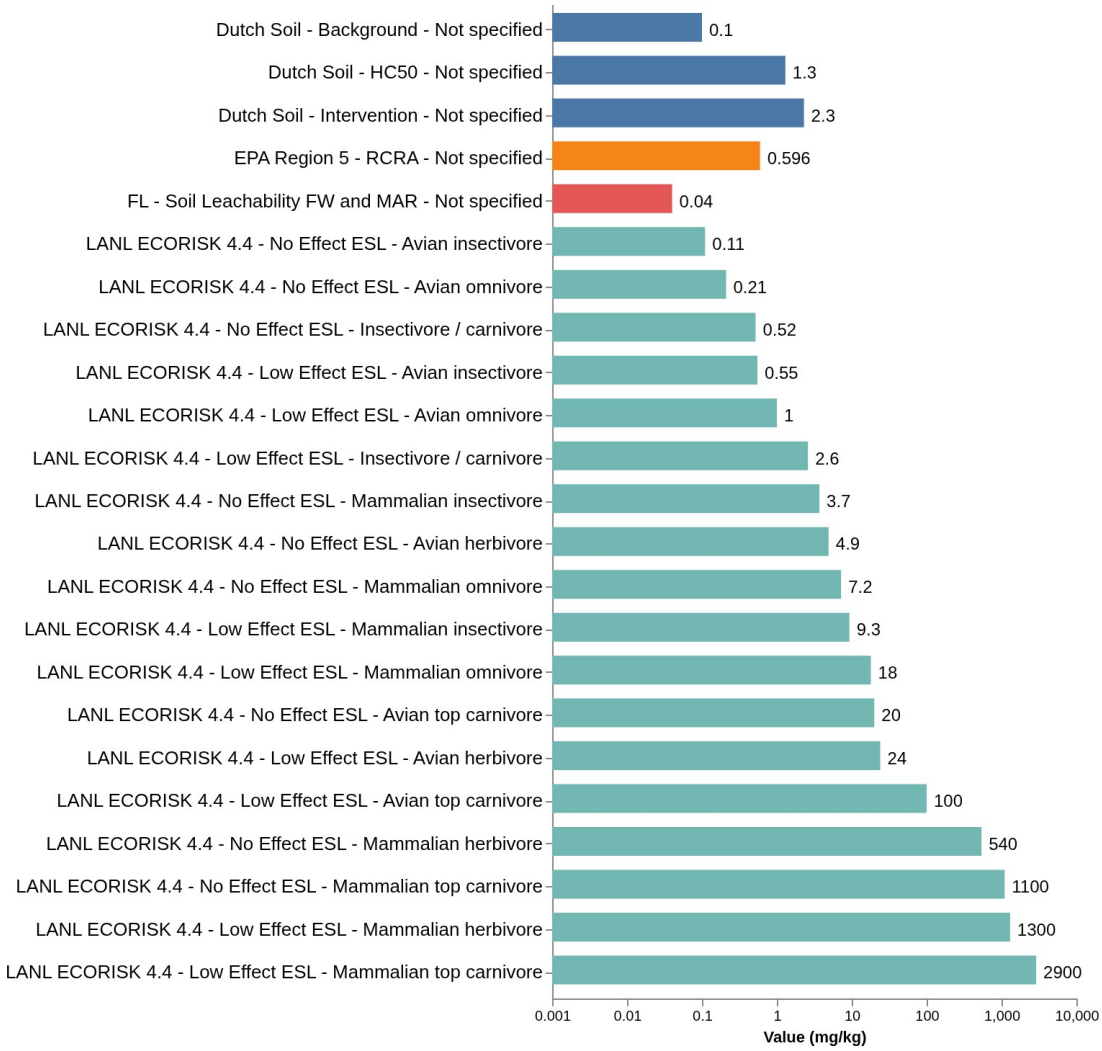


Table 161: Benchmark Values for Dichlorodiphenyltrichloroethane, p,p'− (DDT) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
50−29−3	Dutch Soil Protection Act	Background	Not specified	0.2000
50−29−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	1.0000
50−29−3	Dutch Soil Protection Act	Intervention Value	Not specified	1.7000
50−29−3	EPA ECO−SSL	Mammalian	Not specified	0.0210
50−29−3	EPA ECO−SSL	Avian	Not specified	0.0930
50−29−3	EPA Region 5	EPA RCRA Soil	Not specified	0.0035
50−29−3	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0600
50−29−3	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.0440
50−29−3	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.0880
50−29−3	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	0.2200
50−29−3	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.3600
50−29−3	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	0.4400
50−29−3	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.7100
50−29−3	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	1.0000
50−29−3	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	1.7000
50−29−3	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	2.1000
50−29−3	LANL ECORISK	Soil No Effect ESL	Generic Plant	4.1000
50−29−3	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	5.1000
50−29−3	LANL ECORISK	Soil Low Effect ESL	Generic Plant	6.0000
50−29−3	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	10.0000
50−29−3	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	18.0000
50−29−3	LANL ECORISK	Soil No Effect ESL	Avian herbivore	24.0000
50−29−3	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	53.0000
50−29−3	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	72.0000
50−29−3	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	83.0000
50−29−3	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	91.0000
50−29−3	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	240.0000

Benchmark Values for Dichlorodiphenyltrichloroethane, p,p'- (DDT) in Soil

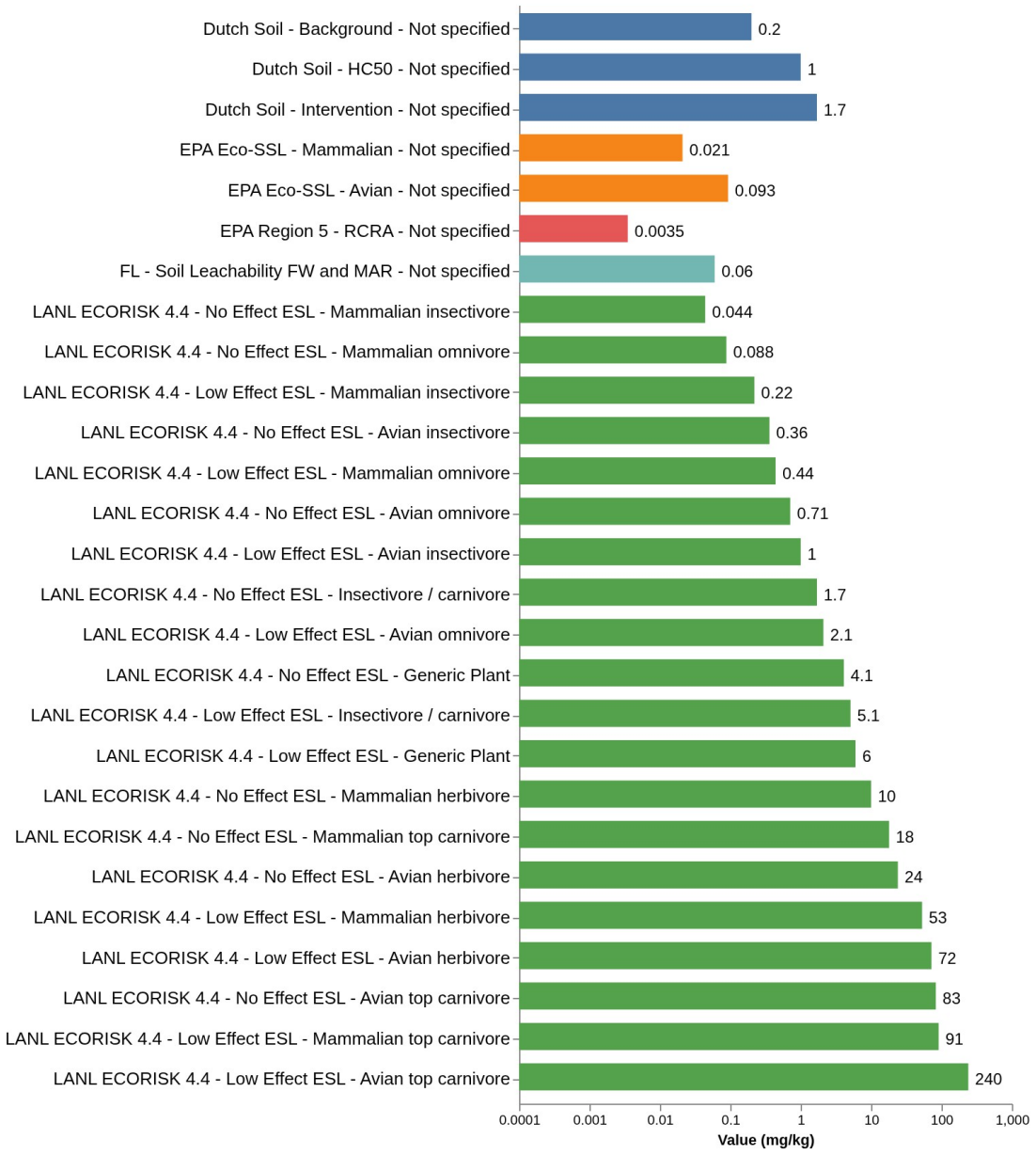


Table 162: Benchmark Values for Dichloroethane, 1,1− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
75−34−3	Canada	Soil Agricultural	Not specified	0.1	
75−34−3	Canada	Soil Residential/Parkland	Not specified	5	
75−34−3	Canada	Soil Industrial	Not specified	50	
75−34−3	Canada	Soil Commercial	Not specified	50	
75−34−3	Dutch Soil Protection Act	Background	Not specified	0.2	71
75−34−3	Dutch Soil Protection Act	Intervention Value	Not specified	15	
75−34−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	60	
75−34−3	EPA Region 4	Soil All Receptors	Not specified	0.14	
75−34−3	EPA Region 4	Soil Invertebrates	Not specified	0.14	
75−34−3	EPA Region 4	Soil Mammals	Not specified	210	
75−34−3	EPA Region 5	EPA RCRA Soil	Not specified	20.1	
75−34−3	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	210	
75−34−3	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	290	
75−34−3	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	410	
75−34−3	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	2100	
75−34−3	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	2900	
75−34−3	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	4100	
75−34−3	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	250000	
75−34−3	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	2.50e+06	

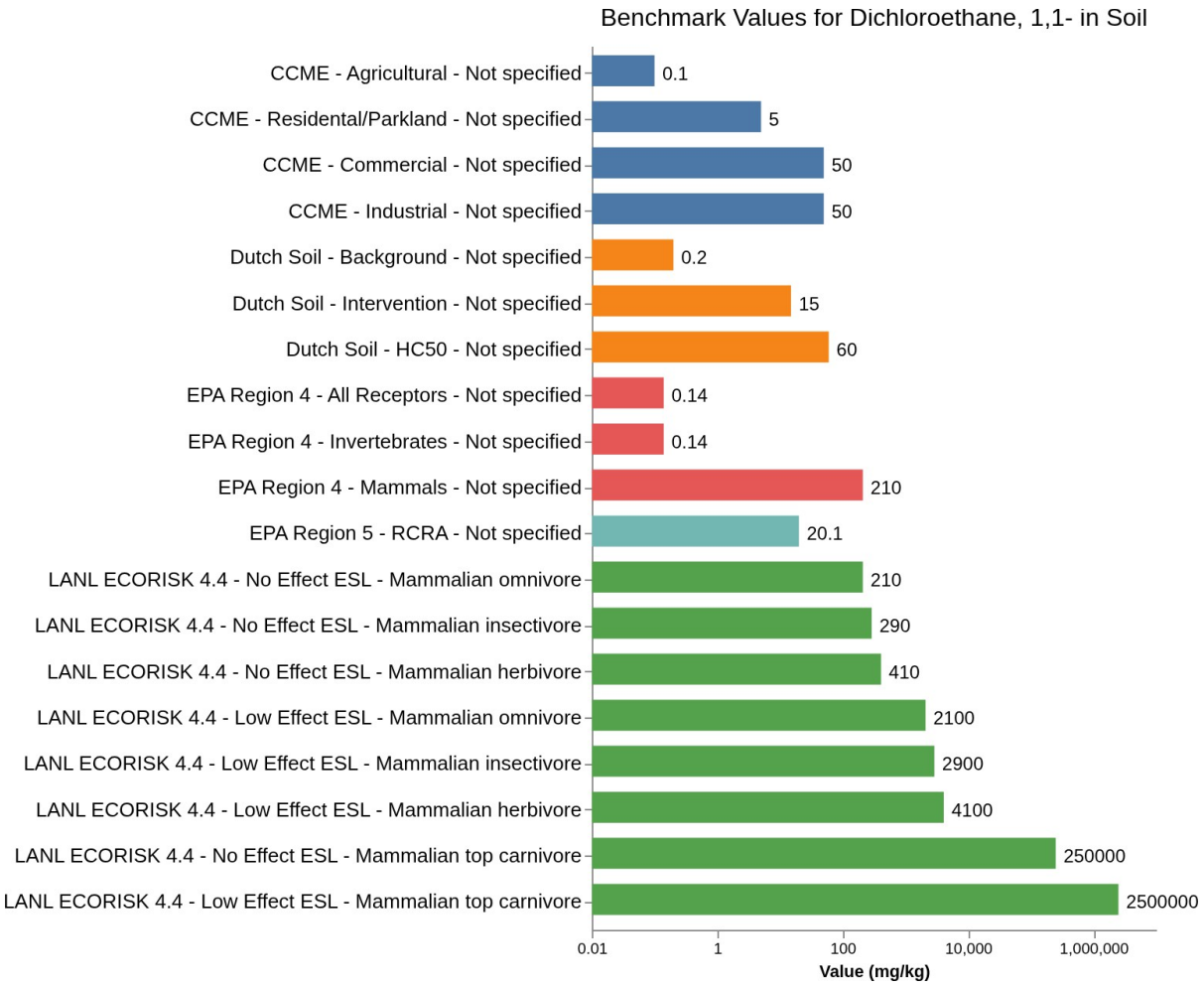

Benchmark Values for Dichloroethane, 1,1- in Soil
CCME - Agricultural - Not specified
0.1
CCME - Residental/Parkland - Not specified
5
CCME - Commercial - Not specified
50
CCME - Industrial - Not specified
50
Dutch Soil - Background - Not specified
0.2
Dutch Soil - Intervention - Not specified
15
Dutch Soil - HC50 - Not specified
60
EPA Region 4 - All Receptors - Not specified
0.14
EPA Region 4 - Invertebrates - Not specified
0.14
EPA Region 4 - Mammals - Not specified
210
EPA Region 5 - RCRA - Not specified
20.1
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
210
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
290
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
410
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
2100
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
2900
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
4100
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
250000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
2500000
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 163: Benchmark Values for Dichloroethane, 1,2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
107−06−2	Canada	Soil Agricultural	Not specified	0.10	
107−06−2	Canada	Soil Residential/Parkland	Not specified	5.00	
107−06−2	Canada	Soil Commercial	Not specified	50.00	
107−06−2	Canada	Soil Industrial	Not specified	50.00	
107−06−2	Dutch Soil Protection Act	Background	Not specified	0.20	71
107−06−2	Dutch Soil Protection Act	Intervention Value	Not specified	6.40	
107−06−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	240.00	
107−06−2	EPA Region 4	Soil All Receptors	Not specified	0.40	
107−06−2	EPA Region 4	Soil Invertebrates	Not specified	0.40	
107−06−2	EPA Region 4	Soil Avians	Not specified	0.85	
107−06−2	EPA Region 4	Soil Mammals	Not specified	27.00	
107−06−2	EPA Region 5	EPA RCRA Soil	Not specified	21.20	
107−06−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.20	
107−06−2	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.85	
107−06−2	LANL ECORISK	Soil No Effect ESL	Avian omnivore	1.40	
107−06−2	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	1.60	
107−06−2	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	2.80	
107−06−2	LANL ECORISK	Soil No Effect ESL	Avian insectivore	4.50	
107−06−2	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	9.00	
107−06−2	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	22.00	
107−06−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	27.00	
107−06−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	39.00	
107−06−2	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	44.00	
107−06−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	91.00	
107−06−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	270.00	
107−06−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	390.00	
107−06−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	910.00	
107−06−2	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	1300.00	
107−06−2	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	2700.00	
107−06−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	36000.00	
107−06−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	360000.00	

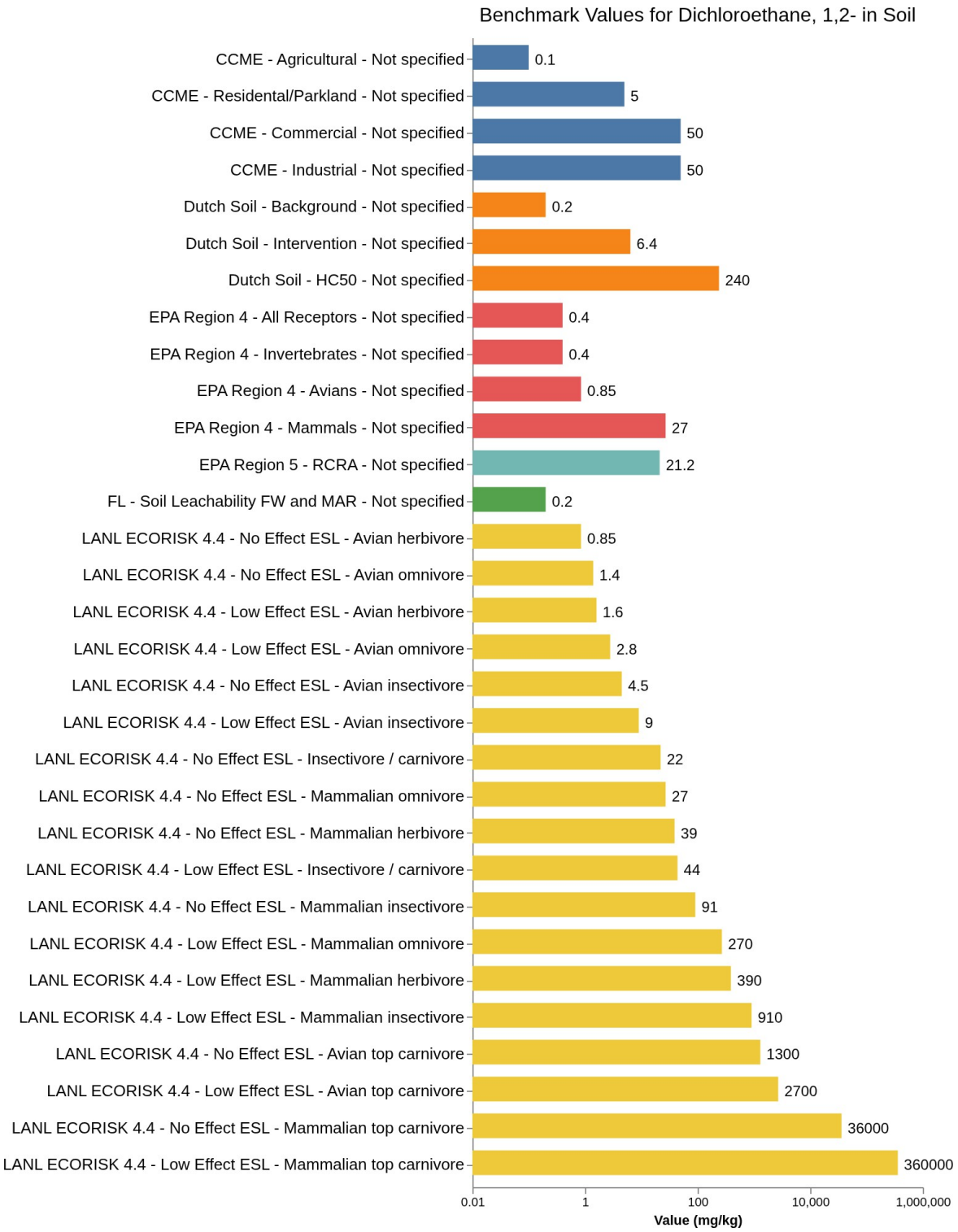

Benchmark Values for Dichloroethane, 1,2- in Soil
CCME - Agricultural - Not specified
0.1
CCME - Residental/Parkland - Not specified
5
CCME - Commercial - Not specified
50
CCME - Industrial - Not specified
50
Dutch Soil - Background - Not specified
0.2
Dutch Soil - Intervention - Not specified
6.4
Dutch Soil - HC50 - Not specified
240
EPA Region 4 - All Receptors - Not specified
0.4
EPA Region 4 - Invertebrates - Not specified
0.4
EPA Region 4 - Avians - Not specified
0.85
EPA Region 4 - Mammals - Not specified
27
EPA Region 5 - RCRA - Not specified
21.2
FL - Soil Leachability FW and MAR - Not specified
0.2
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
0.85
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
1.4
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
1.6
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
2.8
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
4.5
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
9
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
22
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
27
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
39
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
44
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
91
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
270
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
390
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
910
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
1300
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
2700
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
36000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
360000
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 164: Benchmark Values for Dichloroethylene, 1,1− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
75−35−4	Canada	Soil Agricultural	Not specified	0.10	
75−35−4	Canada	Soil Residential/Parkland	Not specified	5.00	
75−35−4	Canada	Soil Commercial	Not specified	50.00	
75−35−4	Canada	Soil Industrial	Not specified	50.00	
75−35−4	Dutch Soil Protection Act	Intervention Value	Not specified	0.30	
75−35−4	Dutch Soil Protection Act	Background	Not specified	0.30	71
75−35−4	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	130.00	
75−35−4	EPA Region 4	Soil All Receptors	Not specified	0.04	
75−35−4	EPA Region 4	Soil Invertebrates	Not specified	0.04	
75−35−4	EPA Region 4	Soil Mammals	Not specified	11.00	
75−35−4	EPA Region 5	EPA RCRA Soil	Not specified	8.28	
75−35−4	Florida	Soil Leachability Freshwater and Marine	Not specified	0.03	
75−35−4	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	11.00	
75−35−4	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	14.00	
75−35−4	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	44.00	
75−35−4	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	110.00	
75−35−4	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	140.00	
75−35−4	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	440.00	
75−35−4	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	14000.00	
75−35−4	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	140000.00	

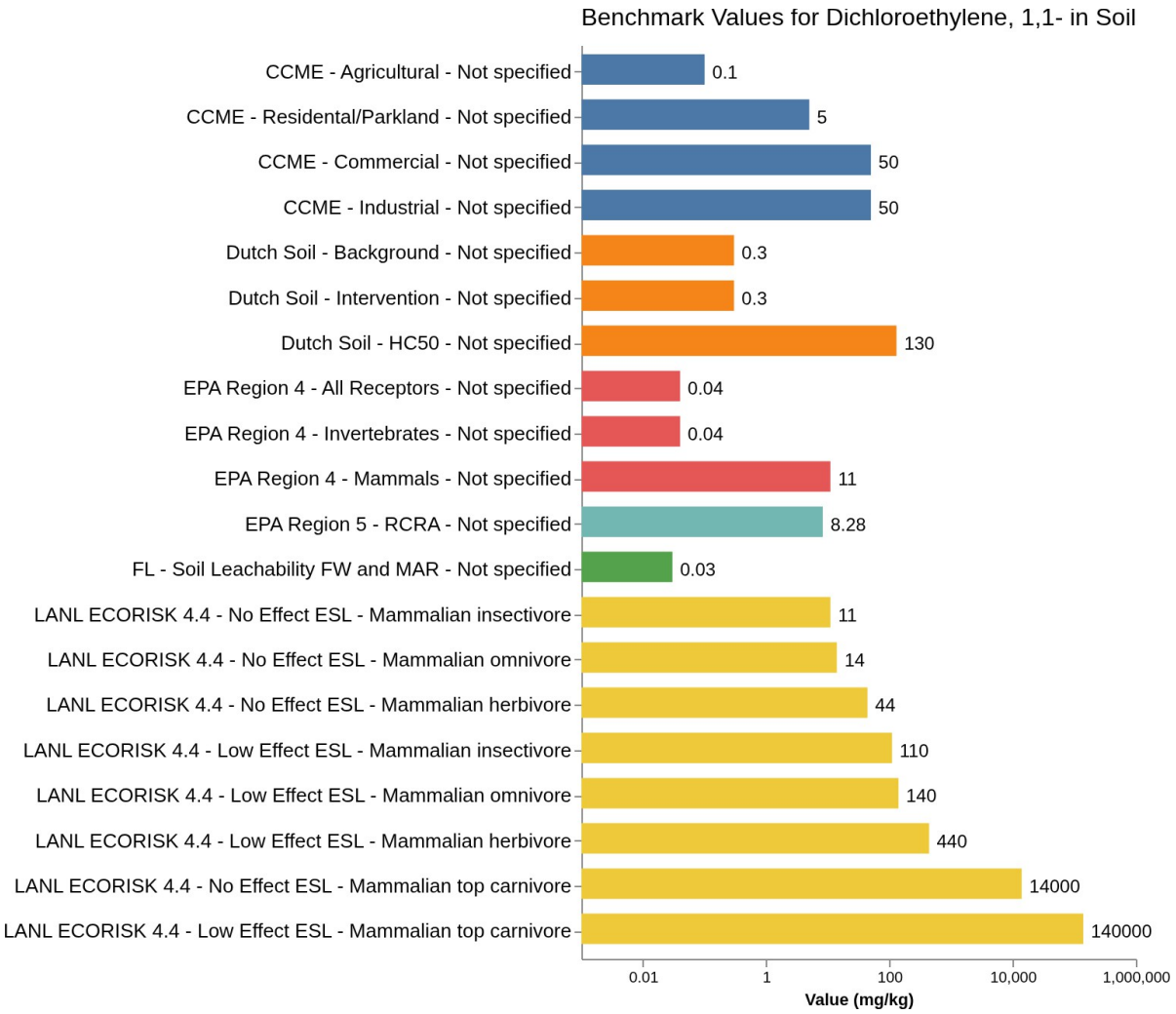

Benchmark Values for Dichloroethylene, 1,1- in Soil
CCME - Agricultural - Not specified
0.1
CCME - Residental/Parkland - Not specified
5
CCME - Commercial - Not specified
50
CCME - Industrial - Not specified
50
Dutch Soil - Background - Not specified
0.3
Dutch Soil - Intervention - Not specified
0.3
Dutch Soil - HC50 - Not specified
130
EPA Region 4 - All Receptors - Not specified
0.04
EPA Region 4 - Invertebrates - Not specified
0.04
EPA Region 4 - Mammals - Not specified
11
EPA Region 5 - RCRA - Not specified
8.28
FL - Soil Leachability FW and MAR - Not specified
0.03
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
11
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
14
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
44
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
110
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
140
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
440
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
14000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
140000
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 165: Benchmark Values for Dichloroethylene, 1,2− (Mixed Isomers) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
540−59−0	Dutch Soil Protection Act	Background	Not specified	0.30	71
540−59−0	Dutch Soil Protection Act	Intervention Value	Not specified	1.00	
540−59−0	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	238.00	
540−59−0	EPA Region 4	Soil All Receptors	Not specified	0.04	
540−59−0	EPA Region 4	Soil Invertebrates	Not specified	0.04	
540−59−0	EPA Region 4	Soil Mammals	Not specified	24.00	
540−59−0	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	24.00	
540−59−0	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	25.00	
540−59−0	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	64.00	
540−59−0	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	240.00	
540−59−0	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	250.00	
540−59−0	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	640.00	
540−59−0	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	25000.00	
540−59−0	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	250000.00	

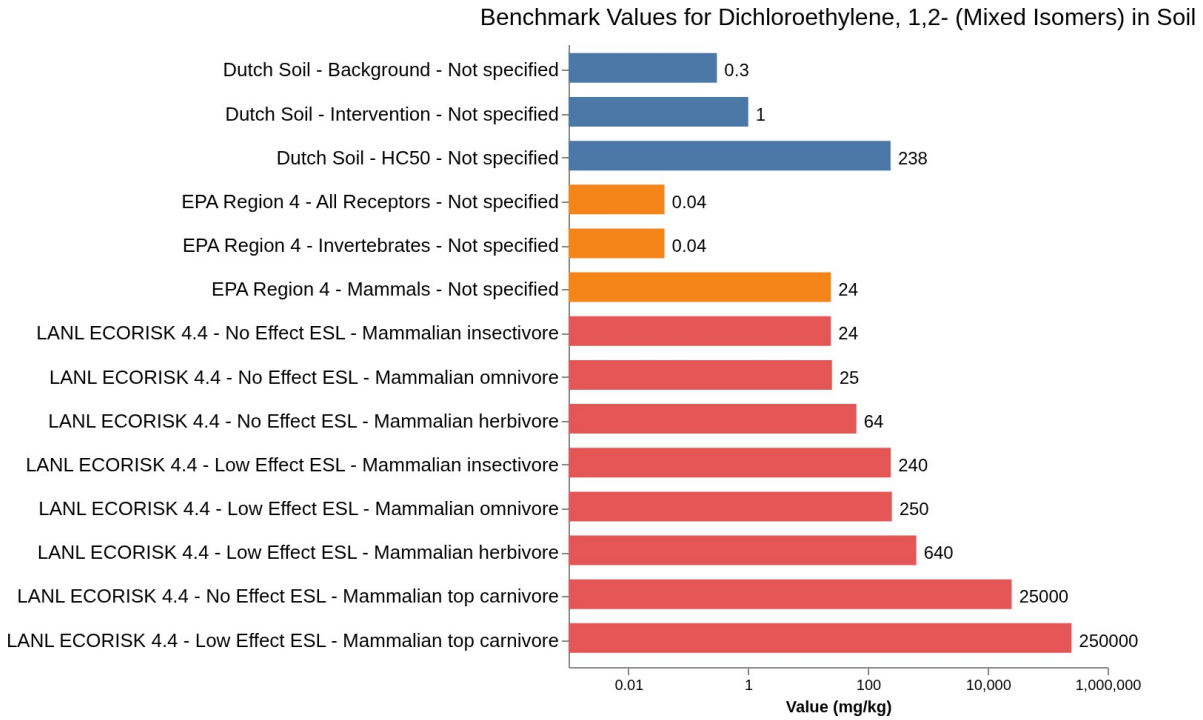


Table 166: Benchmark Values for Dichloroethylene, cis−1,2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
156−59−2	EPA Region 4	Soil All Receptors	Not specified	0.04
156−59−2	EPA Region 4	Soil Invertebrates	Not specified	0.04

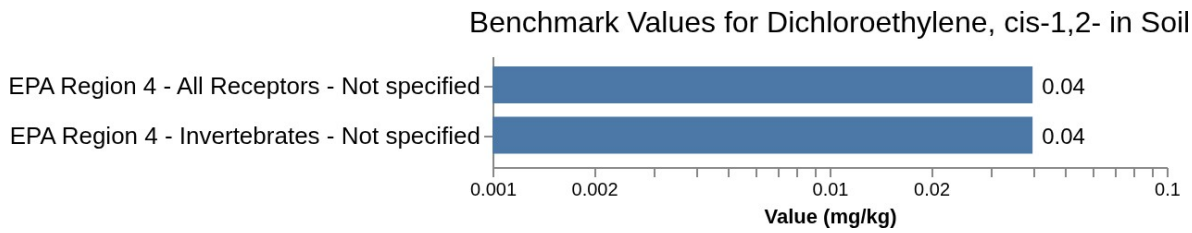


Table 167: Benchmark Values for Dichloroethylene, trans−1,2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
156−60−5	EPA Region 4	Soil All Receptors	Not specified	0.040
156−60−5	EPA Region 4	Soil Invertebrates	Not specified	0.040
156−60−5	EPA Region 4	Soil Mammals	Not specified	0.784
156−60−5	EPA Region 5	EPA RCRA Soil	Not specified	0.784
156−60−5	Florida	Soil Leachability Freshwater and Marine	Not specified	75.000

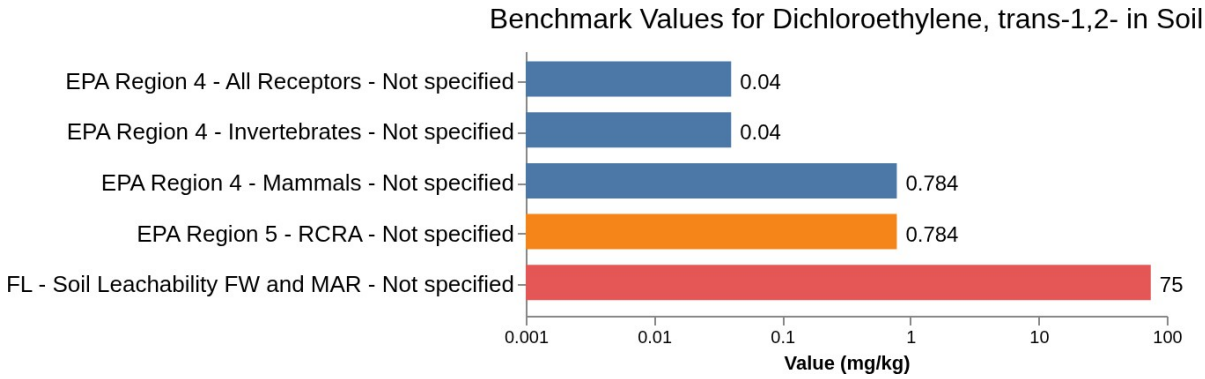


Table 168: Benchmark Values for Dichlorophenol, 2,3− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
576−24−9	Florida	Soil Leachability Freshwater and Marine	Not specified	1.2

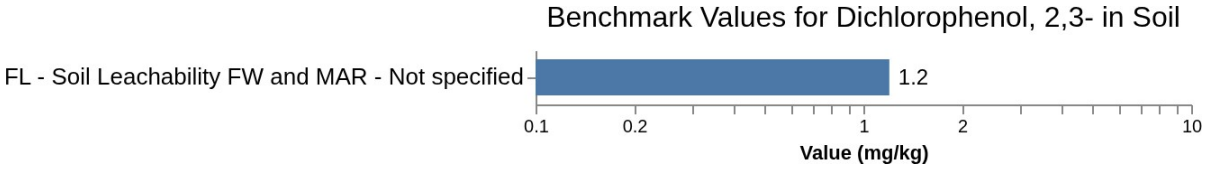


Table 169: Benchmark Values for Dichlorophenol, 2,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
120−83−2	Canada	Soil Agricultural	Not specified	0.05	
120−83−2	Canada	Soil Residential/Parkland	Not specified	0.50	
120−83−2	Canada	Soil Commercial	Not specified	5.00	
120−83−2	Canada	Soil Industrial	Not specified	5.00	
120−83−2	Dutch Soil Protection Act	Background	Not specified	0.20	71
120−83−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	22.00	
120−83−2	Dutch Soil Protection Act	Intervention Value	Not specified	22.00	
120−83−2	EPA Region 4	Soil All Receptors	Not specified	0.05	
120−83−2	EPA Region 4	Soil Invertebrates	Not specified	0.05	
120−83−2	EPA Region 4	Soil Mammals	Not specified	87.50	
120−83−2	EPA Region 5	EPA RCRA Soil	Not specified	87.50	
120−83−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.10	

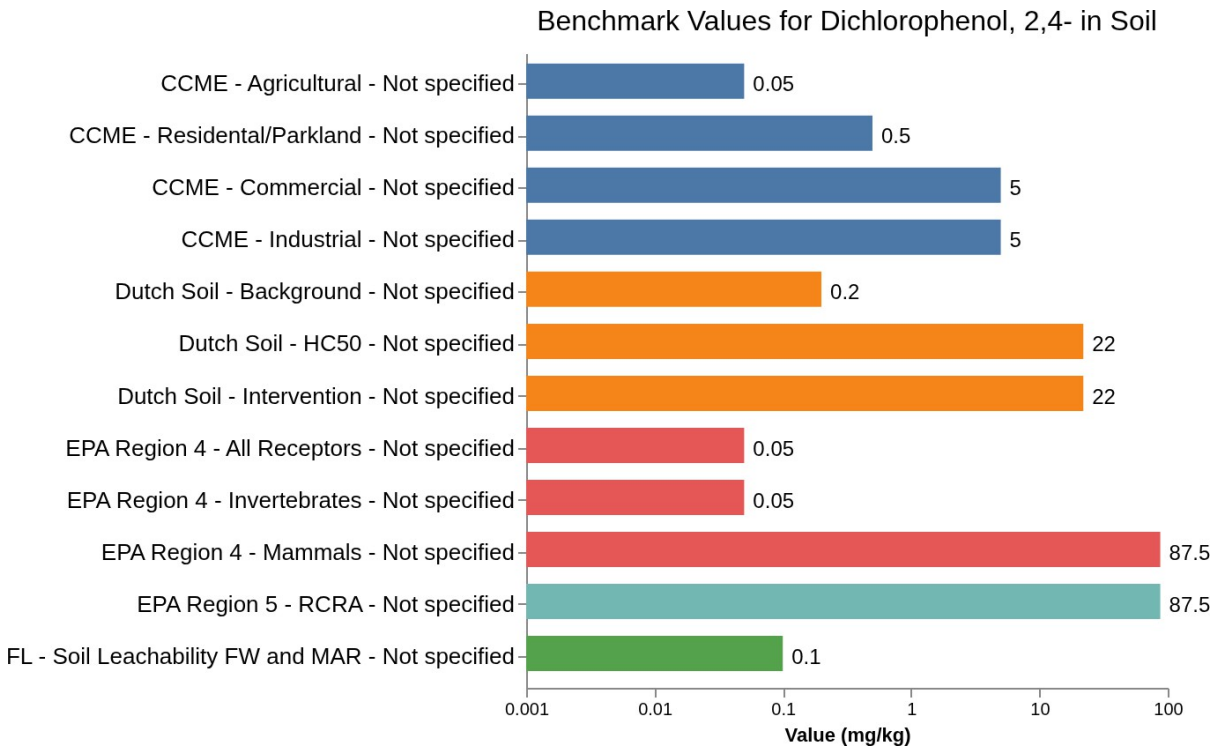


Table 170: Benchmark Values for Dichlorophenol, 2,5− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
583−78−8	Florida	Soil Leachability Freshwater and Marine	Not specified	4.3

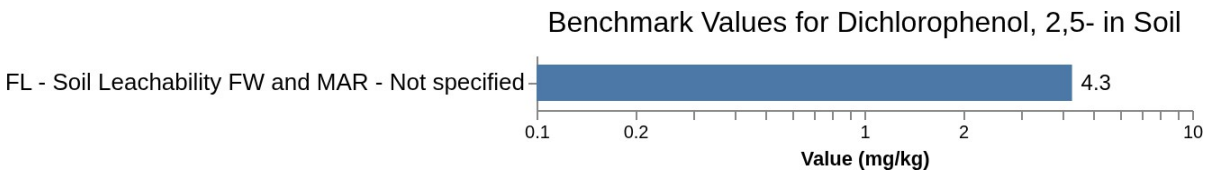


Table 171: Benchmark Values for Dichlorophenol, 2,6− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
87−65−0	Dutch Soil Protection Act	Background	Not specified	0.20	71
87−65−0	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	22.00	
87−65−0	Dutch Soil Protection Act	Intervention Value	Not specified	22.00	
87−65−0	EPA Region 5	EPA RCRA Soil	Not specified	1.17	
87−65−0	Florida	Soil Leachability Freshwater and Marine	Not specified	2.50	

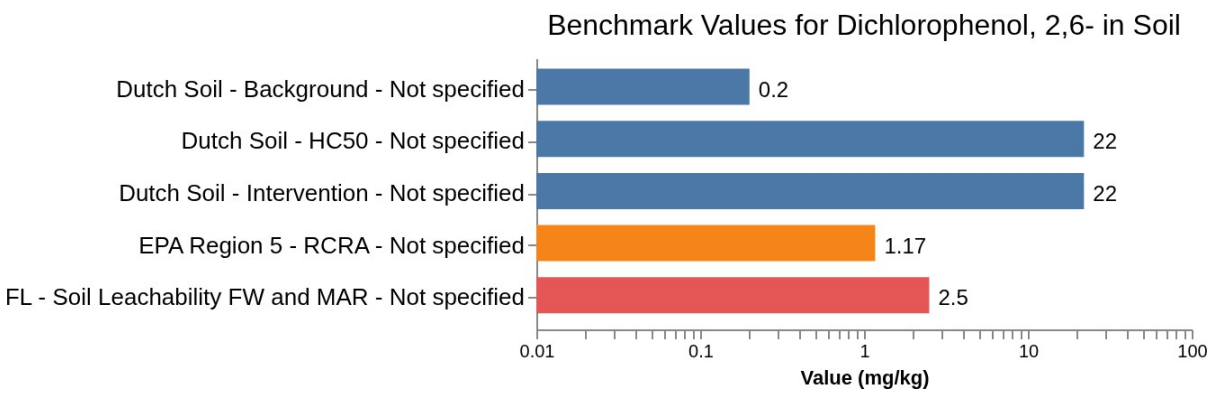


Table 172: Benchmark Values for Dichlorophenol, 3,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
95−77−2	Dutch Soil Protection Act	Background	Not specified	0.2	71
95−77−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	22.0	
95−77−2	Dutch Soil Protection Act	Intervention Value	Not specified	22.0	
95−77−2	EPA Region 4	Soil Plants	Not specified	20.0	
95−77−2	EPA Region 4	Soil Invertebrates	Not specified	20.0	
95−77−2	EPA Region 4	Soil All Receptors	Not specified	20.0	
95−77−2	EPA Region 6	Soil Invertebrates	Not specified	20.0	
95−77−2	EPA Region 6	Soil Plants	Not specified	20.0	
95−77−2	Florida	Soil Leachability Freshwater and Marine	Not specified	2.0	
95−77−2	ORNL	Soil Screening − Invertebrates	Not specified	20.0	
95−77−2	ORNL	Soil Screening − Plants	Not specified	20.0	

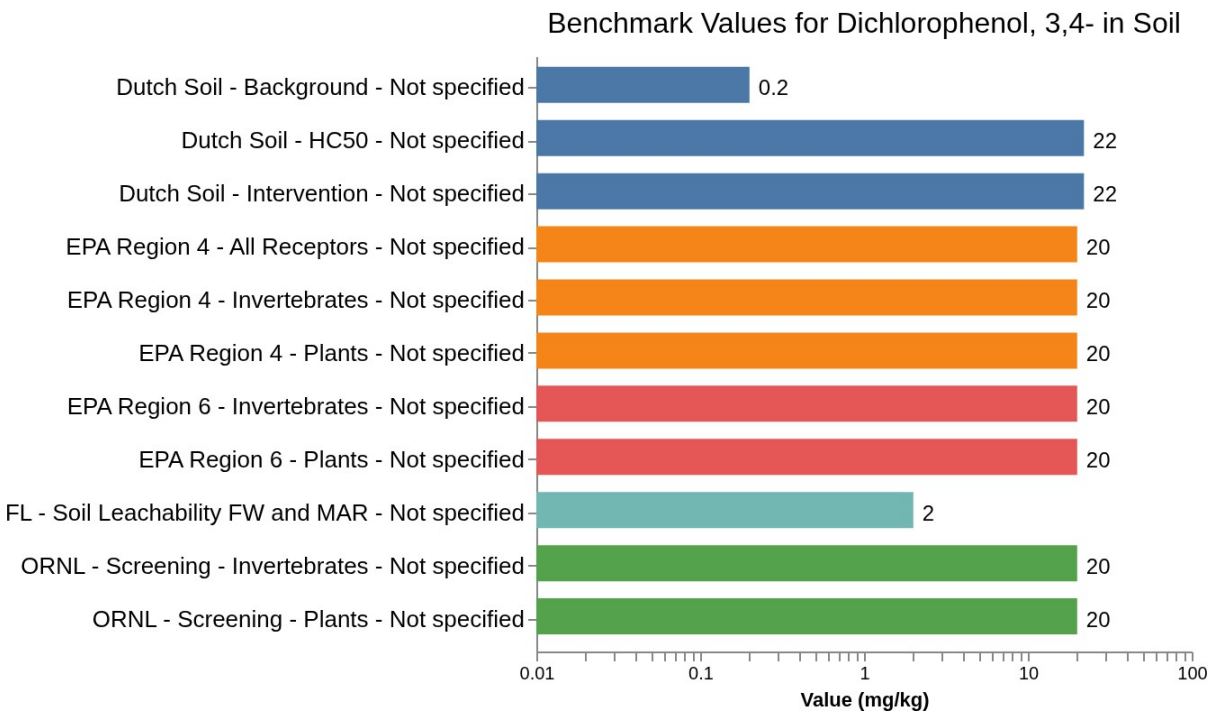


Table 173: Benchmark Values for Dichlorophenol, 3,5− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
591−35−5	Dutch Soil Protection Act	Background	Not specified	0.2	71
591−35−5	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	22.0	
591−35−5	Dutch Soil Protection Act	Intervention Value	Not specified	22.0	

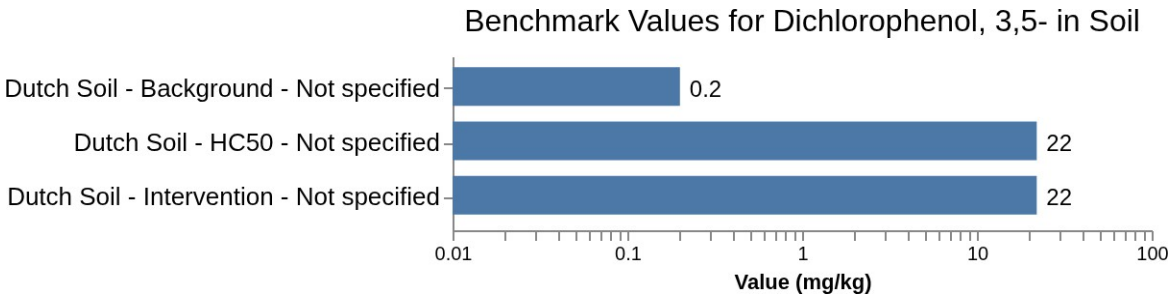


Table 174: Benchmark Values for Dichlorophenols (total) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
000000−04−5	Canada	Soil Agricultural	Not specified	0.05	
000000−04−5	Canada	Soil Residential/Parkland	Not specified	0.50	
000000−04−5	Canada	Soil Commercial	Not specified	5.00	
000000−04−5	Canada	Soil Industrial	Not specified	5.00	
000000−04−5	Dutch Soil Protection Act	Background	Not specified	0.20	71
000000−04−5	Dutch Soil Protection Act	Intervention Value	Not specified	22.00	
000000−04−5	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	22.00	
000000−04−5	ORNL	Soil Screening − Plants	Not specified	20.00	

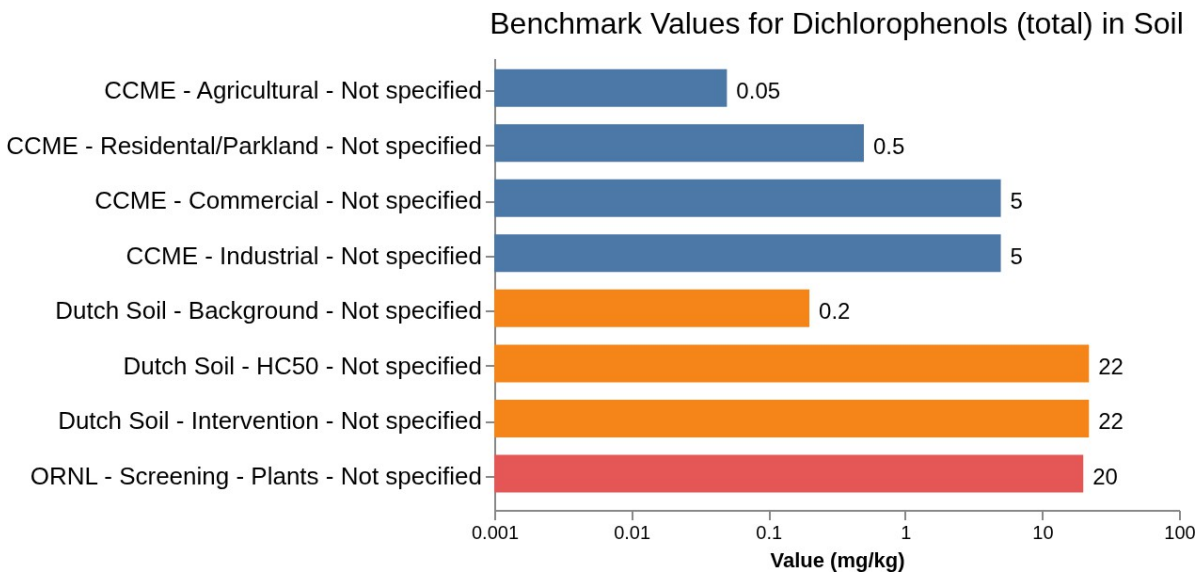


Table 175: Benchmark Values for Dichlorophenoxy Acetic Acid, 2,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
94−75−7	EPA Region 5	EPA RCRA Soil	Not specified	0.0272	
94−75−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.9000	

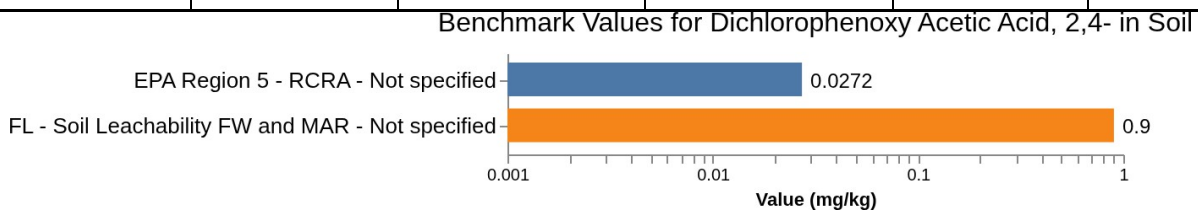


Table 176: Benchmark Values for Dichloropropane, 1,2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
78−87−5	Canada	Soil Agricultural	Not specified	0.10	
78−87−5	Canada	Soil Residential/Parkland	Not specified	5.00	
78−87−5	Canada	Soil Commercial	Not specified	50.00	
78−87−5	Canada	Soil Industrial	Not specified	50.00	
78−87−5	Dutch Soil Protection Act	Background	Not specified	0.80	71
78−87−5	Dutch Soil Protection Act	Intervention Value	Not specified	2.00	
78−87−5	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	125.00	
78−87−5	EPA Region 4	Soil All Receptors	Not specified	0.28	
78−87−5	EPA Region 4	Soil Invertebrates	Not specified	0.28	
78−87−5	EPA Region 4	Soil Mammals	Not specified	32.70	
78−87−5	EPA Region 5	EPA RCRA Soil	Not specified	32.70	
78−87−5	EPA Region 6	Soil Invertebrates	Not specified	700.00	
78−87−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.09	
78−87−5	ORNL	Soil Screening − Invertebrates	Not specified	700.00	

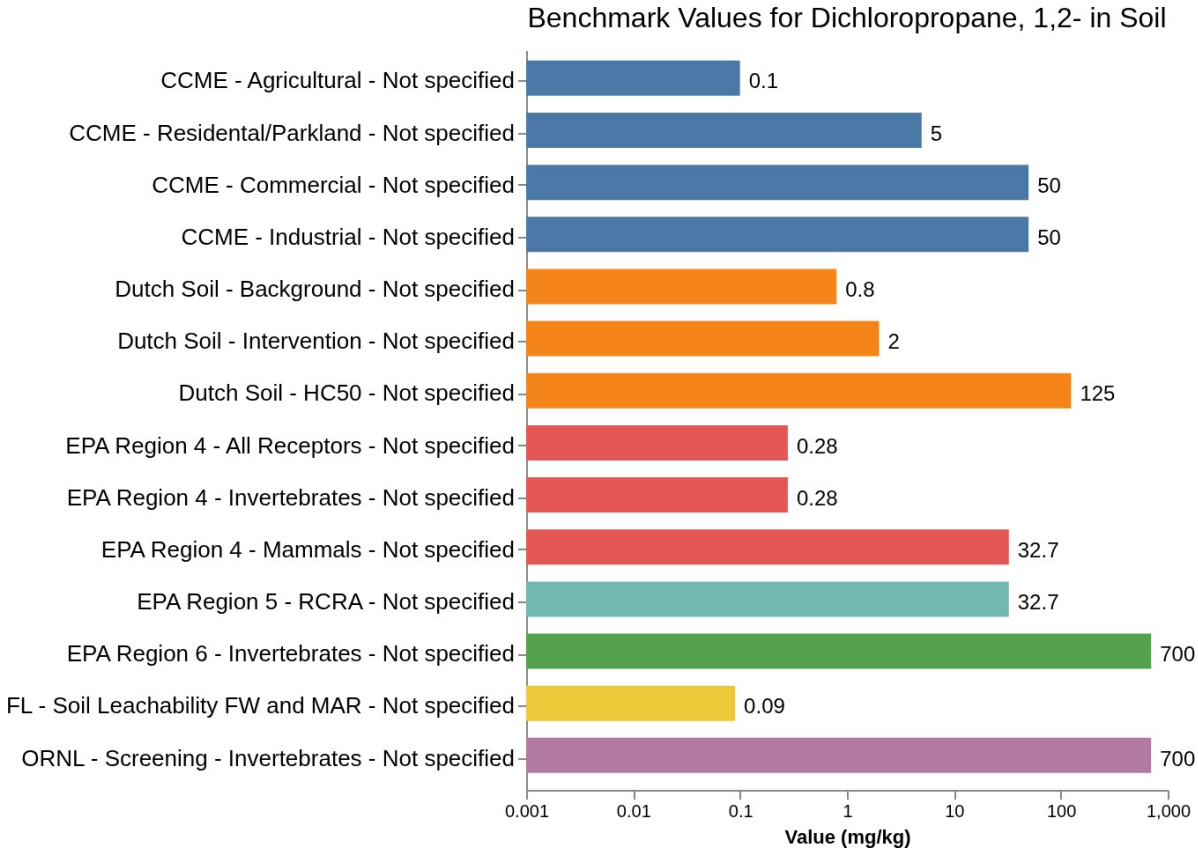


Table 177: Benchmark Values for Dichloropropene, 1,2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
563−54−2	Canada	Soil Agricultural	Not specified	0.1
563−54−2	Canada	Soil Residential/Parkland	Not specified	5.0
563−54−2	Canada	Soil Industrial	Not specified	50.0
563−54−2	Canada	Soil Commercial	Not specified	50.0

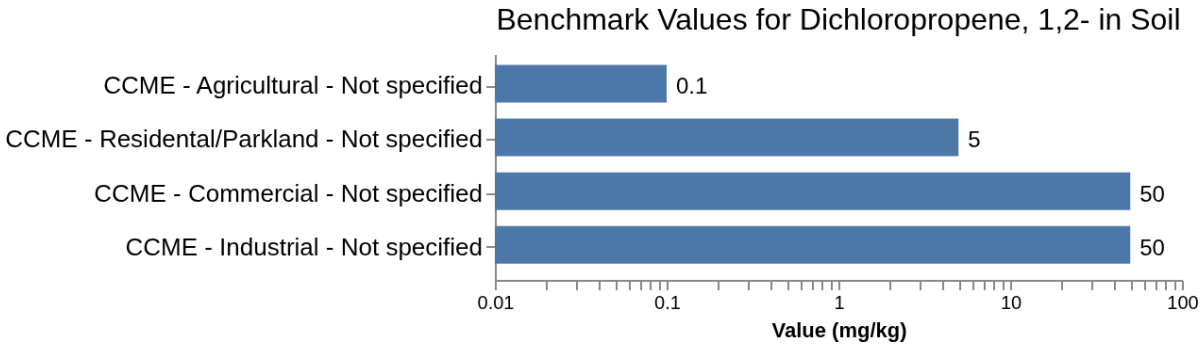


Table 178: Benchmark Values for Dichloropropene, 1,3− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
542−75−6	Dutch Soil Protection Act	Background	Not specified	0.800	71
542−75−6	Dutch Soil Protection Act	Intervention Value	Not specified	2.000	
542−75−6	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	125.000	
542−75−6	EPA Region 4	Soil All Receptors	Not specified	0.001	
542−75−6	EPA Region 4	Soil Invertebrates	Not specified	0.001	
542−75−6	Florida	Soil Leachability Freshwater and Marine	Not specified	0.090	

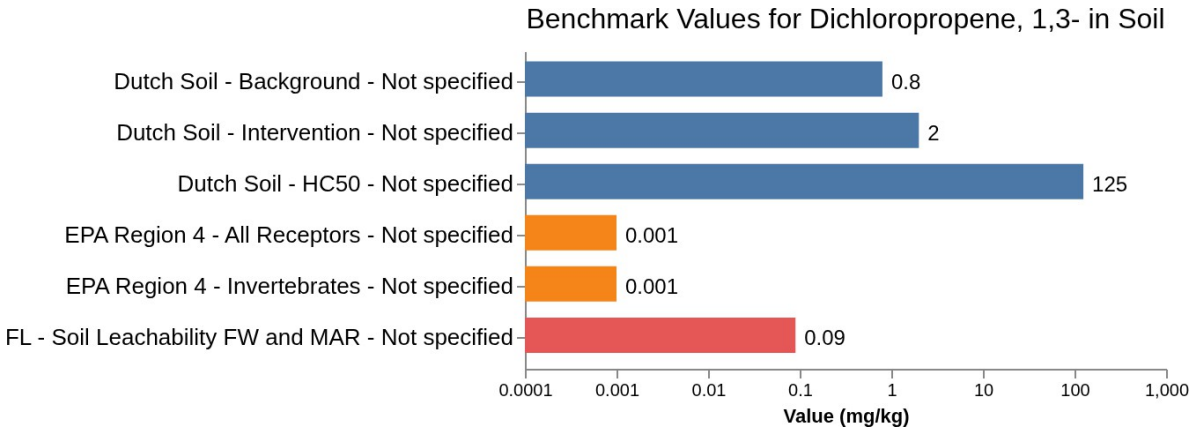


Table 179: Benchmark Values for Dichloropropene, cis−1,3− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
10061−01−5	Dutch Soil Protection Act	Background	Not specified	0.800	71
10061−01−5	Dutch Soil Protection Act	Intervention Value	Not specified	2.000	
10061−01−5	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	125.000	
10061−01−5	EPA Region 5	EPA RCRA Soil	Not specified	0.398	

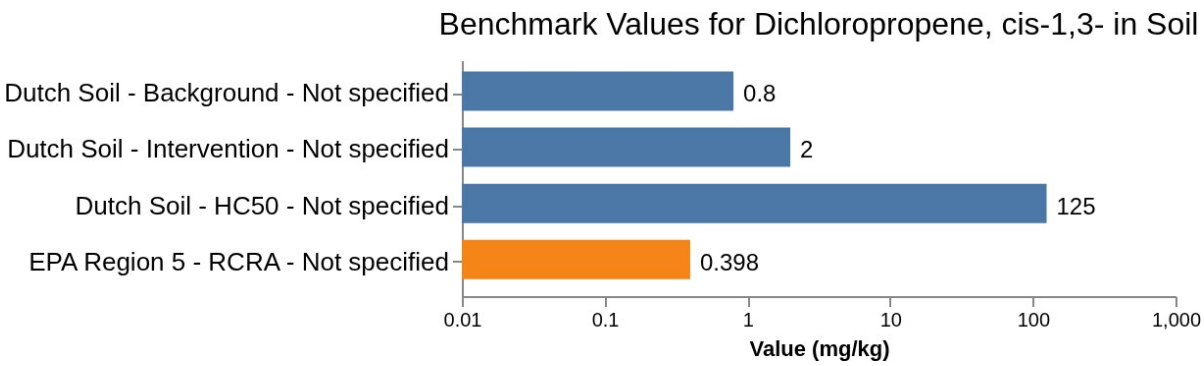


Table 180: Benchmark Values for Dichloropropene, trans−1,3− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
10061−02−6	Dutch Soil Protection Act	Background	Not specified	0.800	71
10061−02−6	Dutch Soil Protection Act	Intervention Value	Not specified	2.000	
10061−02−6	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	125.000	
10061−02−6	EPA Region 5	EPA RCRA Soil	Not specified	0.398	

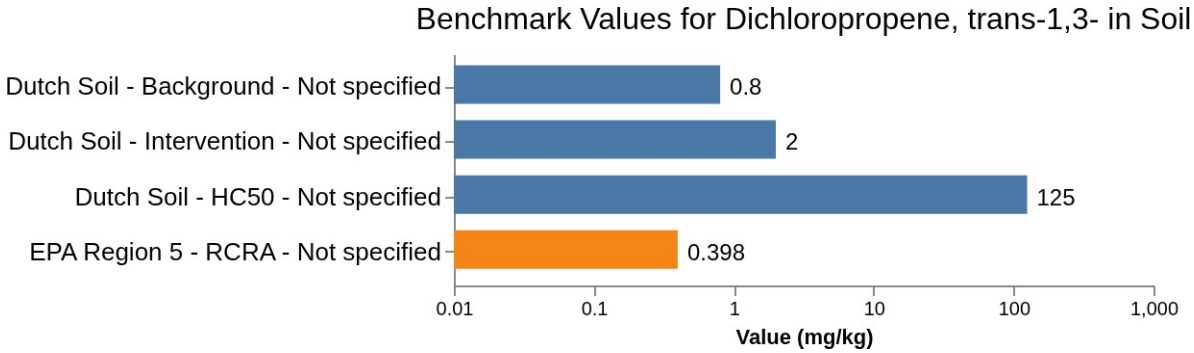


Table 181: Benchmark Values for Dichlorvos in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
62−73−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.00002

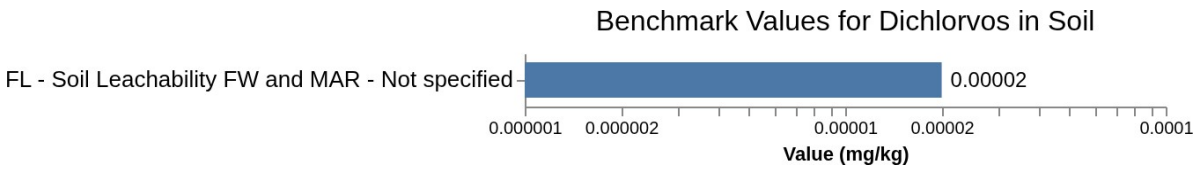


Table 182: Benchmark Values for Dicofol in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
115−32−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0008

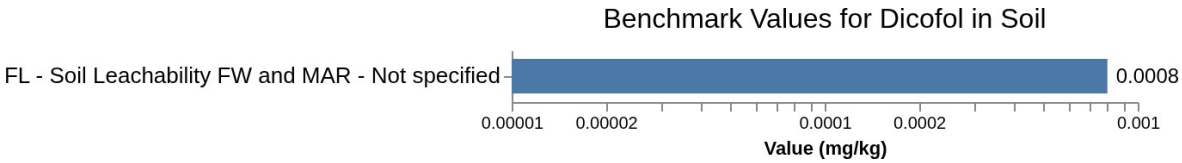


Table 183: Benchmark Values for Dicrotophos in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
141−66−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.1

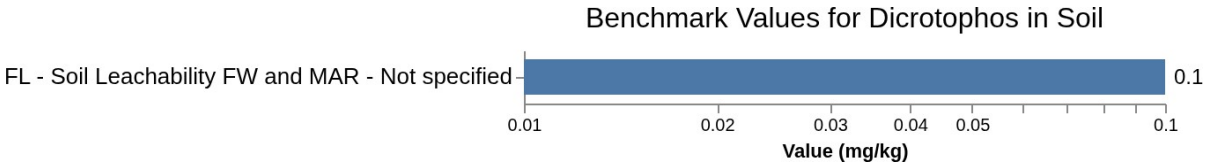


Table 184: Benchmark Values for Dieldrin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
60−57−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	4.00000	
60−57−1	EPA ECO−SSL	Mammalian	Not specified	0.00490	
60−57−1	EPA ECO−SSL	Avian	Not specified	0.02200	
60−57−1	EPA Region 4	Soil Invertebrates	Not specified	0.00290	7
60−57−1	EPA Region 4	Soil All Receptors	Not specified	0.00290	7
60−57−1	EPA Region 4	Soil Mammals	Not specified	0.00490	7
60−57−1	EPA Region 4	Soil Avians	Not specified	0.02200	7
60−57−1	EPA Region 4	Soil Plants	Not specified	10.00000	7
60−57−1	EPA Region 5	EPA RCRA Soil	Not specified	0.00238	
60−57−1	Florida	Soil Leachability Freshwater and Marine	Not specified	0.00010	
60−57−1	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.00450	
60−57−1	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.00870	
60−57−1	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	0.00900	
60−57−1	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.01200	
60−57−1	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	0.01700	
60−57−1	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.02300	
60−57−1	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	0.05600	
60−57−1	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.33000	
60−57−1	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	0.34000	
60−57−1	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	0.64000	
60−57−1	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	0.69000	
60−57−1	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	1.10000	
60−57−1	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	1.20000	
60−57−1	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	1.70000	
60−57−1	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	2.30000	
60−57−1	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	3.00000	
60−57−1	LANL ECORISK	Soil No Effect ESL	Generic Plant	10.00000	
60−57−1	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	17.00000	
60−57−1	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	93.00000	
60−57−1	LANL ECORISK	Soil Low Effect ESL	Generic Plant	100.00000	
60−57−1	Washington	Soil Wildlife	Not specified	0.07000	

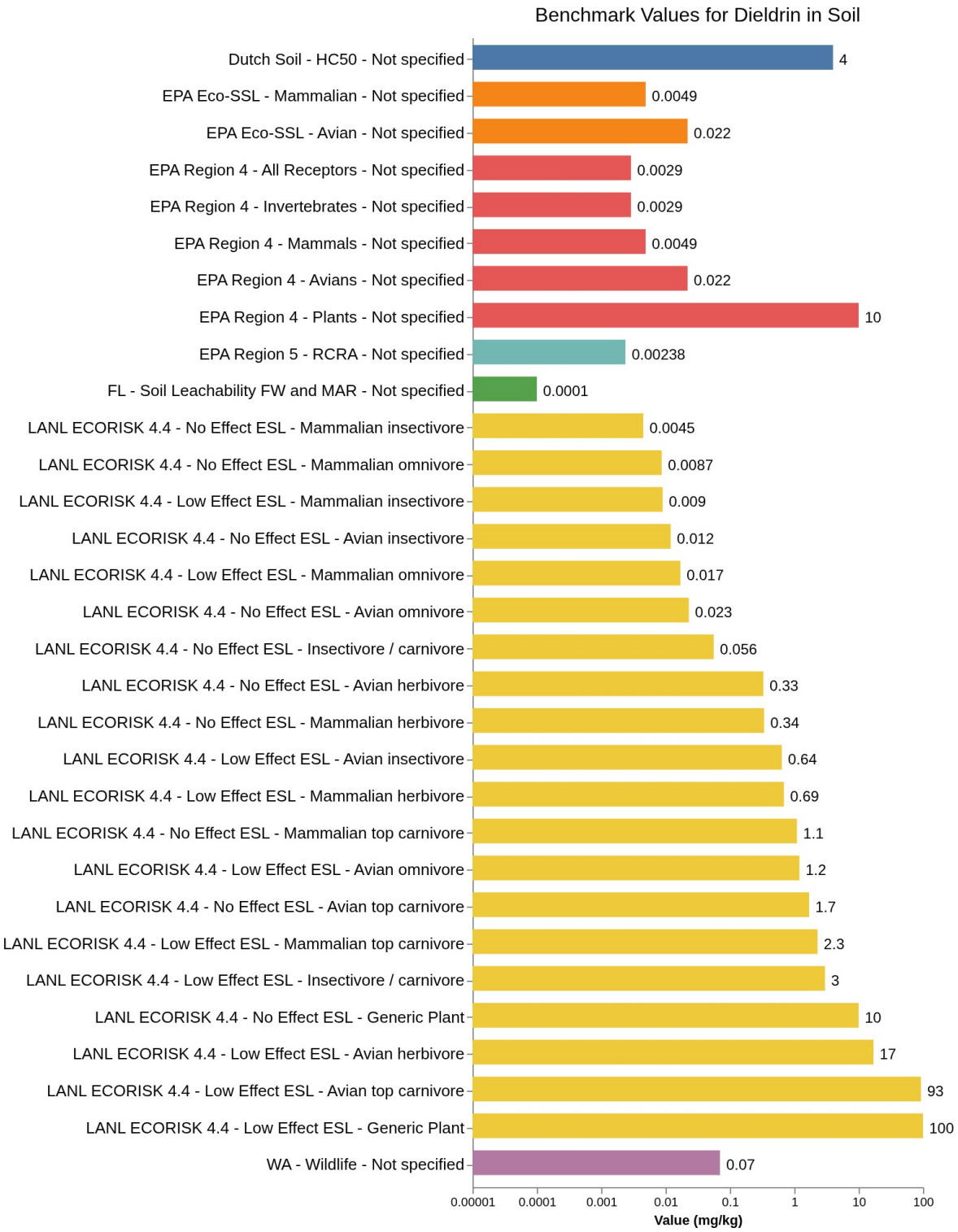

Benchmark Values for Dieldrin in Soil
Dutch Soil - HC50 - Not specified
4
EPA Eco-SSL - Mammalian - Not specified
0.0049
EPA Eco-SSL - Avian - Not specified
0.022
EPA Region 4 - All Receptors - Not specified
0.0029
EPA Region 4 - Invertebrates - Not specified
0.0029
EPA Region 4 - Mammals - Not specified
0.0049
EPA Region 4 - Avians - Not specified
0.022
EPA Region 4 - Plants - Not specified
10
EPA Region 5 - RCRA - Not specified
0.00238
FL - Soil Leachability FW and MAR - Not specified
0.0001
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
0.0045
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
0.0087
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
0.009
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
0.012
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
0.017
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
0.023
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
0.056
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
0.33
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
0.34
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
0.64
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
0.69
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
1.1
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
1.2
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
1.7
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
2.3
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
3
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
10
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
17
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
93
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
100
WA - Wildlife - Not specified
0.07
0.00001
0.0001
0.001
0.01
0.1
1
10
100
Value (mg/kg)

Table 185: Benchmark Values for Diethyl Phthalate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
84−66−2	Dutch Soil Protection Act	Background	Not specified	0.045	71
84−66−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	53	
84−66−2	Dutch Soil Protection Act	Intervention Value	Not specified	53	
84−66−2	EPA Region 4	Soil All Receptors	Not specified	0.25	
84−66−2	EPA Region 4	Soil Invertebrates	Not specified	0.25	
84−66−2	EPA Region 4	Soil Plants	Not specified	100	
84−66−2	EPA Region 4	Soil Mammals	Not specified	3600	
84−66−2	EPA Region 5	EPA RCRA Soil	Not specified	24.8	
84−66−2	EPA Region 6	Soil Plants	Not specified	100	
84−66−2	Florida	Soil Leachability Freshwater and Marine	Not specified	5.9	
84−66−2	LANL ECORISK	Soil No Effect ESL	Generic Plant	100	
84−66−2	LANL ECORISK	Soil Low Effect ESL	Generic Plant	1000	
84−66−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	3600	
84−66−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	3600	
84−66−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	8800	
84−66−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	36000	
84−66−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	36000	
84−66−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	88000	
84−66−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	2.50e+06	
84−66−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	2.50e+07	
84−66−2	ORNL	Soil Screening − Plants	Not specified	100	

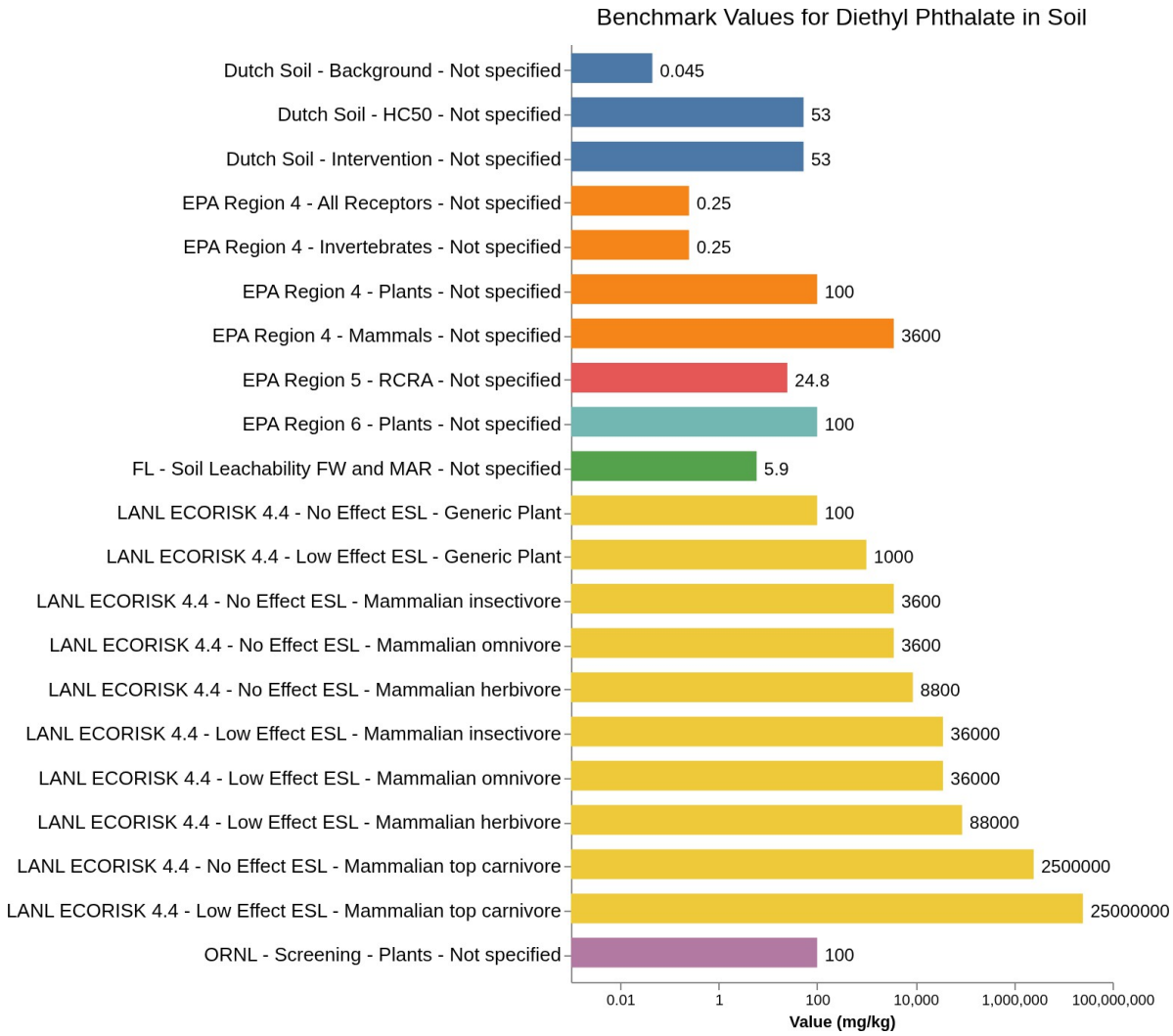


Table 186: Benchmark Values for Diethylene Glycol Monoethyl Ether in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
111−90−0	Florida	Soil Leachability Freshwater and Marine	Not specified	750.0

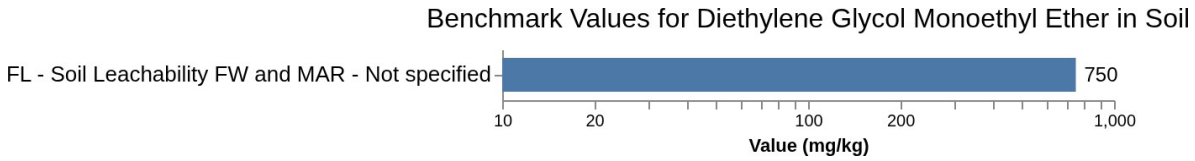


Table 187: Benchmark Values for Diethylene−glycol in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
111−46−6	Dutch Soil Protection Act	Background	Not specified	8.0	
111−46−6	Dutch Soil Protection Act	Intervention Value	Not specified	270.0	73
111−46−6	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	480.0	

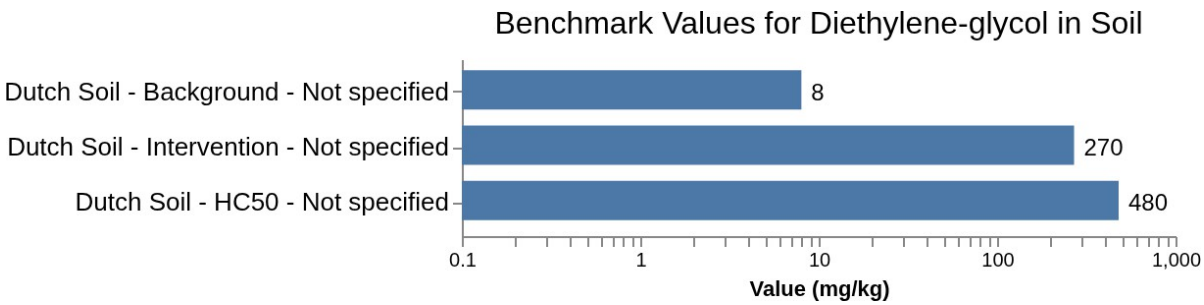


Table 188: Benchmark Values for Dihydroxybenzenes (sum) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−16−9	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	8.0

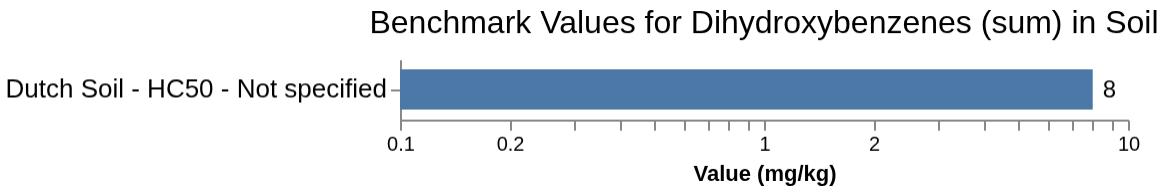


Table 189: Benchmark Values for Di−Isobutyl Phthalate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
84−69−5	Dutch Soil Protection Act	Background	Not specified	0.045	71
84−69−5	Dutch Soil Protection Act	Intervention Value	Not specified	17.000	
84−69−5	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	17.000	

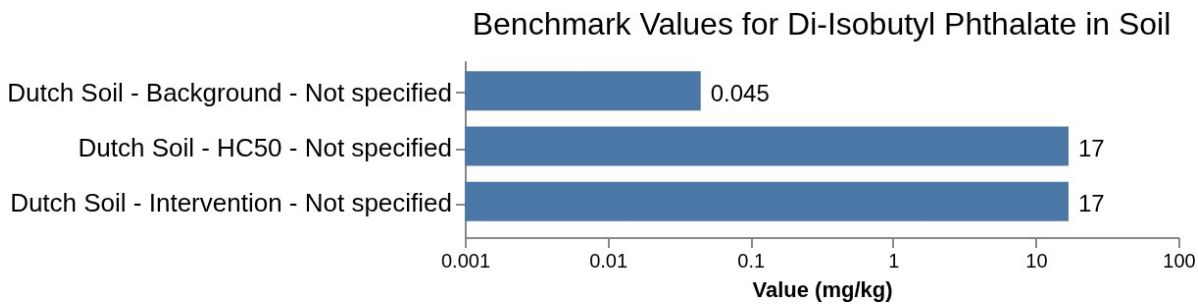


Table 190: Benchmark Values for Diisopropanolamine in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
110−97−4	Canada	Soil Agricultural	Not specified	180.0
110−97−4	Canada	Soil Commercial	Not specified	180.0
110−97−4	Canada	Soil Residential/Parkland	Not specified	180.0
110−97−4	Canada	Soil Industrial	Not specified	180.0

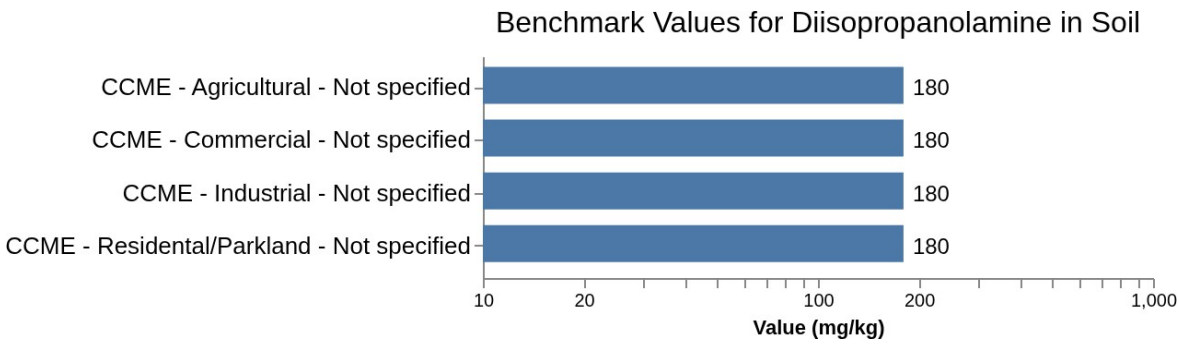


Table 191: Benchmark Values for Diisopropyl Methylphosphonate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
1445−75−6	Florida	Soil Leachability Freshwater and Marine	Not specified	85.0

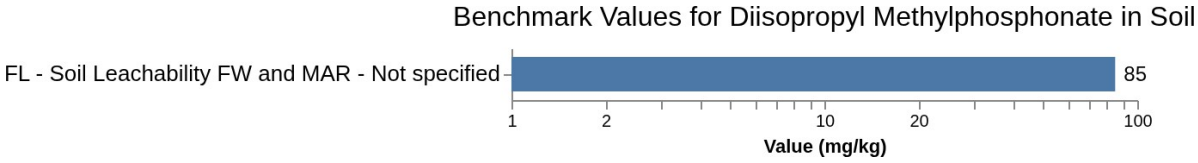


Table 192: Benchmark Values for Dimethoate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
60−51−5	EPA Region 5	EPA RCRA Soil	Not specified	0.2180
60−51−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0004

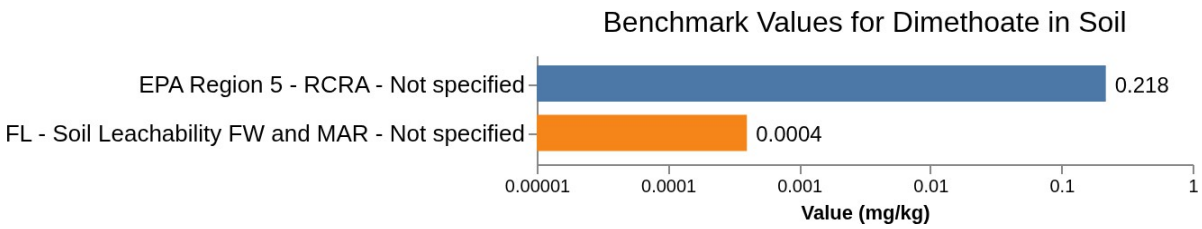


Table 193: Benchmark Values for Dimethrin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
70−38−2	Florida	Soil Leachability Freshwater and Marine	Not specified	1.3

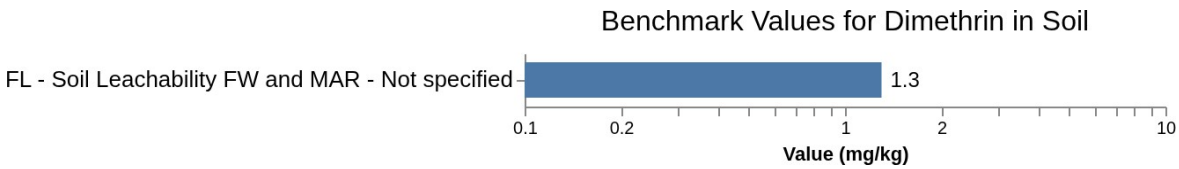


Table 194: Benchmark Values for Dimethylamino azobenzene [p−] in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
60−11−7	EPA Region 5	EPA RCRA Soil	Not specified	0.04

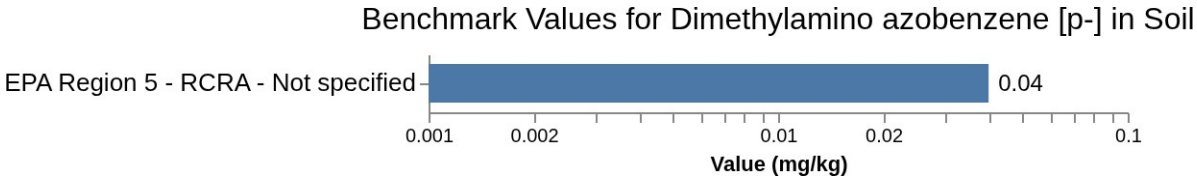


Table 195: Benchmark Values for Dimethylaniline, 2,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
95−68−1	Florida	Soil Leachability Freshwater and Marine	Not specified	19.0

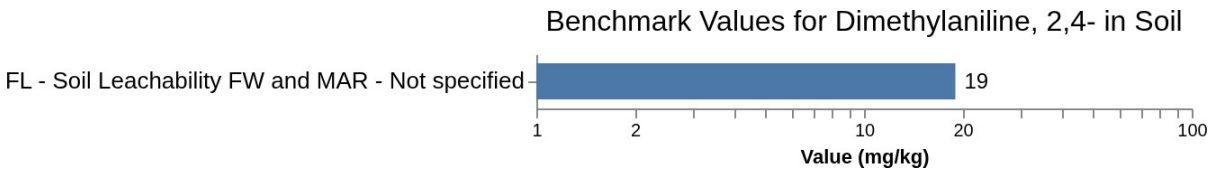


Table 196: Benchmark Values for Dimethylaniline, N,N− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
121−69−7	Florida	Soil Leachability Freshwater and Marine	Not specified	12.0

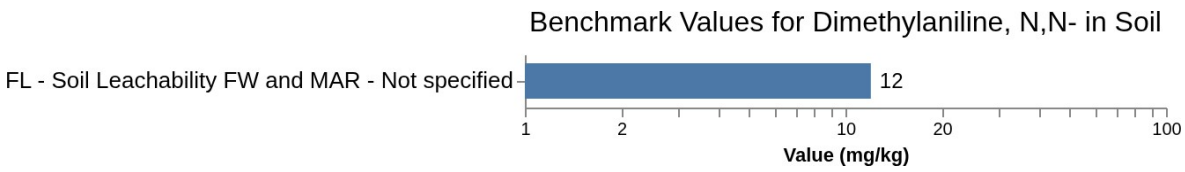


Table 197: Benchmark Values for Dimethylbenz[a]anthracene, 7,12− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
57−97−6	EPA Region 5	EPA RCRA Soil	Not specified	16.3

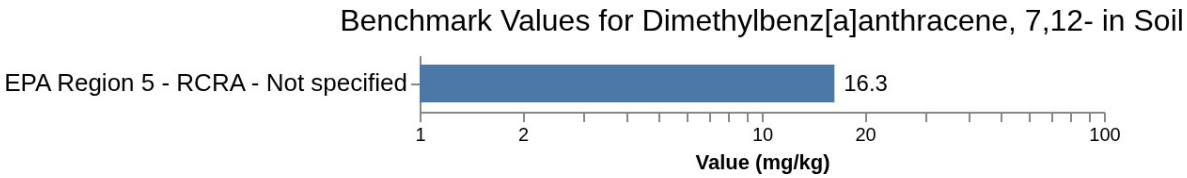


Table 198: Benchmark Values for Dimethylbenzidine, 3,3'− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
119−93−7	EPA Region 5	EPA RCRA Soil	Not specified	0.104

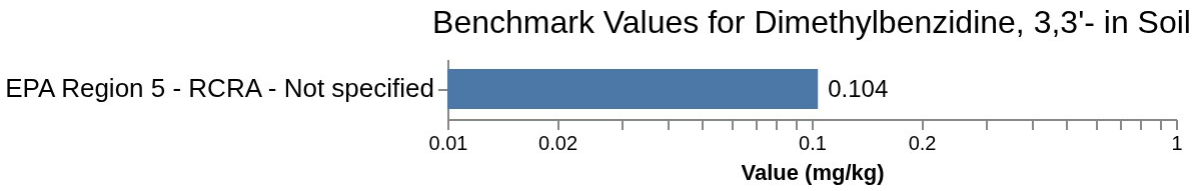


Table 199: Benchmark Values for Dimethylformamide in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
68−12−2	Florida	Soil Leachability Freshwater and Marine	Not specified	210.0

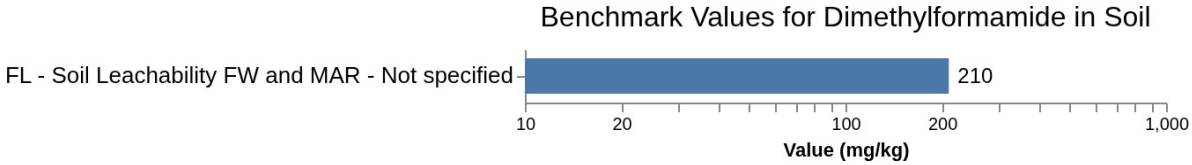


Table 200: Benchmark Values for Dimethylnaphthalene, 2,6− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
581−42−0	EPA Region 4	Soil Invertebrates	Not specified	0.44
581−42−0	EPA Region 4	Soil All Receptors	Not specified	29.00

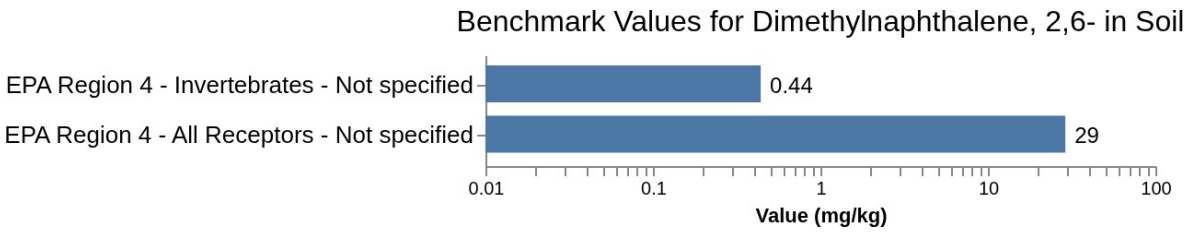


Table 201: Benchmark Values for Dimethylphenethylamine in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
122−09−8	EPA Region 5	EPA RCRA Soil	Not specified	0.3

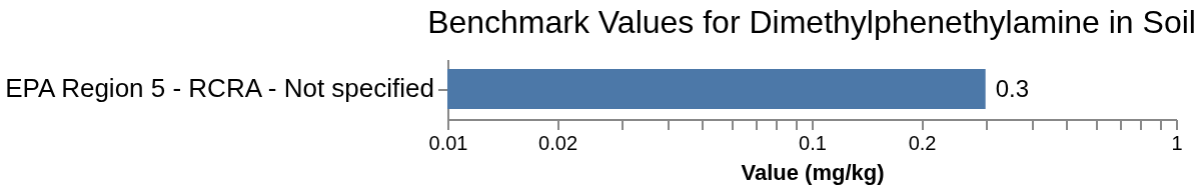


Table 202: Benchmark Values for Dimethylphenol, 2,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
105−67−9	EPA Region 4	Soil All Receptors	Not specified	0.04
105−67−9	EPA Region 4	Soil Invertebrates	Not specified	0.04
105−67−9	EPA Region 5	EPA RCRA Soil	Not specified	0.01
105−67−9	Florida	Soil Leachability Freshwater and Marine	Not specified	1.90

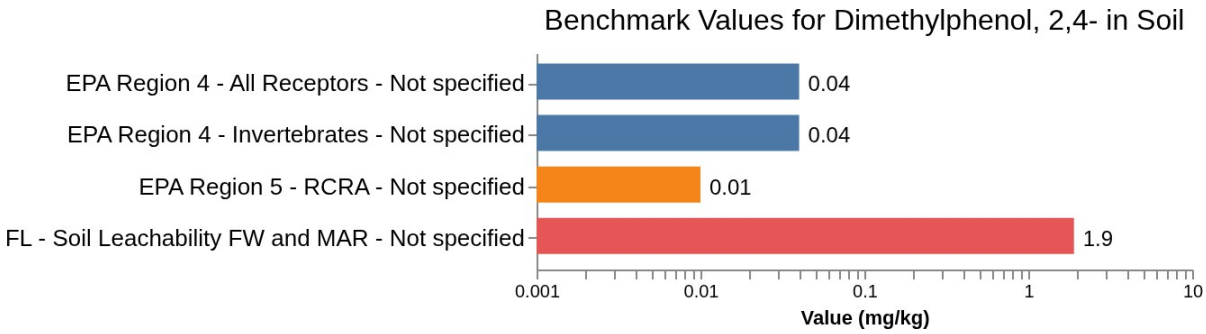


Table 203: Benchmark Values for Dimethylphenol, 2,6− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
576−26−1	Florida	Soil Leachability Freshwater and Marine	Not specified	5.2

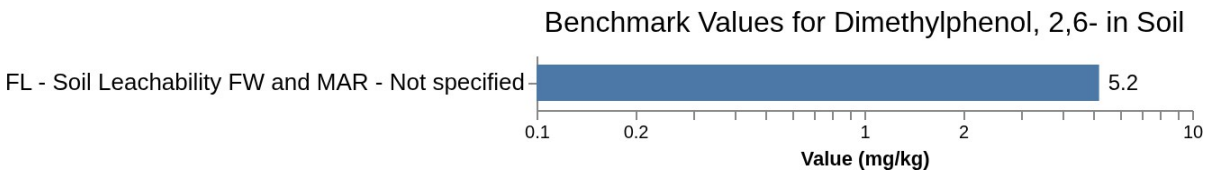


Table 204: Benchmark Values for Dimethylphenol, 3,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
95−65−8	Florida	Soil Leachability Freshwater and Marine	Not specified	3.4

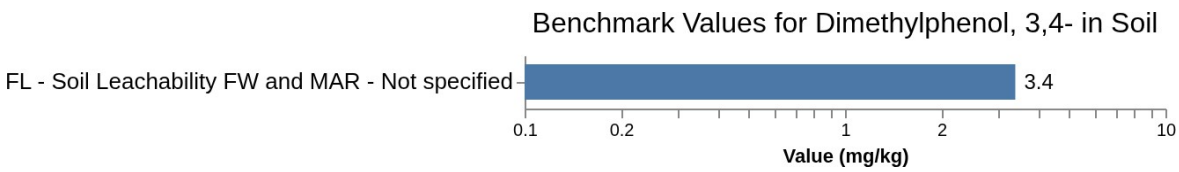


Table 205: Benchmark Values for Dimethylphthalate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
131−11−3	Dutch Soil Protection Act	Background	Not specified	0.045	71
131−11−3	Dutch Soil Protection Act	Intervention Value	Not specified	82.000	
131−11−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	84.000	
131−11−3	EPA Region 4	Soil All Receptors	Not specified	0.350	
131−11−3	EPA Region 4	Soil Invertebrates	Not specified	10.000	
131−11−3	EPA Region 4	Soil Mammals	Not specified	38.000	
131−11−3	EPA Region 5	EPA RCRA Soil	Not specified	734.000	
131−11−3	EPA Region 6	Soil Invertebrates	Not specified	200.000	
131−11−3	Florida	Soil Leachability Freshwater and Marine	Not specified	7.800	
131−11−3	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	10.000	
131−11−3	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	38.000	
131−11−3	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	60.000	
131−11−3	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	80.000	
131−11−3	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	100.000	
131−11−3	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	460.000	
131−11−3	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	740.000	
131−11−3	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	980.000	
131−11−3	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	48000.000	
131−11−3	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	590000.000	
131−11−3	ORNL	Soil Screening − Invertebrates	Not specified	200.000	

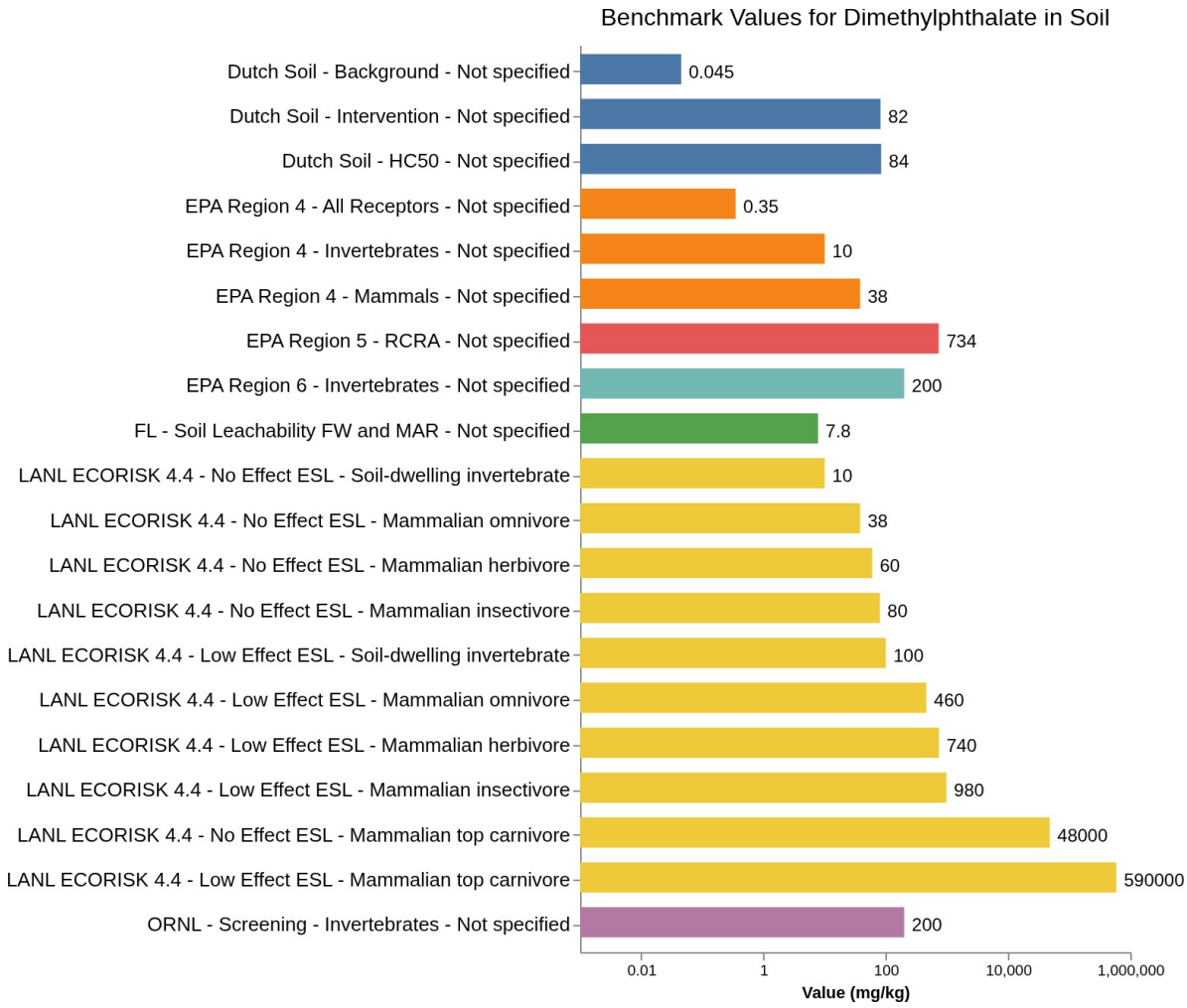


Table 206: Benchmark Values for Di−n−hexylphthalate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
84−75−3	Dutch Soil Protection Act	Background	Not specified	0.07	71
84−75−3	Dutch Soil Protection Act	Intervention Value	Not specified	220.00	
84−75−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	220.00	

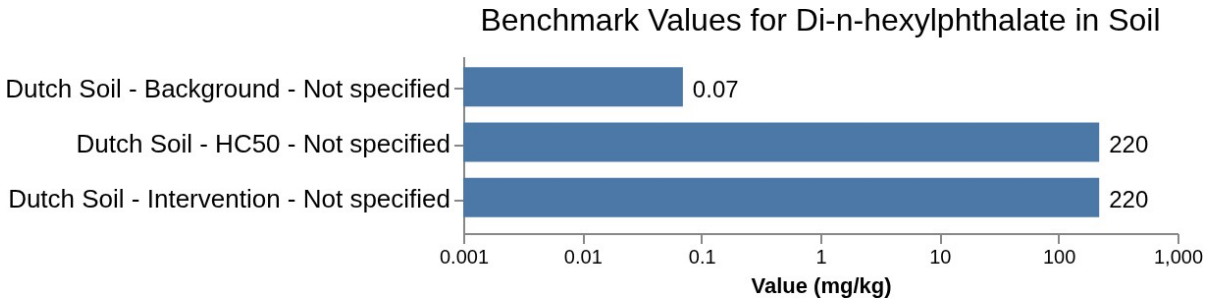


Table 207: Benchmark Values for Dinitroaniline, 3,5− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
618−87−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	43.0	77
618−87−1	Dutch Soil Protection Act	Intervention Value	Not specified	50.0	73, 77

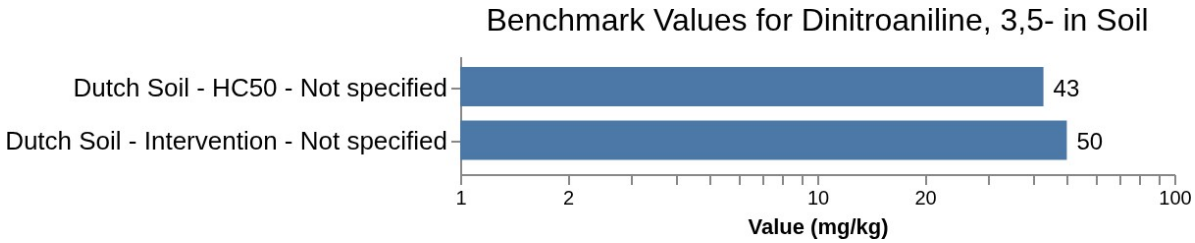


Table 208: Benchmark Values for Dinitrobenzene, 1,2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
528−29−0	Florida	Soil Leachability Freshwater and Marine	Not specified	0.2

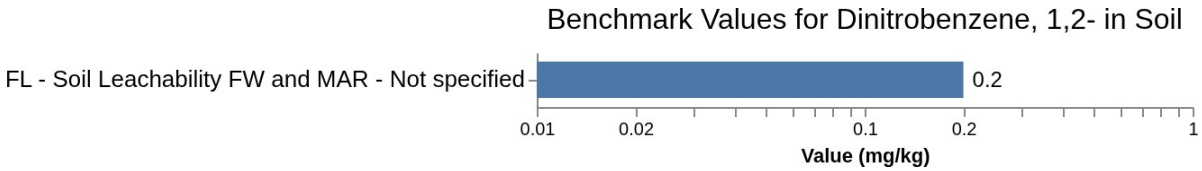


Table 209: Benchmark Values for Dinitrobenzene, 1,3− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
99−65−0	EPA Region 4	Soil Invertebrates	Not specified	0.034
99−65−0	EPA Region 4	Soil All Receptors	Not specified	0.034
99−65−0	EPA Region 4	Soil Mammals	Not specified	0.072
99−65−0	EPA Region 4	Soil Avians	Not specified	0.079
99−65−0	EPA Region 5	EPA RCRA Soil	Not specified	0.655
99−65−0	Florida	Soil Leachability Freshwater and Marine	Not specified	0.400
99−65−0	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.072
99−65−0	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.079
99−65−0	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	0.091
99−65−0	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.150
99−65−0	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	0.160
99−65−0	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	0.210
99−65−0	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	0.790
99−65−0	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.950
99−65−0	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	1.500
99−65−0	LANL ECORISK	Soil No Effect ESL	Avian insectivore	1.600
99−65−0	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	2.200
99−65−0	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	9.300
99−65−0	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	16.000
99−65−0	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	82.000
99−65−0	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	93.000
99−65−0	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	120.000
99−65−0	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	190.000
99−65−0	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	1200.000

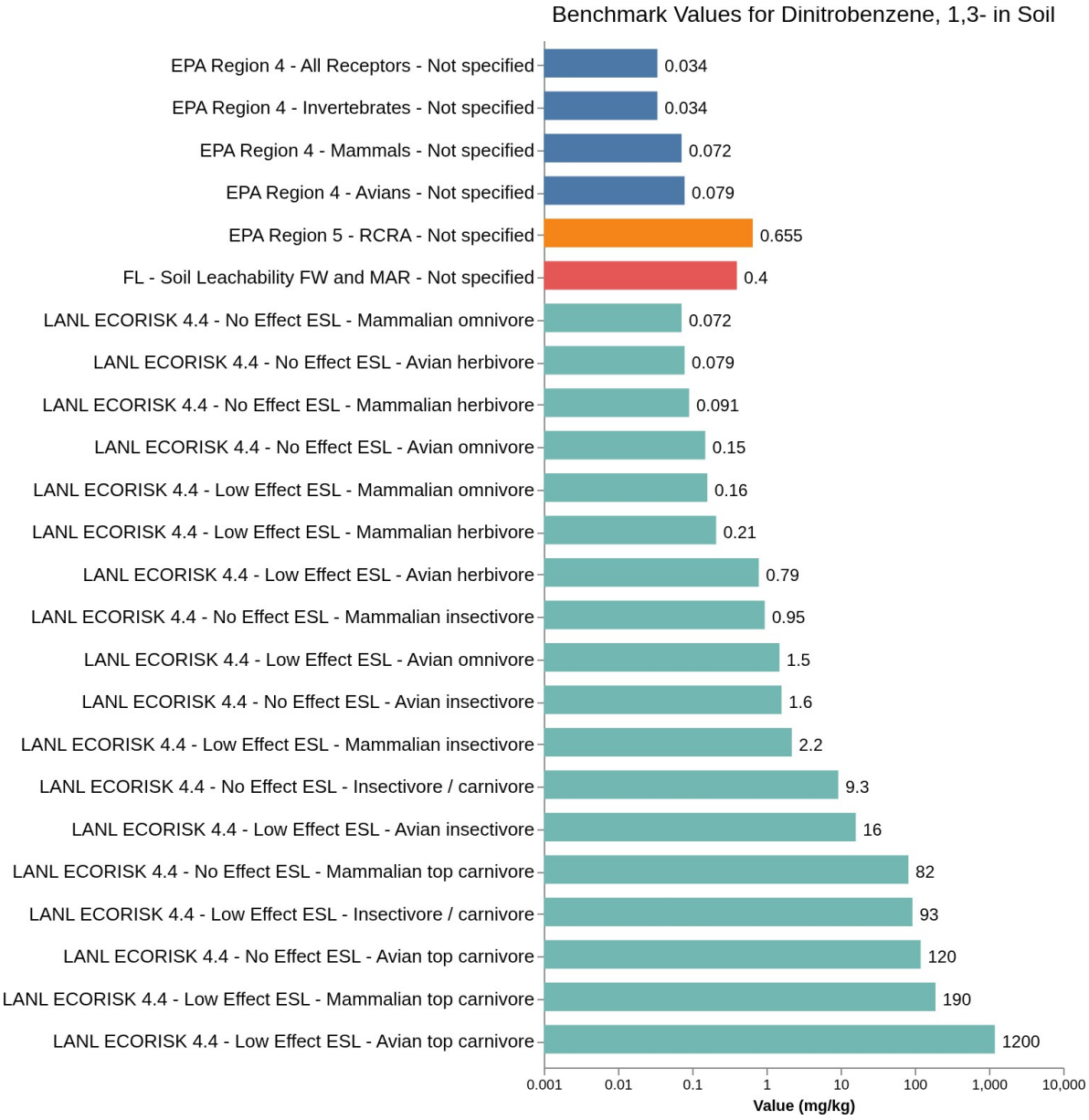


Table 210: Benchmark Values for Dinitrobenzene, 1,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
100−25−4	Florida	Soil Leachability Freshwater and Marine	Not specified	0.4

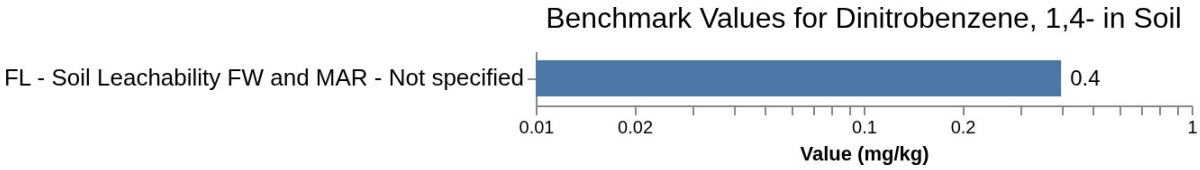


Table 211: Benchmark Values for Dinitro−o−cresol, 4,6− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
534−52−1	EPA Region 5	EPA RCRA Soil	Not specified	0.144

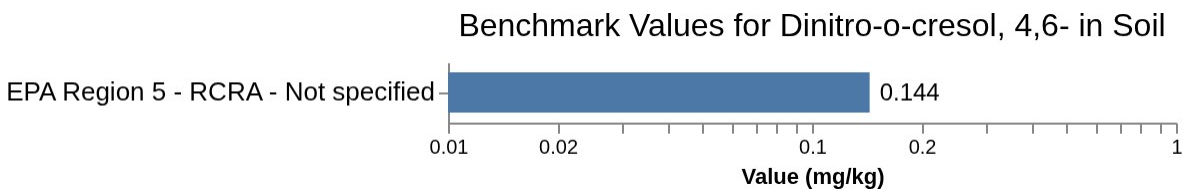


Table 212: Benchmark Values for Dinitrophenol, 2,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
51−28−5	EPA Region 4	Soil Mammals	Not specified	0.0610
51−28−5	EPA Region 4	Soil All Receptors	Not specified	0.0610
51−28−5	EPA Region 4	Soil Invertebrates	Not specified	0.1500
51−28−5	EPA Region 4	Soil Plants	Not specified	20.0000
51−28−5	EPA Region 5	EPA RCRA Soil	Not specified	0.0609
51−28−5	EPA Region 6	Soil Plants	Not specified	20.0000
51−28−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0100
51−28−5	ORNL	Soil Screening − Plants	Not specified	20.0000

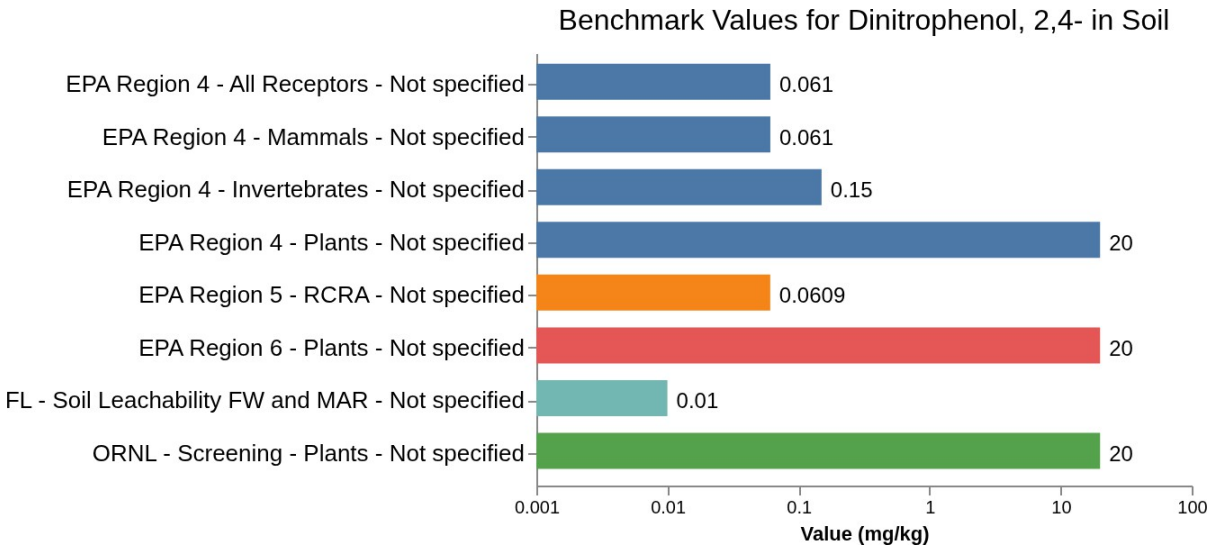


Table 213: Benchmark Values for Dinitrotoluene, 2,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
121−14−2	EPA Region 4	Soil All Receptors	Not specified	6.00
121−14−2	EPA Region 4	Soil Plants	Not specified	6.00
121−14−2	EPA Region 4	Soil Mammals	Not specified	14.00
121−14−2	EPA Region 4	Soil Invertebrates	Not specified	18.00
121−14−2	EPA Region 5	EPA RCRA Soil	Not specified	1.28
121−14−2	EPA Region 6	Soil Plants	Not specified	6.00
121−14−2	EPA Region 6	Soil Invertebrates	Not specified	18.00
121−14−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.07
121−14−2	LANL ECORISK	Soil No Effect ESL	Generic Plant	6.00
121−14−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	14.00
121−14−2	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	18.00
121−14−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	20.00
121−14−2	LANL ECORISK	Soil Low Effect ESL	Generic Plant	60.00
121−14−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	74.00
121−14−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	140.00
121−14−2	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	180.00
121−14−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	200.00
121−14−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	740.00
121−14−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	2000.00
121−14−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	20000.00

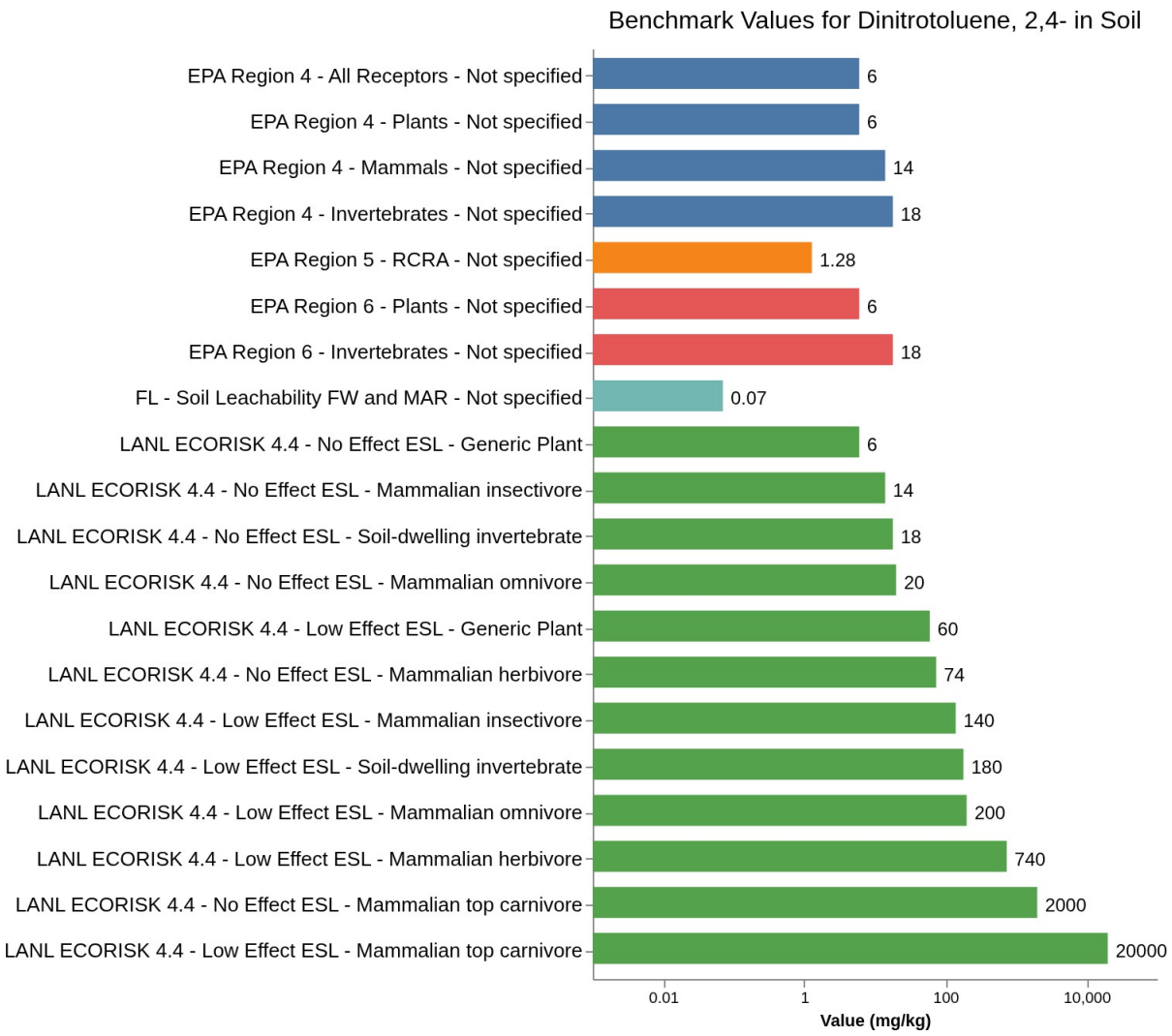

Benchmark Values for Dinitrotoluene, 2,4- in Soil
EPA Region 4 - All Receptors - Not specified
6
EPA Region 4 - Plants - Not specified
6
EPA Region 4 - Mammals - Not specified
14
EPA Region 4 - Invertebrates - Not specified
18
EPA Region 5 - RCRA - Not specified
1.28
EPA Region 6 - Plants - Not specified
6
EPA Region 6 - Invertebrates - Not specified
18
FL - Soil Leachability FW and MAR - Not specified
0.07
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
6
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
14
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
18
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
20
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
60
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
74
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
140
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
180
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
200
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
740
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
2000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
20000
0.01
1
100
10,000
Value (mg/kg)

Table 214: Benchmark Values for Dinitrotoluene, 2,6− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
606−20−2	EPA Region 4	Soil All Receptors	Not specified	4.0000
606−20−2	EPA Region 4	Soil Mammals	Not specified	4.0000
606−20−2	EPA Region 4	Soil Invertebrates	Not specified	30.0000
606−20−2	EPA Region 4	Soil Avians	Not specified	52.0000
606−20−2	EPA Region 5	EPA RCRA Soil	Not specified	0.0328
606−20−2	EPA Region 6	Soil Plants	Not specified	5.0000
606−20−2	EPA Region 6	Soil Invertebrates	Not specified	7.0000
606−20−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0050
606−20−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	4.0000
606−20−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	6.7000
606−20−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	7.6000
606−20−2	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	30.0000
606−20−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	40.0000
606−20−2	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	44.0000
606−20−2	LANL ECORISK	Soil No Effect ESL	Avian herbivore	52.0000
606−20−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	67.0000
606−20−2	LANL ECORISK	Soil No Effect ESL	Avian omnivore	74.0000
606−20−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	76.0000
606−20−2	LANL ECORISK	Soil No Effect ESL	Avian insectivore	130.0000
606−20−2	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	520.0000
606−20−2	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	680.0000
606−20−2	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	740.0000
606−20−2	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	1300.0000
606−20−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	1300.0000
606−20−2	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	6800.0000
606−20−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	13000.0000
606−20−2	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	18000.0000
606−20−2	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	180000.0000

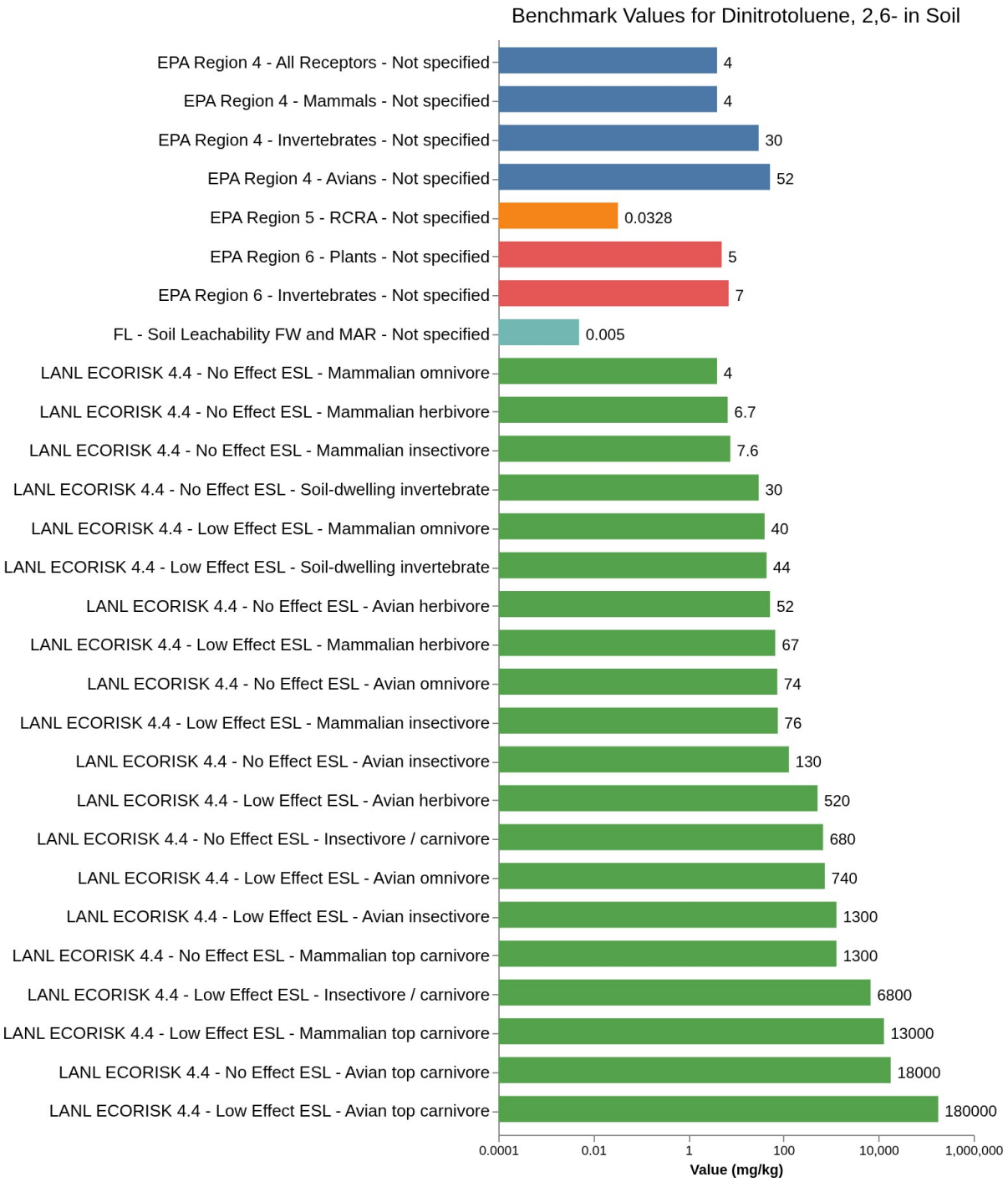

Benchmark Values for Dinitrotoluene, 2,6- in Soil
EPA Region 4 - All Receptors - Not specified
4
EPA Region 4 - Mammals - Not specified
4
EPA Region 4 - Invertebrates - Not specified
30
EPA Region 4 - Avians - Not specified
52
EPA Region 5 - RCRA - Not specified
0.0328
EPA Region 6 - Plants - Not specified
5
EPA Region 6 - Invertebrates - Not specified
7
FL - Soil Leachability FW and MAR - Not specified
0.005
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
4
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
6.7
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
7.6
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
30
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
40
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
44
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
52
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
67
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
74
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
76
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
130
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
520
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
680
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
740
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
1300
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
1300
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
6800
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
13000
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
18000
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
180000
0.0001
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 215: Benchmark Values for Dinitrotoluene, 2−Amino−4,6− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
35572−78−2	EPA Region 4	Soil All Receptors	Not specified	14.0
35572−78−2	EPA Region 4	Soil Plants	Not specified	14.0
35572−78−2	EPA Region 4	Soil Mammals	Not specified	16.0
35572−78−2	EPA Region 4	Soil Invertebrates	Not specified	43.0
35572−78−2	EPA Region 6	Soil Plants	Not specified	14.0
35572−78−2	EPA Region 6	Soil Invertebrates	Not specified	43.0
35572−78−2	LANL ECORISK	Soil No Effect ESL	Generic Plant	14.0
35572−78−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	16.0
35572−78−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	23.0
35572−78−2	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	43.0
35572−78−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	110.0
35572−78−2	LANL ECORISK	Soil Low Effect ESL	Generic Plant	140.0
35572−78−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	160.0
35572−78−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	230.0
35572−78−2	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	430.0
35572−78−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1100.0
35572−78−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	9700.0
35572−78−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	97000.0

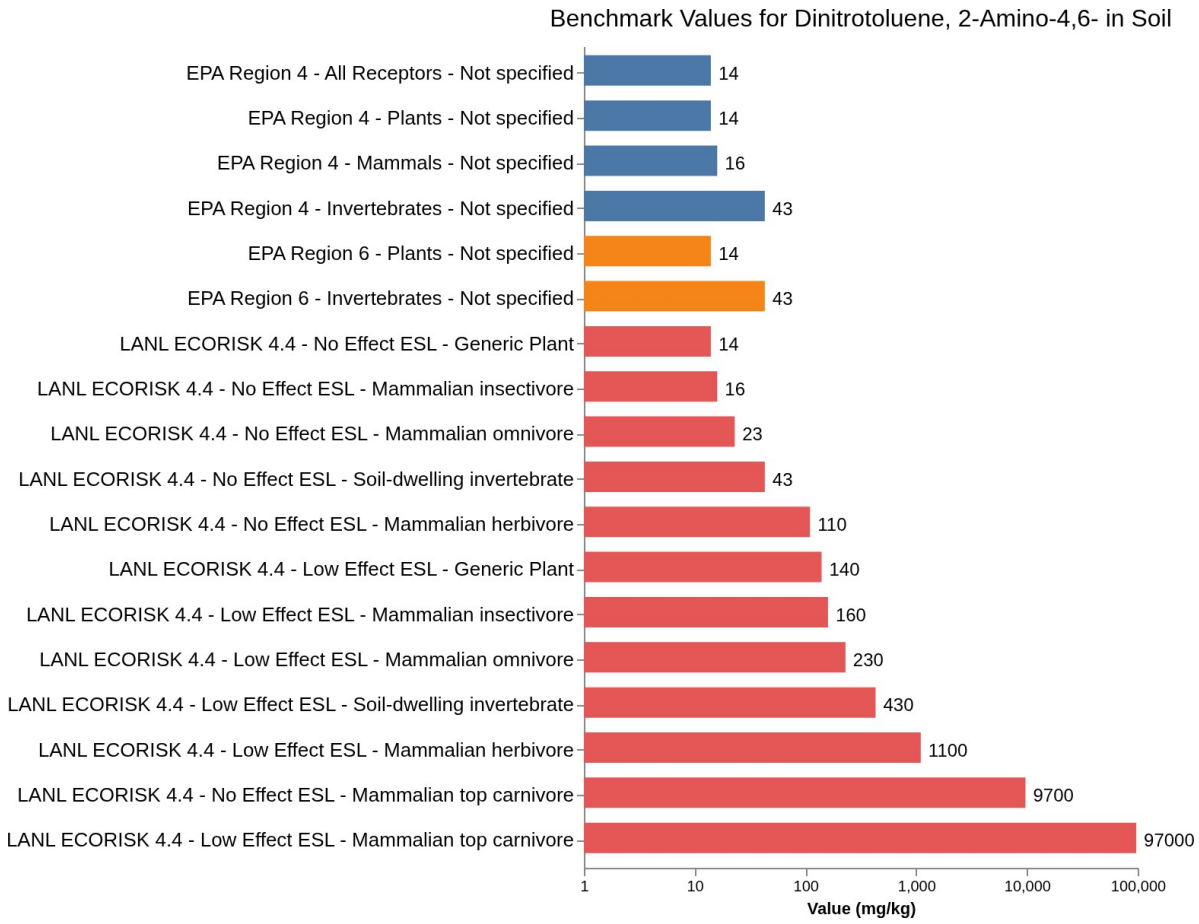

Benchmark Values for Dinitrotoluene, 2-Amino-4,6- in Soil
EPA Region 4 - All Receptors - Not specified
14
EPA Region 4 - Plants - Not specified
14
EPA Region 4 - Mammals - Not specified
16
EPA Region 4 - Invertebrates - Not specified
43
EPA Region 6 - Plants - Not specified
14
EPA Region 6 - Invertebrates - Not specified
43
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
14
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
16
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
23
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
43
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
110
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
140
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
160
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
230
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
430
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
1100
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
9700
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
97000
1
10
100
1,000
10,000
100,000
Value (mg/kg)

Table 216: Benchmark Values for Dinitrotoluene, 4−Amino−2,6− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
19406−51−0	EPA Region 4	Soil Mammals	Not specified	12.0
19406−51−0	EPA Region 4	Soil All Receptors	Not specified	12.0
19406−51−0	EPA Region 4	Soil Invertebrates	Not specified	18.0
19406−51−0	EPA Region 4	Soil Plants	Not specified	33.0
19406−51−0	EPA Region 6	Soil Invertebrates	Not specified	18.0
19406−51−0	EPA Region 6	Soil Plants	Not specified	33.0
19406−51−0	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	12.0
19406−51−0	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	18.0
19406−51−0	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	23.0
19406−51−0	LANL ECORISK	Soil No Effect ESL	Generic Plant	33.0
19406−51−0	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	120.0
19406−51−0	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	180.0
19406−51−0	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	230.0
19406−51−0	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	320.0
19406−51−0	LANL ECORISK	Soil Low Effect ESL	Generic Plant	330.0
19406−51−0	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	3200.0
19406−51−0	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	6700.0
19406−51−0	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	67000.0

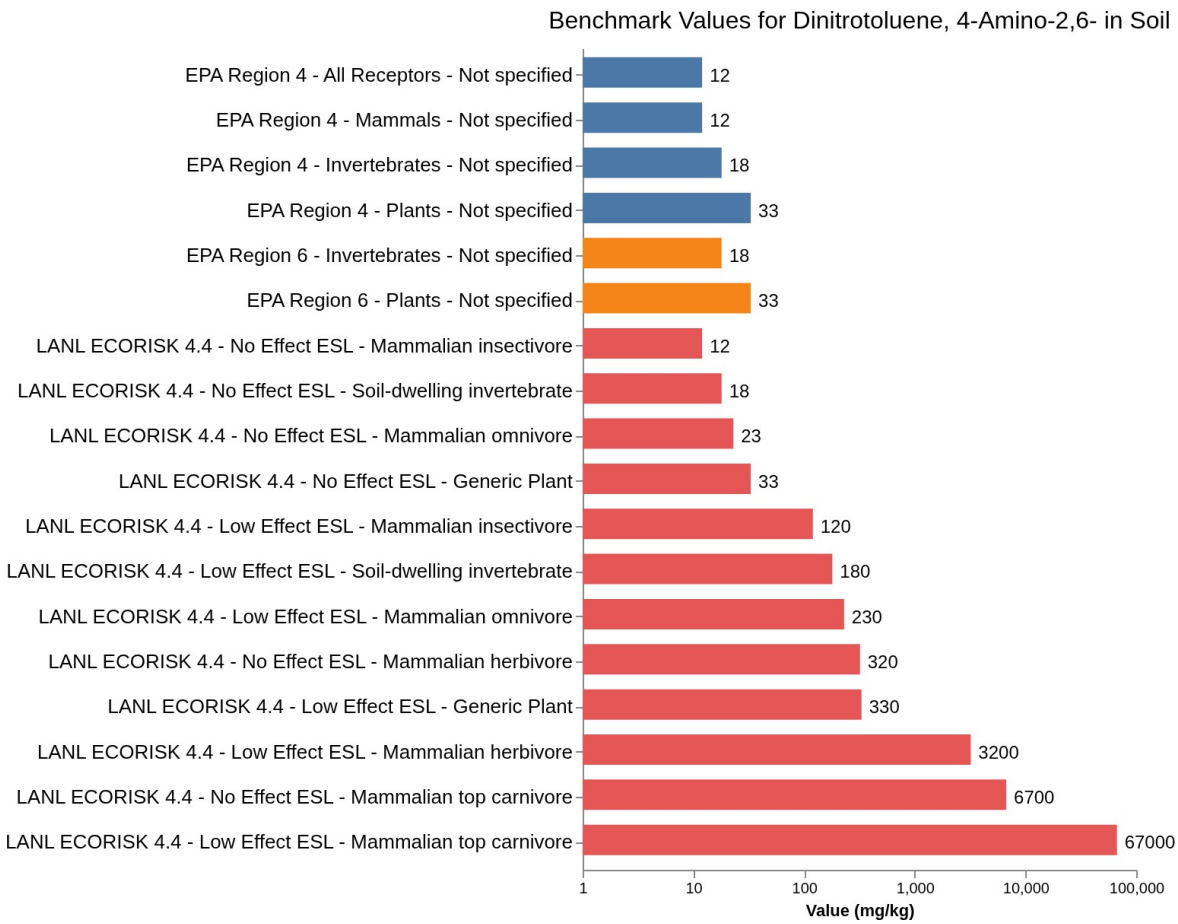


Table 217: Benchmark Values for Dinoseb in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
88−85−7	EPA Region 4	Soil All Receptors	Not specified	0.0150
88−85−7	EPA Region 4	Soil Invertebrates	Not specified	0.0150
88−85−7	EPA Region 4	Soil Mammals	Not specified	0.0220
88−85−7	EPA Region 5	EPA RCRA Soil	Not specified	0.0218
88−85−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0300

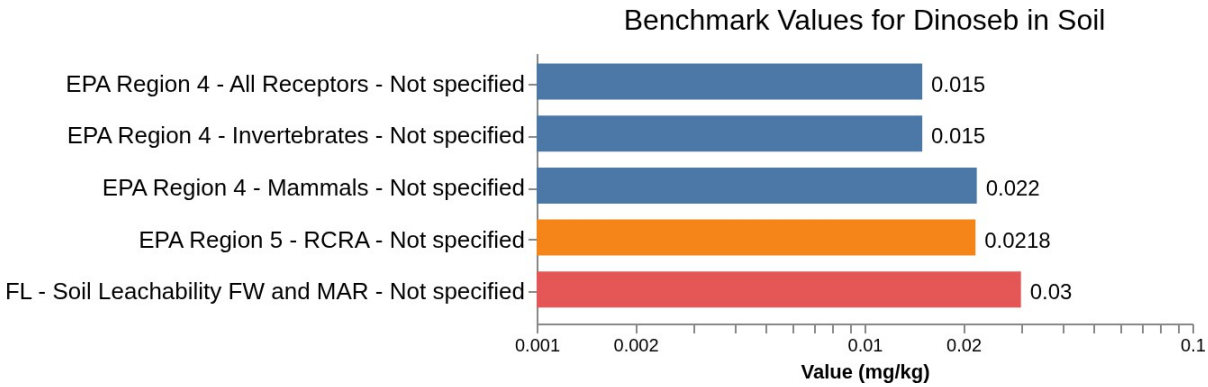


Table 218: Benchmark Values for Dioxane, 1,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
123−91−1	EPA Region 5	EPA RCRA Soil	Not specified	2.05
123−91−1	Florida	Soil Leachability Freshwater and Marine	Not specified	0.50

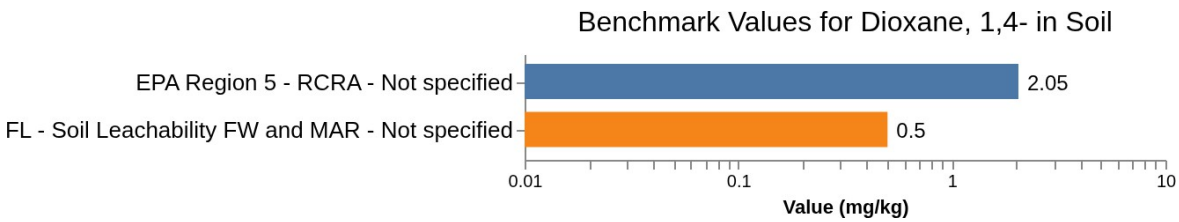


Table 219: Benchmark Values for Dioxin (sum TEQ) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
000000−16−4	Dutch Soil Protection Act	Background	Not specified	0.000055	71
000000−16−4	Dutch Soil Protection Act	Intervention Value	Not specified	0.000180	
000000−16−4	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	0.000360	

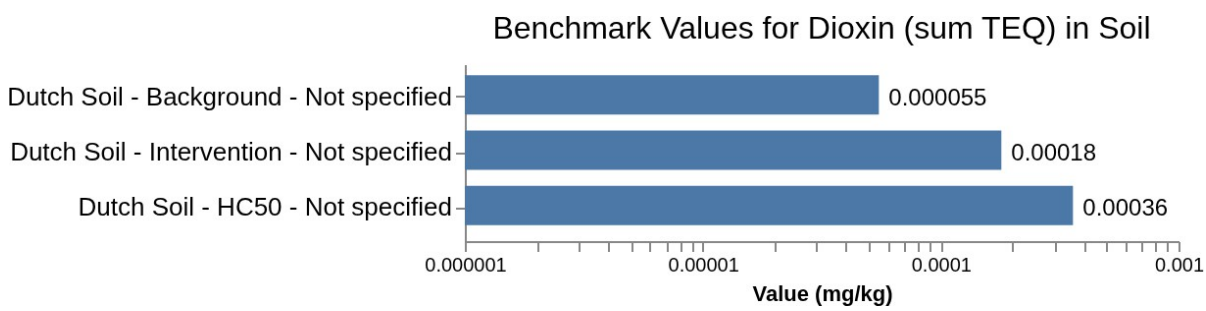


Table 220: Benchmark Values for Diphenamid in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
957−51−7	Florida	Soil Leachability Freshwater and Marine	Not specified	20.0

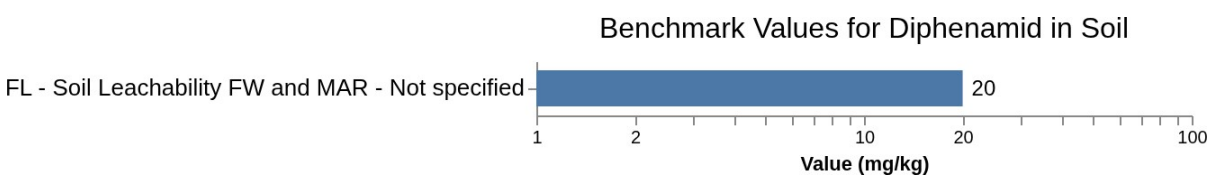


Table 221: Benchmark Values for Diphenylamine in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
122−39−4	EPA Region 4	Soil All Receptors	Not specified	1.01
122−39−4	EPA Region 4	Soil Mammals	Not specified	1.01
122−39−4	EPA Region 4	Soil Invertebrates	Not specified	1.10
122−39−4	EPA Region 4	Soil Avians	Not specified	10.00
122−39−4	EPA Region 5	EPA RCRA Soil	Not specified	1.01
122−39−4	LANL ECORISK	Soil No Effect ESL	Avian insectivore	10.00
122−39−4	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	16.00
122−39−4	LANL ECORISK	Soil No Effect ESL	Avian omnivore	17.00
122−39−4	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	29.00
122−39−4	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	49.00
122−39−4	LANL ECORISK	Soil No Effect ESL	Avian herbivore	78.00
122−39−4	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	81.00
122−39−4	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	130.00
122−39−4	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	3900.00
122−39−4	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	6500.00

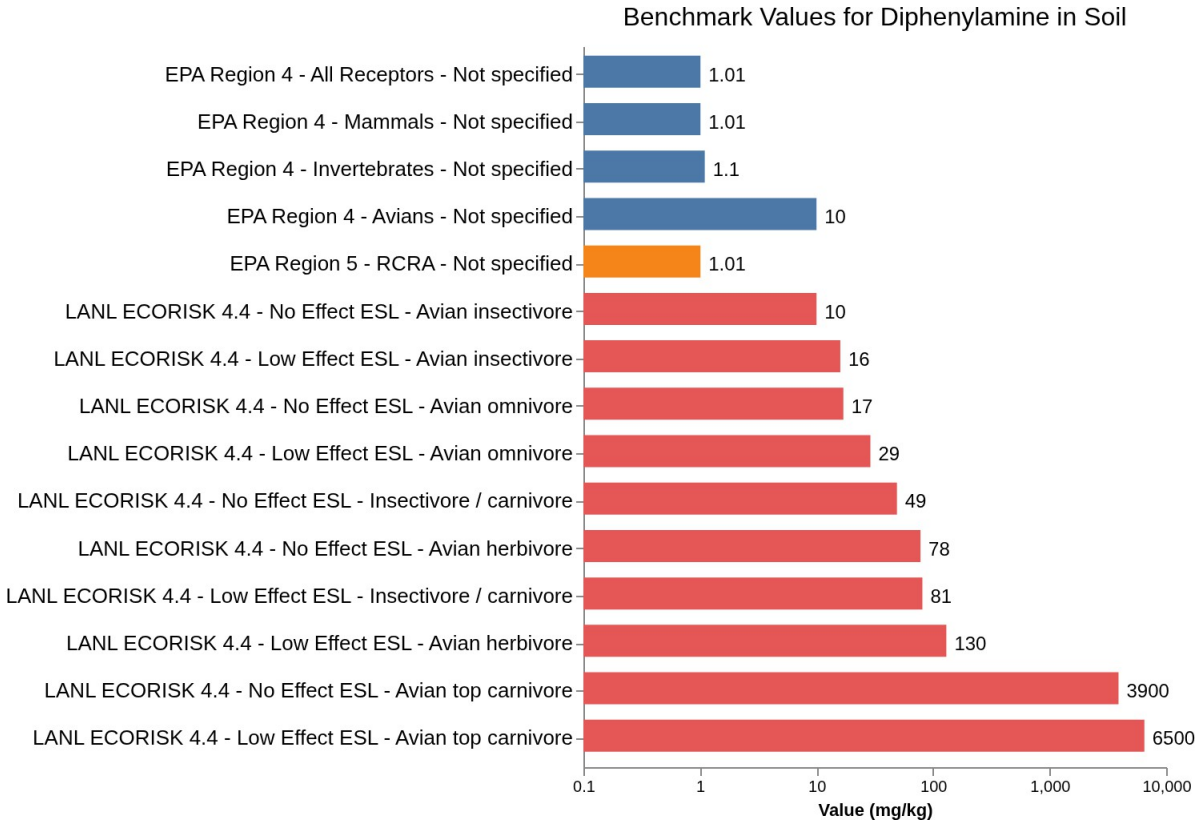


Table 222: Benchmark Values for Diphenylhydrazine, 1,2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
122−66−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.007

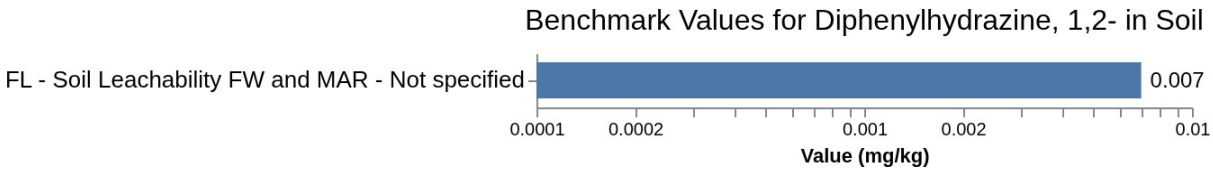


Table 223: Benchmark Values for Diquat dibromide in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
85−00−7	Florida	Soil Leachability Freshwater and Marine	Not specified	60.0

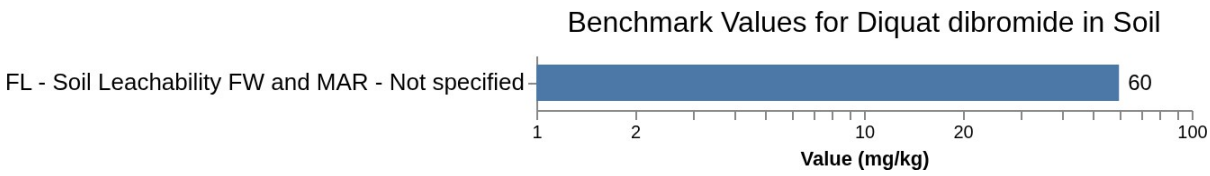


Table 224: Benchmark Values for Disulfoton in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
298−04−4	EPA Region 5	EPA RCRA Soil	Not specified	0.0199
298−04−4	Florida	Soil Leachability Freshwater and Marine	Not specified	0.1000

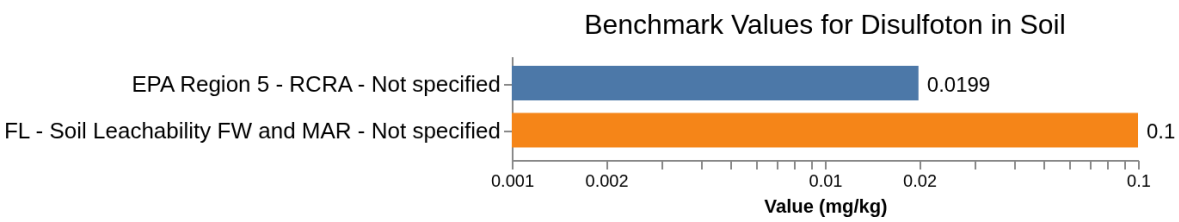


Table 225: Benchmark Values for Diuron in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
330−54−1	Florida	Soil Leachability Freshwater and Marine	Not specified	0.2

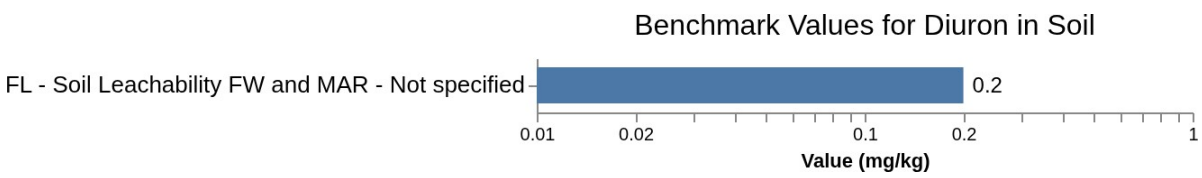


Table 226: Benchmark Values for Dodecylbenzene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
123−01−3	Dutch Soil Protection Act	Background	Not specified	0.35	71
123−01−3	Dutch Soil Protection Act	Intervention Value	Not specified	1000.00	73

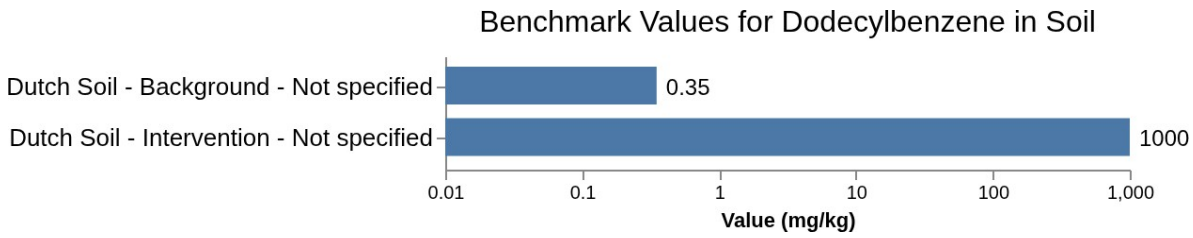


Table 227: Benchmark Values for Drins (Aldrin+Dieldrin+Endrin total) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−02−1	Dutch Soil Protection Act	Background	Not specified	0.015
000000−02−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	0.140
000000−02−1	Dutch Soil Protection Act	Intervention Value	Not specified	4.000

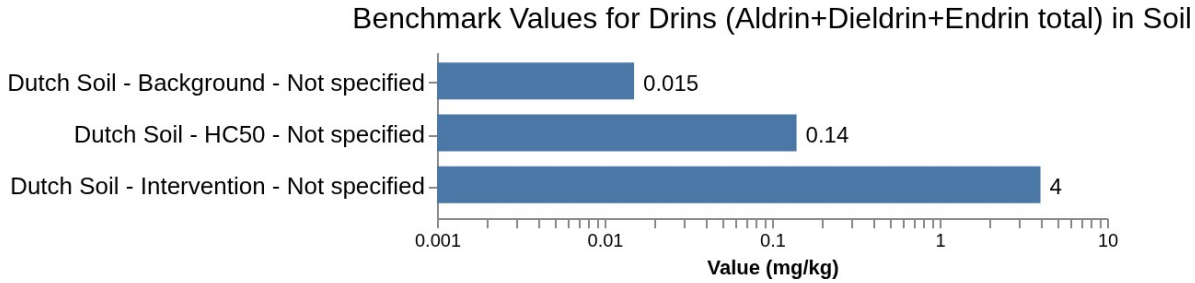


Table 228: Benchmark Values for Endosulfan I in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
959−98−8	Dutch Soil Protection Act	Background	Not specified	0.00090
959−98−8	Dutch Soil Protection Act	Intervention Value	Not specified	4.00000
959−98−8	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	7.10000
959−98−8	EPA Region 4	Soil All Receptors	Not specified	0.00090
959−98−8	EPA Region 4	Soil Invertebrates	Not specified	0.00090
959−98−8	EPA Region 4	Soil Mammals	Not specified	0.11900
959−98−8	EPA Region 5	EPA RCRA Soil	Not specified	0.11900
959−98−8	Florida	Soil Leachability Marine	Not specified	0.00008
959−98−8	Florida	Soil Leachability Freshwater	Not specified	0.00500

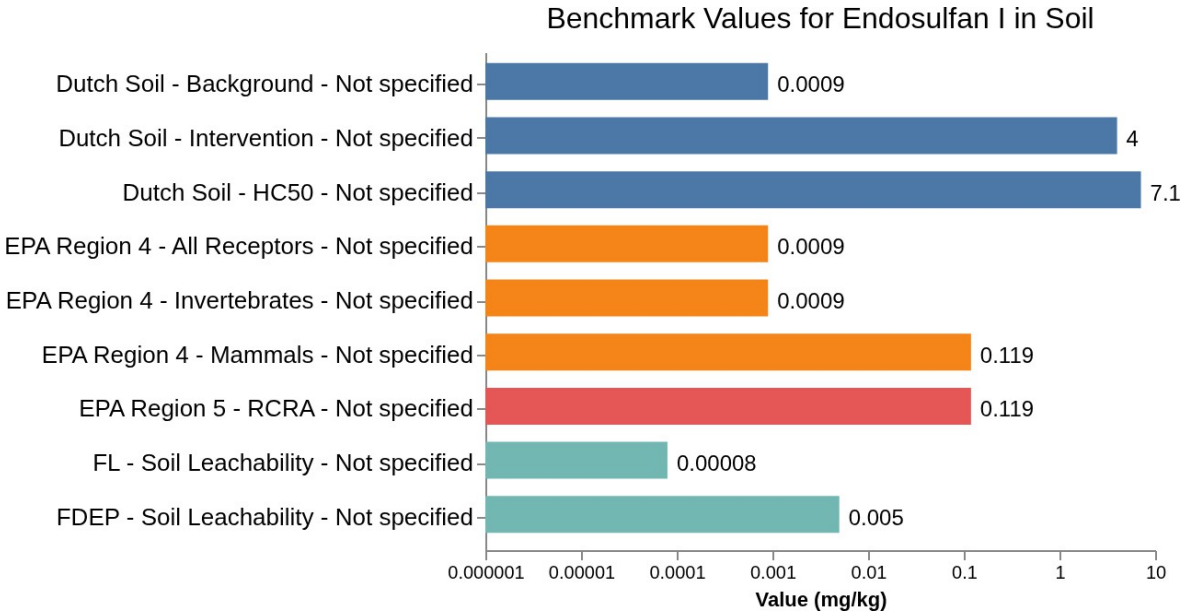


Table 229: Benchmark Values for Endosulfan II in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
33213−65−9	Dutch Soil Protection Act	Background	Not specified	0.00090
33213−65−9	Dutch Soil Protection Act	Intervention Value	Not specified	4.00000
33213−65−9	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	7.10000
33213−65−9	EPA Region 5	EPA RCRA Soil	Not specified	0.11900
33213−65−9	Florida	Soil Leachability Marine	Not specified	0.00008
33213−65−9	Florida	Soil Leachability Freshwater	Not specified	0.00500

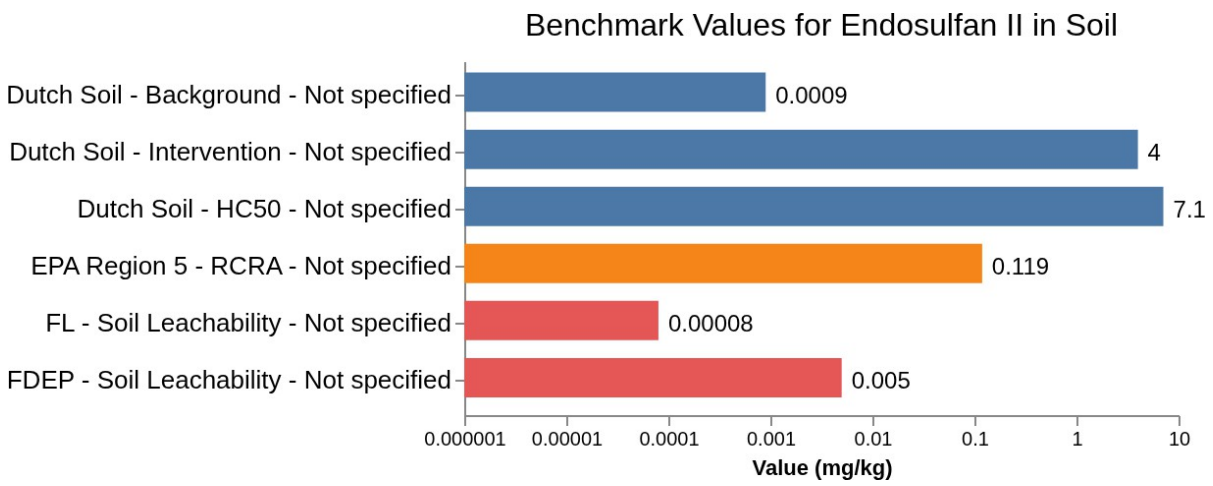


Table 230: Benchmark Values for Endosulfan Sulfate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
1031−07−8	EPA Region 4	Soil Invertebrates	Not specified	0.00070
1031−07−8	EPA Region 4	Soil All Receptors	Not specified	0.00650
1031−07−8	EPA Region 4	Soil Mammals	Not specified	0.03600
1031−07−8	EPA Region 5	EPA RCRA Soil	Not specified	0.03580
1031−07−8	Florida	Soil Leachability Marine	Not specified	0.00008
1031−07−8	Florida	Soil Leachability Freshwater	Not specified	0.00500

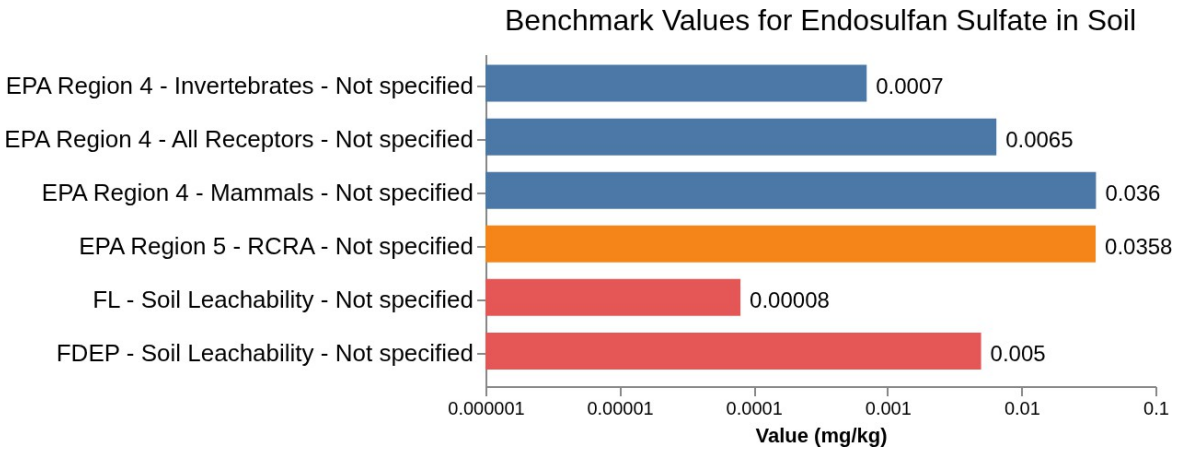


Table 231: Benchmark Values for Endosulfan in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
115−29−7	Dutch Soil Protection Act	Background	Not specified	0.00090
115−29−7	Dutch Soil Protection Act	Intervention Value	Not specified	4.00000
115−29−7	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	7.10000
115−29−7	EPA Region 4	Soil All Receptors	Not specified	0.00090
115−29−7	EPA Region 4	Soil Invertebrates	Not specified	0.00090
115−29−7	EPA Region 4	Soil Mammals	Not specified	0.64000
115−29−7	EPA Region 4	Soil Avians	Not specified	15.00000
115−29−7	Florida	Soil Leachability Marine	Not specified	0.00008
115−29−7	Florida	Soil Leachability Freshwater	Not specified	0.00500
115−29−7	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.64000
115−29−7	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	1.00000
115−29−7	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	1.10000
115−29−7	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	6.40000
115−29−7	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	10.00000
115−29−7	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	11.00000
115−29−7	LANL ECORISK	Soil No Effect ESL	Avian herbivore	15.00000
115−29−7	LANL ECORISK	Soil No Effect ESL	Avian omnivore	21.00000
115−29−7	LANL ECORISK	Soil No Effect ESL	Avian insectivore	37.00000
115−29−7	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	95.00000
115−29−7	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	150.00000
115−29−7	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	200.00000
115−29−7	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	210.00000
115−29−7	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	370.00000
115−29−7	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	950.00000
115−29−7	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	2000.00000
115−29−7	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	2500.00000
115−29−7	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	25000.00000

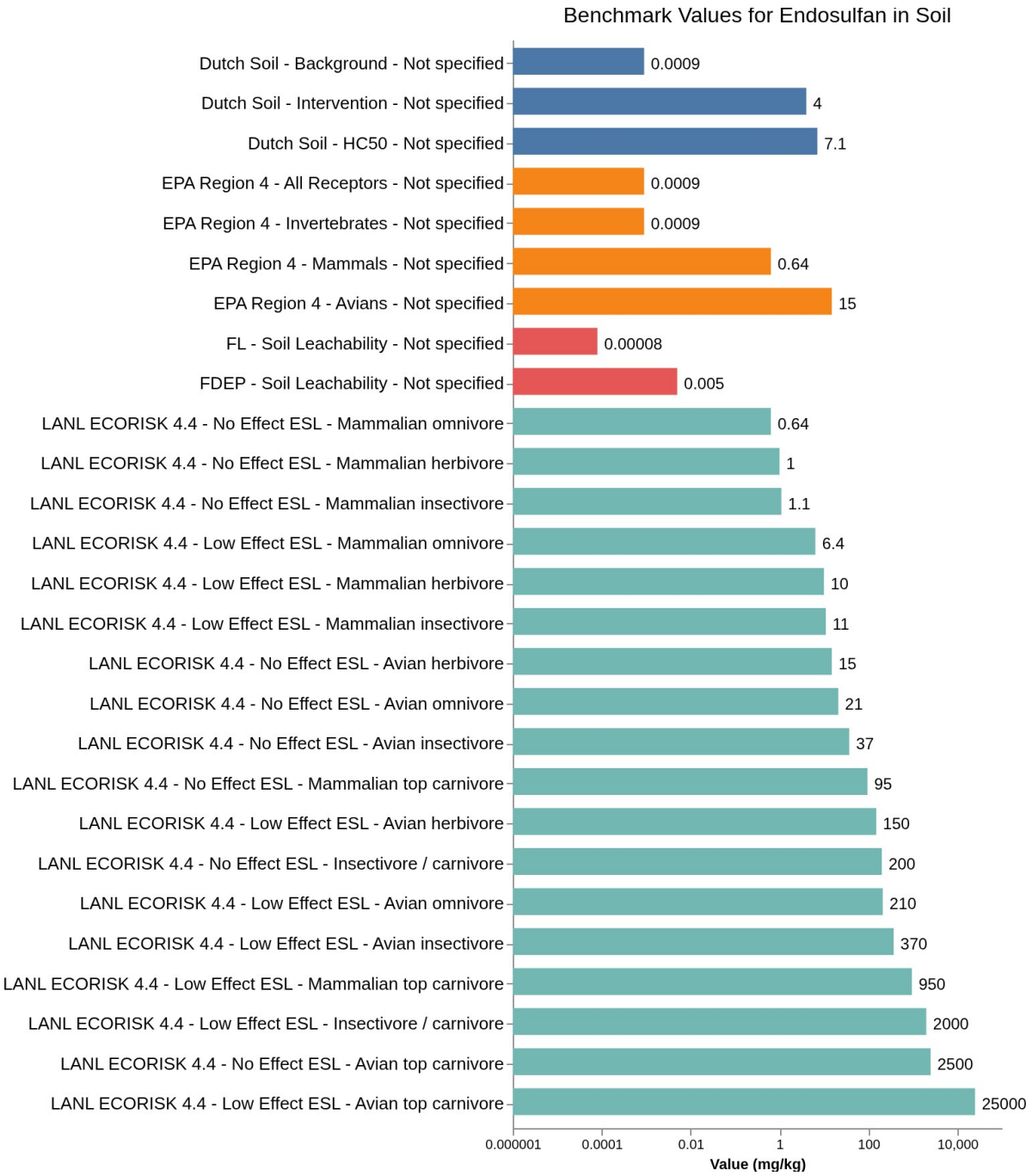

Benchmark Values for Endosulfan in Soil
Dutch Soil - Background - Not specified
0.0009
Dutch Soil - Intervention - Not specified
4
Dutch Soil - HC50 - Not specified
7.1
EPA Region 4 - All Receptors - Not specified
0.0009
EPA Region 4 - Invertebrates - Not specified
0.0009
EPA Region 4 - Mammals - Not specified
0.64
EPA Region 4 - Avians - Not specified
15
FL - Soil Leachability - Not specified
0.00008
FDEP - Soil Leachability - Not specified
0.005
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
0.64
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
1
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
1.1
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
6.4
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
10
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
11
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
15
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
21
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
37
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
95
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
150
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
200
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
210
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
370
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
950
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
2000
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
2500
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
25000
0.000001
0.0001
0.01
1
100
10,000
Value (mg/kg)

Table 232: Benchmark Values for Endothall in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
145−73−3	Florida	Soil Leachability Freshwater and Marine	Not specified	0.4

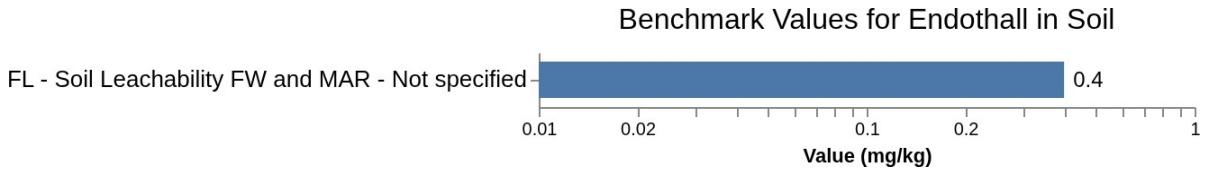


Table 233: Benchmark Values for Endrin aldehyde in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7421−93−4	EPA Region 5	EPA RCRA Soil	Not specified	0.0105

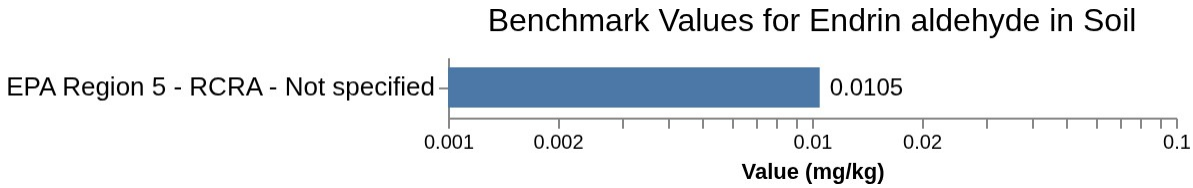


Table 234: Benchmark Values for Endrin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
72−20−8	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	0.0950	
72−20−8	EPA Region 4	Soil Avians	Not specified	0.0014	7
72−20−8	EPA Region 4	Soil Invertebrates	Not specified	0.0019	7
72−20−8	EPA Region 4	Soil All Receptors	Not specified	0.0019	7
72−20−8	EPA Region 4	Soil Plants	Not specified	0.0034	7
72−20−8	EPA Region 4	Soil Mammals	Not specified	0.0230	7
72−20−8	EPA Region 5	EPA RCRA Soil	Not specified	0.0101	
72−20−8	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0010	
72−20−8	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.0014	
72−20−8	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.0028	
72−20−8	LANL ECORISK	Soil No Effect ESL	Generic Plant	0.0034	
72−20−8	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	0.0068	
72−20−8	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	0.0140	
72−20−8	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.0230	
72−20−8	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	0.0280	
72−20−8	LANL ECORISK	Soil Low Effect ESL	Generic Plant	0.0340	
72−20−8	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.0450	
72−20−8	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.0460	
72−20−8	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	0.0680	
72−20−8	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	0.2100	
72−20−8	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	0.2300	
72−20−8	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	0.4500	
72−20−8	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	0.4600	
72−20−8	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	2.1000	
72−20−8	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	2.1000	
72−20−8	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	6.3000	
72−20−8	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	21.0000	
72−20−8	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	63.0000	
72−20−8	Washington	Soil Wildlife	Not specified	0.2000	

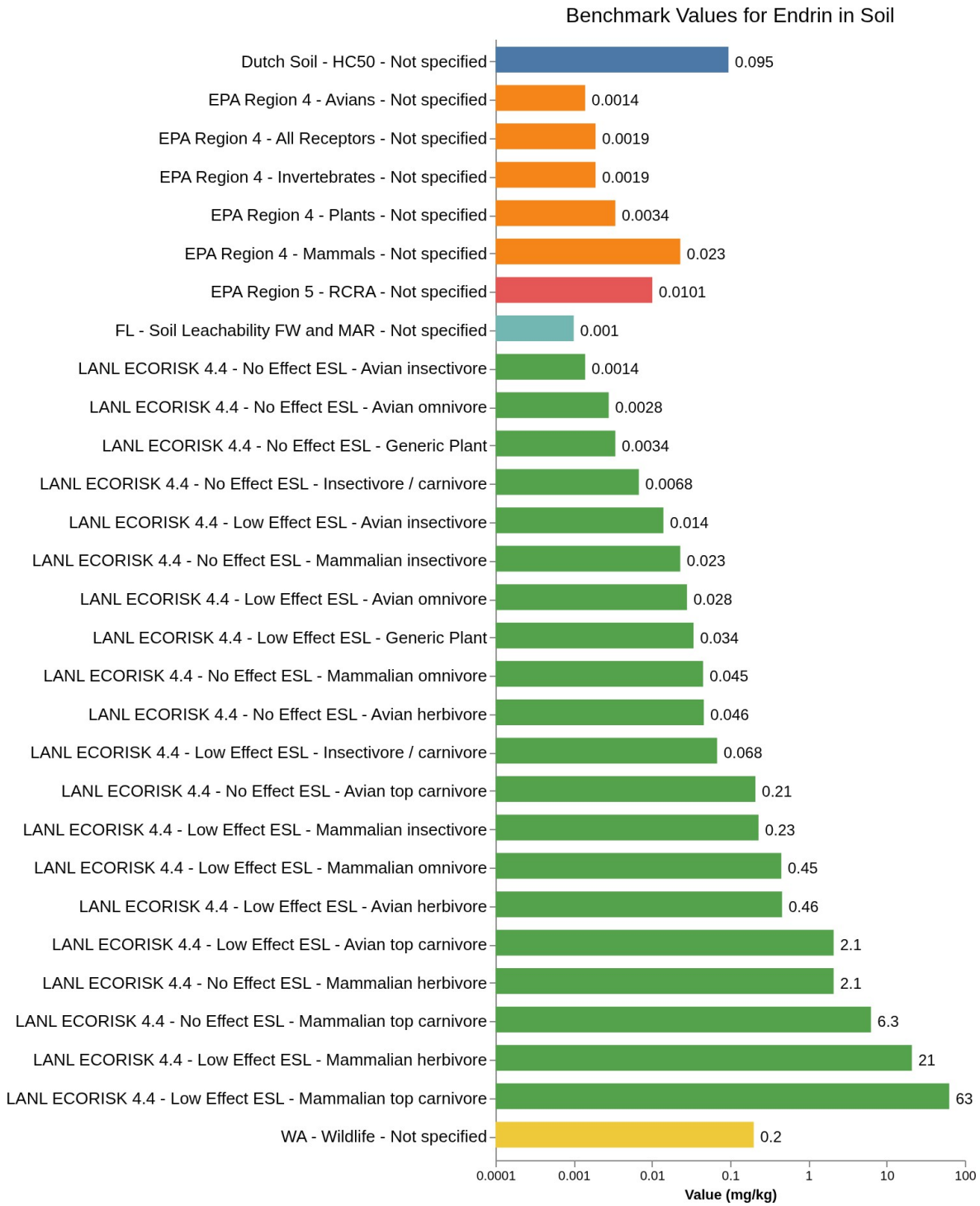

Benchmark Values for Endrin in Soil
Dutch Soil - HC50 - Not specified
0.095
EPA Region 4 - Avians - Not specified
0.0014
EPA Region 4 - All Receptors - Not specified
0.0019
EPA Region 4 - Invertebrates - Not specified
0.0019
EPA Region 4 - Plants - Not specified
0.0034
EPA Region 4 - Mammals - Not specified
0.023
EPA Region 5 - RCRA - Not specified
0.0101
FL - Soil Leachability FW and MAR - Not specified
0.001
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
0.0014
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
0.0028
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
0.0034
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
0.0068
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
0.014
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
0.023
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
0.028
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
0.034
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
0.045
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
0.046
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
0.068
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
0.21
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
0.23
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
0.45
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
0.46
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
2.1
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
2.1
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
6.3
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
21
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
63
WA - Wildlife - Not specified
0.2
0.0001
0.001
0.01
0.1
1
10
100
Value (mg/kg)

Table 235: Benchmark Values for Epichlorohydrin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
106−89−8	Florida	Soil Leachability Freshwater and Marine	Not specified	1.1

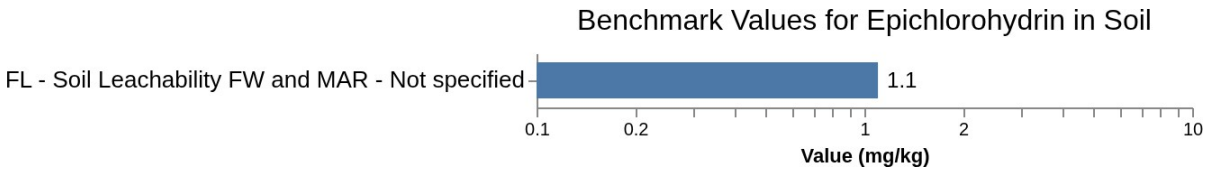


Table 236: Benchmark Values for Ethion in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
563−12−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.003

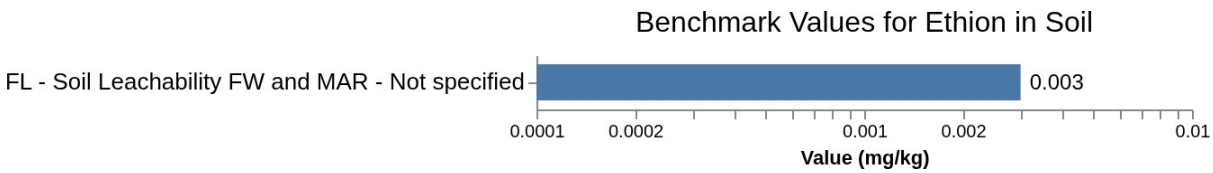


Table 237: Benchmark Values for Ethoprop in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
13194−48−4	Florida	Soil Leachability Freshwater and Marine	Not specified	0.002

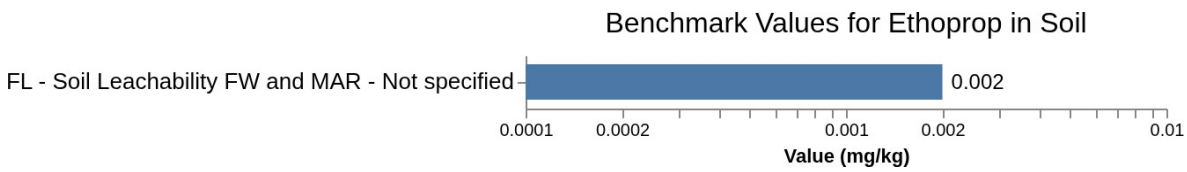


Table 238: Benchmark Values for Ethoxyethanol Acetate, 2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
111−15−9	Florida	Soil Leachability Freshwater and Marine	Not specified	8.4

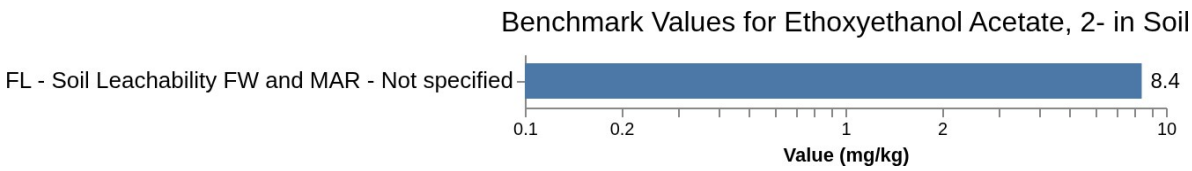


Table 239: Benchmark Values for Ethyl Acetate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
141−78−6	Dutch Soil Protection Act	Background	Not specified	2	71
141−78−6	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	68	
141−78−6	Dutch Soil Protection Act	Intervention Value	Not specified	75	73
141−78−6	Florida	Soil Leachability Freshwater and Marine	Not specified	26	

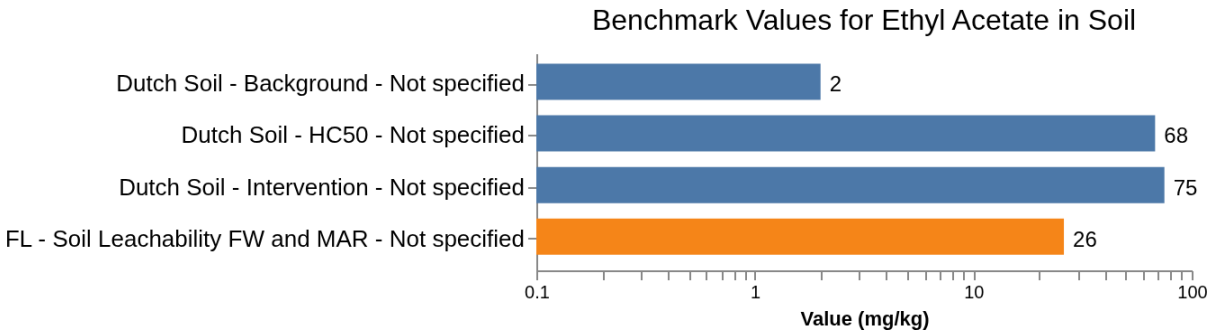


Table 240: Benchmark Values for Ethyl Acrylate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
140−88−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.6

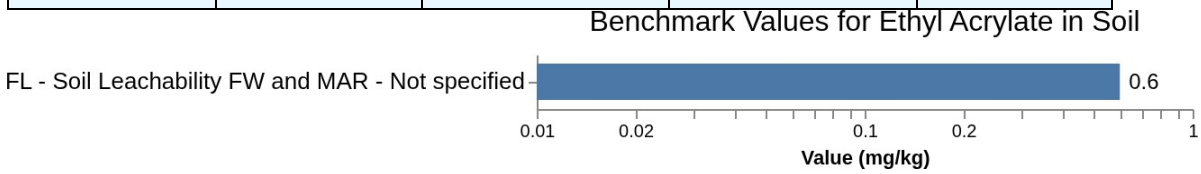


Table 241: Benchmark Values for Ethyl dipropylthiocarbamate, S− (EPTC) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
759−94−4	Florida	Soil Leachability Freshwater and Marine	Not specified	15

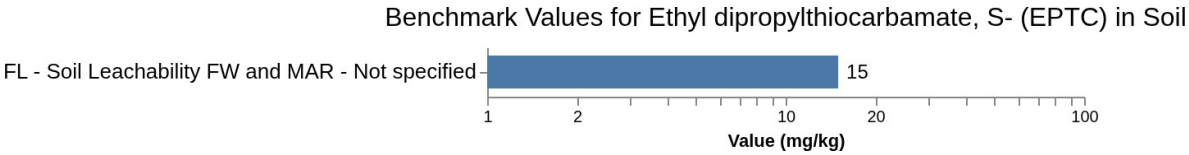


Table 242: Benchmark Values for Ethyl Ether in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
60−29−7	Florida	Soil Leachability Freshwater and Marine	Not specified	850

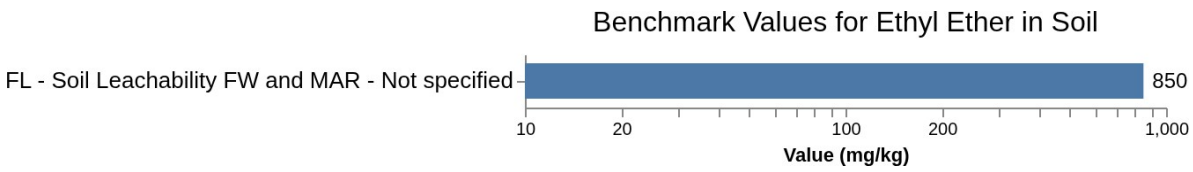


Table 243: Benchmark Values for Ethyl Methacrylate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
97−63−2	EPA Region 5	EPA RCRA Soil	Not specified	30

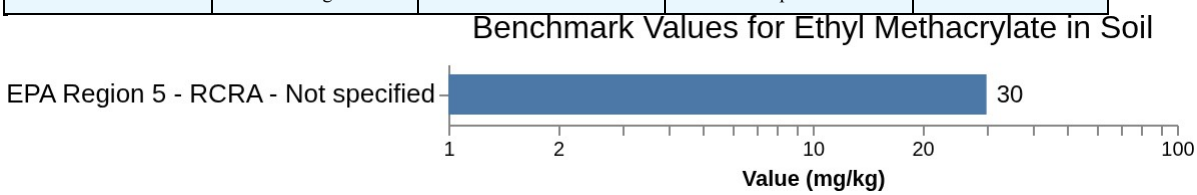


Table 244: Benchmark Values for Ethylbenzene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
100−41−4	Canada	Soil Residential/Parkland	Not specified		37
100−41−4	Canada	Soil Industrial	Not specified		37
100−41−4	Canada	Soil Agricultural	Not specified		37
100−41−4	Canada	Soil Commercial	Not specified		37
100−41−4	Dutch Soil Protection Act	Background	Not specified	0.2	71
100−41−4	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	110	
100−41−4	Dutch Soil Protection Act	Intervention Value	Not specified	110	
100−41−4	EPA Region 4	Soil All Receptors	Not specified	0.27	
100−41−4	EPA Region 4	Soil Invertebrates	Not specified	0.27	
100−41−4	EPA Region 4	Soil Mammals	Not specified	5.16	
100−41−4	EPA Region 5	EPA RCRA Soil	Not specified	5.16	
100−41−4	Florida	Soil Leachability Freshwater and Marine	Not specified	12	

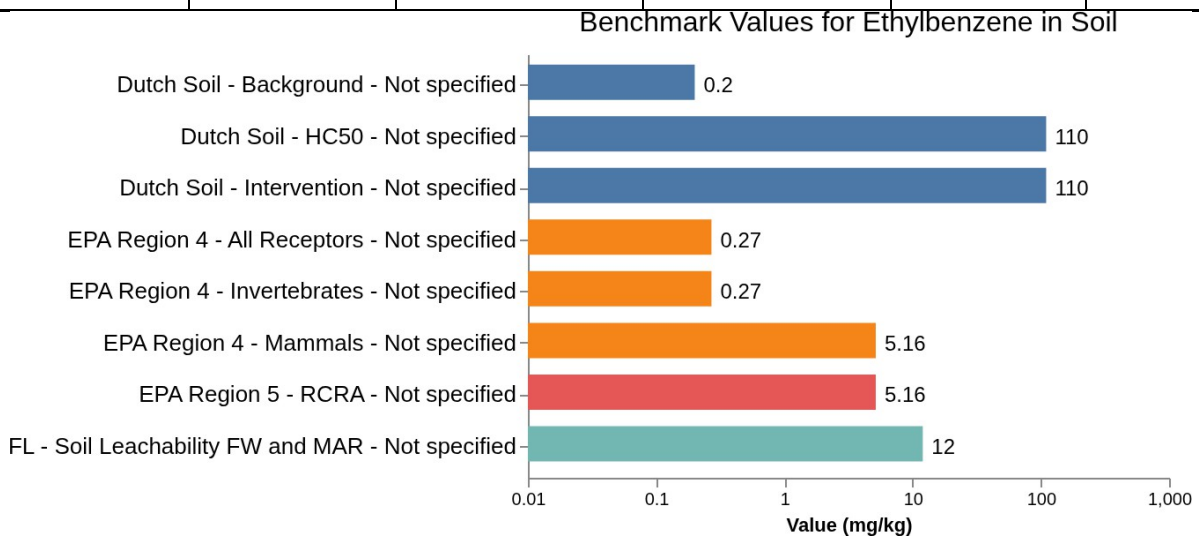


Table 245: Benchmark Values for Ethylene Diamine in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
107−15−3	Florida	Soil Leachability Freshwater and Marine	Not specified	3.2

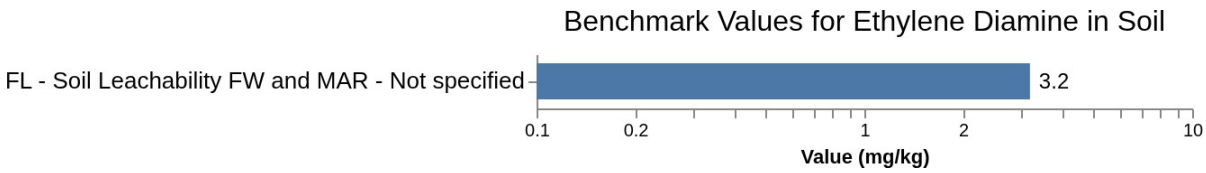


Table 246: Benchmark Values for Ethylene Glycol in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
107−21−1	Canada	Soil Residential/Parkland	Not specified	960.00	
107−21−1	Canada	Soil Commercial	Not specified	960.00	
107−21−1	Canada	Soil Agricultural	Not specified	960.00	
107−21−1	Canada	Soil Industrial	Not specified	960.00	
107−21−1	Dutch Soil Protection Act	Background	Not specified	5.00	
107−21−1	Dutch Soil Protection Act	Intervention Value	Not specified	100.00	73
107−21−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	900.00	
107−21−1	EPA Region 4	Soil All Receptors	Not specified	0.31	
107−21−1	EPA Region 4	Soil Invertebrates	Not specified	0.31	
107−21−1	Florida	Soil Leachability Freshwater and Marine	Not specified	65.00	

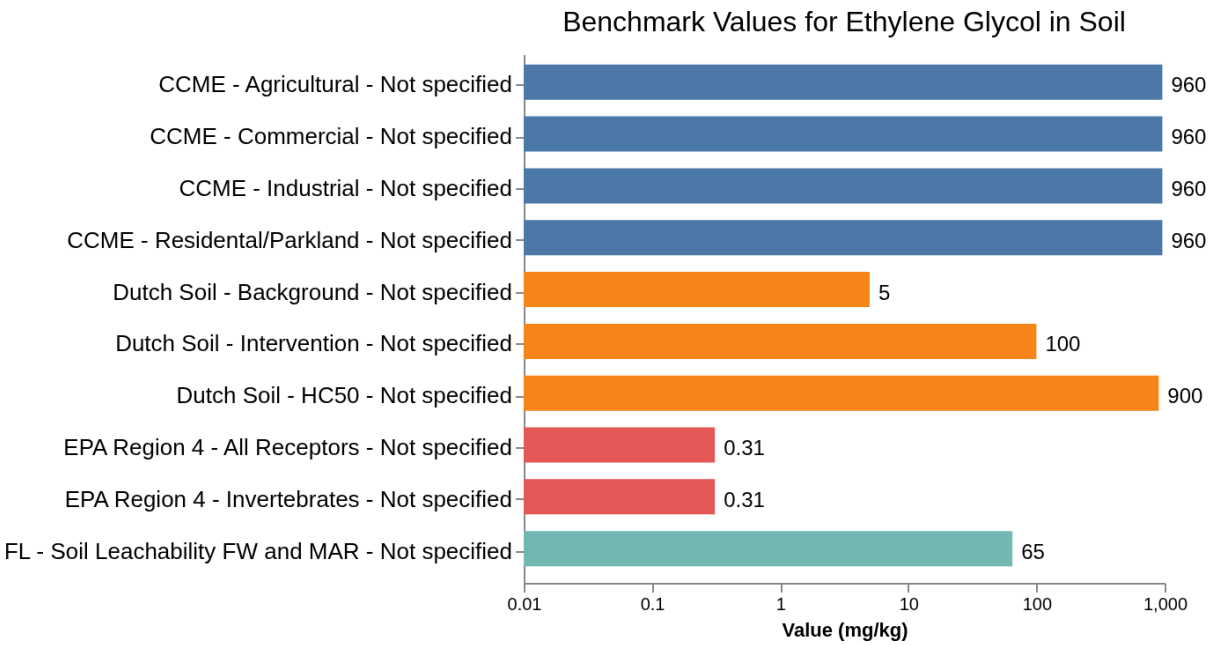


Table 247: Benchmark Values for Ethylene Oxide in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
75−21−8	Florida	Soil Leachability Freshwater and Marine	Not specified	20

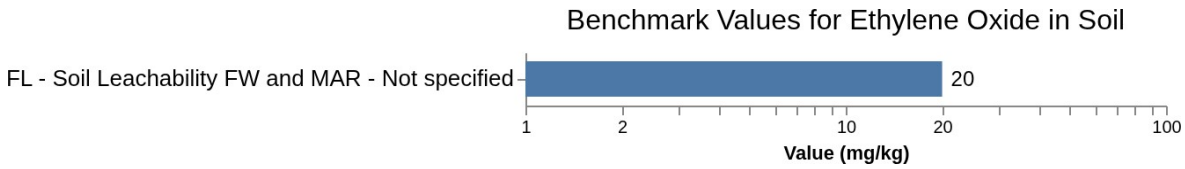


Table 248: Benchmark Values for Ethylene Thiourea in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
96−45−7	Florida	Soil Leachability Freshwater and Marine	Not specified	5.6

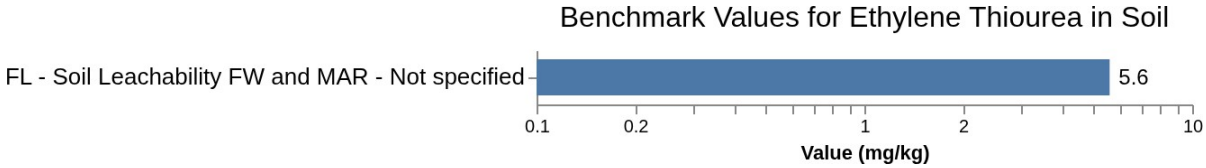


Table 249: Benchmark Values for Ethyl−p−nitrophenyl Phosphonate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
2104−64−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.003

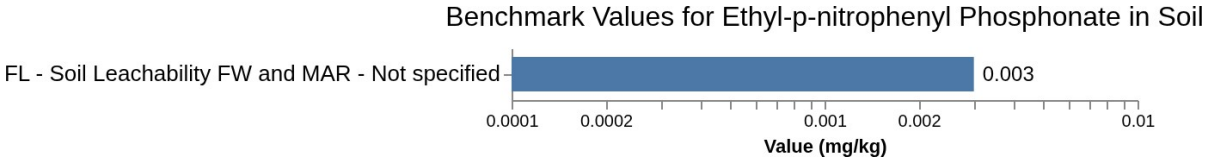


Table 250: Benchmark Values for Famphur in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
52−85−7	EPA Region 5	EPA RCRA Soil	Not specified	0.0497

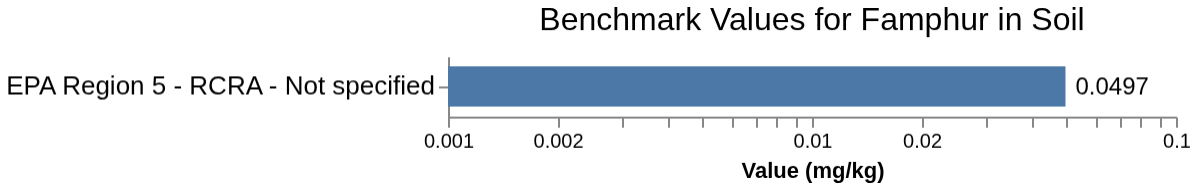


Table 251: Benchmark Values for Fenamiphos in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
22224−92−6	Florida	Soil Leachability Freshwater and Marine	Not specified	0.003

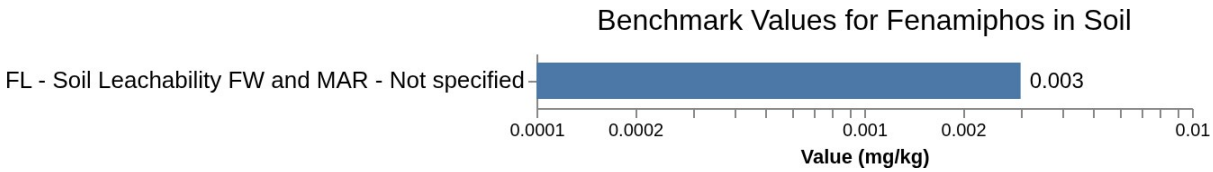


Table 252: Benchmark Values for Fensulfothion in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
115−90−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.004

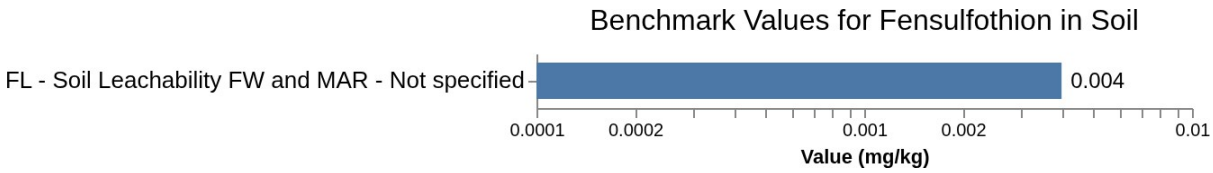


Table 253: Benchmark Values for Fenvalerate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
51630−58−1	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0001

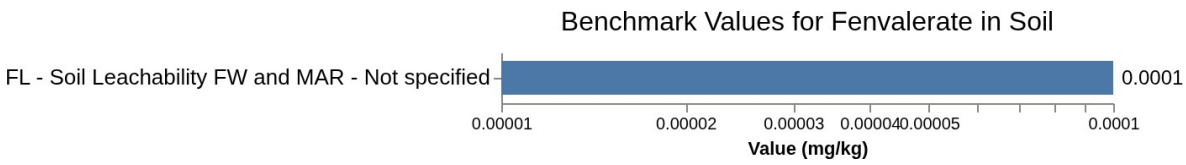


Table 254: Benchmark Values for Fluometuron in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
2164−17−2	Florida	Soil Leachability Freshwater and Marine	Not specified	1.8

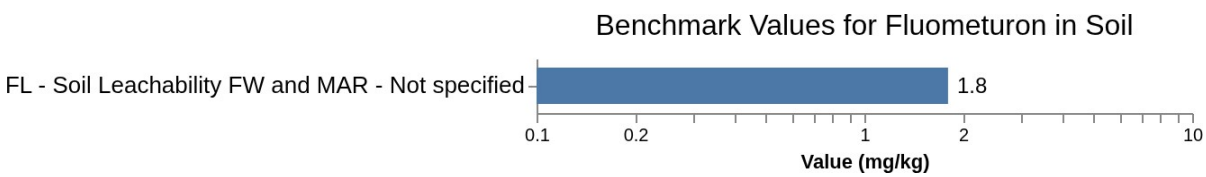


Table 255: Benchmark Values for Fluoranthene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
206−44−0	Canada	Soil Industrial	Not specified		36
206−44−0	Canada	Soil Commercial	Not specified		36
206−44−0	Canada	Soil Agricultural	Not specified		36
206−44−0	Canada	Soil Residential/Parkland	Not specified		36
206−44−0	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	260	
206−44−0	EPA Region 4	Soil All Receptors	Not specified	1.1	7
206−44−0	EPA Region 4	Soil Invertebrates	Not specified	10	7
206−44−0	EPA Region 4	Soil Mammals	Not specified	22	7
206−44−0	EPA Region 5	EPA RCRA Soil	Not specified	122	
206−44−0	Florida	Soil Leachability Freshwater and Marine	Not specified	1.3	
206−44−0	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	10	
206−44−0	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	22	
206−44−0	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	23	
206−44−0	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	38	
206−44−0	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	220	
206−44−0	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	270	
206−44−0	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	380	
206−44−0	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	2700	
206−44−0	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	3900	
206−44−0	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	39000	

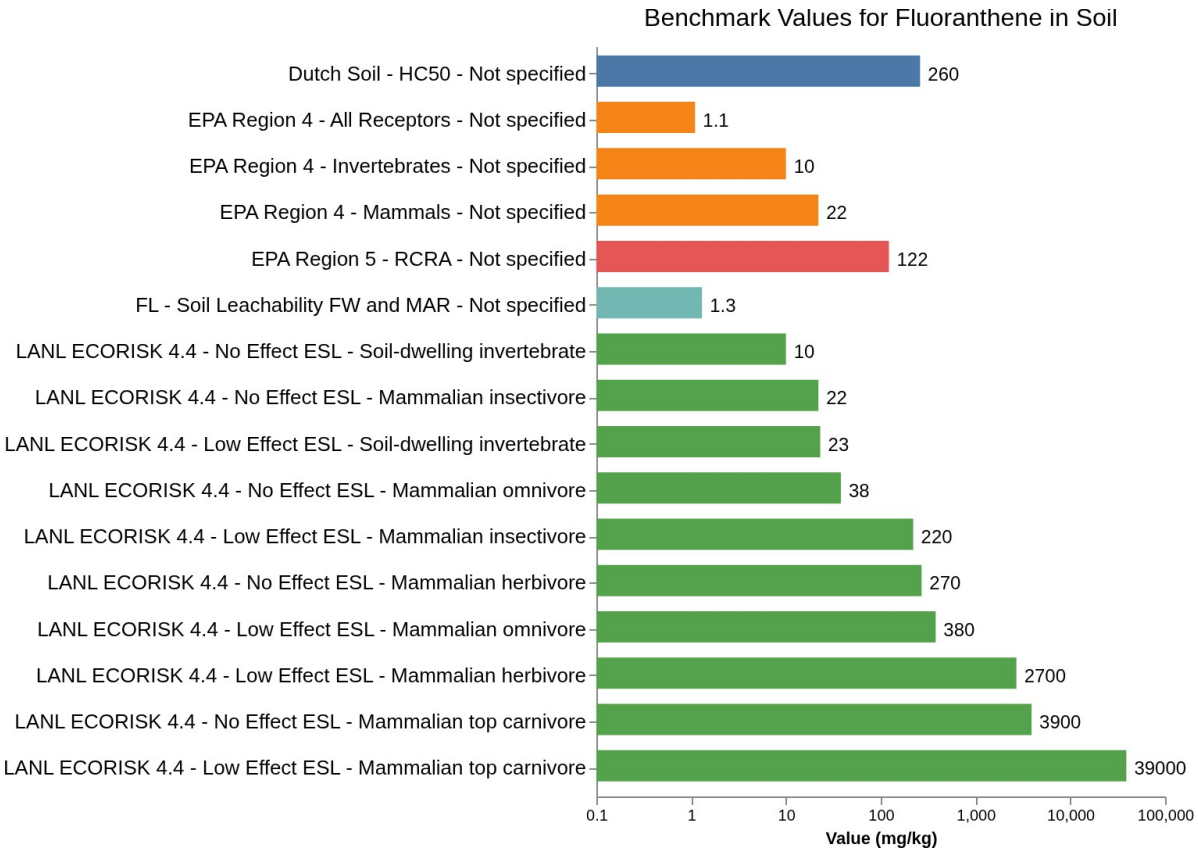

Benchmark Values for Fluoranthene in Soil
Dutch Soil - HC50 - Not specified
260
EPA Region 4 - All Receptors - Not specified
1.1
EPA Region 4 - Invertebrates - Not specified
10
EPA Region 4 - Mammals - Not specified
22
EPA Region 5 - RCRA - Not specified
122
FL - Soil Leachability FW and MAR - Not specified
1.3
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
10
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
22
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
23
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
38
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
220
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
270
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
380
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
2700
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
3900
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
39000
0.1
1
10
100
1,000
10,000
100,000
Value (mg/kg)

Table 256: Benchmark Values for Fluorene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
86−73−7	Canada	Soil Residential/Parkland	Not specified		36
86−73−7	Canada	Soil Industrial	Not specified		36
86−73−7	Canada	Soil Agricultural	Not specified		36
86−73−7	Canada	Soil Commercial	Not specified		36
86−73−7	EPA Region 4	Soil Invertebrates	Not specified	3.7	
86−73−7	EPA Region 4	Soil All Receptors	Not specified	29	
86−73−7	EPA Region 4	Soil Mammals	Not specified	250	
86−73−7	EPA Region 5	EPA RCRA Soil	Not specified	122	
86−73−7	Florida	Soil Leachability Freshwater and Marine	Not specified	17	
86−73−7	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	3.7	
86−73−7	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	19	
86−73−7	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	250	
86−73−7	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	340	
86−73−7	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	510	
86−73−7	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	680	
86−73−7	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	1100	
86−73−7	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	2300	
86−73−7	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	50000	
86−73−7	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	100000	
86−73−7	ORNL	Soil Screening − Invertebrates	Not specified	30	

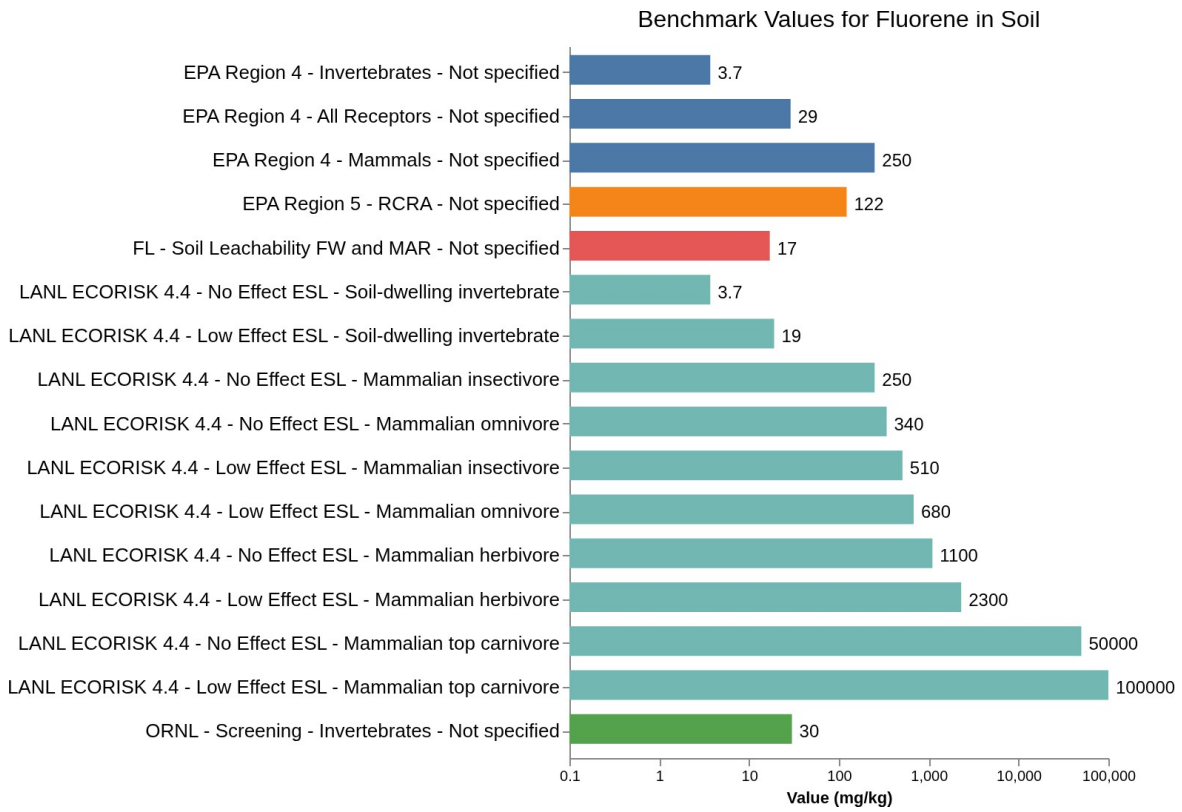

Benchmark Values for Fluorene in Soil
EPA Region 4 - Invertebrates - Not specified
3.7
EPA Region 4 - All Receptors - Not specified
29
EPA Region 4 - Mammals - Not specified
250
EPA Region 5 - RCRA - Not specified
122
FL - Soil Leachability FW and MAR - Not specified
17
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
3.7
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
19
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
250
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
340
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
510
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
680
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
1100
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
2300
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
50000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
100000
ORNL - Screening - Invertebrates - Not specified
30
0.1
1
10
100
1,000
10,000
100,000
Value (mg/kg)

Table 257: Benchmark Values for Fluoride in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
16984−48−8	Canada	Soil Agricultural	Not specified	200
16984−48−8	Canada	Soil Residential/Parkland	Not specified	400
16984−48−8	Canada	Soil Commercial	Not specified	2000
16984−48−8	Canada	Soil Industrial	Not specified	2000
16984−48−8	EPA Region 4	Soil All Receptors	Not specified	32
16984−48−8	EPA Region 4	Soil Avians	Not specified	120
16984−48−8	EPA Region 4	Soil Mammals	Not specified	870
16984−48−8	Florida	Soil Leachability Marine	Not specified	15000
16984−48−8	LANL ECORISK	Soil No Effect ESL	Avian insectivore	120
16984−48−8	LANL ECORISK	Soil No Effect ESL	Avian omnivore	140
16984−48−8	LANL ECORISK	Soil No Effect ESL	Avian herbivore	170
16984−48−8	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	870
16984−48−8	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	910
16984−48−8	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	1100
16984−48−8	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	1200
16984−48−8	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	1400
16984−48−8	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	1600
16984−48−8	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	1700
16984−48−8	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	2100
16984−48−8	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	2200
16984−48−8	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	2600
16984−48−8	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	4800
16984−48−8	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	9100
16984−48−8	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	13000
16984−48−8	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	22000
16984−48−8	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	24000

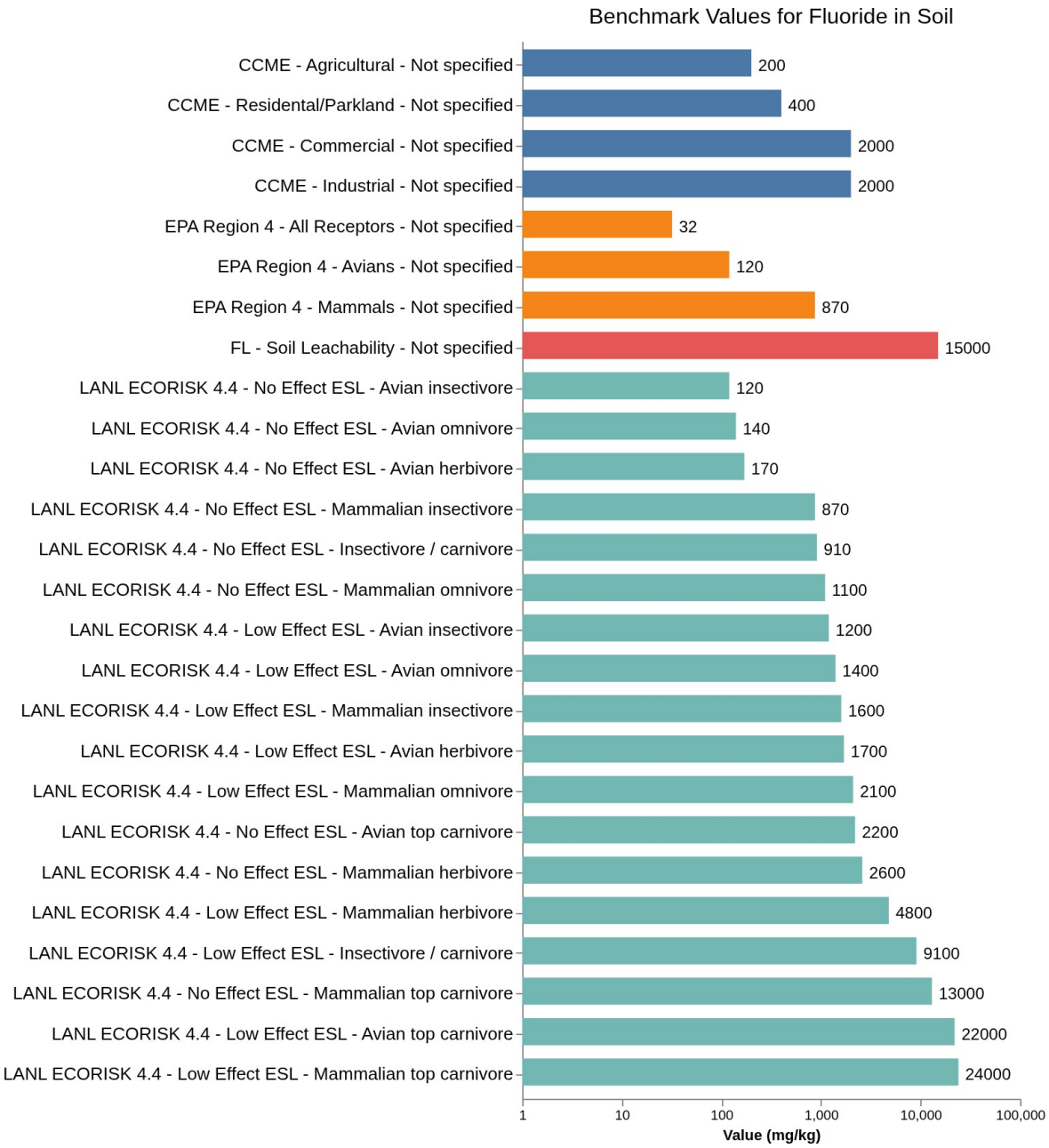

Benchmark Values for Fluoride in Soil
CCME - Agricultural - Not specified
200
CCME - Residental/Parkland - Not specified
400
CCME - Commercial - Not specified
2000
CCME - Industrial - Not specified
2000
EPA Region 4 - All Receptors - Not specified
32
EPA Region 4 - Avians - Not specified
120
EPA Region 4 - Mammals - Not specified
870
FL - Soil Leachability - Not specified
15000
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
120
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
140
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
170
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
870
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
910
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
1100
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
1200
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
1400
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
1600
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
1700
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
2100
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
2200
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
2600
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
4800
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
9100
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
13000
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
22000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
24000
1
10
100
1,000
10,000
100,000
Value (mg/kg)

Table 258: Benchmark Values for Fluorine (Soluble Fluoride) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7782−41−4	EPA Region 4	Soil Plants	Not specified	200
7782−41−4	EPA Region 4	Soil All Receptors	Not specified	200
7782−41−4	EPA Region 6	Soil Plants	Not specified	200
7782−41−4	Florida	Soil Leachability Freshwater	Not specified	30000
7782−41−4	ORNL	Soil Screening − Microbes	Not specified	30
7782−41−4	ORNL	Soil Screening − Plants	Not specified	200

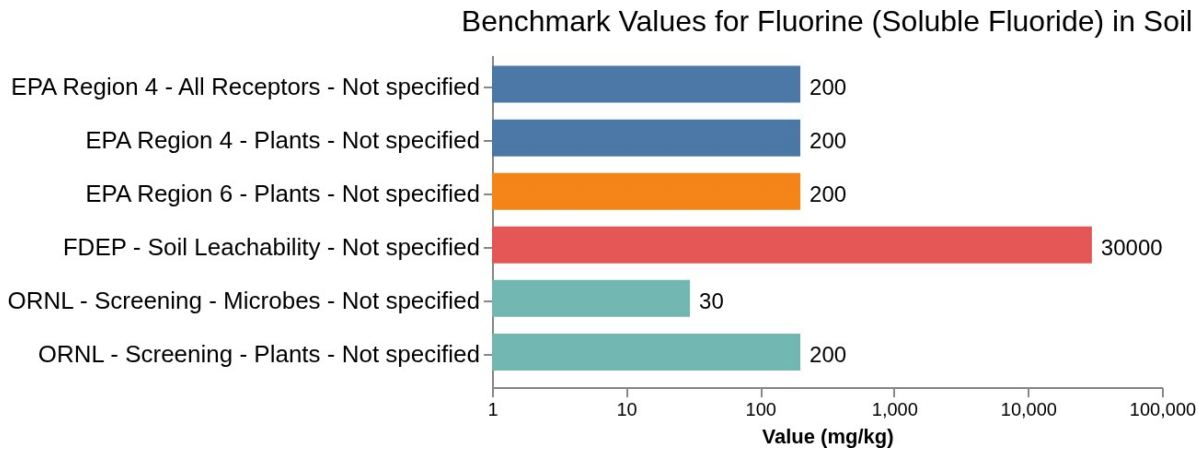


Table 259: Benchmark Values for Fluridone in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
59756−60−4	Florida	Soil Leachability Freshwater and Marine	Not specified	460

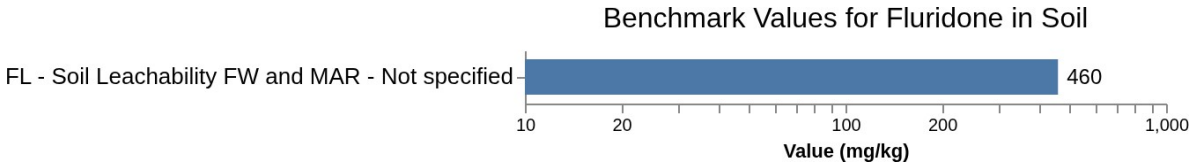


Table 260: Benchmark Values for Fonofos in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
944−22−9	Florida	Soil Leachability Freshwater and Marine	Not specified	0.003

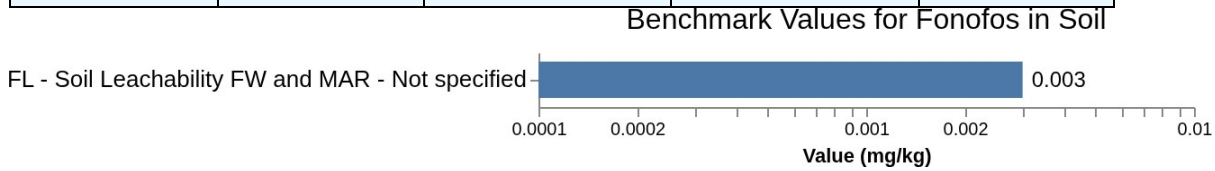


Table 261: Benchmark Values for Formaldehyde in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
50−00−0	Dutch Soil Protection Act	Intervention Value	Not specified	0.1	73
50−00−0	Dutch Soil Protection Act	Background	Not specified	0.1	71
50−00−0	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	0.3	
50−00−0	Florida	Soil Leachability Freshwater and Marine	Not specified	0.4	

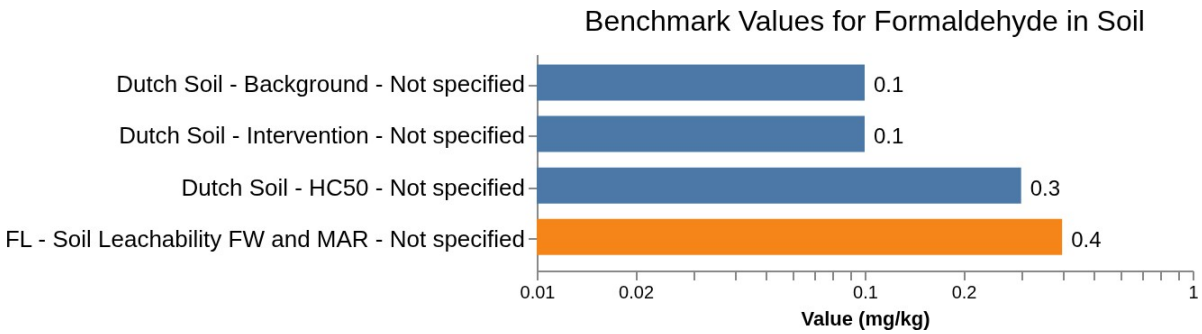


Table 262: Benchmark Values for Furan in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
110−00−9	EPA Region 6	Soil Plants	Not specified	600
110−00−9	ORNL	Soil Screening − Plants	Not specified	600

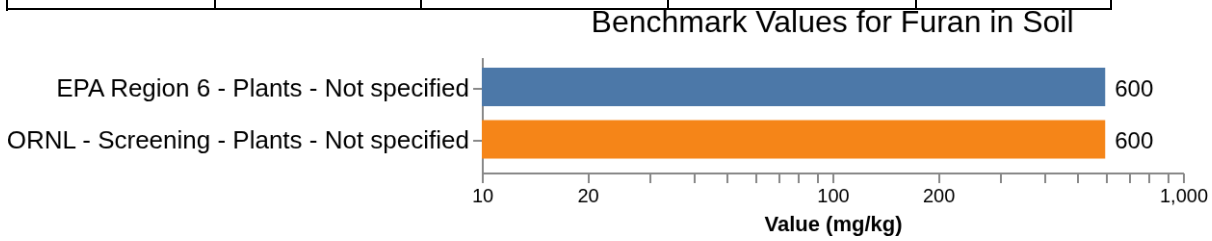


Table 263: Benchmark Values for Furfural in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
98−01−1	Florida	Soil Leachability Freshwater and Marine	Not specified	2.7

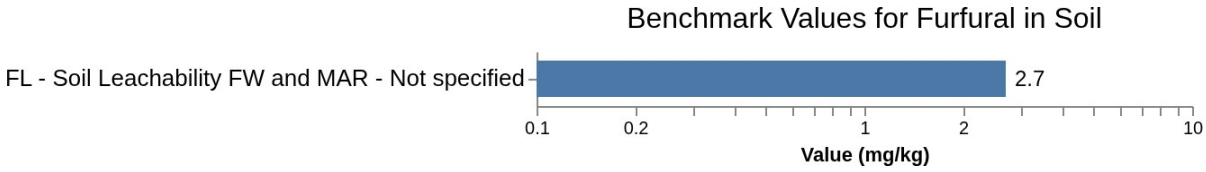


Table 264: Benchmark Values for Glyphosate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
1071−83−6	Florida	Soil Leachability Freshwater and Marine	Not specified	0.5

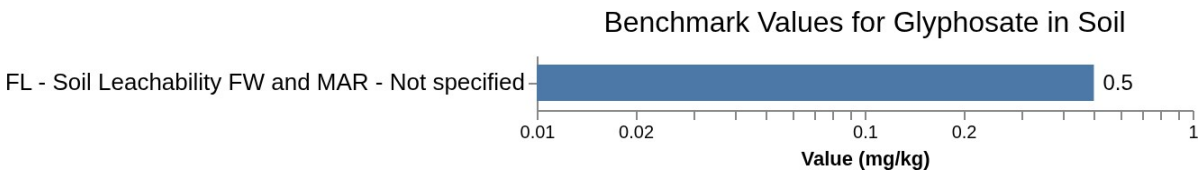


Table 265: Benchmark Values for Heptachlor Epoxide in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
1024−57−3	Dutch Soil Protection Act	Background	Not specified	0.00200	
1024−57−3	Dutch Soil Protection Act	Intervention Value	Not specified	4.00000	
1024−57−3	EPA Region 4	Soil Invertebrates	Not specified	0.00015	
1024−57−3	EPA Region 4	Soil All Receptors	Not specified	0.00015	
1024−57−3	EPA Region 4	Soil Mammals	Not specified	0.15200	
1024−57−3	EPA Region 5	EPA RCRA Soil	Not specified	0.15200	
1024−57−3	Florida	Soil Leachability Freshwater and Marine	Not specified	0.00010	
1024−57−3	Washington	Soil Wildlife	Not specified	0.40000	205

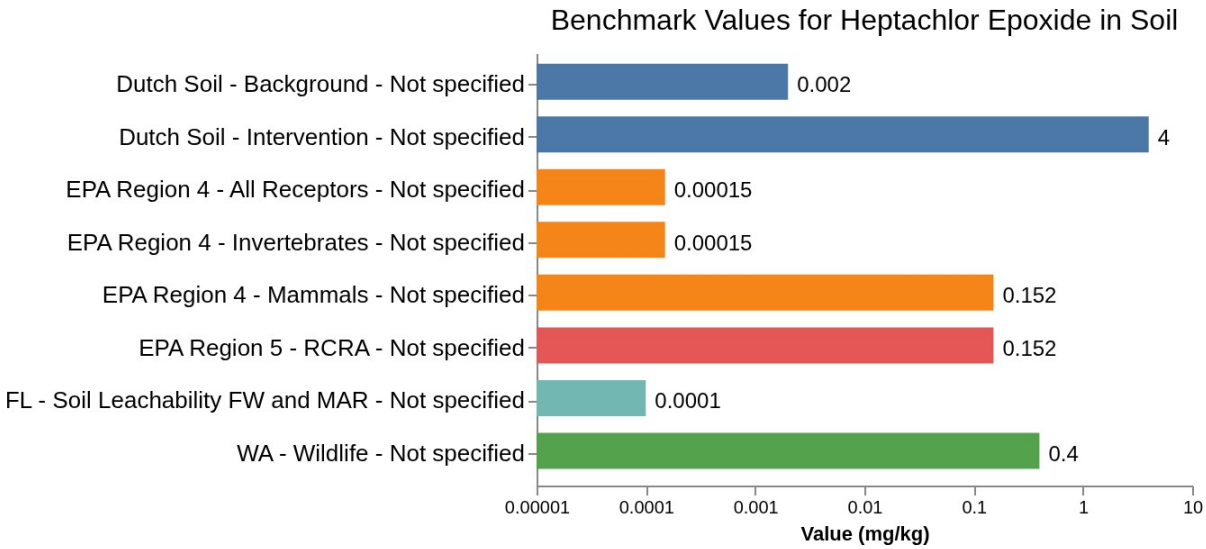


Table 266: Benchmark Values for Heptachlor in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
76−44−8	Dutch Soil Protection Act	Background	Not specified	0.00070	
76−44−8	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	1.00000	
76−44−8	Dutch Soil Protection Act	Intervention Value	Not specified	4.00000	
76−44−8	EPA Region 4	Soil All Receptors	Not specified	0.00160	7
76−44−8	EPA Region 4	Soil Invertebrates	Not specified	0.00160	7
76−44−8	EPA Region 4	Soil Mammals	Not specified	0.05900	7
76−44−8	EPA Region 4	Soil Avians	Not specified	0.30000	7
76−44−8	EPA Region 4	Soil Plants	Not specified	0.40000	7
76−44−8	EPA Region 5	EPA RCRA Soil	Not specified	0.00598	
76−44−8	Florida	Soil Leachability Freshwater and Marine	Not specified	0.01000	
76−44−8	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.05900	
76−44−8	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.11000	
76−44−8	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.30000	
76−44−8	LANL ECORISK	Soil No Effect ESL	Generic Plant	0.40000	
76−44−8	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.59000	
76−44−8	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	0.59000	
76−44−8	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1.10000	
76−44−8	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	1.40000	
76−44−8	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	3.00000	
76−44−8	LANL ECORISK	Soil Low Effect ESL	Generic Plant	4.00000	
76−44−8	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	4.60000	
76−44−8	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	5.90000	
76−44−8	LANL ECORISK	Soil No Effect ESL	Avian herbivore	7.70000	
76−44−8	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	14.00000	
76−44−8	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	15.00000	
76−44−8	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	45.00000	
76−44−8	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	46.00000	
76−44−8	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	77.00000	
76−44−8	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	150.00000	
76−44−8	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	450.00000	
76−44−8	Washington	Soil Wildlife	Not specified	0.40000	205

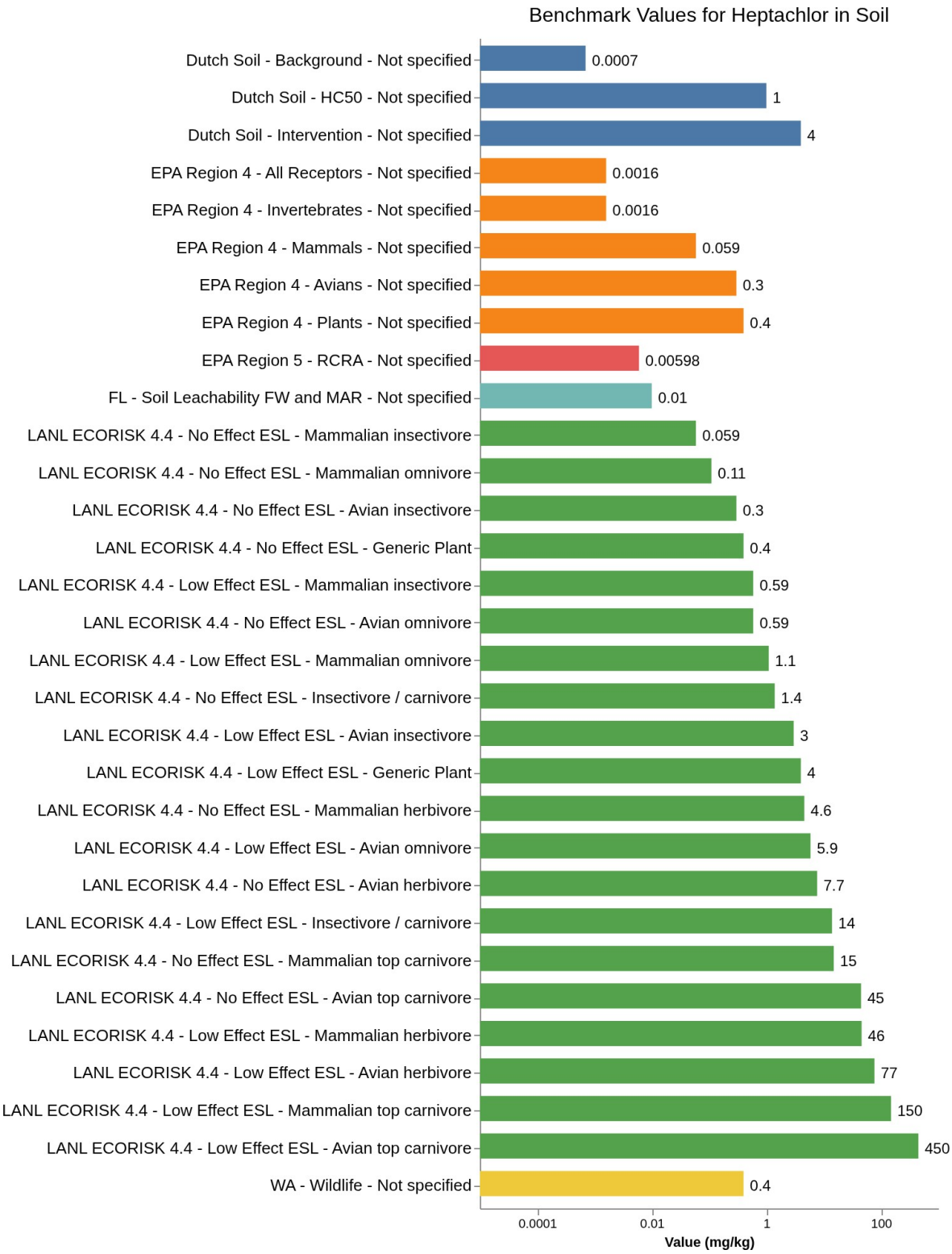

Benchmark Values for Heptachlor in Soil
Dutch Soil - Background - Not specified
0.0007
Dutch Soil - HC50 - Not specified
1
Dutch Soil - Intervention - Not specified
4
EPA Region 4 - All Receptors - Not specified
0.0016
EPA Region 4 - Invertebrates - Not specified
0.0016
EPA Region 4 - Mammals - Not specified
0.059
EPA Region 4 - Avians - Not specified
0.3
EPA Region 4 - Plants - Not specified
0.4
EPA Region 5 - RCRA - Not specified
0.00598
FL - Soil Leachability FW and MAR - Not specified
0.01
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
0.059
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
0.11
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
0.3
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
0.4
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
0.59
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
0.59
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
1.1
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
1.4
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
3
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
4
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
4.6
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
5.9
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
7.7
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
14
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
15
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
45
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
46
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
77
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
150
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
450
WA - Wildlife - Not specified
0.4
0.0001
0.01
1
100
Value (mg/kg)

Table 267: Benchmark Values for Heptachlorodibenzofuran, 1,2,3,4,6,7,8− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
67562−39−4	Washington	Soil Wildlife	Not specified	0.000002	207

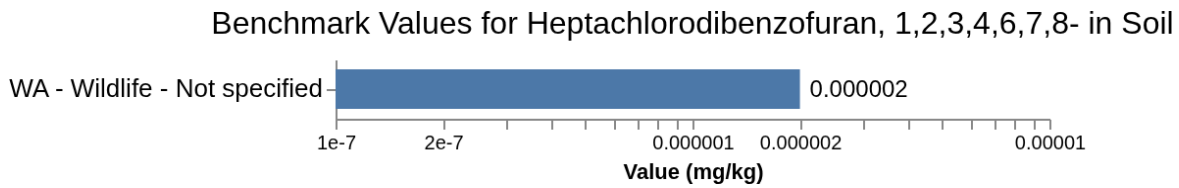


Table 268: Benchmark Values for Hexachlorobenzene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
118−74−1	Canada	Soil Agricultural	Not specified	0.0500	
118−74−1	Canada	Soil Residential/Parkland	Not specified	2.0000	
118−74−1	Canada	Soil Commercial	Not specified	10.0000	
118−74−1	Canada	Soil Industrial	Not specified	10.0000	
118−74−1	Dutch Soil Protection Act	Background	Not specified	0.0085	
118−74−1	Dutch Soil Protection Act	Intervention Value	Not specified	2.0000	
118−74−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	2.0000	
118−74−1	EPA Region 4	Soil All Receptors	Not specified	0.0790	7
118−74−1	EPA Region 4	Soil Avians	Not specified	0.0790	7
118−74−1	EPA Region 4	Soil Mammals	Not specified	0.2000	7
118−74−1	EPA Region 4	Soil Invertebrates	Not specified	10.0000	7
118−74−1	EPA Region 4	Soil Plants	Not specified	10.0000	7
118−74−1	EPA Region 5	EPA RCRA Soil	Not specified	0.1990	
118−74−1	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0006	
118−74−1	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.0790	
118−74−1	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.1500	
118−74−1	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.2000	
118−74−1	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	0.3700	
118−74−1	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.3900	
118−74−1	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	0.7900	
118−74−1	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	1.5000	
118−74−1	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	2.0000	
118−74−1	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	3.7000	
118−74−1	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	3.9000	
118−74−1	LANL ECORISK	Soil No Effect ESL	Generic Plant	10.0000	
118−74−1	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	10.0000	
118−74−1	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	12.0000	
118−74−1	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	59.0000	
118−74−1	LANL ECORISK	Soil No Effect ESL	Avian herbivore	83.0000	
118−74−1	LANL ECORISK	Soil Low Effect ESL	Generic Plant	100.0000	
118−74−1	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	100.0000	
118−74−1	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	120.0000	
118−74−1	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	590.0000	
118−74−1	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	830.0000	
118−74−1	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	910.0000	
118−74−1	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	9100.0000	
118−74−1	ORNL	Soil Screening − Microbes	Not specified	1000.0000	
118−74−1	UK	Soil Screening Values	Not specified	0.0020	
118−74−1	Washington	Soil Wildlife	Not specified	17.0000	

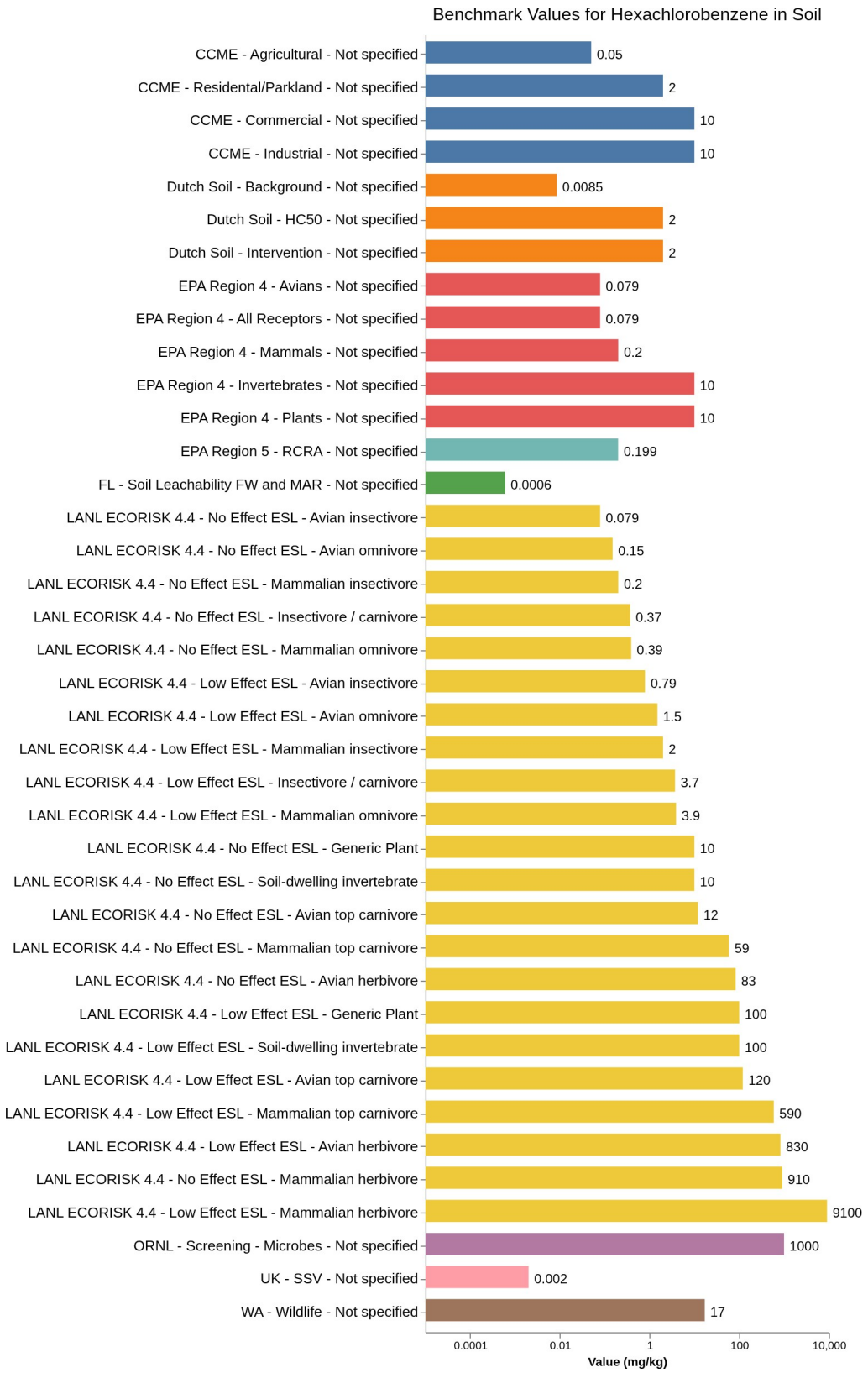

Benchmark Values for Hexachlorobenzene in Soil
CCME - Agricultural - Not specified
0.05
CCME - Residental/Parkland - Not specified
2
CCME - Commercial - Not specified
10
CCME - Industrial - Not specified
10
Dutch Soil - Background - Not specified
0.0085
Dutch Soil - HC50 - Not specified
2
Dutch Soil - Intervention - Not specified
2
EPA Region 4 - Avians - Not specified
0.079
EPA Region 4 - All Receptors - Not specified
0.079
EPA Region 4 - Mammals - Not specified
0.2
EPA Region 4 - Invertebrates - Not specified
10
EPA Region 4 - Plants - Not specified
10
EPA Region 5 - RCRA - Not specified
0.199
FL - Soil Leachability FW and MAR - Not specified
0.0006
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
0.079
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
0.15
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
0.2
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
0.37
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
0.39
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
0.79
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
1.5
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
2
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
3.7
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
3.9
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
10
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
10
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
12
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
59
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
83
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
100
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
100
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
120
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
590
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
830
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
910
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
9100
ORNL - Screening - Microbes - Not specified
1000
UK - SSV - Not specified
0.002
WA - Wildlife - Not specified
17
0.0001
0.01
1
100
10,000
Value (mg/kg)

Table 269: Benchmark Values for Hexachlorobutadiene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
87−68−3	Dutch Soil Protection Act	Background	Not specified	0.0030	71
87−68−3	EPA Region 4	Soil All Receptors	Not specified	0.0090	7
87−68−3	EPA Region 4	Soil Invertebrates	Not specified	0.0090	7
87−68−3	EPA Region 4	Soil Mammals	Not specified	0.0400	7
87−68−3	EPA Region 5	EPA RCRA Soil	Not specified	0.0398	
87−68−3	Florida	Soil Leachability Freshwater and Marine	Not specified	110.0000	

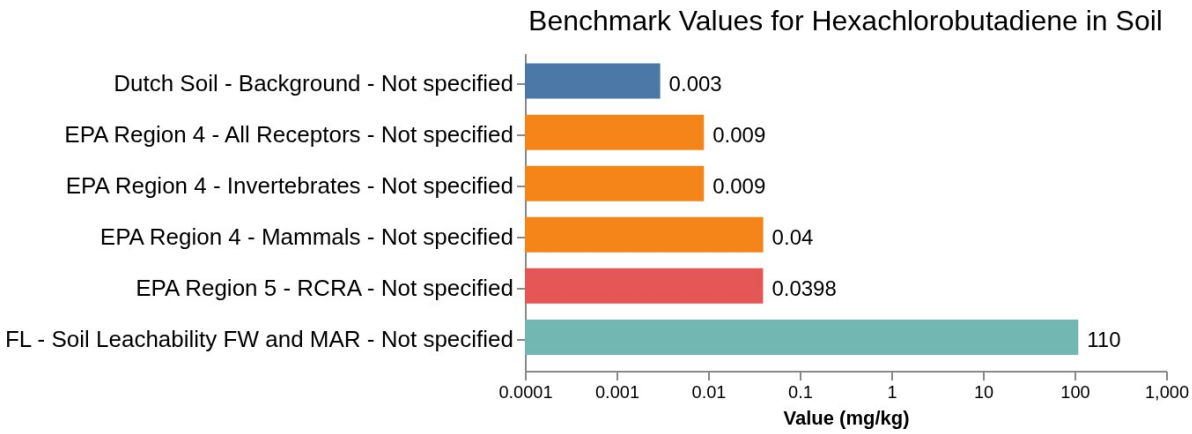


Table 270: Benchmark Values for Hexachlorocyclohexane, (total) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
000000−02−2	Washington	Soil Wildlife	Not specified	6	206

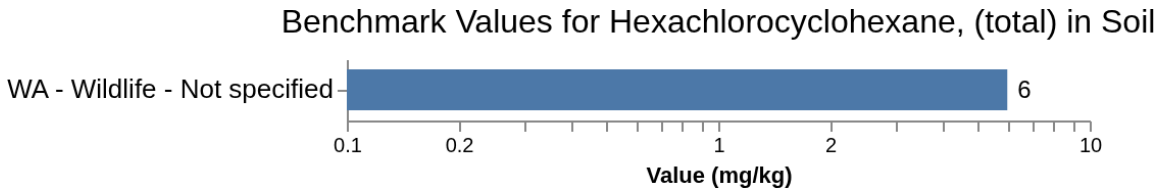


Table 271: Benchmark Values for Hexachlorocyclohexane, Alpha− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
319−84−6	Dutch Soil Protection Act	Background	Not specified	0.0010	
319−84−6	Dutch Soil Protection Act	Intervention Value	Not specified	17.0000	
319−84−6	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	17.0000	
319−84−6	EPA Region 4	Soil Invertebrates	Not specified	0.0000	7
319−84−6	EPA Region 4	Soil All Receptors	Not specified	0.0003	7
319−84−6	EPA Region 4	Soil Mammals	Not specified	59.0000	7
319−84−6	EPA Region 5	EPA RCRA Soil	Not specified	0.0994	
319−84−6	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0003	
319−84−6	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	59.0000	
319−84−6	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	100.0000	
319−84−6	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	590.0000	
319−84−6	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	800.0000	
319−84−6	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1000.0000	
319−84−6	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	8000.0000	
319−84−6	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	18000.0000	
319−84−6	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	180000.0000	
319−84−6	Washington	Soil Wildlife	Not specified	6.0000	206

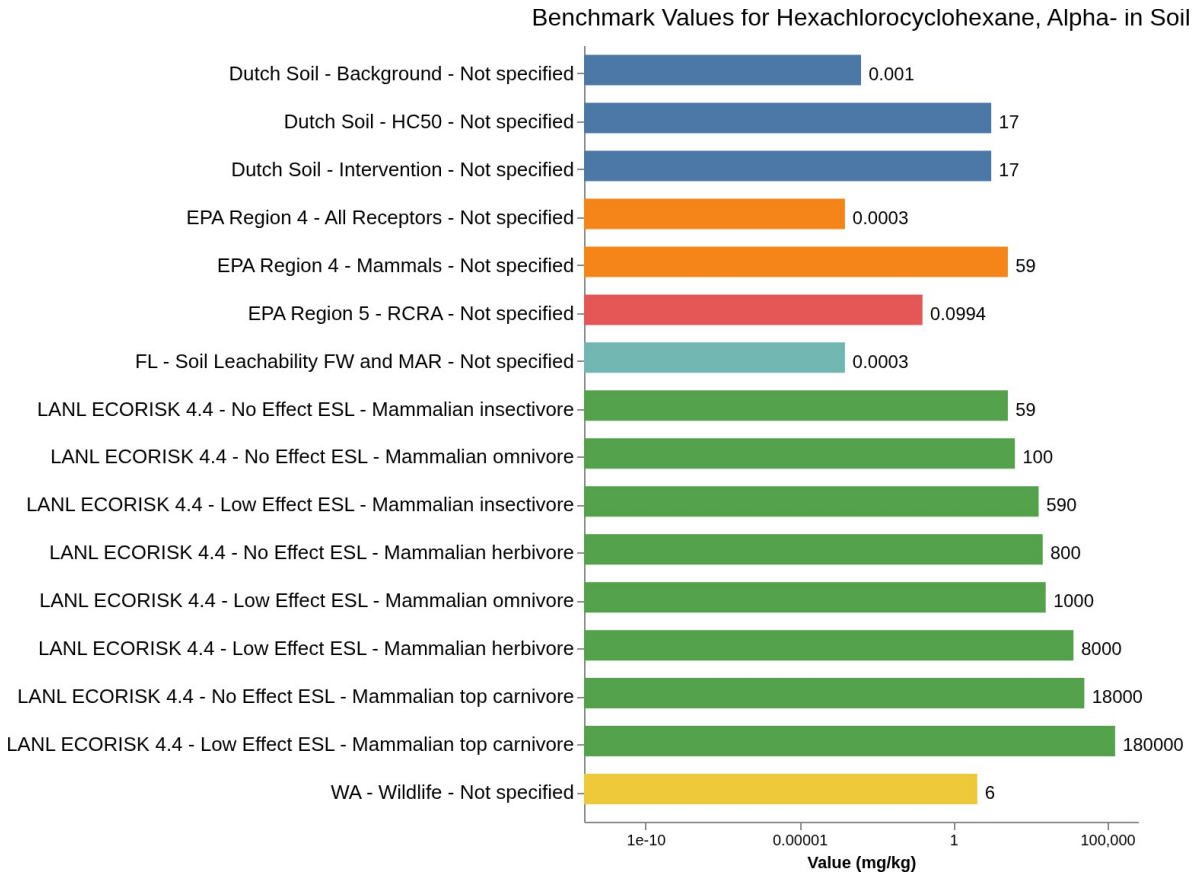

Benchmark Values for Hexachlorocyclohexane, Alpha- in Soil
Dutch Soil - Background - Not specified
0.001
Dutch Soil - HC50 - Not specified
17
Dutch Soil - Intervention - Not specified
17
EPA Region 4 - All Receptors - Not specified
0.0003
EPA Region 4 - Mammals - Not specified
59
EPA Region 5 - RCRA - Not specified
0.0994
FL - Soil Leachability FW and MAR - Not specified
0.0003
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
59
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
100
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
590
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
800
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
1000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
8000
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
18000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
180000
WA - Wildlife - Not specified
6
1e-10
0.00001
1
100,000
Value (mg/kg)

Table 272: Benchmark Values for Hexachlorocyclohexane, Beta− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
319−85−7	Dutch Soil Protection Act	Background	Not specified	0.00200	
319−85−7	Dutch Soil Protection Act	Intervention Value	Not specified	1.60000	
319−85−7	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	13.00000	
319−85−7	EPA Region 4	Soil All Receptors	Not specified	0.00030	7
319−85−7	EPA Region 4	Soil Invertebrates	Not specified	0.00030	7
319−85−7	EPA Region 4	Soil Mammals	Not specified	0.27000	7
319−85−7	EPA Region 4	Soil Avians	Not specified	14.00000	7
319−85−7	EPA Region 5	EPA RCRA Soil	Not specified	0.00398	
319−85−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.00300	
319−85−7	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.27000	
319−85−7	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.46000	
319−85−7	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	1.30000	
319−85−7	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	2.30000	
319−85−7	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	3.70000	
319−85−7	LANL ECORISK	Soil No Effect ESL	Avian insectivore	14.00000	
319−85−7	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	18.00000	
319−85−7	LANL ECORISK	Soil No Effect ESL	Avian omnivore	24.00000	
319−85−7	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	69.00000	
319−85−7	LANL ECORISK	Soil No Effect ESL	Avian herbivore	78.00000	
319−85−7	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	83.00000	
319−85−7	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	140.00000	
319−85−7	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	240.00000	
319−85−7	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	410.00000	
319−85−7	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	690.00000	
319−85−7	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	780.00000	
319−85−7	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	2600.00000	
319−85−7	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	26000.00000	
319−85−7	Washington	Soil Wildlife	Not specified	6.00000	206

Benchmark Values for Hexachlorocyclohexane, Beta- in Soil

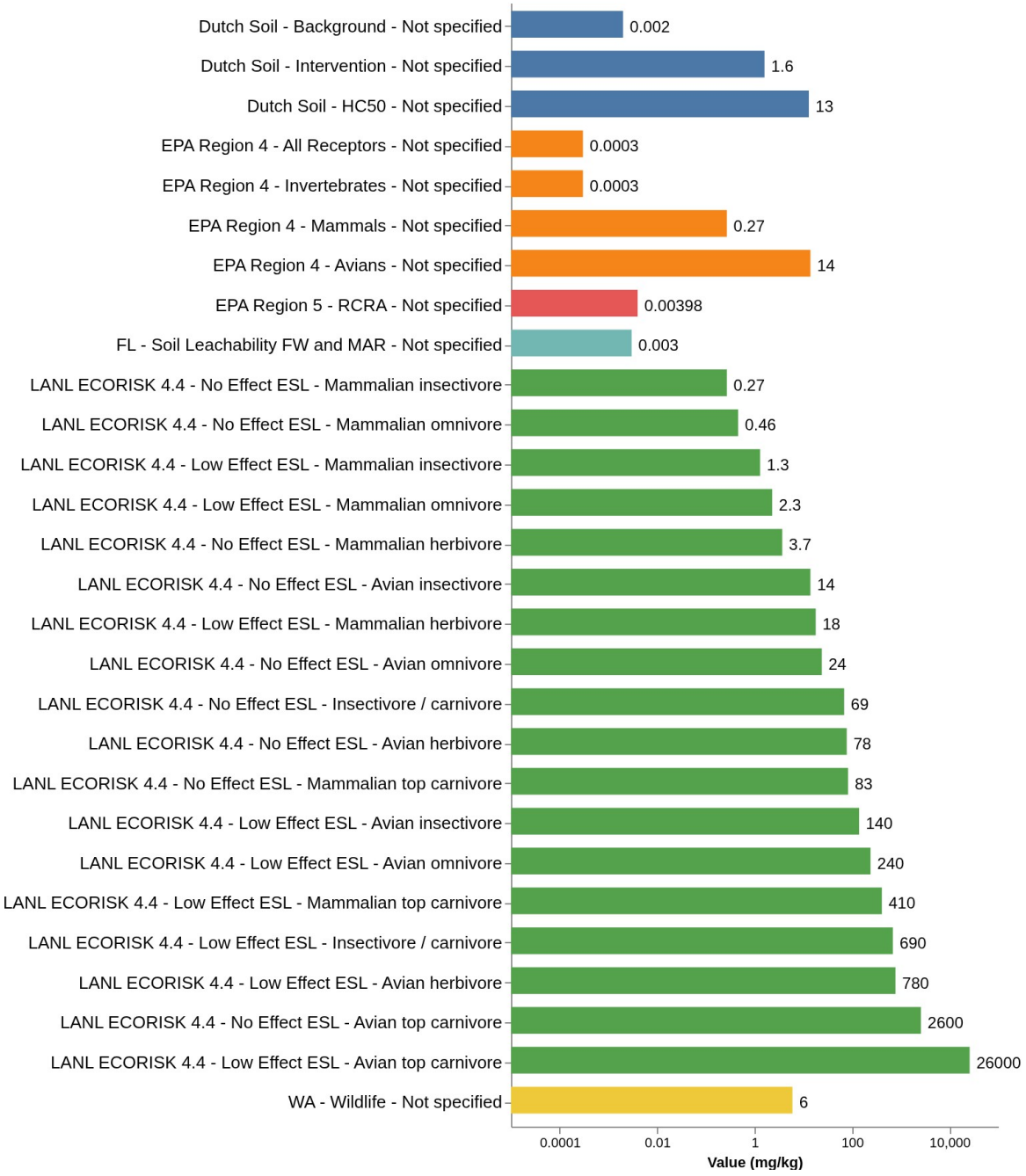


Table 273: Benchmark Values for Hexachlorocyclohexane, Delta− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
319−86−8	EPA Region 5	EPA RCRA Soil	Not specified	0.005	
319−86−8	Washington	Soil Wildlife	Not specified	6.000	206

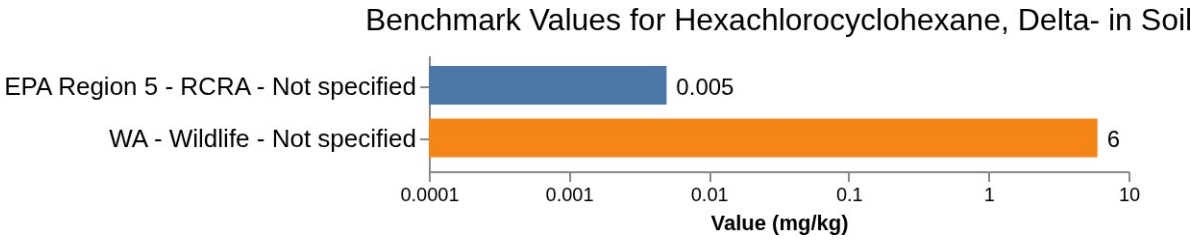


Table 274: Benchmark Values for Hexachlorocyclohexane, Epsilon in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
6108−10−7	Washington	Soil Wildlife	Not specified	6	206

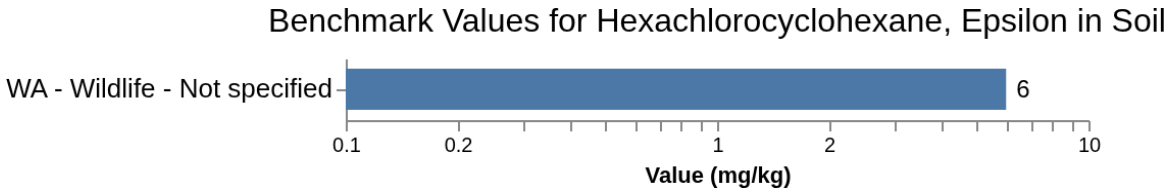


Table 275: Benchmark Values for Hexachlorocyclohexane, Gamma− (Lindane) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
58−89−9	Canada	Soil Agricultural	Not specified	0.0100	
58−89−9	Dutch Soil Protection Act	Background	Not specified	0.0030	
58−89−9	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	1.2000	
58−89−9	Dutch Soil Protection Act	Intervention Value	Not specified	1.2000	
58−89−9	EPA Region 4	Soil All Receptors	Not specified	0.0031	7
58−89−9	EPA Region 4	Soil Invertebrates	Not specified	0.0031	7
58−89−9	EPA Region 4	Soil Mammals	Not specified	0.0095	7
58−89−9	EPA Region 4	Soil Plants	Not specified	0.1000	7
58−89−9	EPA Region 4	Soil Avians	Not specified	0.2100	7
58−89−9	EPA Region 5	EPA RCRA Soil	Not specified	0.0050	
58−89−9	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0030	
58−89−9	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.0095	
58−89−9	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.0160	
58−89−9	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	0.0950	
58−89−9	LANL ECORISK	Soil No Effect ESL	Generic Plant	0.1000	
58−89−9	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	0.1200	
58−89−9	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	0.1600	
58−89−9	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.2100	
58−89−9	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.3500	
58−89−9	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	0.8500	
58−89−9	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	1.0000	
58−89−9	LANL ECORISK	Soil Low Effect ESL	Generic Plant	1.0000	
58−89−9	LANL ECORISK	Soil No Effect ESL	Avian herbivore	1.1000	
58−89−9	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1.2000	
58−89−9	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	1.4000	
58−89−9	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	2.9000	
58−89−9	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	4.0000	
58−89−9	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	4.5000	
58−89−9	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	29.0000	
58−89−9	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	38.0000	
58−89−9	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	150.0000	
58−89−9	Washington	Soil Wildlife	Not specified	6.0000	206

Benchmark Values for Hexachlorocyclohexane, Gamma- (Lindane) in Soil

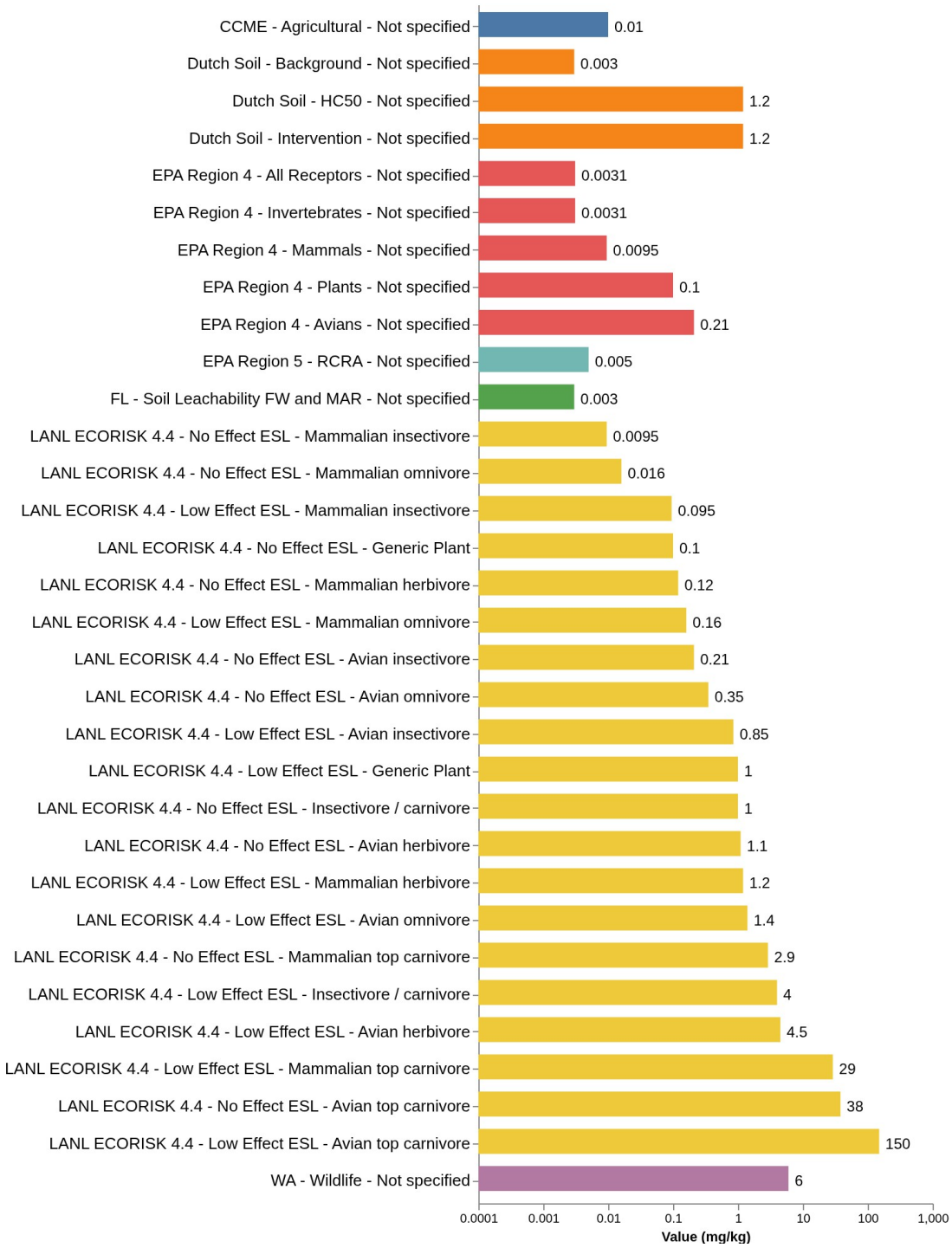


Table 276: Benchmark Values for Hexachlorocyclohexane, Technical in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
608−73−1	Washington	Soil Wildlife	Not specified	6	206

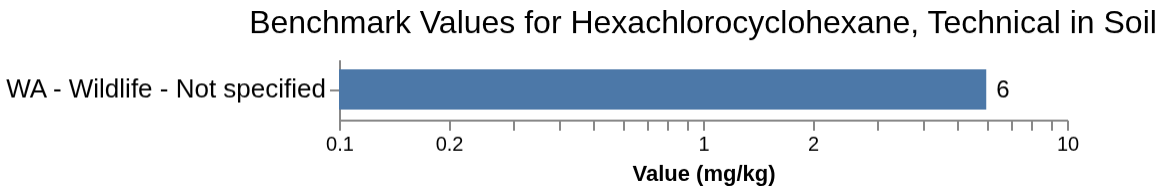


Table 277: Benchmark Values for Hexachlorocyclopentadiene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
77−47−4	EPA Region 4	Soil All Receptors	Not specified	0.0010	7
77−47−4	EPA Region 4	Soil Invertebrates	Not specified	0.0064	7
77−47−4	EPA Region 4	Soil Mammals	Not specified	0.7550	7
77−47−4	EPA Region 4	Soil Plants	Not specified	10.0000	7
77−47−4	EPA Region 5	EPA RCRA Soil	Not specified	0.7550	
77−47−4	EPA Region 6	Soil Plants	Not specified	10.0000	
77−47−4	Florida	Soil Leachability Freshwater and Marine	Not specified	24.0000	
77−47−4	ORNL	Soil Screening − Plants	Not specified	10.0000	

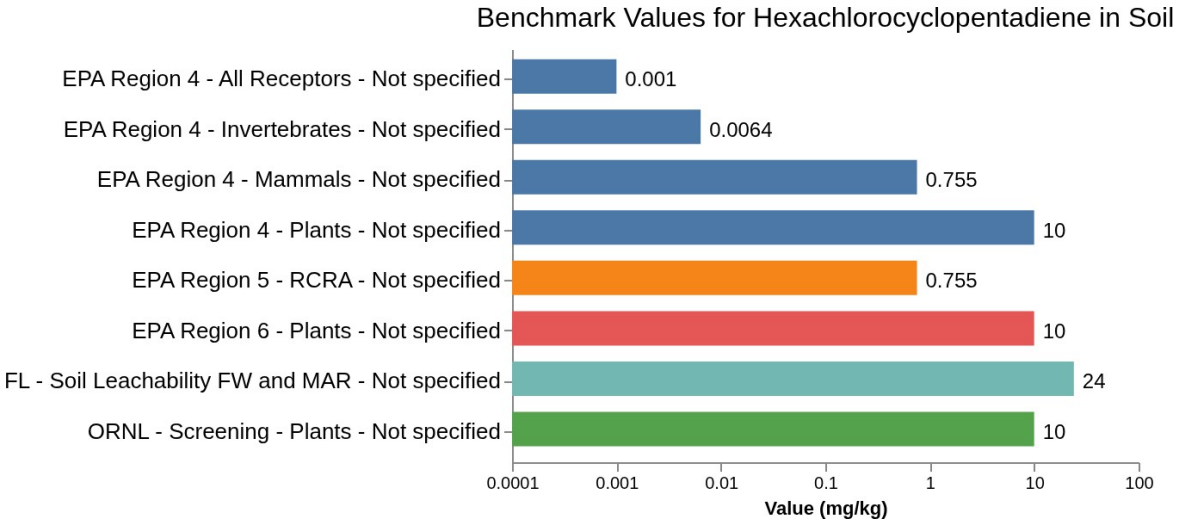


Table 278: Benchmark Values for Hexachlorodibenzofuran, 1,2,3,4,7,8− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
70648−26−9	Washington	Soil Wildlife	Not specified	0.000002	207

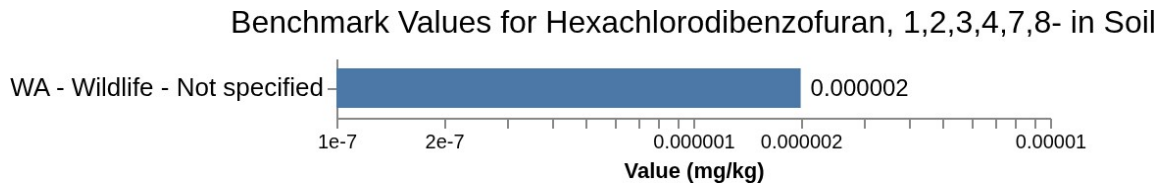


Table 279: Benchmark Values for Hexachlorodibenzo−p−dioxin, 1,2,3,4,7,8− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
39227−28−6	Washington	Soil Wildlife	Not specified	0.000002	208

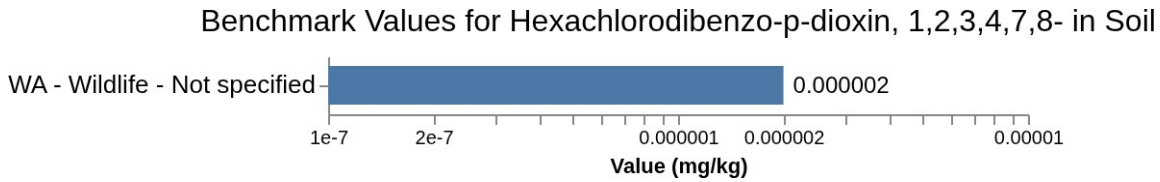


Table 280: Benchmark Values for Hexachlorodibenzo−p−dioxin, Mixture in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
34465−46−8	Washington	Soil Wildlife	Not specified	0.000002	208

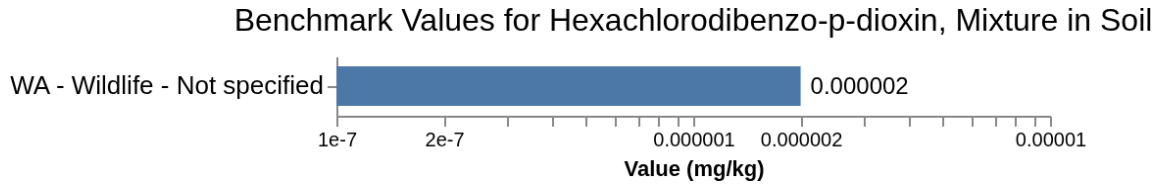


Table 281: Benchmark Values for Hexachloroethane in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
67−72−1	EPA Region 4	Soil All Receptors	Not specified	0.024
67−72−1	EPA Region 4	Soil Invertebrates	Not specified	0.024
67−72−1	EPA Region 4	Soil Mammals	Not specified	0.600
67−72−1	EPA Region 5	EPA RCRA Soil	Not specified	0.596
67−72−1	Florida	Soil Leachability Freshwater and Marine	Not specified	0.200

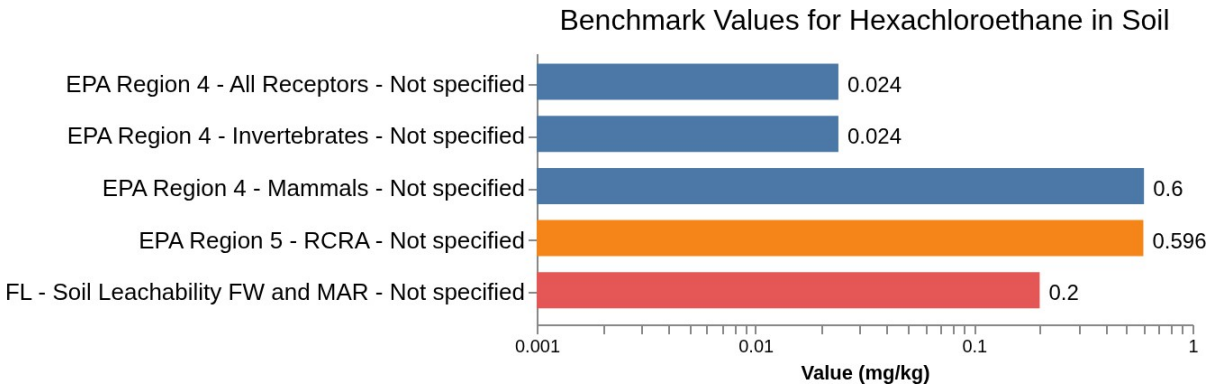


Table 282: Benchmark Values for Hexachlorophene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
70−30−4	EPA Region 5	EPA RCRA Soil	Not specified	0.199
70−30−4	Florida	Soil Leachability Freshwater and Marine	Not specified	26.000

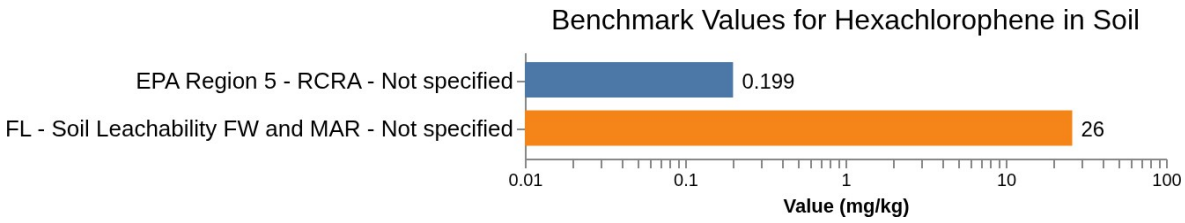


Table 283: Benchmark Values for Hexahydro−1,3,5−trinitro−1,3,5−triazine (RDX) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
121−82−4	EPA Region 4	Soil Avians	Not specified	2.3
121−82−4	EPA Region 4	Soil All Receptors	Not specified	2.3
121−82−4	EPA Region 4	Soil Invertebrates	Not specified	8.4
121−82−4	EPA Region 4	Soil Mammals	Not specified	16.0
121−82−4	EPA Region 4	Soil Plants	Not specified	45.9
121−82−4	EPA Region 6	Soil Plants	Not specified	71.0
121−82−4	EPA Region 6	Soil Invertebrates	Not specified	72.0
121−82−4	Florida	Soil Leachability Freshwater and Marine	Not specified	1.3
121−82−4	LANL ECORISK	Soil No Effect ESL	Avian herbivore	2.3
121−82−4	LANL ECORISK	Soil No Effect ESL	Avian omnivore	2.3
121−82−4	LANL ECORISK	Soil No Effect ESL	Avian insectivore	2.4
121−82−4	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	4.3
121−82−4	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	4.4
121−82−4	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	4.5
121−82−4	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	8.4
121−82−4	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	11.0
121−82−4	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	15.0
121−82−4	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	16.0
121−82−4	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	16.0
121−82−4	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	22.0
121−82−4	LANL ECORISK	Soil No Effect ESL	Generic plant	36.0
121−82−4	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	38.0
121−82−4	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	51.0
121−82−4	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	53.0
121−82−4	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	120.0
121−82−4	LANL ECORISK	Soil Low Effect ESL	Generic plant	360.0
121−82−4	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	780.0
121−82−4	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	1400.0
121−82−4	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	7000.0
121−82−4	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	22000.0

Benchmark Values for Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) in Soil

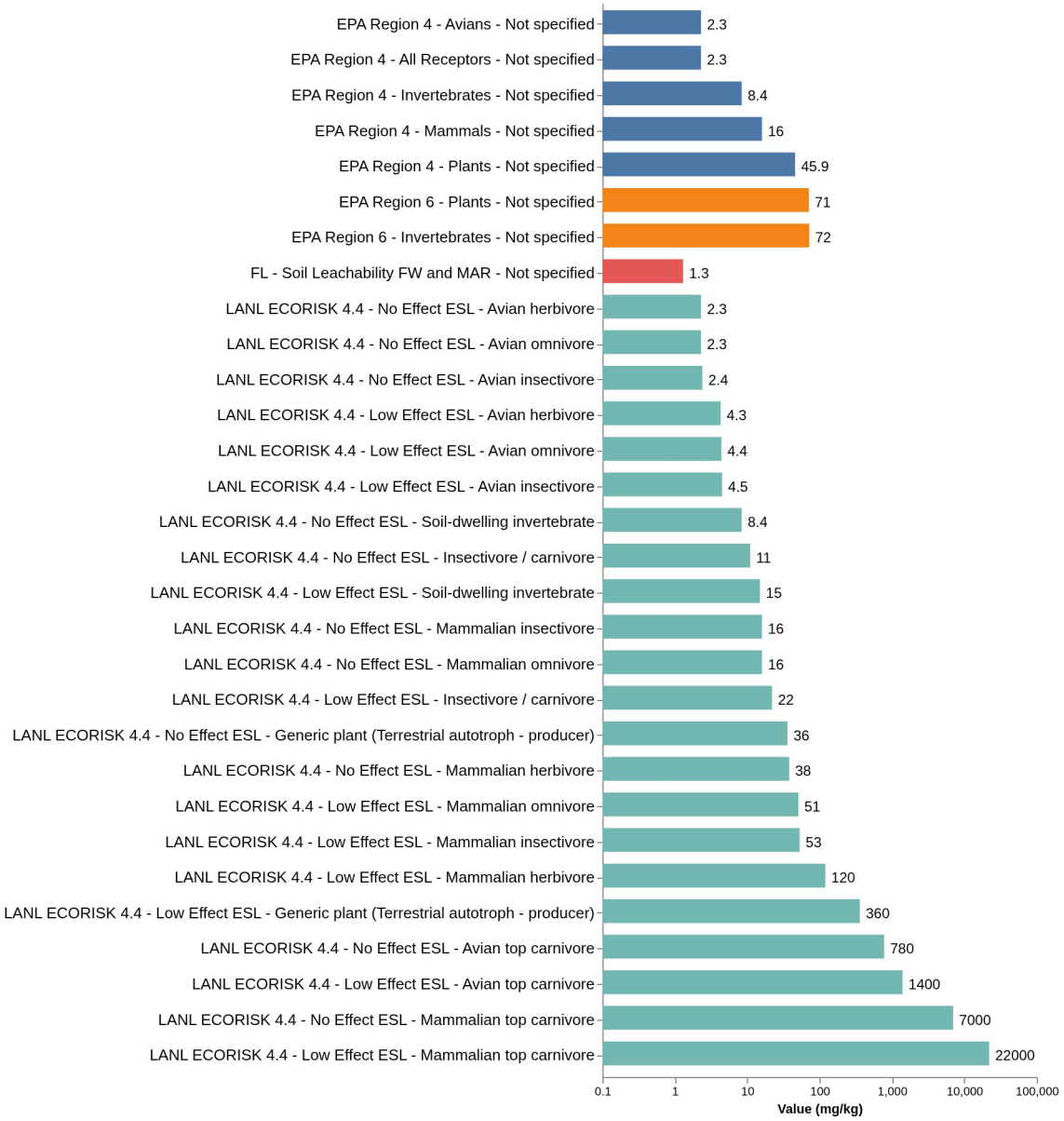


Table 284: Benchmark Values for Hexane, n− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
110−54−3	Canada	Soil Agricultural	Not specified		39
110−54−3	Canada	Soil Residential/Parkland	Not specified		39
110−54−3	Canada	Soil Industrial	Not specified		43
110−54−3	Canada	Soil Commercial	Not specified		43
110−54−3	EPA Region 4	Soil Invertebrates	Not specified	0.007	
110−54−3	EPA Region 4	Soil All Receptors	Not specified	0.007	
110−54−3	Florida	Soil Leachability Freshwater and Marine	Not specified	1200	

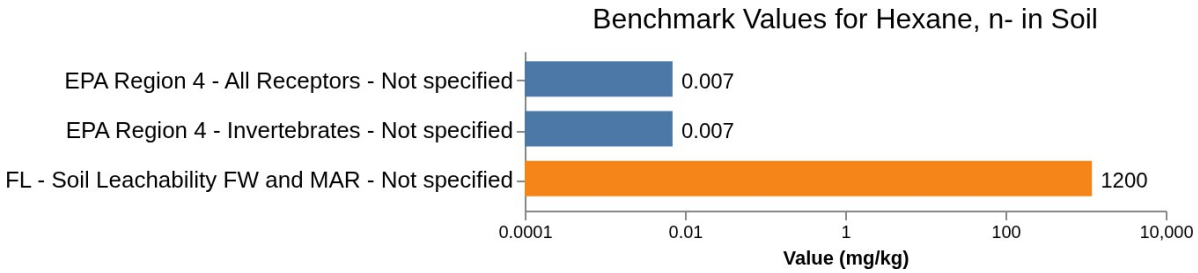


Table 285: Benchmark Values for Hexanone, 2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
591−78−6	EPA Region 4	Soil Avians	Not specified	0.36
591−78−6	EPA Region 4	Soil All Receptors	Not specified	0.36
591−78−6	EPA Region 4	Soil Invertebrates	Not specified	2.50
591−78−6	EPA Region 4	Soil Mammals	Not specified	5.40
591−78−6	EPA Region 5	EPA RCRA Soil	Not specified	12.60
591−78−6	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.36
591−78−6	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.41
591−78−6	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.47
591−78−6	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	1.70
591−78−6	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	3.60
591−78−6	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	4.10
591−78−6	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	4.70
591−78−6	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	5.40
591−78−6	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	6.10
591−78−6	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	17.00
591−78−6	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	17.00
591−78−6	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	20.00
591−78−6	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	23.00
591−78−6	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	65.00
591−78−6	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	290.00
591−78−6	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	2900.00
591−78−6	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	5900.00
591−78−6	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	22000.00

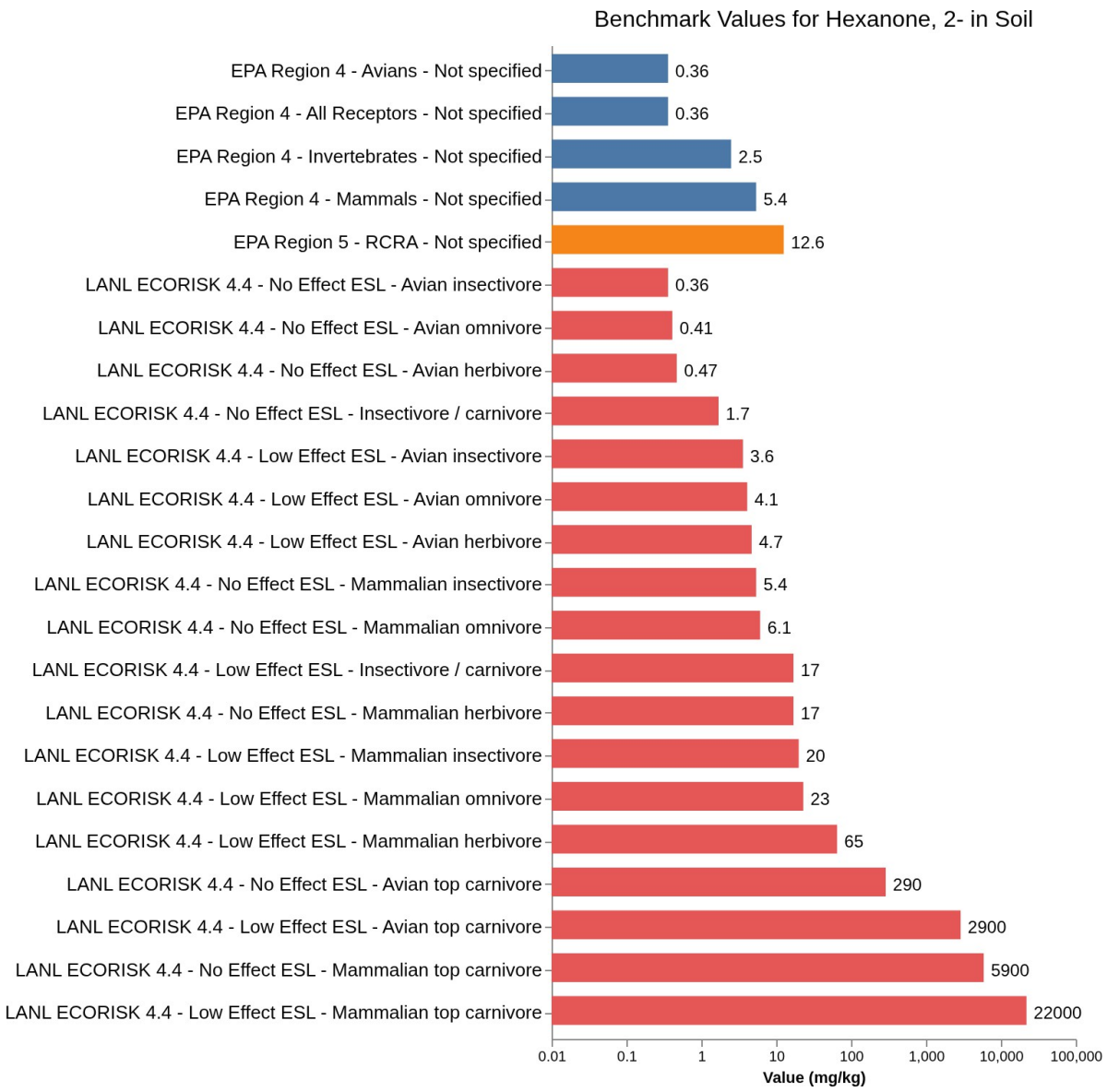

Benchmark Values for Hexanone, 2- in Soil
EPA Region 4 - Avians - Not specified
0.36
EPA Region 4 - All Receptors - Not specified
0.36
EPA Region 4 - Invertebrates - Not specified
2.5
EPA Region 4 - Mammals - Not specified
5.4
EPA Region 5 - RCRA - Not specified
12.6
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
0.36
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
0.41
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
0.47
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
1.7
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
3.6
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
4.1
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
4.7
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
5.4
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
6.1
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
17
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
17
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
20
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
23
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
65
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
290
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
2900
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
5900
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
22000
0.01
0.1
1
10
100
1,000
10,000
100,000
Value (mg/kg)

Table 286: Benchmark Values for Hexazinone in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
51235−04−2	Florida	Soil Leachability Freshwater and Marine	Not specified	120

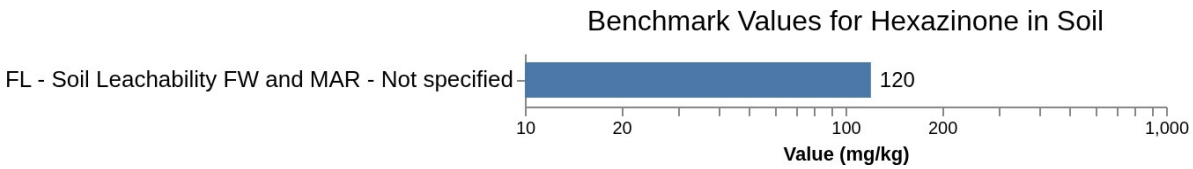


Table 287: Benchmark Values for HpCDD, 1,2,3,4,6,7,8,− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
35822−46−9	Washington	Soil Wildlife	Not specified	0.000002	208

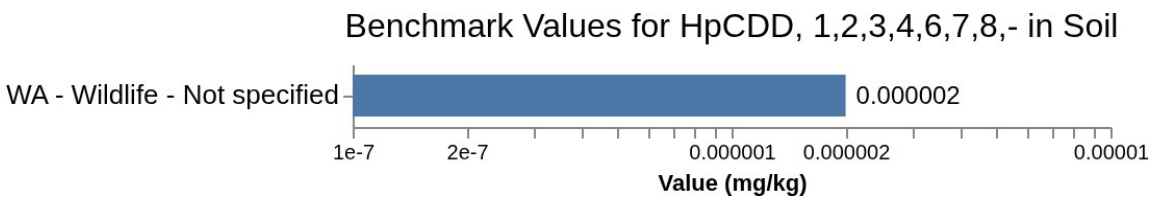


Table 288: Benchmark Values for HpCDD, 2,3,7,8− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
37871−00−4	Washington	Soil Wildlife	Not specified	0.000002	208

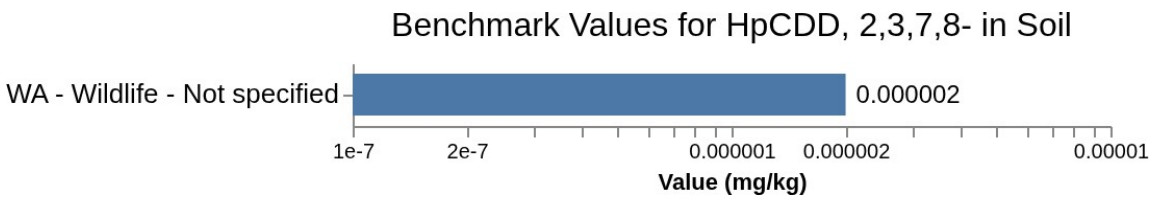


Table 289: Benchmark Values for HpCDF, 1,2,3,4,7,8,9− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
55673−89−7	Washington	Soil Wildlife	Not specified	0.000002	207

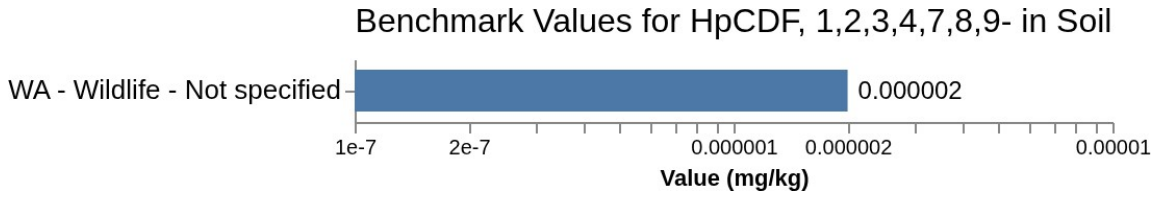


Table 290: Benchmark Values for HpCDF, 2,3,7,8− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
38998−75−3	Washington	Soil Wildlife	Not specified	0.000002	207

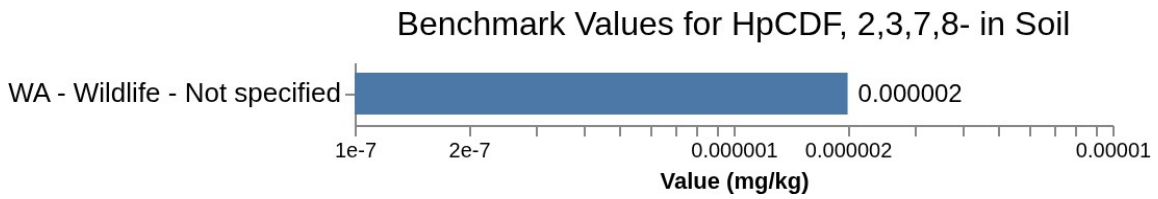


Table 291: Benchmark Values for HxCDD, 1,2,3,6,7,8− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
57653−85−7	Washington	Soil Wildlife	Not specified	0.000002	208

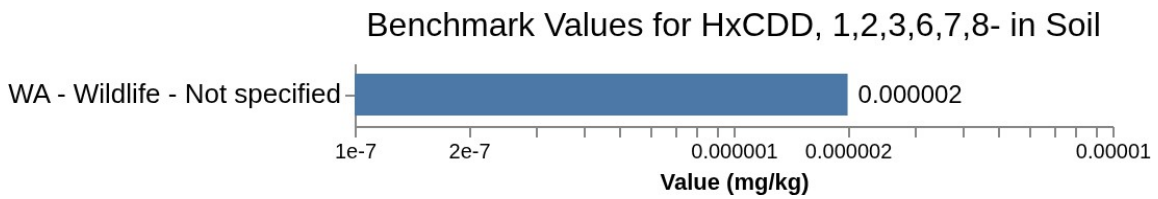


Table 292: Benchmark Values for HxCDD, 1,2,3,7,8,9− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
19408−74−3	Washington	Soil Wildlife	Not specified	0.000002	208

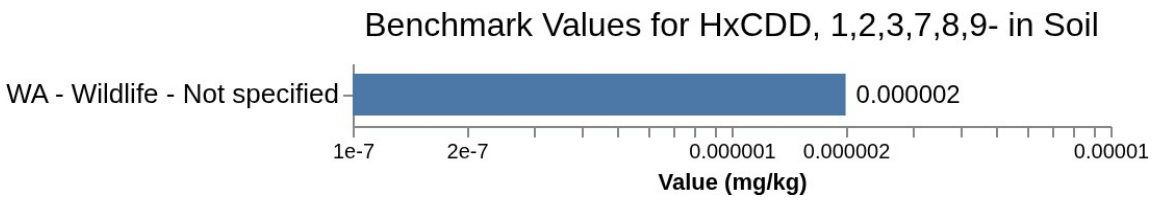


Table 293: Benchmark Values for HxCDF, 1,2,3,6,7,8− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
57117−44−9	Washington	Soil Wildlife	Not specified	0.000002	207

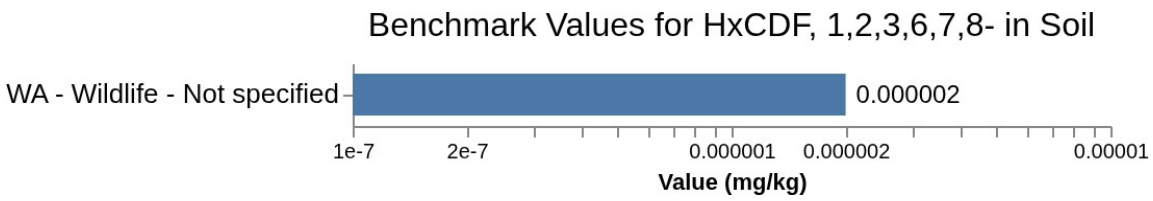


Table 294: Benchmark Values for HxCDF, 1,2,3,7,8,9− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
72918−21−9	Washington	Soil Wildlife	Not specified	0.000002	207

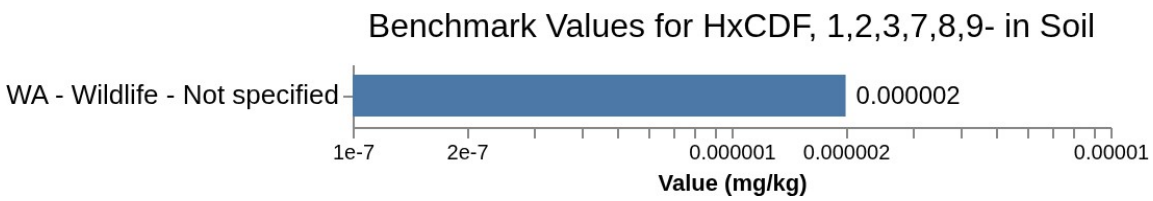


Table 295: Benchmark Values for HxCDF, 2,3,4,6,7,8− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
60851−34−5	Washington	Soil Wildlife	Not specified	0.000002	207

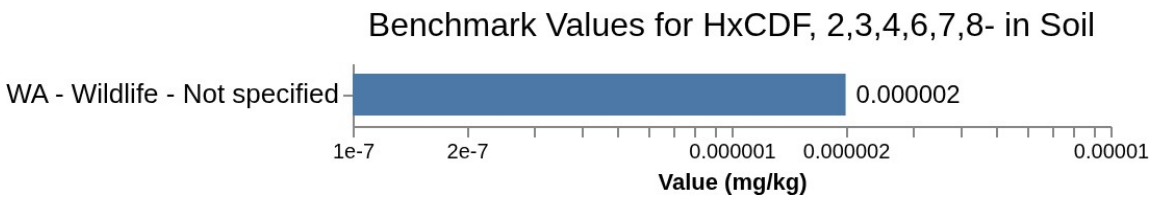


Table 296: Benchmark Values for HxCDF, 2,3,7,8− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
55684−94−1	Washington	Soil Wildlife	Not specified	0.000002	207

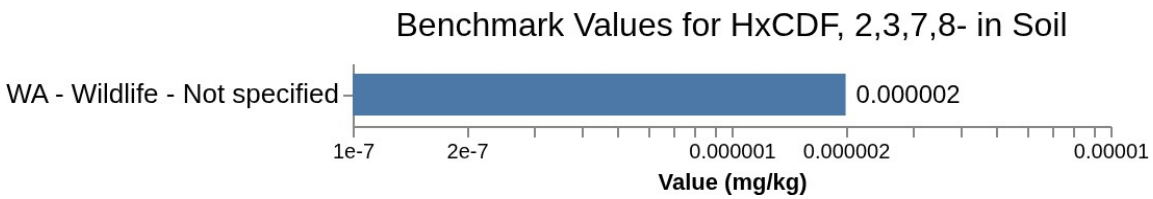


Table 297: Benchmark Values for Hydroquinone in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
123−31−9	Dutch Soil Protection Act	Intervention Value	Not specified	8.00	73, 75
123−31−9	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	43.00	
123−31−9	Florida	Soil Leachability Freshwater and Marine	Not specified	0.02	

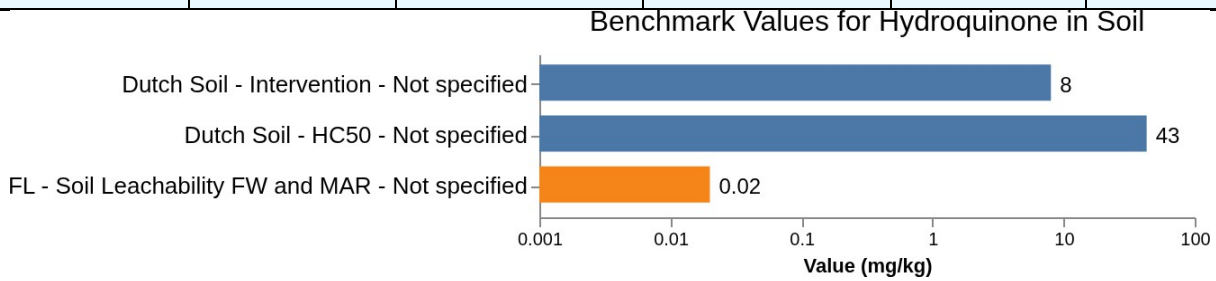


Table 298: Benchmark Values for Indeno[1,2,3−cd]pyrene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
193−39−5	Canada	Soil Agricultural	Not specified		36
193−39−5	Canada	Soil Commercial	Not specified		36
193−39−5	Canada	Soil Industrial	Not specified		36
193−39−5	Canada	Soil Residential/Parkland	Not specified		36
193−39−5	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	1.9	
193−39−5	EPA Region 4	Soil Invertebrates	Not specified	0.08	7
193−39−5	EPA Region 4	Soil All Receptors	Not specified	1.1	7
193−39−5	EPA Region 4	Soil Mammals	Not specified	71	7
193−39−5	EPA Region 5	EPA RCRA Soil	Not specified	109	
193−39−5	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	71	
193−39−5	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	110	
193−39−5	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	510	
193−39−5	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	710	
193−39−5	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1100	
193−39−5	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	4600	
193−39−5	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	5100	
193−39−5	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	46000	

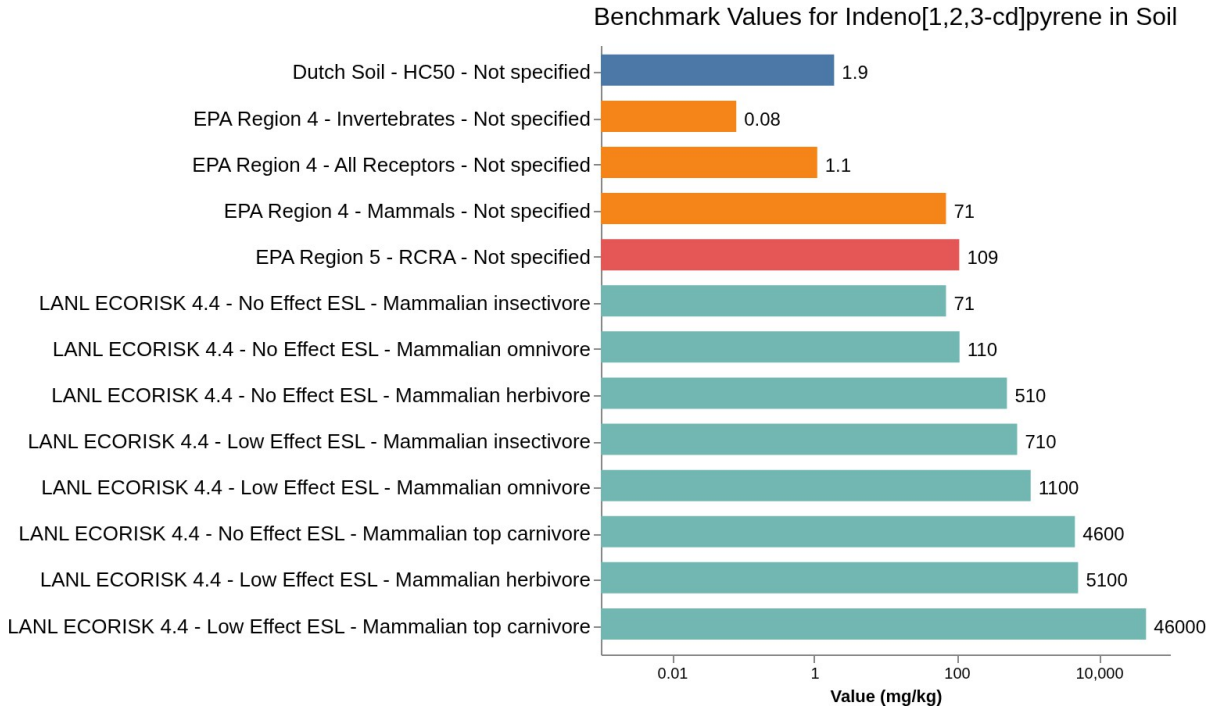


Table 299: Benchmark Values for Iodide in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
20461−54−5	ORNL	Soil Screening − Plants	Not specified	4

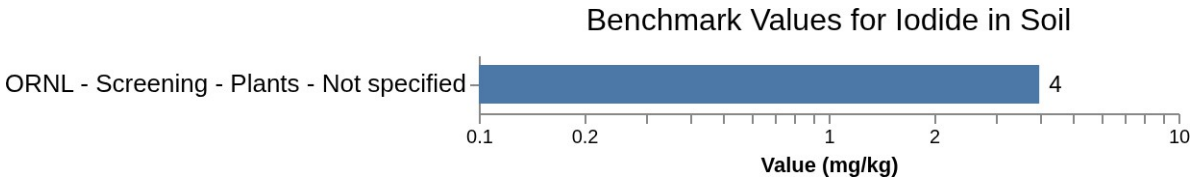


Table 300: Benchmark Values for Iodine in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7553−56−2	EPA Region 4	Soil Plants	Not specified	4
7553−56−2	EPA Region 4	Soil All Receptors	Not specified	4
7553−56−2	EPA Region 6	Soil Plants	Not specified	4

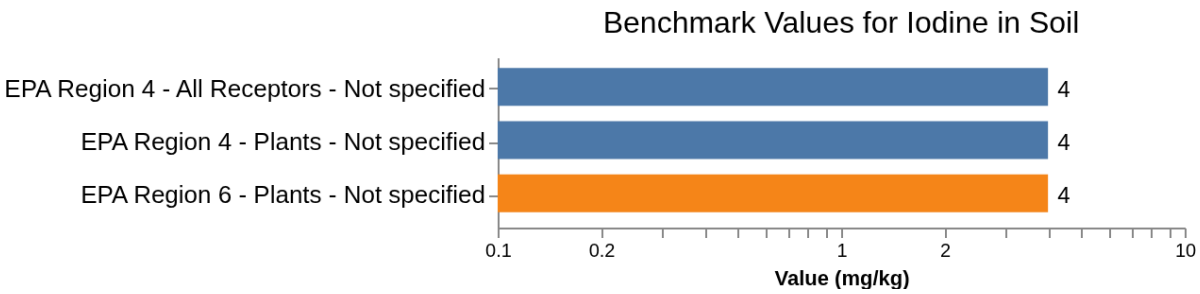


Table 301: Benchmark Values for Iodomethane in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
74−88−4	EPA Region 5	EPA RCRA Soil	Not specified	1.230
74−88−4	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.038
74−88−4	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.047
74−88−4	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.062
74−88−4	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	0.076
74−88−4	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	0.095
74−88−4	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	0.120
74−88−4	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	0.290
74−88−4	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	0.590
74−88−4	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	46.000
74−88−4	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	92.000

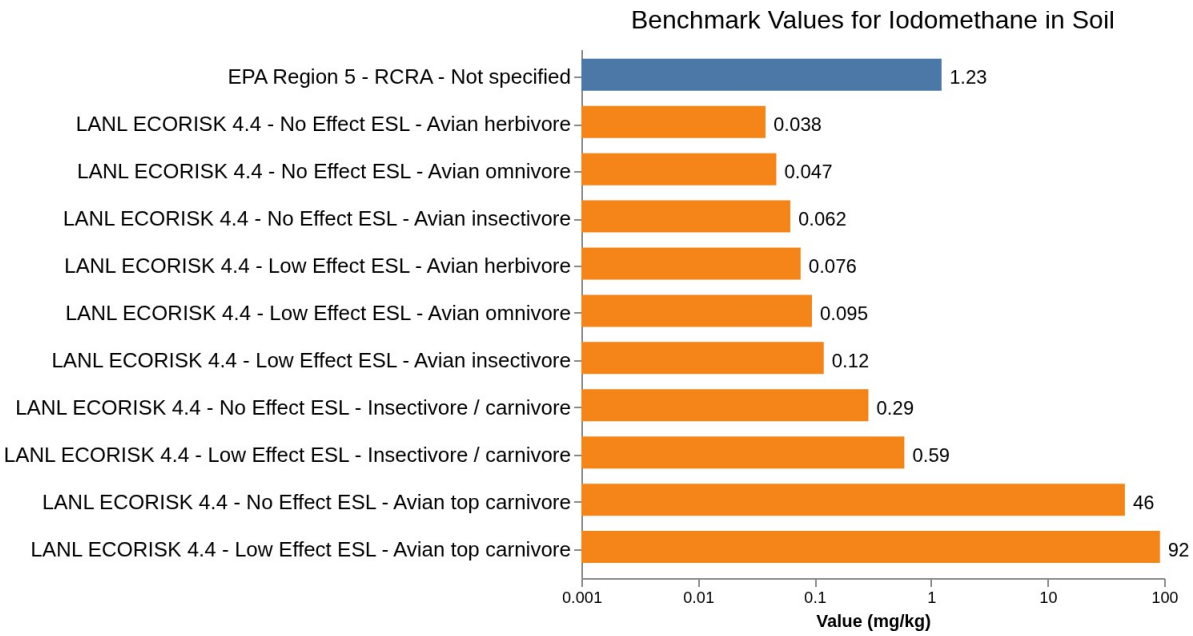


Table 302: Benchmark Values for Iron in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
7439−89−6	EPA Region 4	Soil Invertebrates	Not specified		232
7439−89−6	EPA Region 4	Soil All Receptors	Not specified		232
7439−89−6	EPA Region 6	Soil Plants	Not specified		16
7439−89−6	EPA Region 6	Soil Invertebrates	Not specified		16
7439−89−6	ORNL	Soil Screening − Microbes	Not specified	200	

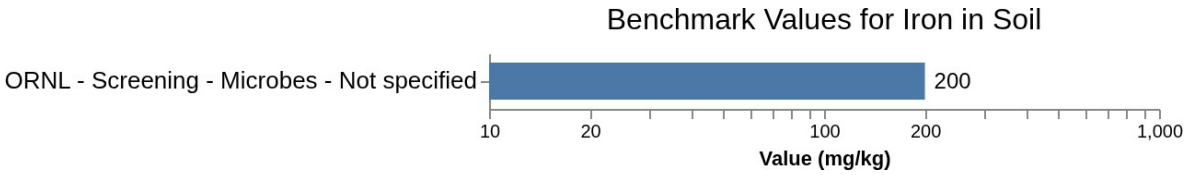


Table 303: Benchmark Values for Isobutyl Alcohol in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
78−83−1	EPA Region 5	EPA RCRA Soil	Not specified	20.8
78−83−1	Florida	Soil Leachability Freshwater and Marine	Not specified	200.0

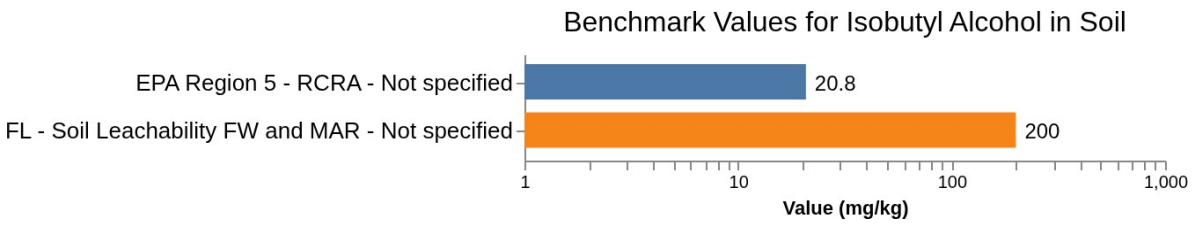


Table 304: Benchmark Values for Isodrin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
465−73−6	EPA Region 5	EPA RCRA Soil	Not specified	0.00332

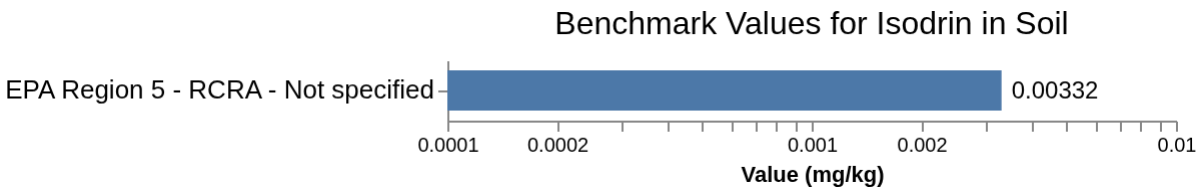


Table 305: Benchmark Values for Isophorone in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
78−59−1	EPA Region 5	EPA RCRA Soil	Not specified	139.0
78−59−1	Florida	Soil Leachability Freshwater and Marine	Not specified	3.8

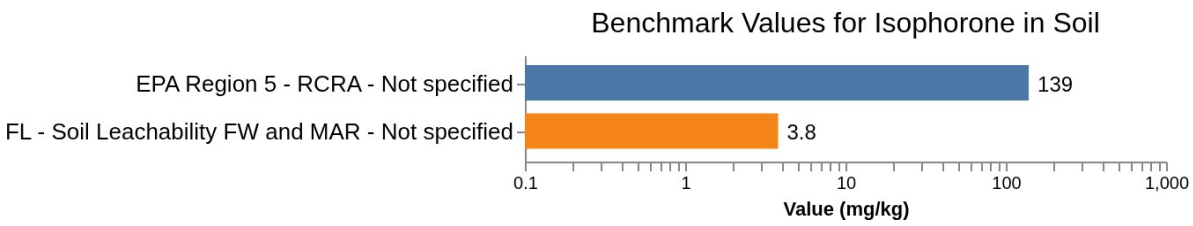


Table 306: Benchmark Values for Isopropanol in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
67−63−0	Dutch Soil Protection Act	Background	Not specified	0.75	
67−63−0	Dutch Soil Protection Act	Intervention Value	Not specified	220.00	73
67−63−0	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	220.00	

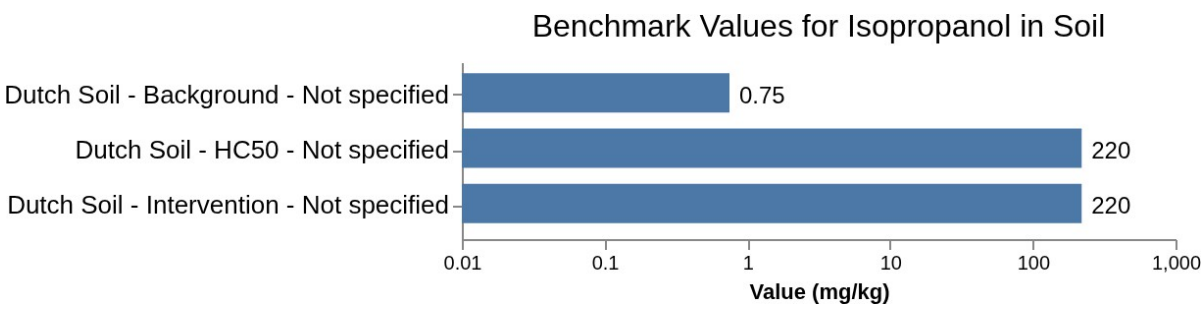


Table 307: Benchmark Values for Isopropyltoluene, p− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
99−87−6	EPA Region 4	Soil Invertebrates	Not specified	0.18
99−87−6	EPA Region 4	Soil All Receptors	Not specified	0.18

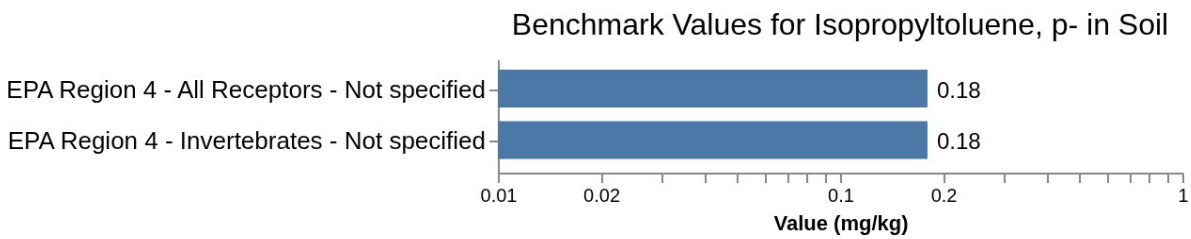


Table 308: Benchmark Values for Isosafrole in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
120−58−1	EPA Region 5	EPA RCRA Soil	Not specified	9.94

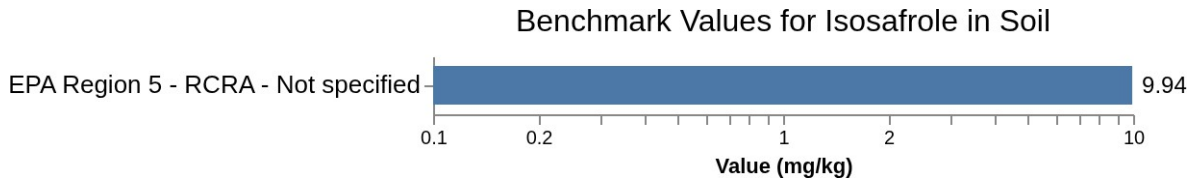


Table 309: Benchmark Values for Lanthanum in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7439−91−0	ORNL	Soil Screening − Microbes	Not specified	50.0

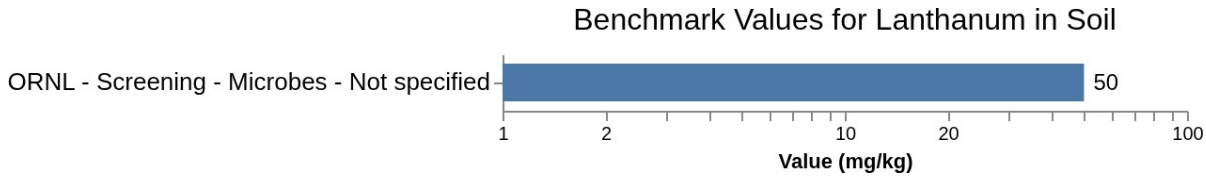


Table 310: Benchmark Values for Lead and Compounds in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7439−92−1	Canada	Soil Agricultural	Not specified	70.0000
7439−92−1	Canada	Soil Residential/Parkland	Not specified	140.0000
7439−92−1	Canada	Soil Commercial	Not specified	260.0000
7439−92−1	Canada	Soil Industrial	Not specified	600.0000
7439−92−1	Dutch Soil Protection Act	Background	Not specified	50.0000
7439−92−1	Dutch Soil Protection Act	Intervention Value	Not specified	530.0000
7439−92−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	540.0000
7439−92−1	EPA ECO−SSL	Avian	Not specified	11.0000
7439−92−1	EPA ECO−SSL	Mammalian	Not specified	56.0000
7439−92−1	EPA ECO−SSL	Plants	Not specified	120.0000
7439−92−1	EPA ECO−SSL	Soil Invertebrates	Not specified	1700.0000
7439−92−1	EPA Region 4	Soil Avians	Not specified	11.0000
7439−92−1	EPA Region 4	Soil All Receptors	Not specified	11.0000
7439−92−1	EPA Region 4	Soil Mammals	Not specified	56.0000
7439−92−1	EPA Region 4	Soil Plants	Not specified	120.0000
7439−92−1	EPA Region 4	Soil Invertebrates	Not specified	1700.0000
7439−92−1	EPA Region 5	EPA RCRA Soil	Not specified	0.0537
7439−92−1	EPA Region 6	Soil Plants	Not specified	120.0000
7439−92−1	EPA Region 6	Soil Invertebrates	Not specified	1700.0000
7439−92−1	LANL ECORISK	Soil No Effect ESL	Avian insectivore	11.0000
7439−92−1	LANL ECORISK	Soil No Effect ESL	Avian omnivore	14.0000
7439−92−1	LANL ECORISK	Soil No Effect ESL	Avian herbivore	18.0000
7439−92−1	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	23.0000
7439−92−1	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	28.0000
7439−92−1	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	36.0000
7439−92−1	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	83.0000
7439−92−1	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	93.0000
7439−92−1	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	120.0000
7439−92−1	LANL ECORISK	Soil No Effect ESL	Generic Plant	120.0000
7439−92−1	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	160.0000
7439−92−1	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	170.0000
7439−92−1	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	230.0000
7439−92−1	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	310.0000
7439−92−1	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	540.0000
7439−92−1	LANL ECORISK	Soil Low Effect ESL	Generic Plant	570.0000
7439−92−1	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	600.0000
7439−92−1	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	1000.0000
7439−92−1	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	1700.0000
7439−92−1	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	3700.0000
7439−92−1	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	7000.0000
7439−92−1	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	8400.0000
7439−92−1	ORNL	Soil Screening − Plants	Not specified	50.0000
7439−92−1	ORNL	Soil Screening − Invertebrates	Not specified	500.0000
7439−92−1	ORNL	Soil Screening − Microbes	Not specified	900.0000
7439−92−1	Washington	Soil Wildlife	Not specified	118.0000

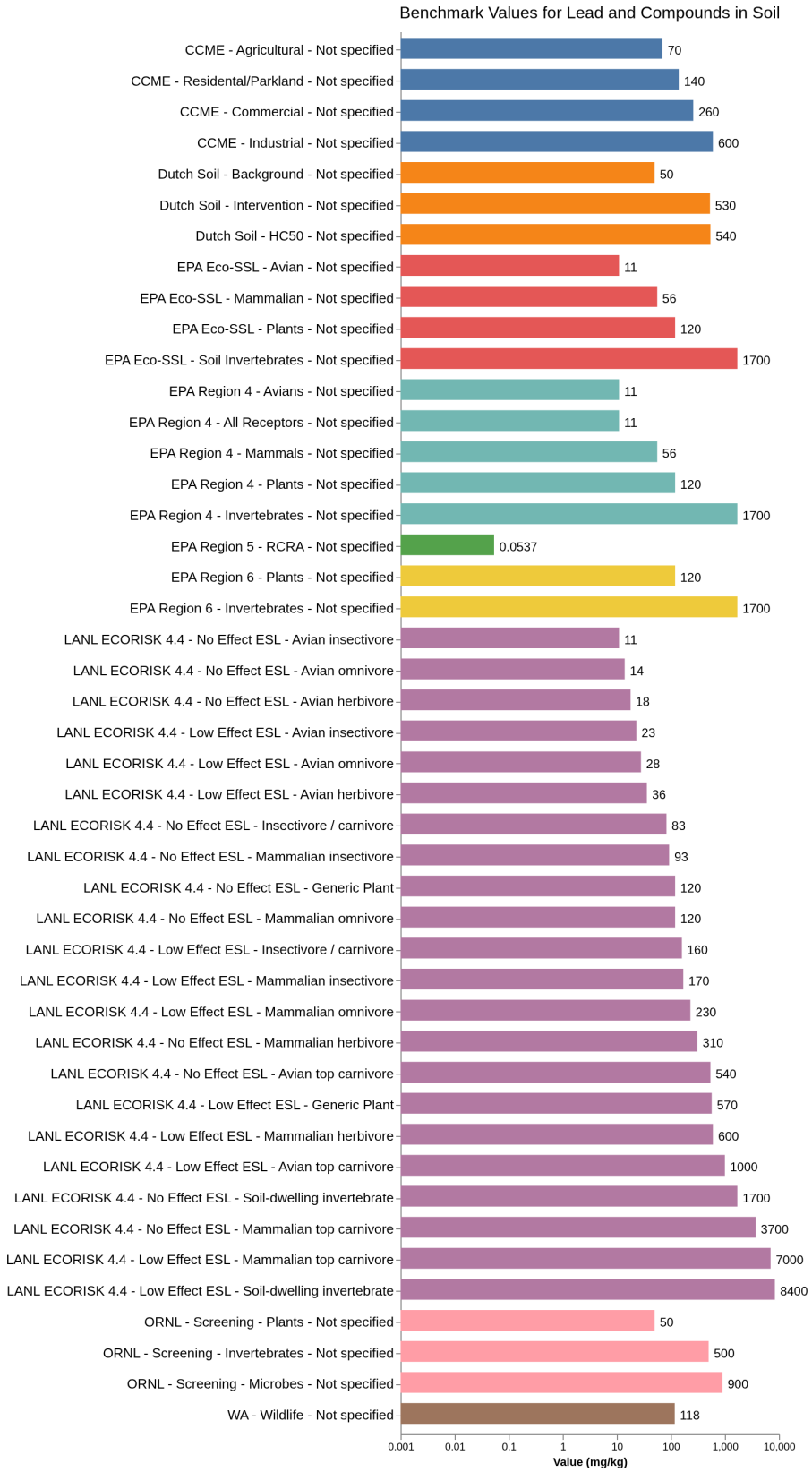

Benchmark Values for Lead and Compounds in Soil
CCME - Agricultural - Not specified 70
CCME - Residental/Parkland - Not specified 140
CCME - Commercial - Not specified 260
CCME - Industrial - Not specified 600
Dutch Soil - Background - Not specified 50
Dutch Soil - Intervention - Not specified 530
Dutch Soil - HC50 - Not specified 540
EPA Eco-SSL - Avian - Not specified 11
EPA Eco-SSL - Mammalian - Not specified 56
EPA Eco-SSL - Plants - Not specified 120
EPA Eco-SSL - Soil Invertebrates - Not specified 1700
EPA Region 4 - Avians - Not specified 11
EPA Region 4 - All Receptors - Not specified 11
EPA Region 4 - Mammals - Not specified 56
EPA Region 4 - Plants - Not specified 120
EPA Region 4 - Invertebrates - Not specified 1700
EPA Region 5 - RCRA - Not specified 0.0537
EPA Region 6 - Plants - Not specified 120
EPA Region 6 - Invertebrates - Not specified 1700
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore 11
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore 14
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore 18
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore 23
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore 28
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore 36
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore 83
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore 93
LANL ECORISK 4.4 - No Effect ESL - Generic Plant 120
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore 120
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore 160
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore 170
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore 230
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore 310
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore 540
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant 570
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore 600
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore 1000
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate 1700
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore 3700
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore 7000
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate 8400
ORNL - Screening - Plants - Not specified 50
ORNL - Screening - Invertebrates - Not specified 500
ORNL - Screening - Microbes - Not specified 900
WA - Wildlife - Not specified 118
0.001 0.01 0.1 1 10 100 1,000 10,000
Value (mg/kg)

Table 311: Benchmark Values for Linuron in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
330−55−2	Florida	Soil Leachability Freshwater and Marine	Not specified	1.4

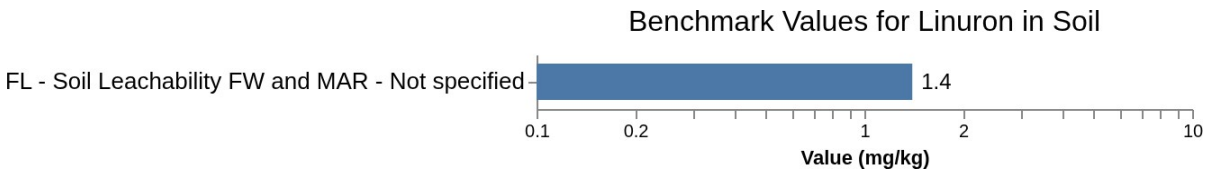


Table 312: Benchmark Values for Lithium in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7439−93−2	EPA Region 4	Soil All Receptors	Not specified	2.0
7439−93−2	EPA Region 4	Soil Plants	Not specified	2.0
7439−93−2	EPA Region 4	Soil Mammals	Not specified	75.0
7439−93−2	EPA Region 6	Soil Plants	Not specified	2.0
7439−93−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	75.0
7439−93−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	100.0
7439−93−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	150.0
7439−93−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	350.0
7439−93−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	480.0
7439−93−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	750.0
7439−93−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	870.0
7439−93−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	4100.0
7439−93−2	ORNL	Soil Screening − Plants	Not specified	2.0
7439−93−2	ORNL	Soil Screening − Microbes	Not specified	10.0

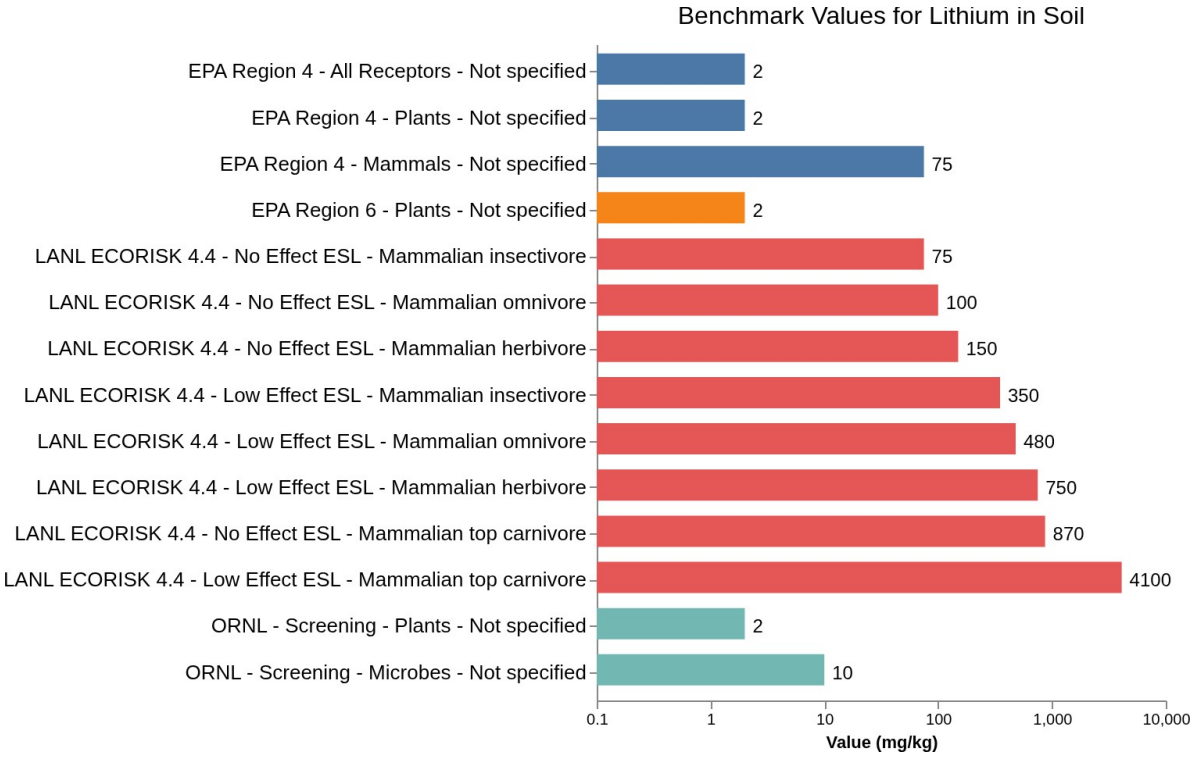


Table 313: Benchmark Values for Malathion in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
121−75−5	EPA Region 4	Soil All Receptors	Not specified	0.00004
121−75−5	EPA Region 4	Soil Invertebrates	Not specified	0.00004
121−75−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.00300

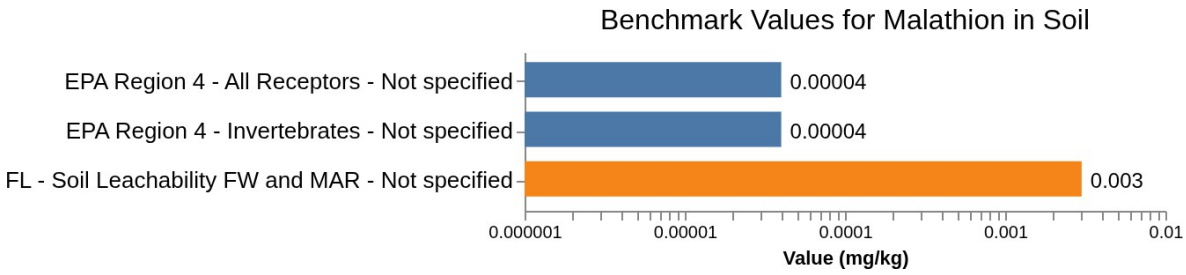


Table 314: Benchmark Values for Maleic Anhydride in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
108−31−6	Florida	Soil Leachability Freshwater and Marine	Not specified	3.4

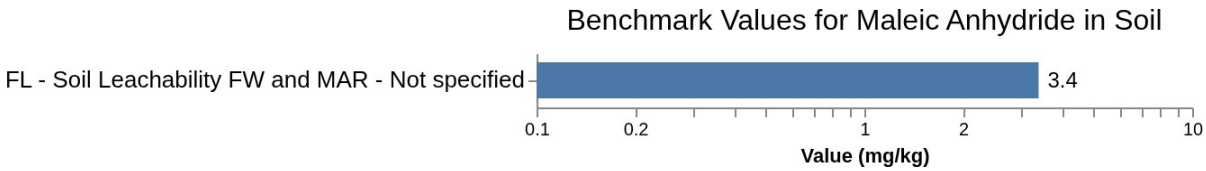


Table 315: Benchmark Values for Maneb in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
12427−38−2	Dutch Soil Protection Act	Intervention Value	Not specified	22.0	73
12427−38−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	22.0	
12427−38−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.5	

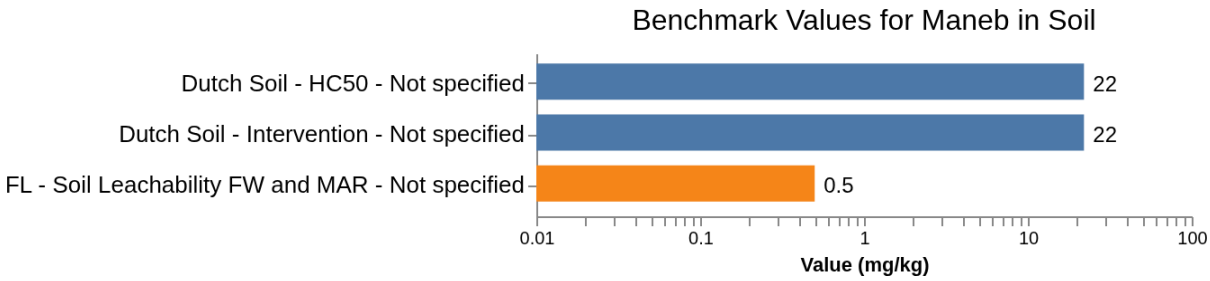


Table 316: Benchmark Values for Manganese (Diet) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7439−96−5	EPA ECO−SSL	Plants	Not specified	220.0
7439−96−5	EPA ECO−SSL	Soil Invertebrates	Not specified	450.0
7439−96−5	EPA ECO−SSL	Mammalian	Not specified	4000.0
7439−96−5	EPA ECO−SSL	Avian	Not specified	4300.0
7439−96−5	EPA Region 4	Soil Plants	Not specified	220.0
7439−96−5	EPA Region 4	Soil All Receptors	Not specified	220.0
7439−96−5	EPA Region 4	Soil Invertebrates	Not specified	450.0
7439−96−5	EPA Region 4	Soil Mammals	Not specified	4000.0
7439−96−5	EPA Region 4	Soil Avians	Not specified	4300.0
7439−96−5	EPA Region 6	Soil Plants	Not specified	220.0
7439−96−5	EPA Region 6	Soil Invertebrates	Not specified	450.0
7439−96−5	LANL ECORISK	Soil No Effect ESL	Generic Plant	220.0
7439−96−5	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	450.0
7439−96−5	LANL ECORISK	Soil Low Effect ESL	Generic Plant	1100.0
7439−96−5	LANL ECORISK	Soil No Effect ESL	Avian herbivore	1300.0
7439−96−5	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	1400.0
7439−96−5	LANL ECORISK	Soil No Effect ESL	Avian omnivore	1600.0
7439−96−5	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	2000.0
7439−96−5	LANL ECORISK	Soil No Effect ESL	Avian insectivore	2200.0
7439−96−5	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	2700.0
7439−96−5	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	2800.0
7439−96−5	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	3500.0
7439−96−5	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	4500.0
7439−96−5	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	4700.0
7439−96−5	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	5400.0
7439−96−5	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	7500.0
7439−96−5	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	10000.0
7439−96−5	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	24000.0
7439−96−5	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	40000.0
7439−96−5	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	50000.0
7439−96−5	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	60000.0
7439−96−5	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	120000.0
7439−96−5	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	150000.0
7439−96−5	ORNL	Soil Screening − Microbes	Not specified	100.0
7439−96−5	ORNL	Soil Screening − Plants	Not specified	500.0
7439−96−5	Washington	Soil Wildlife	Not specified	1500.0

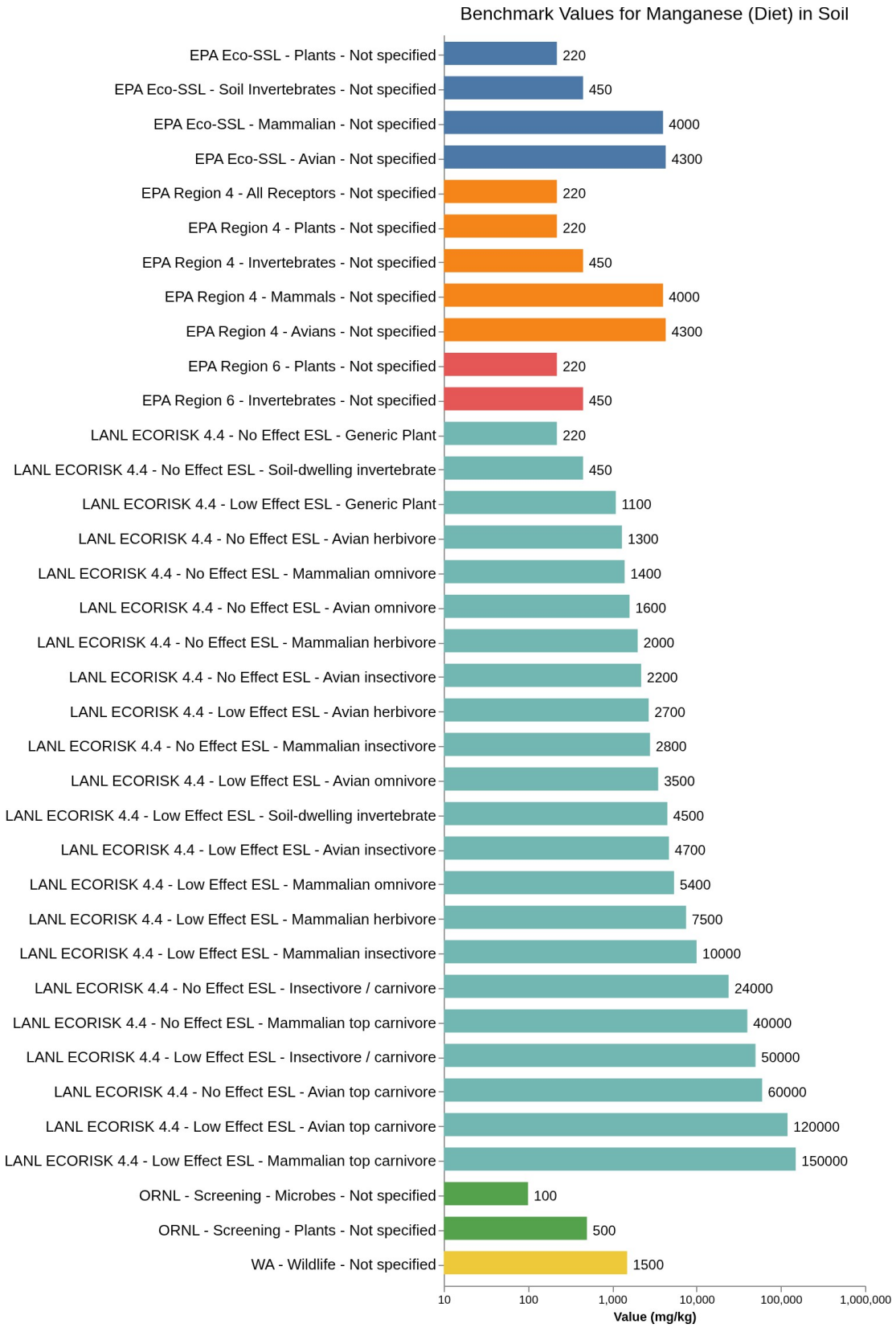

Benchmark Values for Manganese (Diet) in Soil
EPA Eco-SSL - Plants - Not specified
220
EPA Eco-SSL - Soil Invertebrates - Not specified
450
EPA Eco-SSL - Mammalian - Not specified
4000
EPA Eco-SSL - Avian - Not specified
4300
EPA Region 4 - All Receptors - Not specified
220
EPA Region 4 - Plants - Not specified
220
EPA Region 4 - Invertebrates - Not specified
450
EPA Region 4 - Mammals - Not specified
4000
EPA Region 4 - Avians - Not specified
4300
EPA Region 6 - Plants - Not specified
220
EPA Region 6 - Invertebrates - Not specified
450
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
220
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
450
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
1100
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
1300
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
1400
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
1600
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
2000
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
2200
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
2700
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
2800
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
3500
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
4500
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
4700
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
5400
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
7500
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
10000
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
24000
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
40000
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
50000
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
60000
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
120000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
150000
ORNL - Screening - Microbes - Not specified
100
ORNL - Screening - Plants - Not specified
500
WA - Wildlife - Not specified
1500
10
100
1,000
10,000
100,000
1,000,000
Value (mg/kg)

Table 317: Benchmark Values for Mercury (elemental) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
7439−97−6	Canada	Soil Residential/Parkland	Not specified	6.600	
7439−97−6	Canada	Soil Agricultural	Not specified	6.600	
7439−97−6	Canada	Soil Commercial	Not specified	24.000	
7439−97−6	Canada	Soil Industrial	Not specified	50.000	
7439−97−6	Dutch Soil Protection Act	Background	Not specified	0.150	
7439−97−6	EPA Region 4	Soil Avians	Not specified	0.013	7
7439−97−6	EPA Region 4	Soil All Receptors	Not specified	0.013	7
7439−97−6	EPA Region 4	Soil Invertebrates	Not specified	0.050	7
7439−97−6	EPA Region 4	Soil Plants	Not specified	0.300	7
7439−97−6	EPA Region 4	Soil Mammals	Not specified	1.700	7
7439−97−6	EPA Region 5	EPA RCRA Soil	Not specified	0.100	
7439−97−6	EPA Region 6	Soil Invertebrates	Not specified	0.100	
7439−97−6	EPA Region 6	Soil Plants	Not specified	0.300	
7439−97−6	Florida	Soil Leachability Freshwater	Not specified	0.010	212
7439−97−6	Florida	Soil Leachability Marine	Not specified	0.030	
7439−97−6	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.013	
7439−97−6	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.022	
7439−97−6	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	0.050	
7439−97−6	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	0.058	
7439−97−6	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.067	
7439−97−6	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	0.130	
7439−97−6	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	0.220	
7439−97−6	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	0.320	
7439−97−6	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	0.500	
7439−97−6	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	0.580	
7439−97−6	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	0.670	
7439−97−6	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	1.700	
7439−97−6	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	3.000	
7439−97−6	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	3.200	
7439−97−6	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	17.000	
7439−97−6	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	23.000	
7439−97−6	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	30.000	
7439−97−6	LANL ECORISK	Soil No Effect ESL	Generic Plant	34.000	
7439−97−6	LANL ECORISK	Soil Low Effect ESL	Generic Plant	64.000	
7439−97−6	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	76.000	
7439−97−6	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	230.000	
7439−97−6	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	760.000	
7439−97−6	ORNL	Soil Screening −Invertebrates	Not specified	0.100	
7439−97−6	ORNL	Soil Screening − Plants	Not specified	0.300	
7439−97−6	ORNL	Soil Screening − Microbes	Not specified	30.000	
7439−97−6	Washington	Soil Wildlife	Not specified	5.500	

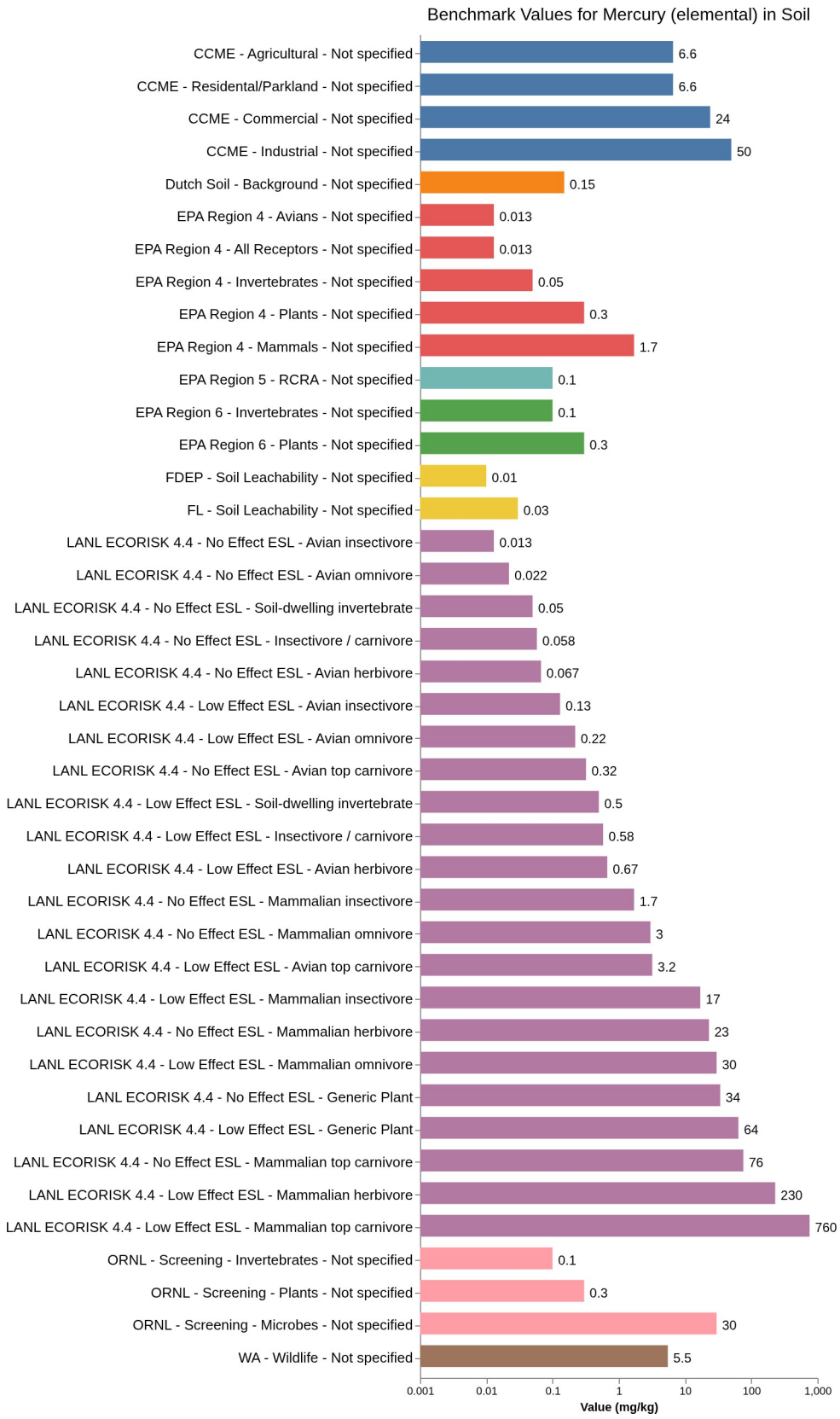

Benchmark Values for Mercury (elemental) in Soil
CCME - Agricultural - Not specified
6.6
CCME - Residental/Parkland - Not specified
6.6
CCME - Commercial - Not specified
24
CCME - Industrial - Not specified
50
Dutch Soil - Background - Not specified
0.15
EPA Region 4 - Avians - Not specified
0.013
EPA Region 4 - All Receptors - Not specified
0.013
EPA Region 4 - Invertebrates - Not specified
0.05
EPA Region 4 - Plants - Not specified
0.3
EPA Region 4 - Mammals - Not specified
1.7
EPA Region 5 - RCRA - Not specified
0.1
EPA Region 6 - Invertebrates - Not specified
0.1
EPA Region 6 - Plants - Not specified
0.3
FDEP - Soil Leachability - Not specified
0.01
FL - Soil Leachability - Not specified
0.03
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
0.013
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
0.022
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
0.05
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
0.058
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
0.067
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
0.13
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
0.22
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
0.32
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
0.5
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
0.58
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
0.67
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
1.7
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
3
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
3.2
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
17
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
23
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
30
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
34
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
64
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
76
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
230
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
760
ORNL - Screening - Invertebrates - Not specified
0.1
ORNL - Screening - Plants - Not specified
0.3
ORNL - Screening - Microbes - Not specified
30
WA - Wildlife - Not specified
5.5
0.001
0.01
0.1
1
10
100
1,000
Value (mg/kg)

Table 318: Benchmark Values for Mercury, Inorganic Salts in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−01−7	Dutch Soil Protection Act	Intervention Value	Not specified	36.0
000000−01−7	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	36.0

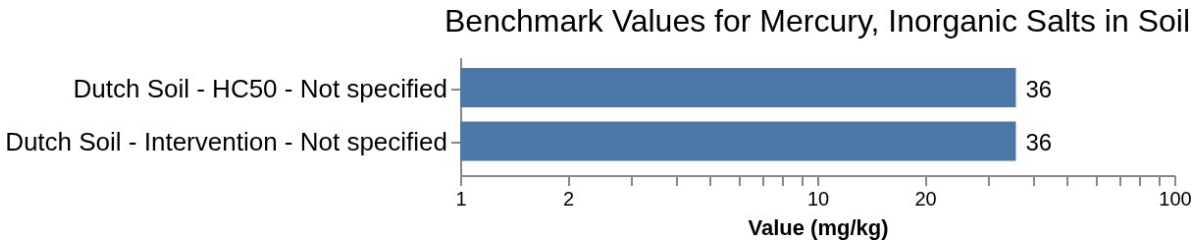


Table 319: Benchmark Values for Methacrylonitrile in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
126−98−7	EPA Region 5	EPA RCRA Soil	Not specified	0.057

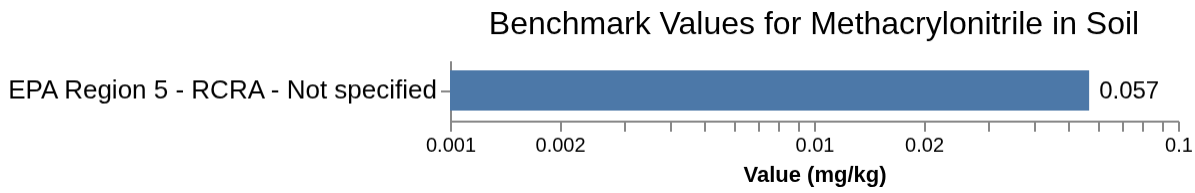


Table 320: Benchmark Values for Methanol in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
67−56−1	Canada	Soil Residential/Parkland	Not specified		38
67−56−1	Canada	Soil Industrial	Not specified		38
67−56−1	Canada	Soil Commercial	Not specified		38
67−56−1	Canada	Soil Agricultural	Not specified		38
67−56−1	Dutch Soil Protection Act	Background	Not specified	3	
67−56−1	Dutch Soil Protection Act	Intervention Value	Not specified	30	73
67−56−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	33	
67−56−1	Florida	Soil Leachability Freshwater and Marine	Not specified	180	

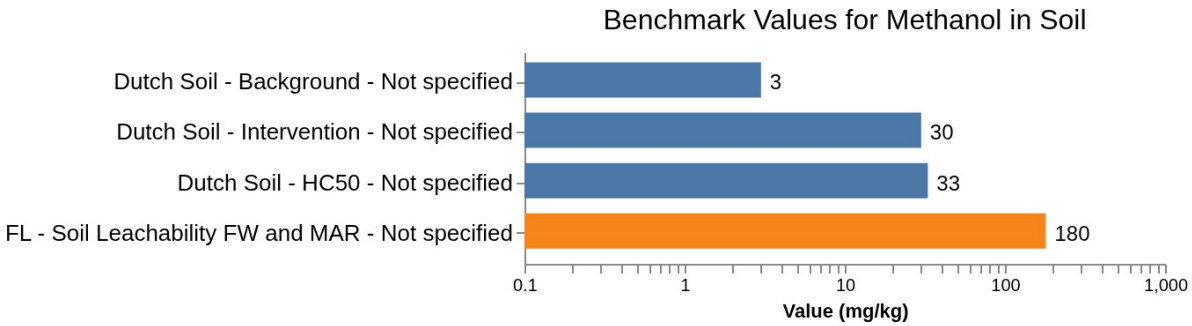


Table 321: Benchmark Values for Methapyrilene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
91−80−5	EPA Region 5	EPA RCRA Soil	Not specified	2.78

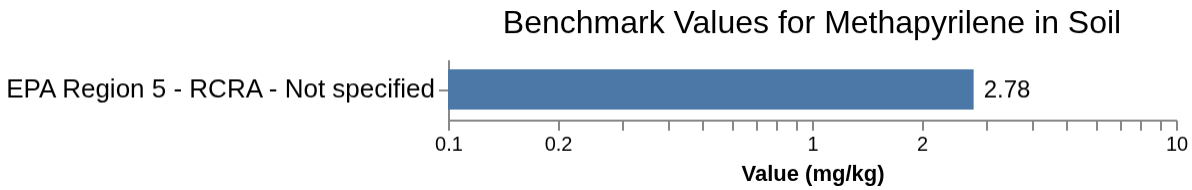


Table 322: Benchmark Values for Methidathion in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
950−37−8	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0001

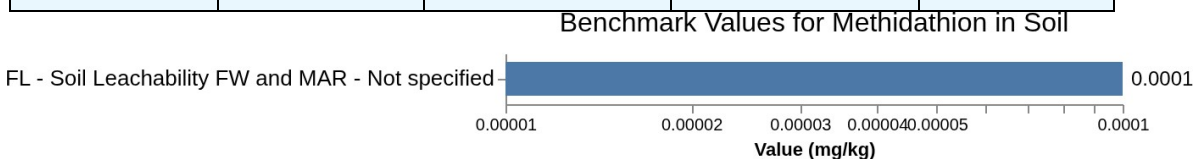


Table 323: Benchmark Values for Methomyl in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
16752−77−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.007

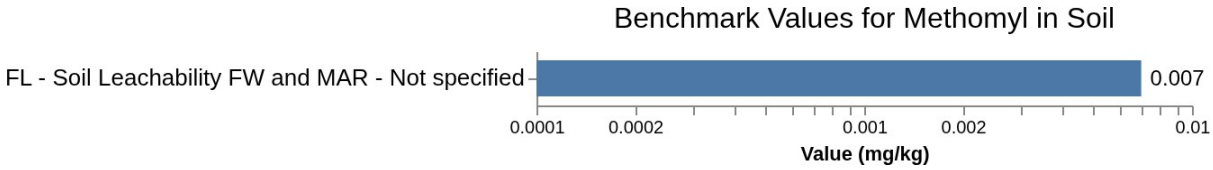


Table 324: Benchmark Values for Methoxychlor in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
72−43−5	EPA Region 4	Soil All Receptors	Not specified	0.0021	7
72−43−5	EPA Region 4	Soil Invertebrates	Not specified	0.0021	7
72−43−5	EPA Region 4	Soil Mammals	Not specified	5.1000	7
72−43−5	EPA Region 4	Soil Avians	Not specified	18.0000	7
72−43−5	EPA Region 5	EPA RCRA Soil	Not specified	0.0199	
72−43−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.1000	
72−43−5	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	5.1000	
72−43−5	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	9.0000	
72−43−5	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	10.0000	
72−43−5	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	18.0000	
72−43−5	LANL ECORISK	Soil No Effect ESL	Avian insectivore	18.0000	
72−43−5	LANL ECORISK	Soil No Effect ESL	Avian omnivore	31.0000	
72−43−5	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	83.0000	
72−43−5	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	87.0000	
72−43−5	LANL ECORISK	Soil No Effect ESL	Avian herbivore	110.0000	
72−43−5	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	160.0000	
72−43−5	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	180.0000	
72−43−5	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	310.0000	
72−43−5	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	880.0000	
72−43−5	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	1000.0000	
72−43−5	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	1100.0000	
72−43−5	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	2000.0000	
72−43−5	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	2100.0000	
72−43−5	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	21000.0000	

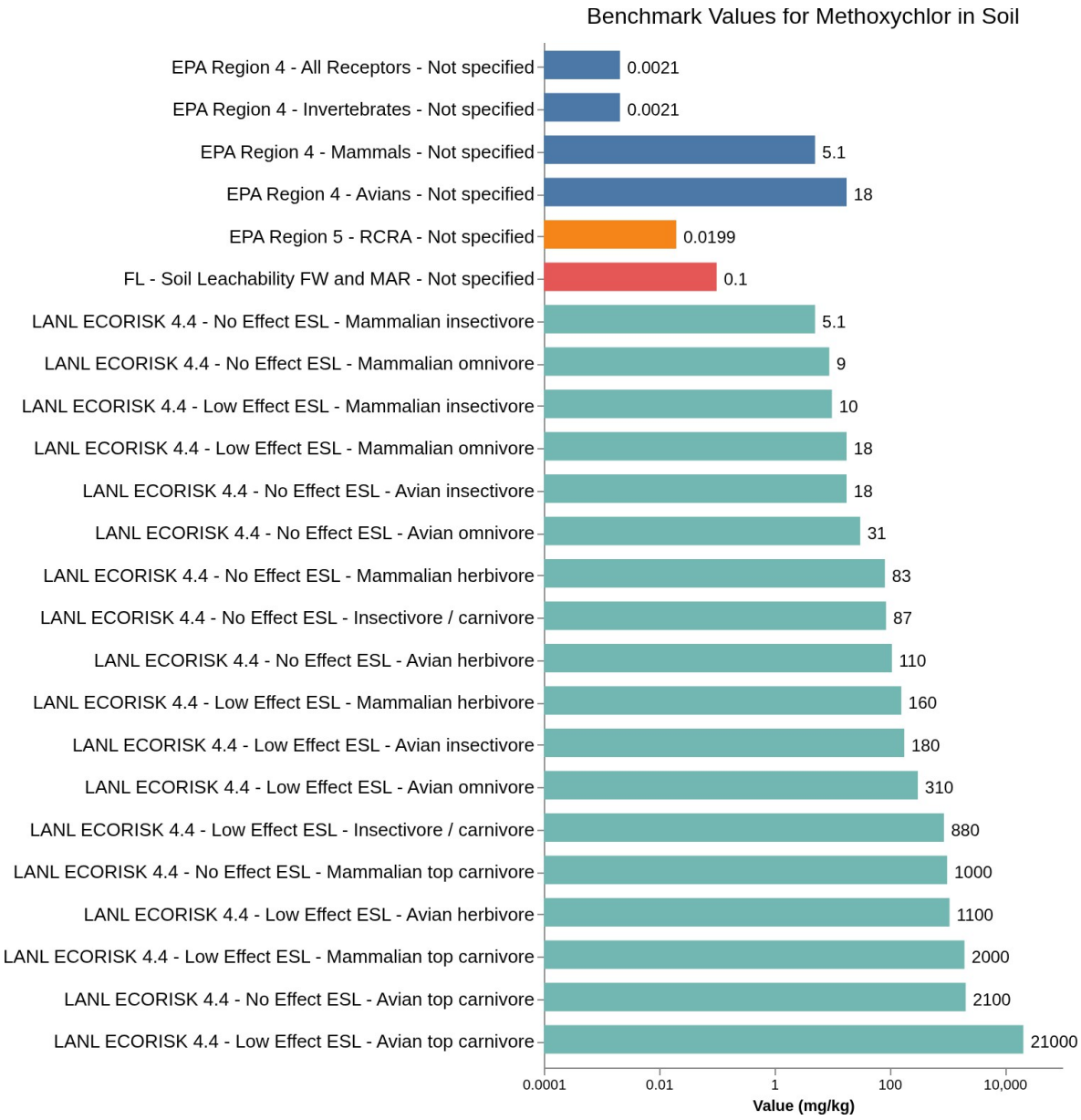

Benchmark Values for Methoxychlor in Soil
EPA Region 4 - All Receptors - Not specified
0.0021
EPA Region 4 - Invertebrates - Not specified
0.0021
EPA Region 4 - Mammals - Not specified
5.1
EPA Region 4 - Avians - Not specified
18
EPA Region 5 - RCRA - Not specified
0.0199
FL - Soil Leachability FW and MAR - Not specified
0.1
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
5.1
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
9
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
10
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
18
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
18
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
31
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
83
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
87
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
110
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
160
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
180
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
310
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
880
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
1000
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
1100
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
2000
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
2100
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
21000
0.0001
0.01
1
100
10,000
Value (mg/kg)

Table 325: Benchmark Values for Methyl Ethyl Ketone (2−Butanone) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
78−93−3	Dutch Soil Protection Act	Background	Not specified	2	71
78−93−3	Dutch Soil Protection Act	Intervention Value	Not specified	35	73
78−93−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	175	
78−93−3	EPA Region 4	Soil All Receptors	Not specified	1	
78−93−3	EPA Region 4	Soil Invertebrates	Not specified	1	
78−93−3	EPA Region 4	Soil Mammals	Not specified	350	
78−93−3	EPA Region 5	EPA RCRA Soil	Not specified	89.6	
78−93−3	Florida	Soil Leachability Freshwater and Marine	Not specified	490	
78−93−3	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	350	
78−93−3	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	470	
78−93−3	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	920	
78−93−3	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1200	
78−93−3	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	2700	
78−93−3	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	6900	
78−93−3	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	1.30e+06	
78−93−3	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	3.50e+06	

Benchmark Values for Methyl Ethyl Ketone (2-Butanone) in Soil

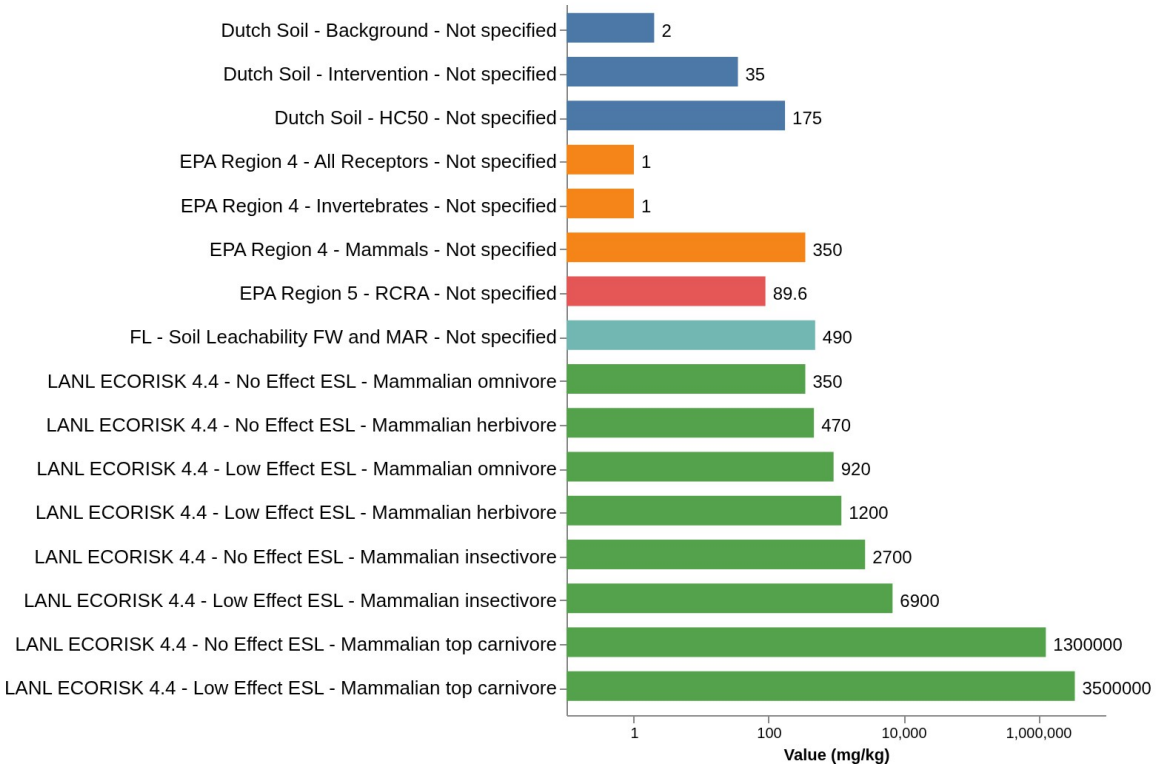


Table 326: Benchmark Values for Methyl Isobutyl Ketone (4−methyl−2−pentanone) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
108−10−1	EPA Region 5	EPA RCRA Soil	Not specified	443.0
108−10−1	Florida	Soil Leachability Freshwater and Marine	Not specified	110.0
108−10−1	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	9.7
108−10−1	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	15.0
108−10−1	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	17.0
108−10−1	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	97.0
108−10−1	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	150.0
108−10−1	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	170.0
108−10−1	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	18000.0
108−10−1	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	180000.0

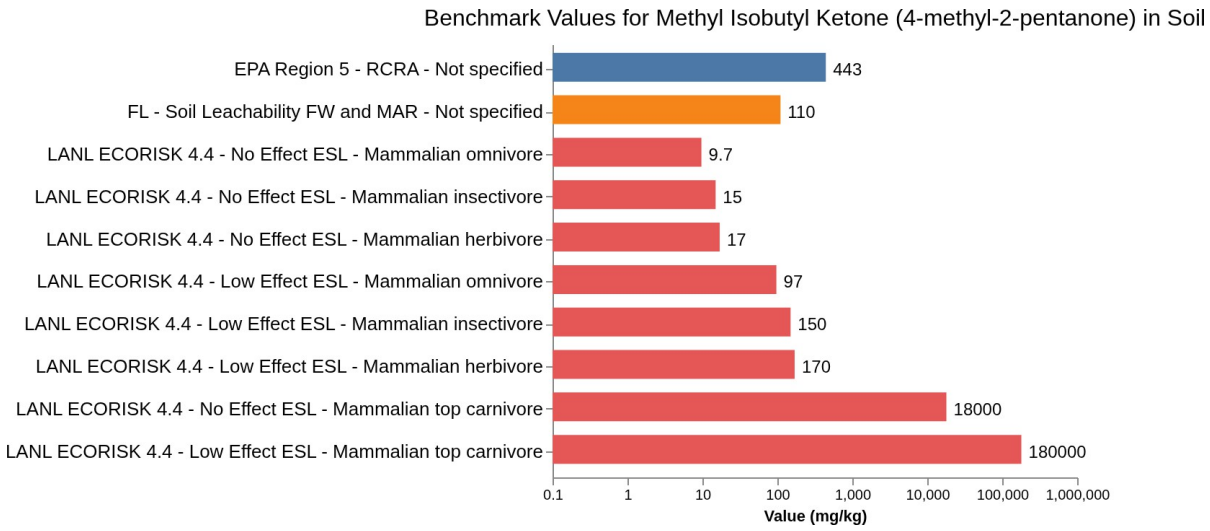


Table 327: Benchmark Values for Methyl Mercury in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
22967−92−6	Dutch Soil Protection Act	Intervention Value	Not specified	4.00000	74
22967−92−6	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	4.00000	74
22967−92−6	EPA Region 4	Soil Avians	Not specified	0.00035	7
22967−92−6	EPA Region 4	Soil All Receptors	Not specified	0.00035	7
22967−92−6	EPA Region 4	Soil Mammals	Not specified	0.00310	7
22967−92−6	EPA Region 4	Soil Invertebrates	Not specified	2.50000	7
22967−92−6	EPA Region 5	EPA RCRA Soil	Not specified	0.00158	
22967−92−6	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.00035	
22967−92−6	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.00071	
22967−92−6	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	0.00150	
22967−92−6	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.00310	
22967−92−6	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	0.00350	
22967−92−6	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.00620	
22967−92−6	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	0.00710	
22967−92−6	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	0.00900	
22967−92−6	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	0.01500	
22967−92−6	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	0.01500	
22967−92−6	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	0.03100	
22967−92−6	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.06600	
22967−92−6	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	0.09000	
22967−92−6	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	0.14000	
22967−92−6	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	0.66000	
22967−92−6	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	0.74000	
22967−92−6	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	1.90000	
22967−92−6	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	2.50000	
22967−92−6	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	9.80000	
22967−92−6	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	12.00000	
22967−92−6	ORNL	Soil Screening − Invertebrates	Not specified	0.10000	
22967−92−6	Washington	Soil Wildlife	Not specified	0.40000	

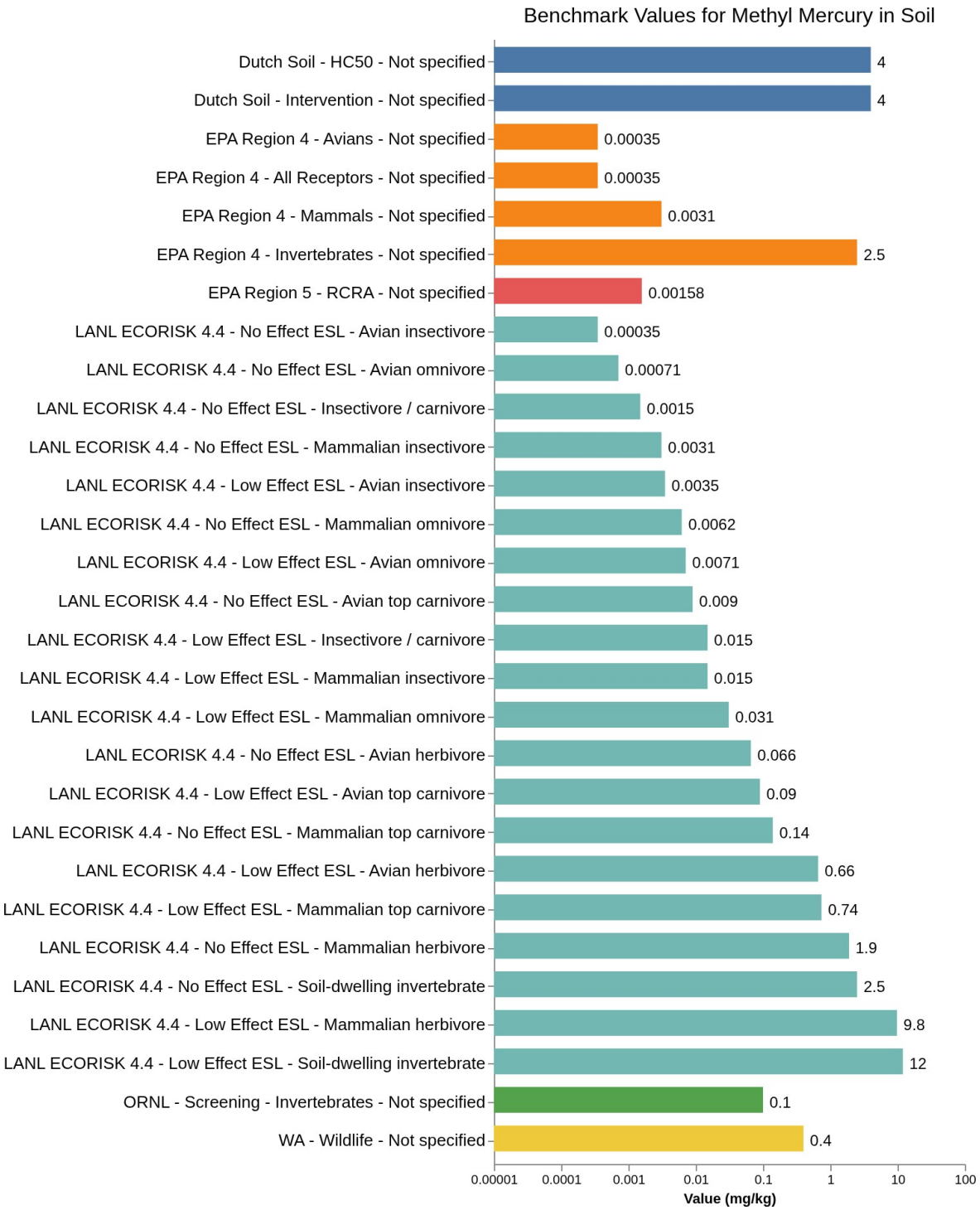

Benchmark Values for Methyl Mercury in Soil
Dutch Soil - HC50 - Not specified
4
Dutch Soil - Intervention - Not specified
4
EPA Region 4 - Avians - Not specified
0.00035
EPA Region 4 - All Receptors - Not specified
0.00035
EPA Region 4 - Mammals - Not specified
0.0031
EPA Region 4 - Invertebrates - Not specified
2.5
EPA Region 5 - RCRA - Not specified
0.00158
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
0.00035
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
0.00071
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
0.0015
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
0.0031
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
0.0035
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
0.0062
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
0.0071
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
0.009
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
0.015
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
0.015
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
0.031
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
0.066
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
0.09
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
0.14
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
0.66
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
0.74
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
1.9
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
2.5
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
9.8
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
12
ORNL - Screening - Invertebrates - Not specified
0.1
WA - Wildlife - Not specified
0.4
0.00001
0.0001
0.001
0.01
0.1
1
10
100
Value (mg/kg)

Table 328: Benchmark Values for Methyl Methacrylate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
80−62−6	EPA Region 5	EPA RCRA Soil	Not specified	984
80−62−6	Florida	Soil Leachability Freshwater and Marine	Not specified	32

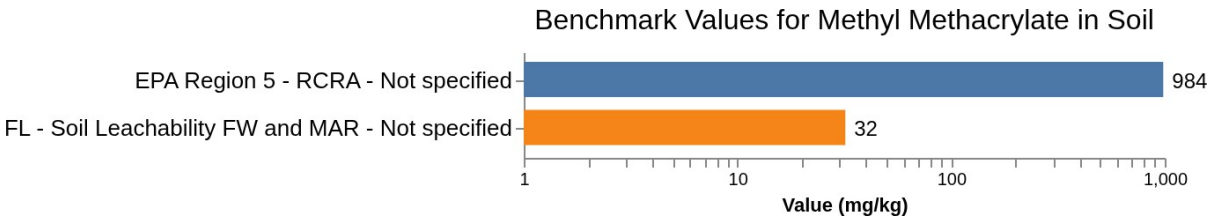


Table 329: Benchmark Values for Methyl methanesulfonate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
66−27−3	EPA Region 5	EPA RCRA Soil	Not specified	0.315

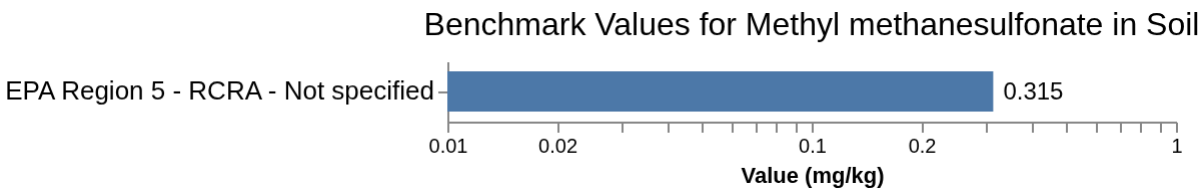


Table 330: Benchmark Values for Methyl Parathion in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
298−00−0	EPA Region 5	EPA RCRA Soil	Not specified	0.000292
298−00−0	Florida	Soil Leachability Freshwater and Marine	Not specified	0.000300

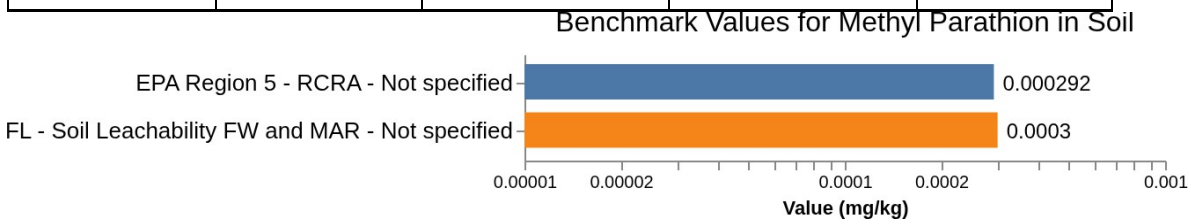


Table 331: Benchmark Values for Methyl tert−Butyl Ether (MTBE) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
1634−04−4	Dutch Soil Protection Act	Background	Not specified	0.2	71
1634−04−4	Dutch Soil Protection Act	Intervention Value	Not specified	100.0	73
1634−04−4	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	125.0	
1634−04−4	Florida	Soil Leachability Freshwater and Marine	Not specified	150.0	

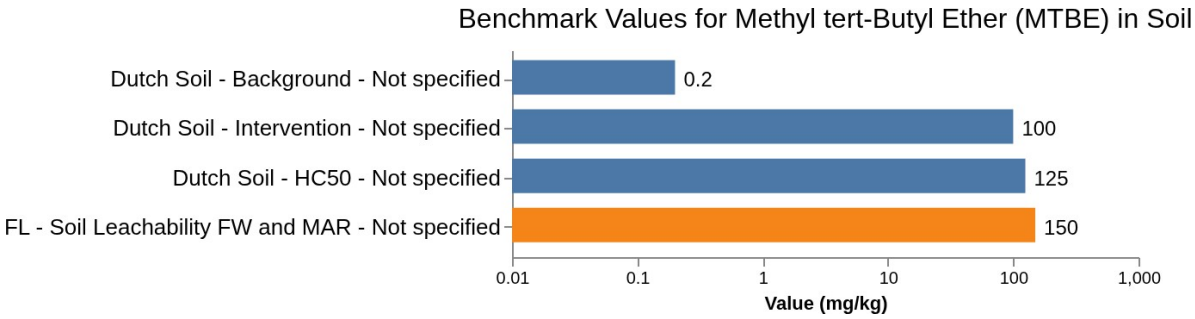


Table 332: Benchmark Values for Methyl−5−Nitroaniline, 2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
99−55−8	EPA Region 5	EPA RCRA Soil	Not specified	8.73

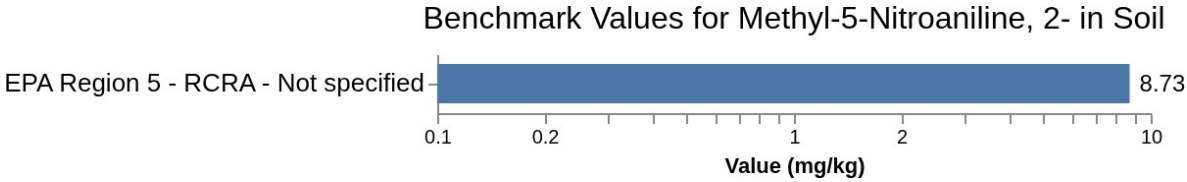


Table 333: Benchmark Values for Methylcholanthrene, 3− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
56−49−5	EPA Region 5	EPA RCRA Soil	Not specified	0.0779

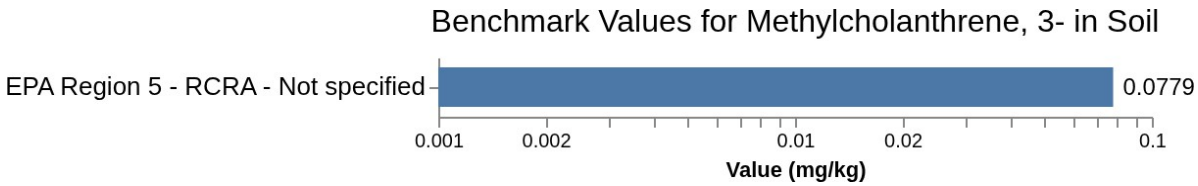


Table 334: Benchmark Values for Methylene Chloride in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
75−09−2	Canada	Soil Agricultural	Not specified	0.10
75−09−2	Canada	Soil Residential/Parkland	Not specified	5.00
75−09−2	Canada	Soil Commercial	Not specified	50.00
75−09−2	Canada	Soil Industrial	Not specified	50.00
75−09−2	Dutch Soil Protection Act	Background	Not specified	0.10
75−09−2	Dutch Soil Protection Act	Intervention Value	Not specified	3.90
75−09−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	3.90
75−09−2	EPA Region 4	Soil All Receptors	Not specified	0.21
75−09−2	EPA Region 4	Soil Invertebrates	Not specified	0.21
75−09−2	EPA Region 4	Soil Mammals	Not specified	2.60
75−09−2	EPA Region 4	Soil Plants	Not specified	1600.00
75−09−2	EPA Region 5	EPA RCRA Soil	Not specified	4.05
75−09−2	Florida	Soil Leachability Freshwater and Marine	Not specified	7.30
75−09−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	2.60
75−09−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	3.80
75−09−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	9.20
75−09−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	22.00
75−09−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	32.00
75−09−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	79.00
75−09−2	LANL ECORISK	Soil No Effect ESL	Generic Plant	1600.00
75−09−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	4300.00
75−09−2	LANL ECORISK	Soil Low Effect ESL	Generic Plant	16000.00
75−09−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	36000.00

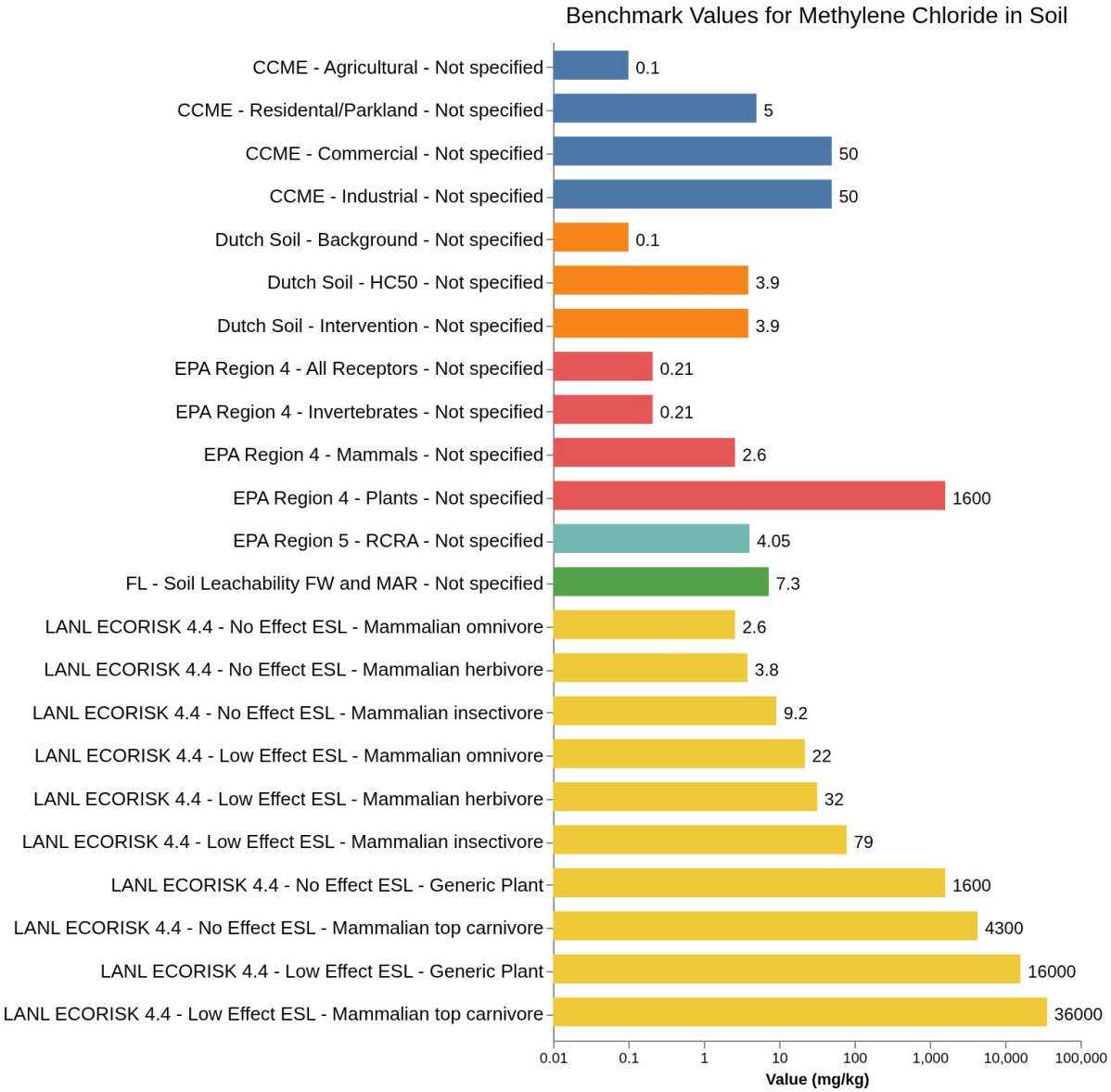


Table 335: Benchmark Values for Methylnaphthalene, 1− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
90−12−0	EPA Region 4	Soil Invertebrates	Not specified	0.14
90−12−0	EPA Region 4	Soil All Receptors	Not specified	29.00
90−12−0	Florida	Soil Leachability Freshwater and Marine	Not specified	10.00

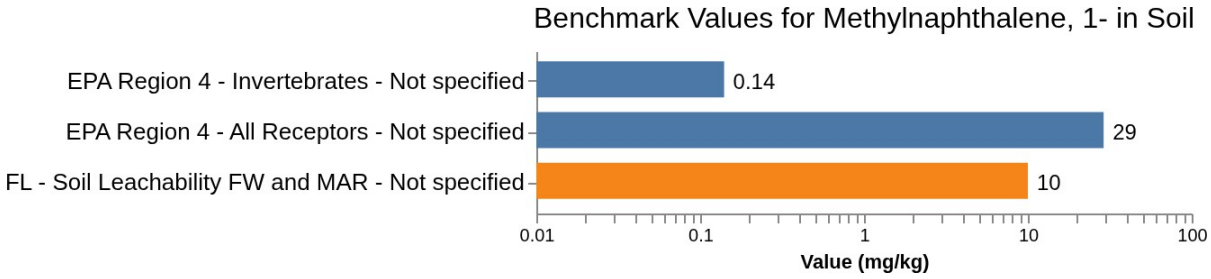


Table 336: Benchmark Values for Methylnaphthalene, 2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
91−57−6	EPA Region 4	Soil Invertebrates	Not specified	0.11
91−57−6	EPA Region 4	Soil Mammals	Not specified	16.00
91−57−6	EPA Region 4	Soil All Receptors	Not specified	29.00
91−57−6	EPA Region 5	EPA RCRA Soil	Not specified	3.24
91−57−6	Florida	Soil Leachability Freshwater and Marine	Not specified	9.10
91−57−6	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	16.00
91−57−6	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	24.00
91−57−6	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	110.00
91−57−6	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	160.00
91−57−6	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	240.00
91−57−6	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1100.00
91−57−6	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	4900.00
91−57−6	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	49000.00

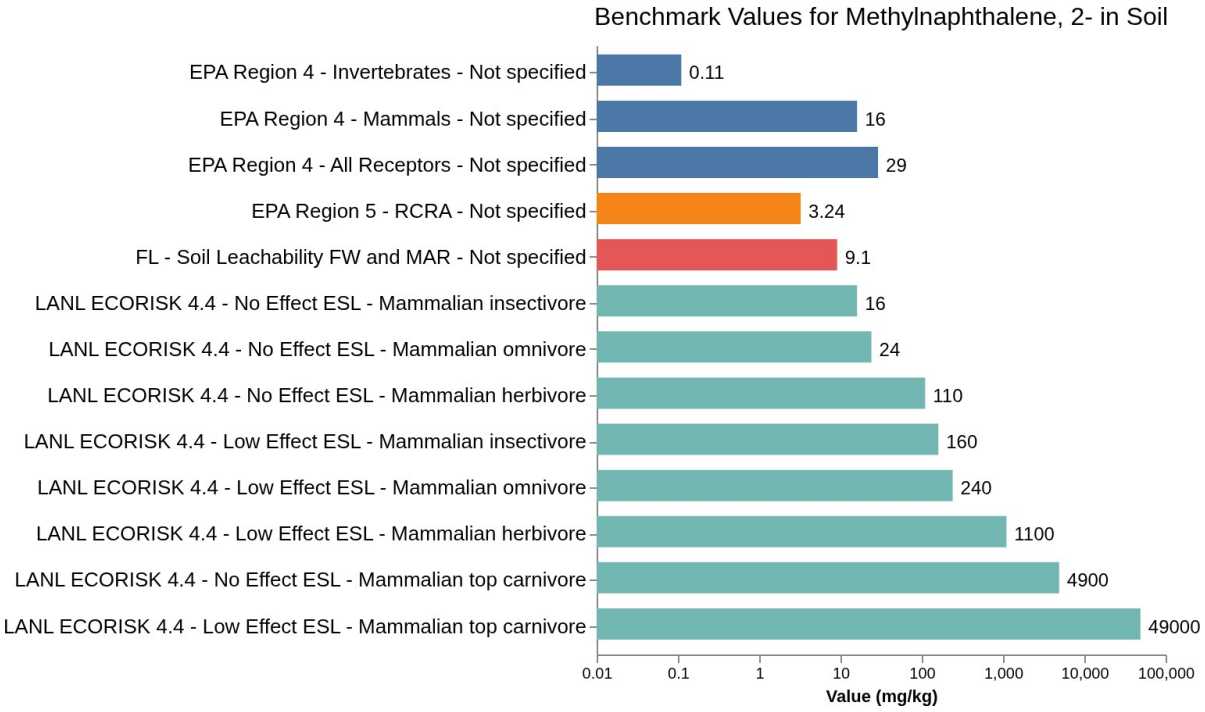


Table 337: Benchmark Values for Methylphenanthrene, 1− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
832−69−9	EPA Region 4	Soil Invertebrates	Not specified	0.5	7
832−69−9	EPA Region 4	Soil All Receptors	Not specified	29.0	7

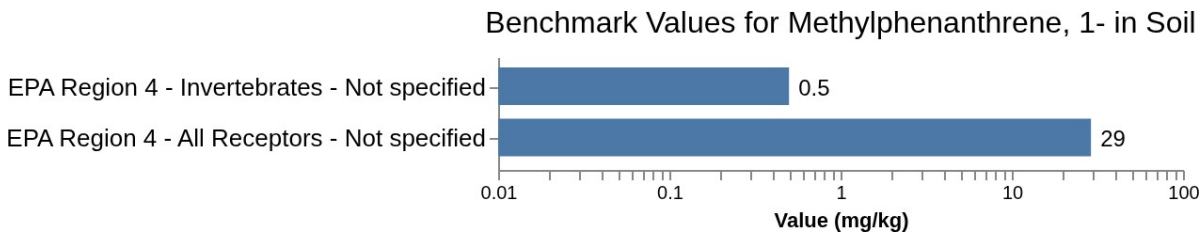


Table 338: Benchmark Values for Metolachlor in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
51218−45−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.01

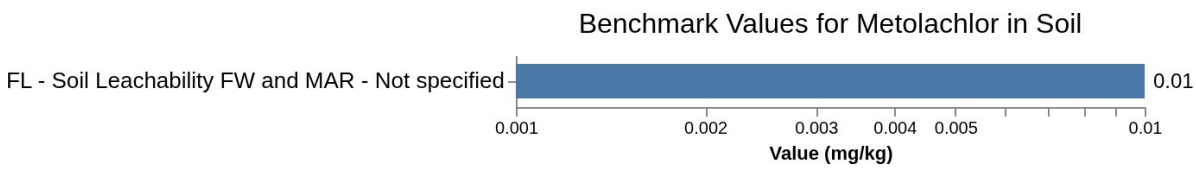


Table 339: Benchmark Values for Metribuzin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
21087−64−9	Florida	Soil Leachability Freshwater and Marine	Not specified	0.8

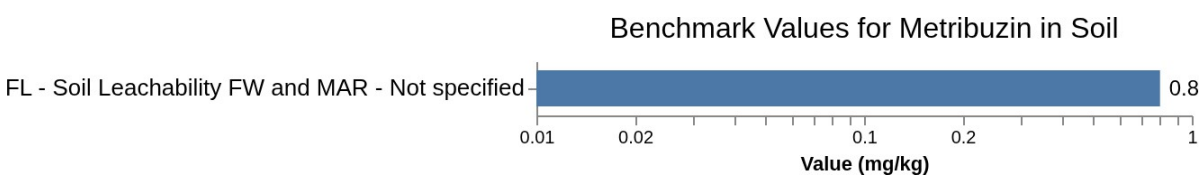


Table 340: Benchmark Values for Mevinphos in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7786−34−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0003

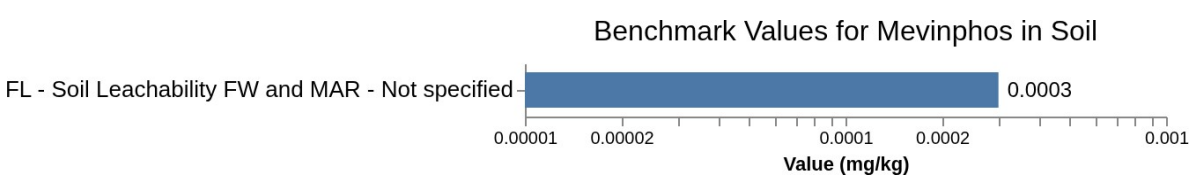


Table 341: Benchmark Values for Mineral oils in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
8012−95−1	Dutch Soil Protection Act	Background	Not specified	190.0
8012−95−1	Dutch Soil Protection Act	Intervention Value	Not specified	5000.0

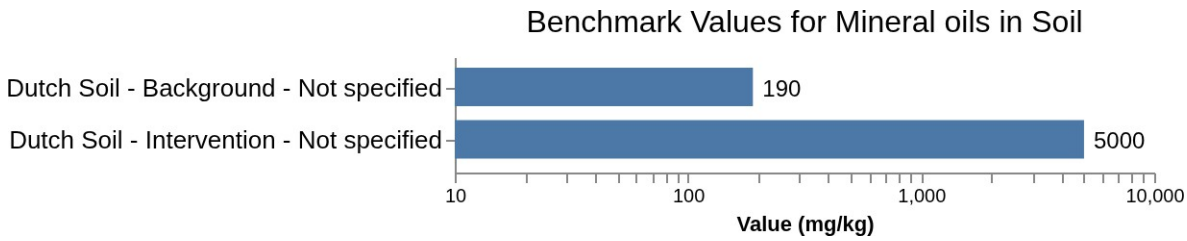


Table 342: Benchmark Values for Mirex in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
2385−85−5	EPA Region 4	Soil Invertebrates	Not specified	0.0036	7
2385−85−5	EPA Region 4	Soil All Receptors	Not specified	0.0036	7

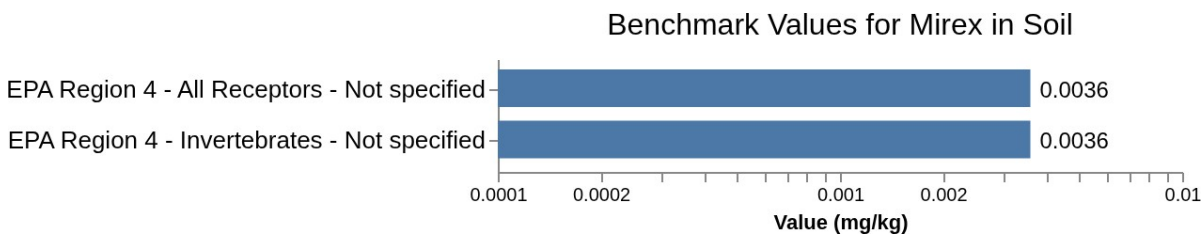


Table 343: Benchmark Values for Molinate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
2212−67−1	Florida	Soil Leachability Freshwater and Marine	Not specified	0.1	

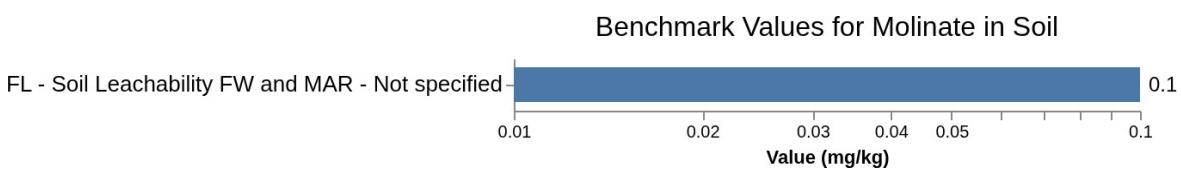


Table 344: Benchmark Values for Molybdenum in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
7439−98−7	Canada	Soil Agricultural	Not specified	5.0	
7439−98−7	Canada	Soil Residential/Parkland	Not specified	10.0	
7439−98−7	Canada	Soil Industrial	Not specified	40.0	
7439−98−7	Canada	Soil Commercial	Not specified	40.0	
7439−98−7	Dutch Soil Protection Act	Background	Not specified	1.5	72
7439−98−7	Dutch Soil Protection Act	Intervention Value	Not specified	190.0	
7439−98−7	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	192.0	
7439−98−7	EPA Region 4	Soil All Receptors	Not specified	2.0	
7439−98−7	EPA Region 4	Soil Plants	Not specified	2.0	
7439−98−7	EPA Region 4	Soil Mammals	Not specified	4.8	
7439−98−7	EPA Region 4	Soil Avians	Not specified	15.0	
7439−98−7	EPA Region 6	Soil Plants	Not specified	2.0	
7439−98−7	LANL ECORISK	Soil No Effect ESL	Avian insectivore	15.0	
7439−98−7	LANL ECORISK	Soil No Effect ESL	Avian omnivore	16.0	
7439−98−7	LANL ECORISK	Soil No Effect ESL	Avian herbivore	18.0	
7439−98−7	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	90.0	
7439−98−7	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	150.0	
7439−98−7	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	160.0	
7439−98−7	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	180.0	
7439−98−7	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	900.0	
7439−98−7	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	1100.0	
7439−98−7	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	11000.0	
7439−98−7	ORNL	Soil Screening − Plants	Not specified	2.0	
7439−98−7	ORNL	Soil Screening − Microbes	Not specified	200.0	
7439−98−7	UK	Soil Screening Values	Not specified	5.1	
7439−98−7	Washington	Soil Wildlife	Not specified	7.0	

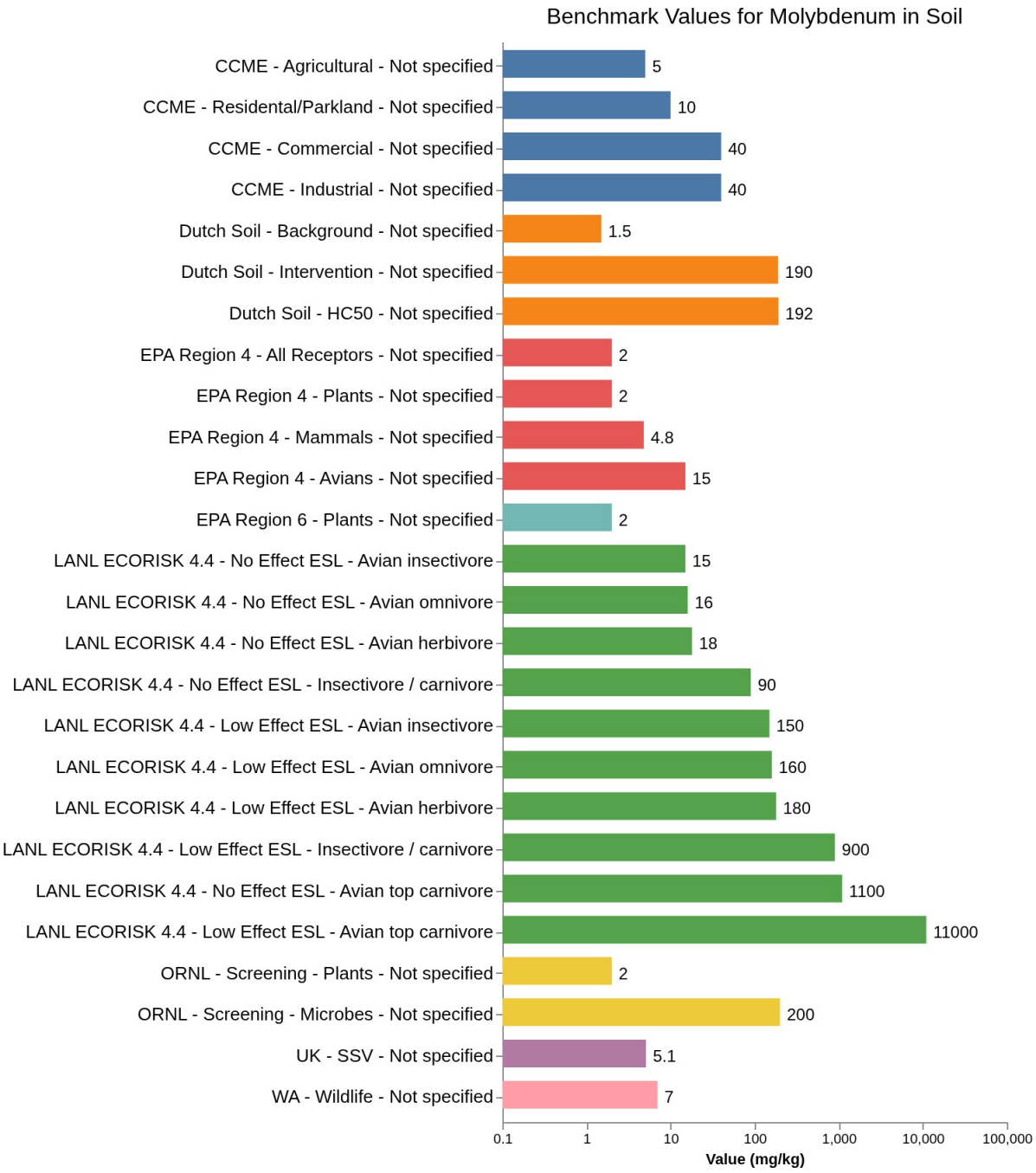

Benchmark Values for Molybdenum in Soil
CCME - Agricultural - Not specified
5
CCME - Residental/Parkland - Not specified
10
CCME - Commercial - Not specified
40
CCME - Industrial - Not specified
40
Dutch Soil - Background - Not specified
1.5
Dutch Soil - Intervention - Not specified
190
Dutch Soil - HC50 - Not specified
192
EPA Region 4 - All Receptors - Not specified
2
EPA Region 4 - Plants - Not specified
2
EPA Region 4 - Mammals - Not specified
4.8
EPA Region 4 - Avians - Not specified
15
EPA Region 6 - Plants - Not specified
2
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
15
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
16
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
18
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
90
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
150
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
160
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
180
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
900
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
1100
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
11000
ORNL - Screening - Plants - Not specified
2
ORNL - Screening - Microbes - Not specified
200
UK - SSV - Not specified
5.1
WA - Wildlife - Not specified
7
0.1
1
10
100
1,000
10,000
100,000
Value (mg/kg)

Table 345: Benchmark Values for Monochlorophenols (total) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
25167−80−0	Canada	Soil Agricultural	Not specified	0.050
25167−80−0	Canada	Soil Residential/Parkland	Not specified	0.500
25167−80−0	Canada	Soil Commercial	Not specified	5.000
25167−80−0	Canada	Soil Industrial	Not specified	5.000
25167−80−0	Dutch Soil Protection Act	Background	Not specified	0.045
25167−80−0	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	5.400

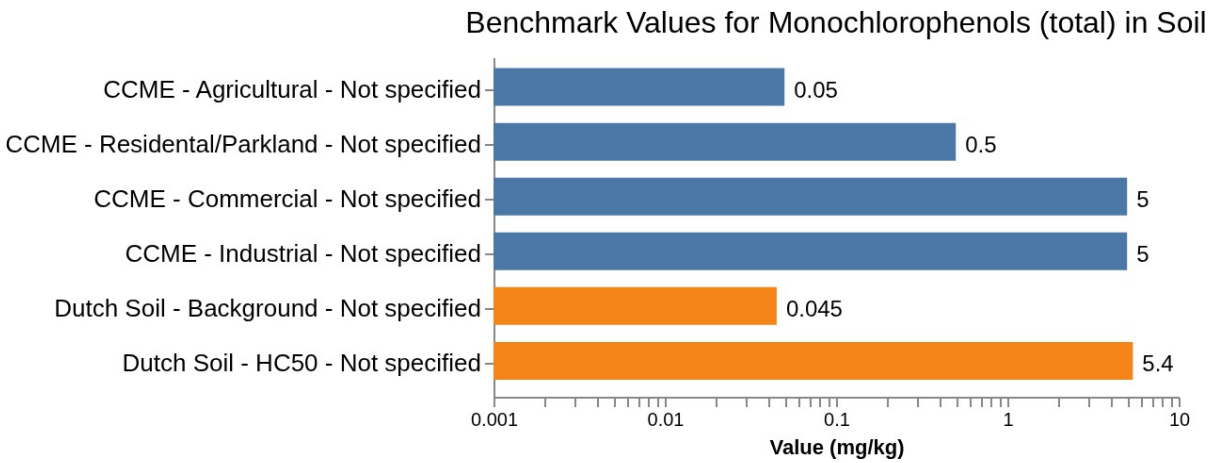


Table 346: Benchmark Values for Monocyclic aromatic hydrocarbons (total) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
000000−04−2	Dutch Soil Protection Act	Background	Not specified	2.5	71
000000−04−2	Dutch Soil Protection Act	Intervention Value	Not specified	200.0	73
000000−04−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	211.0	

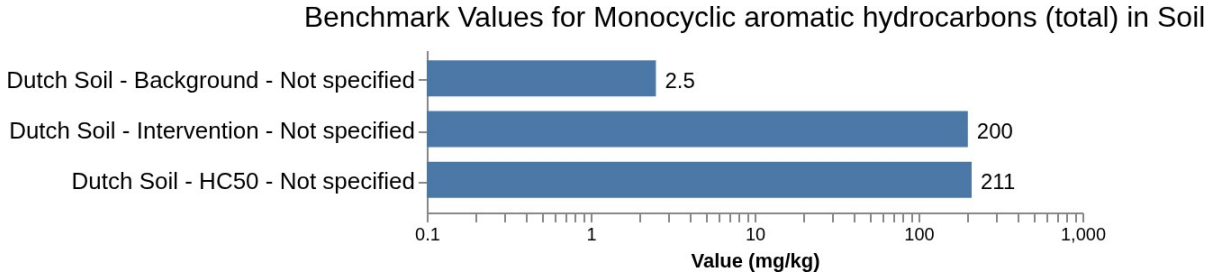


Table 347: Benchmark Values for Naled in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
300−76−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0002

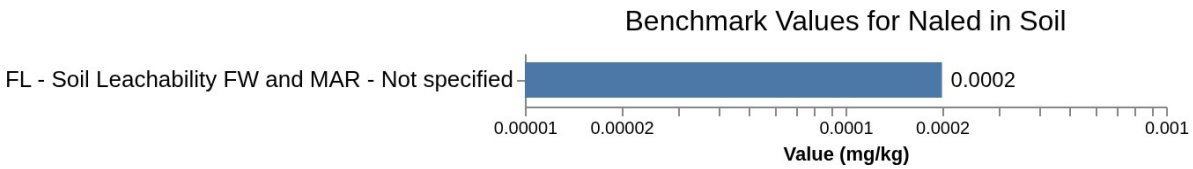


Table 348: Benchmark Values for Naphthalene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
91−20−3	Canada	Soil Agricultural	Not specified	0.1000	36
91−20−3	Canada	Soil Residential/Parkland	Not specified	0.6000	36
91−20−3	Canada	Soil Commercial	Not specified	22.0000	36
91−20−3	Canada	Soil Industrial	Not specified	22.0000	36
91−20−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	17.0000	
91−20−3	EPA Region 4	Soil Invertebrates	Not specified	0.1600	
91−20−3	EPA Region 4	Soil Plants	Not specified	1.0000	
91−20−3	EPA Region 4	Soil Avians	Not specified	3.4000	
91−20−3	EPA Region 4	Soil Mammals	Not specified	9.6000	
91−20−3	EPA Region 4	Soil All Receptors	Not specified	29.0000	
91−20−3	EPA Region 5	EPA RCRA Soil	Not specified	0.0994	
91−20−3	Florida	Soil Leachability Freshwater and Marine	Not specified	2.2000	
91−20−3	LANL ECORISK	Soil No Effect ESL	Generic Plant	1.0000	
91−20−3	LANL ECORISK	Soil No Effect ESL	Avian herbivore	3.4000	
91−20−3	LANL ECORISK	Soil No Effect ESL	Avian omnivore	5.7000	
91−20−3	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	9.6000	
91−20−3	LANL ECORISK	Soil Low Effect ESL	Generic Plant	10.0000	
91−20−3	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	14.0000	
91−20−3	LANL ECORISK	Soil No Effect ESL	Avian insectivore	15.0000	
91−20−3	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	27.0000	
91−20−3	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	28.0000	
91−20−3	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	34.0000	
91−20−3	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	40.0000	
91−20−3	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	57.0000	
91−20−3	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	78.0000	
91−20−3	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	79.0000	
91−20−3	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	150.0000	
91−20−3	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	780.0000	
91−20−3	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	2100.0000	
91−20−3	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	5800.0000	
91−20−3	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	16000.0000	
91−20−3	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	21000.0000	

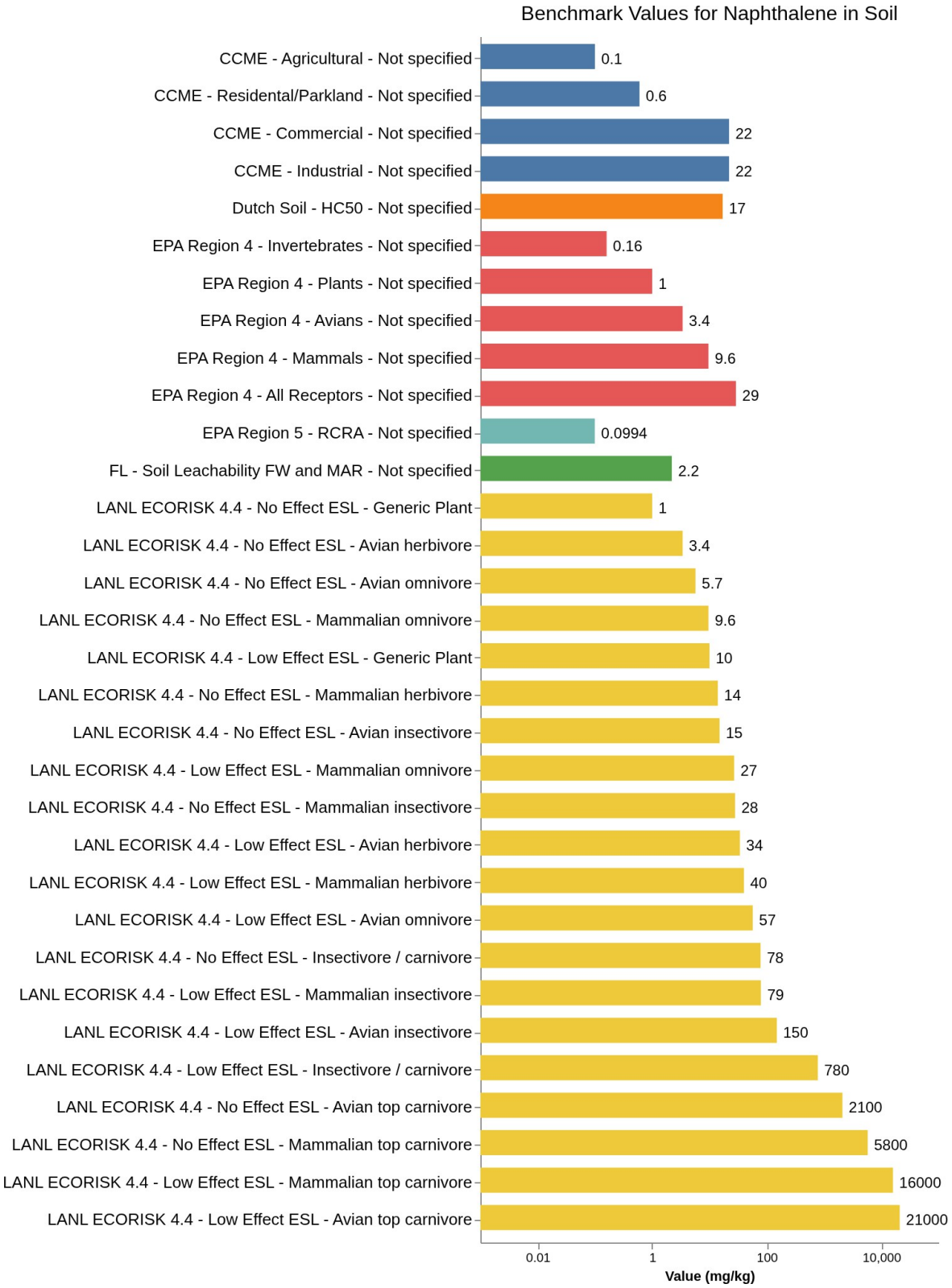

Benchmark Values for Naphthalene in Soil
CCME - Agricultural - Not specified
0.1
CCME - Residental/Parkland - Not specified
0.6
CCME - Commercial - Not specified
22
CCME - Industrial - Not specified
22
Dutch Soil - HC50 - Not specified
17
EPA Region 4 - Invertebrates - Not specified
0.16
EPA Region 4 - Plants - Not specified
1
EPA Region 4 - Avians - Not specified
3.4
EPA Region 4 - Mammals - Not specified
9.6
EPA Region 4 - All Receptors - Not specified
29
EPA Region 5 - RCRA - Not specified
0.0994
FL - Soil Leachability FW and MAR - Not specified
2.2
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
1
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
3.4
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
5.7
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
9.6
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
10
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
14
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
15
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
27
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
28
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
34
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
40
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
57
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
78
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
79
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
150
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
780
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
2100
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
5800
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
16000
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
21000
0.01
1
100
10,000
Value (mg/kg)

Table 349: Benchmark Values for Naphthoquinone, 1,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
130−15−4	EPA Region 5	EPA RCRA Soil	Not specified	1.67

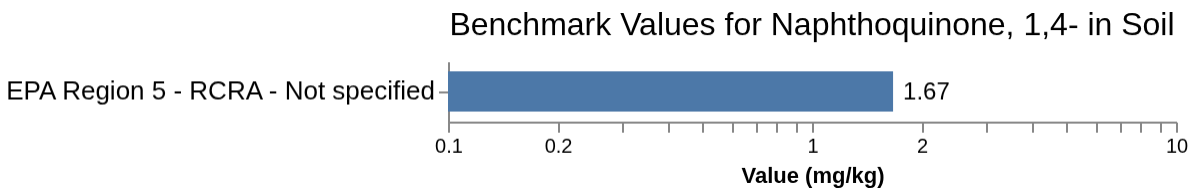


Table 350: Benchmark Values for Naphthylamine, 1− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
134−32−7	EPA Region 5	EPA RCRA Soil	Not specified	9.34

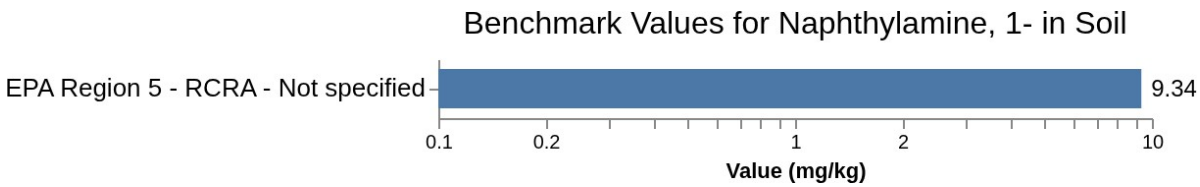


Table 351: Benchmark Values for Naphthylamine, 2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
91−59−8	EPA Region 5	EPA RCRA Soil	Not specified	3.03

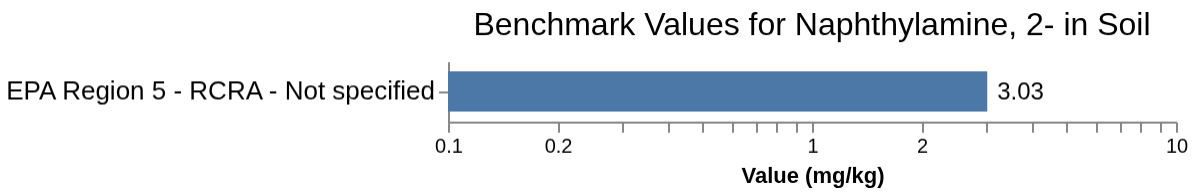


Table 352: Benchmark Values for Nickel Soluble Salts in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
7440−02−0	Canada	Soil Residential/Parkland	Not specified	45.0	
7440−02−0	Canada	Soil Agricultural	Not specified	45.0	
7440−02−0	Canada	Soil Industrial	Not specified	89.0	
7440−02−0	Canada	Soil Commercial	Not specified	89.0	
7440−02−0	Dutch Soil Protection Act	Background	Not specified	35.0	
7440−02−0	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	95.0	
7440−02−0	Dutch Soil Protection Act	Intervention Value	Not specified	100.0	
7440−02−0	EPA ECO−SSL	Plants	Not specified	38.0	
7440−02−0	EPA ECO−SSL	Mammalian	Not specified	130.0	
7440−02−0	EPA ECO−SSL	Avian	Not specified	210.0	
7440−02−0	EPA ECO−SSL	Soil Invertebrates	Not specified	280.0	
7440−02−0	EPA Region 4	Soil Plants	Not specified	38.0	
7440−02−0	EPA Region 4	Soil All Receptors	Not specified	38.0	
7440−02−0	EPA Region 4	Soil Mammals	Not specified	130.0	
7440−02−0	EPA Region 4	Soil Avians	Not specified	210.0	
7440−02−0	EPA Region 4	Soil Invertebrates	Not specified	280.0	
7440−02−0	EPA Region 5	EPA RCRA Soil	Not specified	13.6	
7440−02−0	EPA Region 6	Soil Plants	Not specified	38.0	
7440−02−0	EPA Region 6	Soil Invertebrates	Not specified	280.0	
7440−02−0	Florida	Soil Leachability Marine	Not specified	11.0	211, 212
7440−02−0	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	10.0	
7440−02−0	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	20.0	
7440−02−0	LANL ECORISK	Soil No Effect ESL	Avian insectivore	20.0	
7440−02−0	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	21.0	
7440−02−0	LANL ECORISK	Soil No Effect ESL	Avian omnivore	35.0	
7440−02−0	LANL ECORISK	Soil No Effect ESL	Generic Plant	38.0	
7440−02−0	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	40.0	
7440−02−0	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	81.0	
7440−02−0	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	110.0	
7440−02−0	LANL ECORISK	Soil No Effect ESL	Avian herbivore	120.0	
7440−02−0	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	130.0	
7440−02−0	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	270.0	
7440−02−0	LANL ECORISK	Soil Low Effect ESL	Generic Plant	270.0	
7440−02−0	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	280.0	
7440−02−0	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	440.0	
7440−02−0	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	500.0	
7440−02−0	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	540.0	
7440−02−0	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	1200.0	
7440−02−0	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	1300.0	
7440−02−0	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	2000.0	
7440−02−0	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	2500.0	
7440−02−0	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	8100.0	
7440−02−0	ORNL	Soil Screening − Plants	Not specified	30.0	
7440−02−0	ORNL	Soil Screening −Microbes	Not specified	90.0	
7440−02−0	ORNL	Soil Screening − Invertebrates	Not specified	200.0	
7440−02−0	UK	Soil Screening Values	Not specified	28.2	
7440−02−0	Washington	Soil Wildlife	Not specified	980.0	

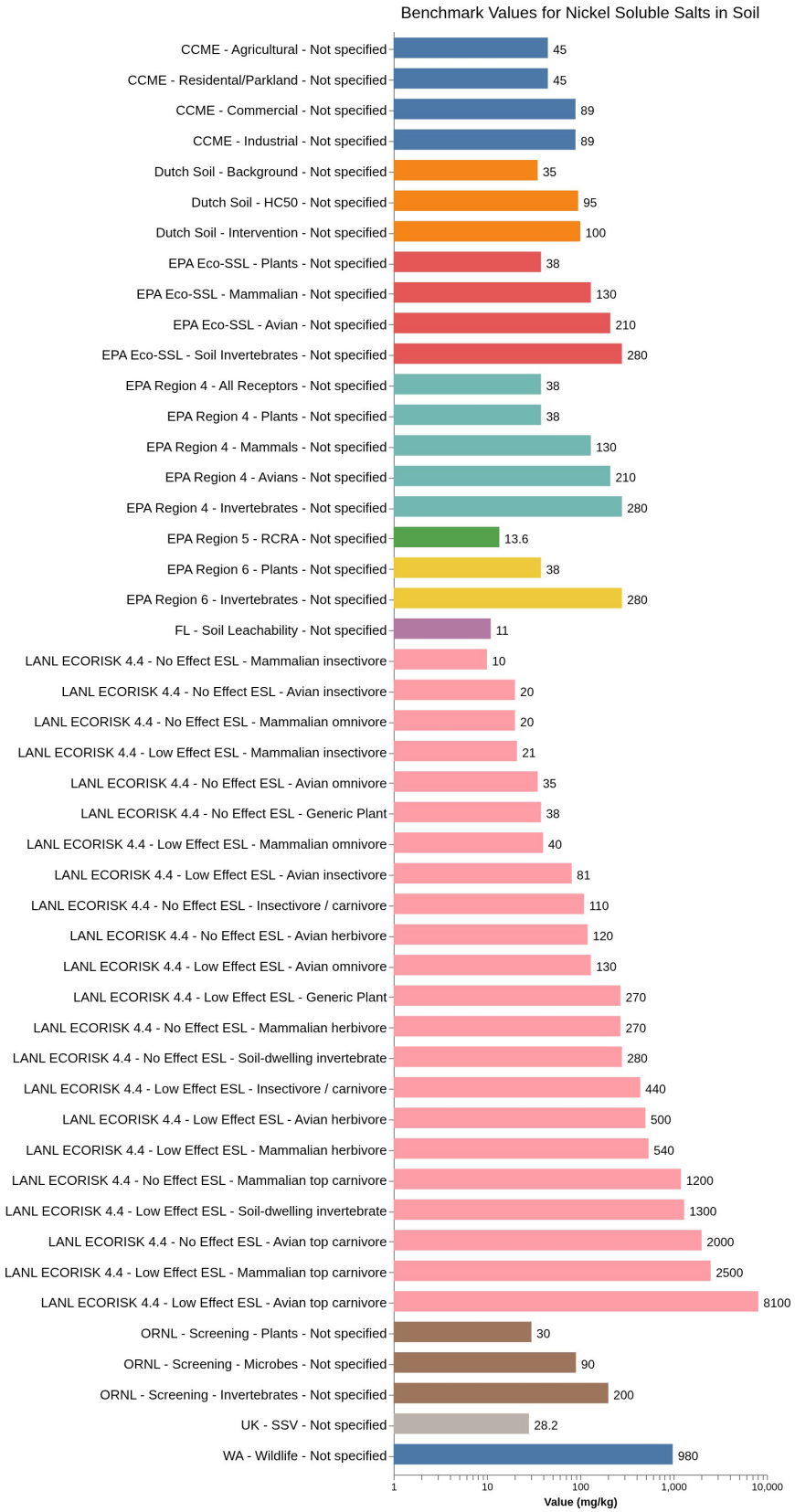

Benchmark Values for Nickel Soluble Salts in Soil
CCME - Agricultural - Not specified 45
CCME - Residental/Parkland - Not specified 45
CCME - Commercial - Not specified 89
CCME - Industrial - Not specified 89
Dutch Soil - Background - Not specified 35
Dutch Soil - HC50 - Not specified 95
Dutch Soil - Intervention - Not specified 100
EPA Eco-SSL - Plants - Not specified 38
EPA Eco-SSL - Mammalian - Not specified 130
EPA Eco-SSL - Avian - Not specified 210
EPA Eco-SSL - Soil Invertebrates - Not specified 280
EPA Region 4 - All Receptors - Not specified 38
EPA Region 4 - Plants - Not specified 38
EPA Region 4 - Mammals - Not specified 130
EPA Region 4 - Avians - Not specified 210
EPA Region 4 - Invertebrates - Not specified 280
EPA Region 5 - RCRA - Not specified 13.6
EPA Region 6 - Plants - Not specified 38
EPA Region 6 - Invertebrates - Not specified 280
FL - Soil Leachability - Not specified 11
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore 10
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore 20
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore 20
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore 21
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore 35
LANL ECORISK 4.4 - No Effect ESL - Generic Plant 38
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore 40
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore 81
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore 110
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore 120
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore 130
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant 270
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore 270
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate 280
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore 440
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore 500
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore 540
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore 1200
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate 1300
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore 2000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore 2500
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore 8100
ORNL - Screening - Plants - Not specified 30
ORNL - Screening - Microbes - Not specified 90
ORNL - Screening - Invertebrates - Not specified 200
UK - SSV - Not specified 28.2
WA - Wildlife - Not specified 980
1
10
100
1,000
10,000
Value (mg/kg)

Table 353: Benchmark Values for Nitroaniline, 2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
88−74−4	EPA Region 4	Soil All Receptors	Not specified	0.02
88−74−4	EPA Region 4	Soil Invertebrates	Not specified	0.02
88−74−4	EPA Region 4	Soil Mammals	Not specified	5.30
88−74−4	EPA Region 5	EPA RCRA Soil	Not specified	74.10
88−74−4	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	5.30
88−74−4	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	6.50
88−74−4	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	10.00
88−74−4	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	11.00
88−74−4	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	13.00
88−74−4	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	22.00
88−74−4	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	2200.00
88−74−4	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	4400.00

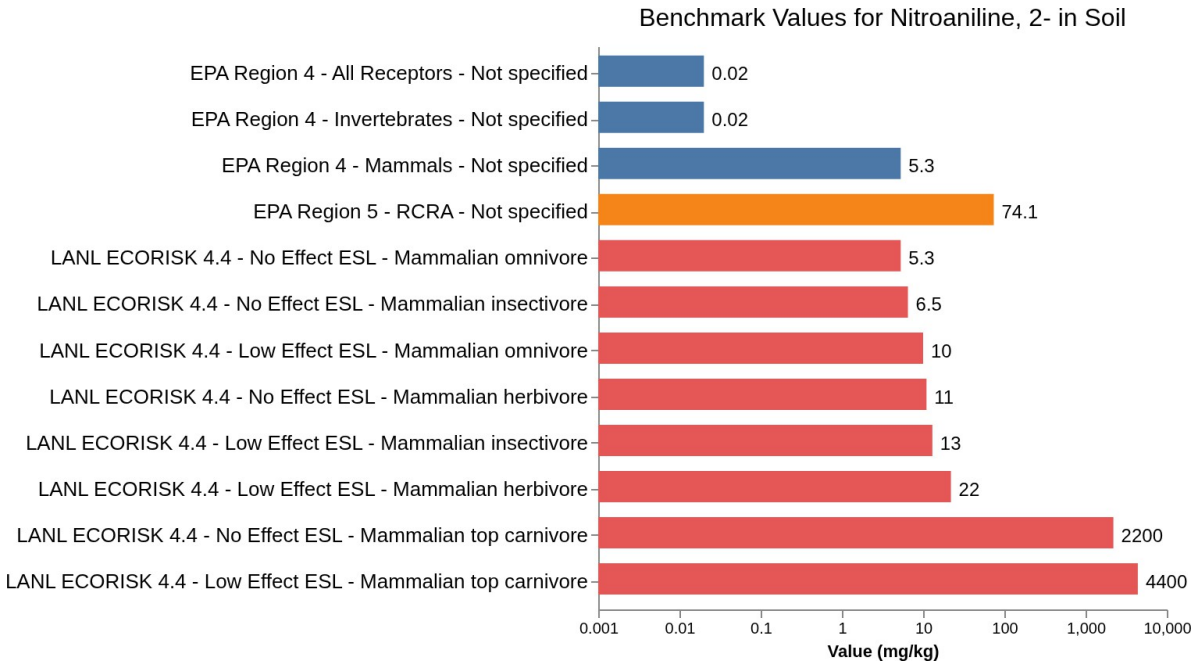


Table 354: Benchmark Values for Nitroaniline, 3− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
99−09−2	EPA Region 5	EPA RCRA Soil	Not specified	3.16

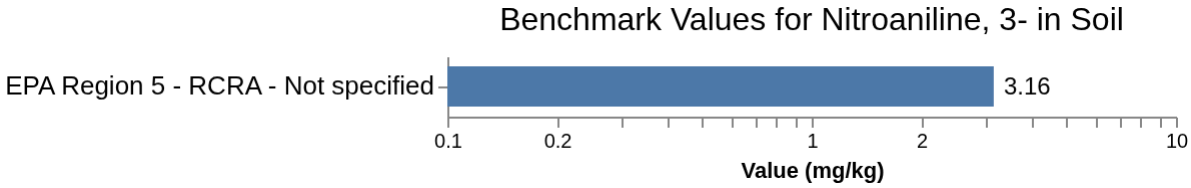


Table 355: Benchmark Values for Nitroaniline, 4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
100−01−6	EPA Region 5	EPA RCRA Soil	Not specified	21.9
100−01−6	Florida	Soil Leachability Freshwater and Marine	Not specified	5.9

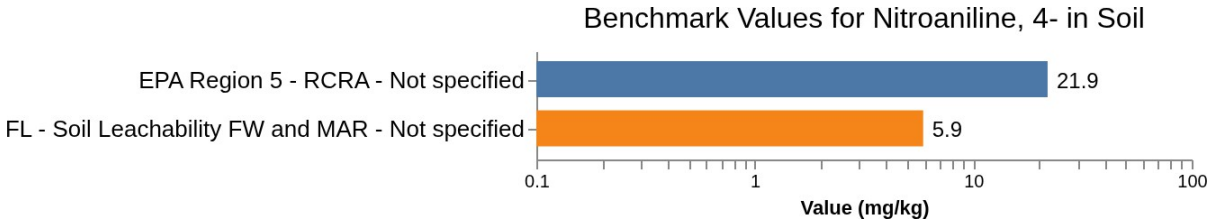


Table 356: Benchmark Values for Nitrobenzene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
98−95−3	EPA Region 4	Soil All Receptors	Not specified	2.20
98−95−3	EPA Region 4	Soil Invertebrates	Not specified	2.20
98−95−3	EPA Region 4	Soil Mammals	Not specified	4.80
98−95−3	EPA Region 5	EPA RCRA Soil	Not specified	1.31
98−95−3	EPA Region 6	Soil Invertebrates	Not specified	40.00
98−95−3	Florida	Soil Leachability Freshwater and Marine	Not specified	0.60
98−95−3	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	2.20
98−95−3	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	4.80
98−95−3	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	6.70
98−95−3	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	21.00
98−95−3	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	22.00
98−95−3	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	48.00
98−95−3	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	67.00
98−95−3	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	210.00
98−95−3	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	4100.00
98−95−3	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	41000.00
98−95−3	ORNL	Soil Screening − Invertebrates	Not specified	40.00
98−95−3	ORNL	Soil Screening − Microbes	Not specified	1000.00

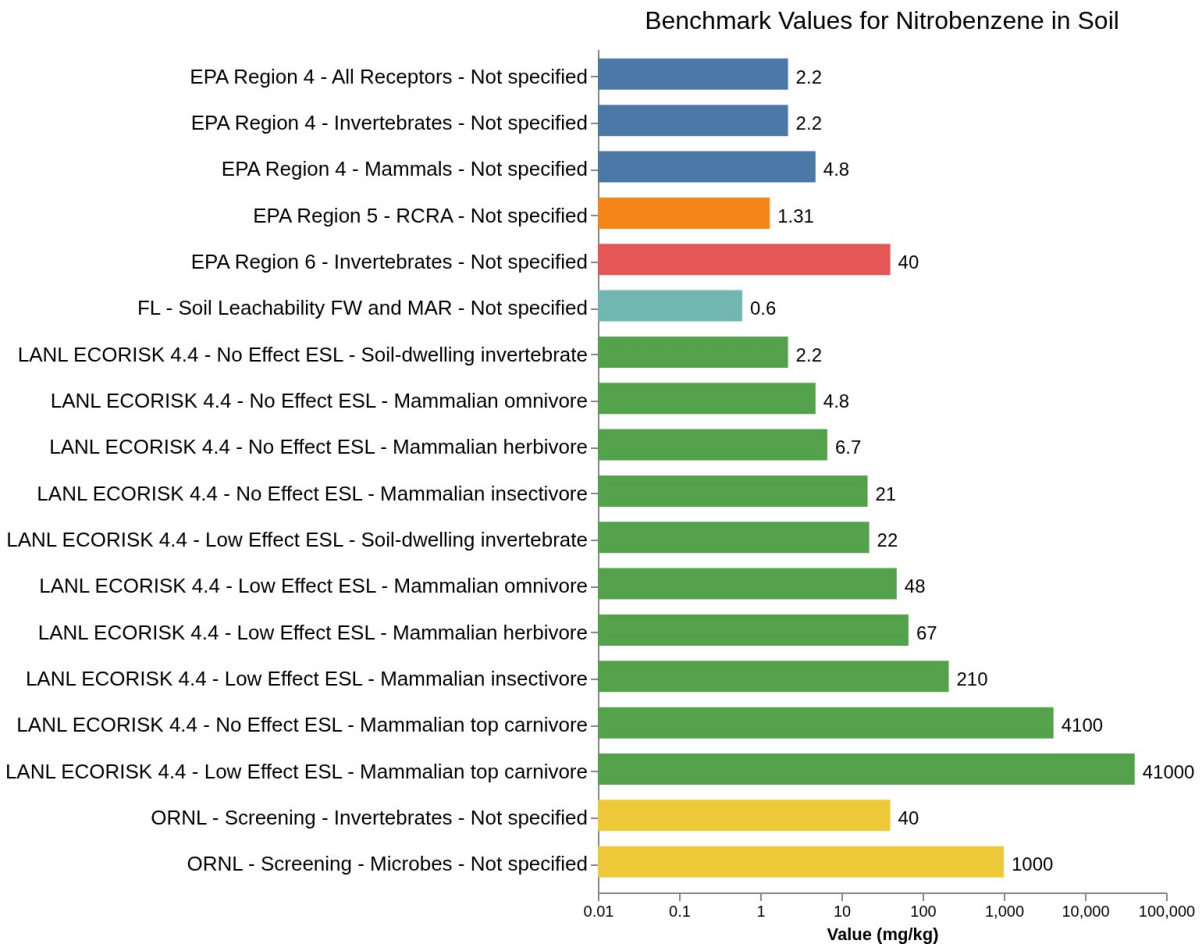

Benchmark Values for Nitrobenzene in Soil
EPA Region 4 - All Receptors - Not specified
2.2
EPA Region 4 - Invertebrates - Not specified
2.2
EPA Region 4 - Mammals - Not specified
4.8
EPA Region 5 - RCRA - Not specified
1.31
EPA Region 6 - Invertebrates - Not specified
40
FL - Soil Leachability FW and MAR - Not specified
0.6
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
2.2
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
4.8
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
6.7
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
21
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
22
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
48
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
67
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
210
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
4100
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
41000
ORNL - Screening - Invertebrates - Not specified
40
ORNL - Screening - Microbes - Not specified
1000
0.01
0.1
1
10
100
1,000
10,000
100,000
Value (mg/kg)

Table 357: Benchmark Values for Nitroglycerin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
55−63−0	EPA Region 4	Soil All Receptors	Not specified	13.0
55−63−0	EPA Region 4	Soil Invertebrates	Not specified	13.0
55−63−0	EPA Region 4	Soil Plants	Not specified	21.0
55−63−0	EPA Region 4	Soil Mammals	Not specified	70.0
55−63−0	EPA Region 6	Soil Invertebrates	Not specified	13.0
55−63−0	EPA Region 6	Soil Plants	Not specified	21.0
55−63−0	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	13.0
55−63−0	LANL ECORISK	Soil No Effect ESL	Generic Plant	21.0
55−63−0	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	70.0
55−63−0	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	88.0
55−63−0	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	130.0
55−63−0	LANL ECORISK	Soil Low Effect ESL	Generic Plant	210.0
55−63−0	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	740.0
55−63−0	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	930.0
55−63−0	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	1200.0
55−63−0	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	13000.0
55−63−0	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	69000.0
55−63−0	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	730000.0

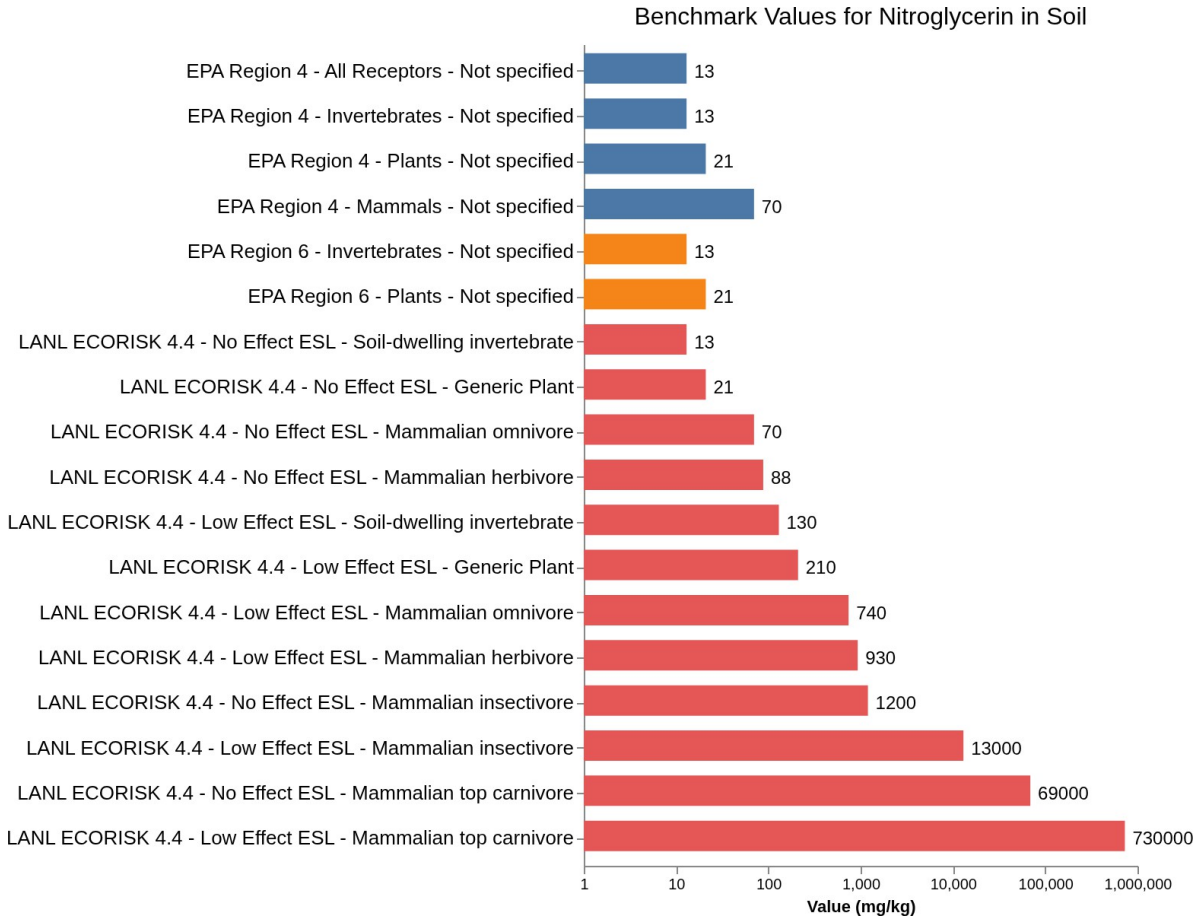


Table 358: Benchmark Values for Nitrophenol, 2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
88−75−5	EPA Region 5	EPA RCRA Soil	Not specified	1.6

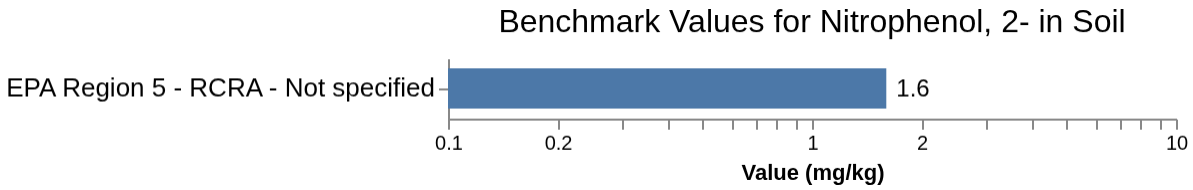


Table 359: Benchmark Values for Nitrophenol, 4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
100−02−7	EPA Region 4	Soil All Receptors	Not specified	5.12
100−02−7	EPA Region 4	Soil Mammals	Not specified	5.12
100−02−7	EPA Region 4	Soil Invertebrates	Not specified	7.00
100−02−7	EPA Region 5	EPA RCRA Soil	Not specified	5.12
100−02−7	EPA Region 6	Soil Invertebrates	Not specified	7.00
100−02−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.30
100−02−7	ORNL	Soil Screening − Invertebrates	Not specified	7.00

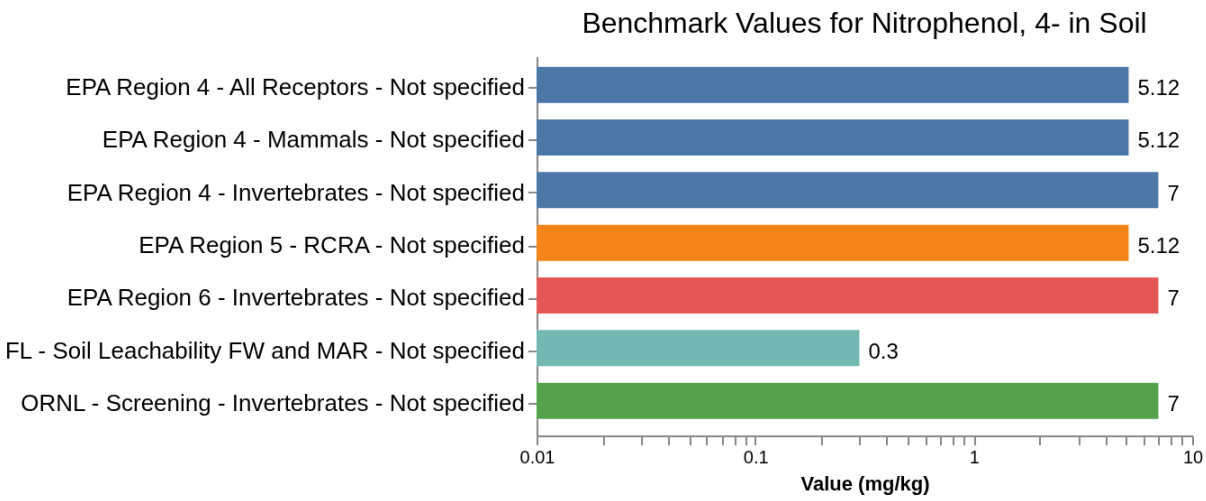


Table 360: Benchmark Values for Nitroquinoline−1−oxide. 4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
56−57−5	EPA Region 5	EPA RCRA Soil	Not specified	0.122

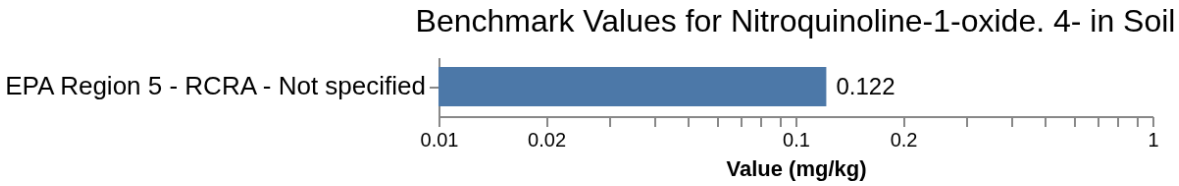


Table 361: Benchmark Values for Nitrosodibutylamine, N− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
924−16−3	EPA Region 5	EPA RCRA Soil	Not specified	0.2670
924−16−3	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0005

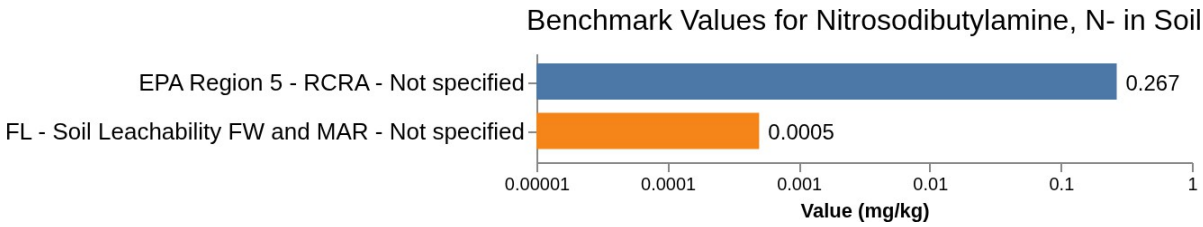


Table 362: Benchmark Values for Nitrosodiethylamine, N− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
55−18−5	EPA Region 5	EPA RCRA Soil	Not specified	0.06930
55−18−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.00003

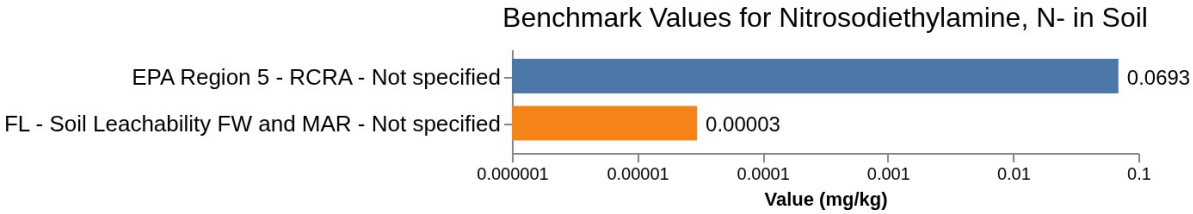


Table 363: Benchmark Values for Nitrosodimethylamine, N− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
62−75−9	EPA Region 5	EPA RCRA Soil	Not specified	0.000032
62−75−9	Florida	Soil Leachability Freshwater and Marine	Not specified	0.010000

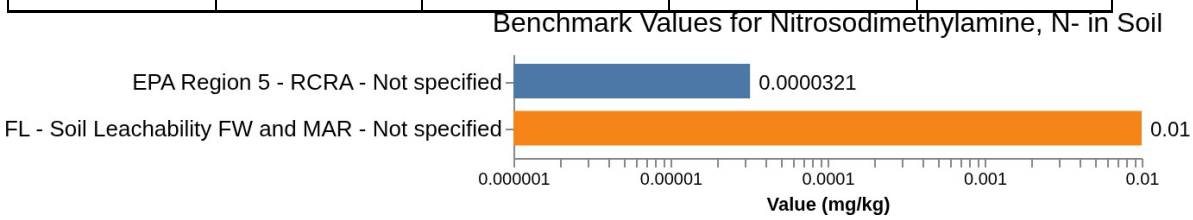


Table 364: Benchmark Values for Nitrosodiphenylamine, N− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
86−30−6	EPA Region 4	Soil Mammals	Not specified	0.545
86−30−6	EPA Region 4	Soil All Receptors	Not specified	0.545
86−30−6	EPA Region 4	Soil Invertebrates	Not specified	20.000
86−30−6	EPA Region 5	EPA RCRA Soil	Not specified	0.545
86−30−6	EPA Region 6	Soil Invertebrates	Not specified	20.000
86−30−6	Florida	Soil Leachability Freshwater and Marine	Not specified	0.300
86−30−6	ORNL	Soil Screening − Invertebrates	Not specified	20.000

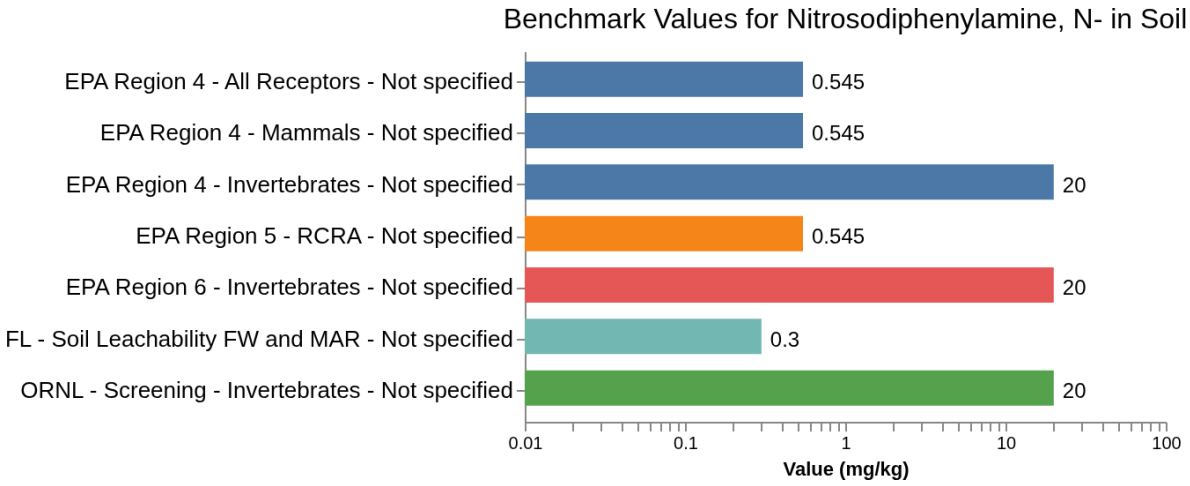


Table 365: Benchmark Values for Nitrosodipropylamine, N− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
621−64−7	EPA Region 5	EPA RCRA Soil	Not specified	0.544
621−64−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.005

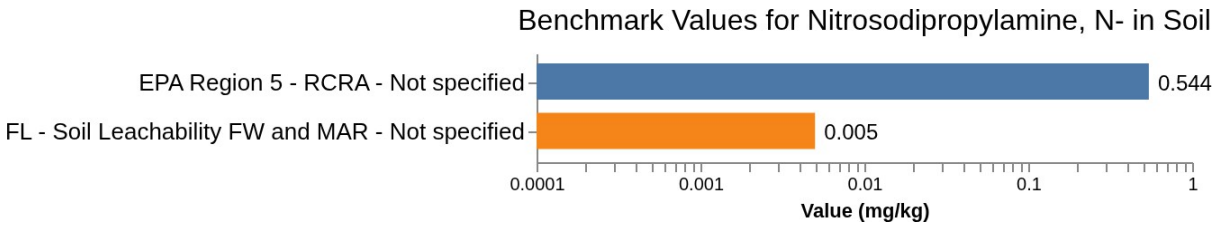


Table 366: Benchmark Values for Nitrosomethylethylamine, N− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
10595−95−6	EPA Region 5	EPA RCRA Soil	Not specified	0.00166
10595−95−6	Florida	Soil Leachability Freshwater and Marine	Not specified	0.00020

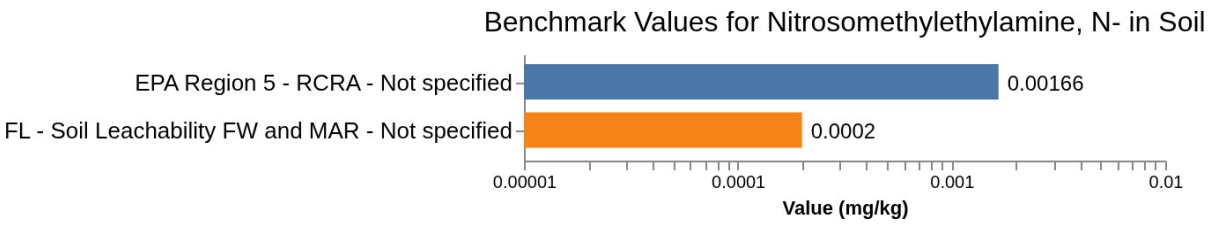


Table 367: Benchmark Values for Nitrosomorpholine [N−] in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
59−89−2	EPA Region 5	EPA RCRA Soil	Not specified	0.0706

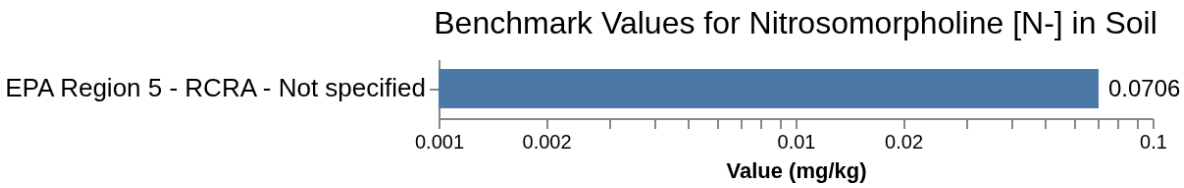


Table 368: Benchmark Values for Nitrosopiperidine [N−] in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
100−75−4	EPA Region 5	EPA RCRA Soil	Not specified	0.00665

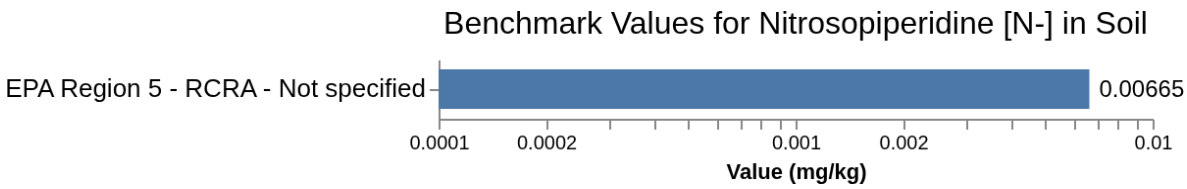


Table 369: Benchmark Values for Nitrosopyrrolidine, N− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
930−55−2	EPA Region 5	EPA RCRA Soil	Not specified	0.0126

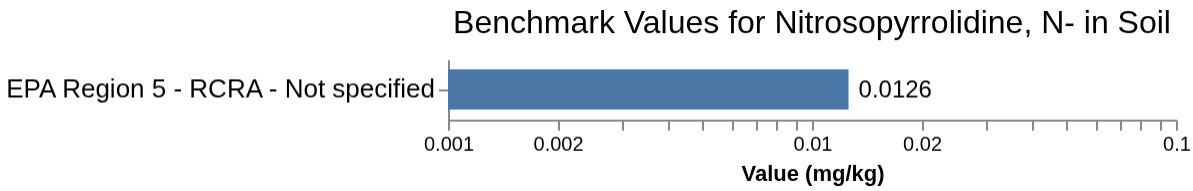


Table 370: Benchmark Values for Nitrotoluene, m− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
99−08−1	EPA Region 4	Soil All Receptors	Not specified	0.13
99−08−1	EPA Region 4	Soil Invertebrates	Not specified	0.13
99−08−1	EPA Region 4	Soil Mammals	Not specified	12.00
99−08−1	Florida	Soil Leachability Freshwater and Marine	Not specified	3.60
99−08−1	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	12.00
99−08−1	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	19.00
99−08−1	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	21.00
99−08−1	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	120.00
99−08−1	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	190.00
99−08−1	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	210.00
99−08−1	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	7000.00
99−08−1	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	70000.00

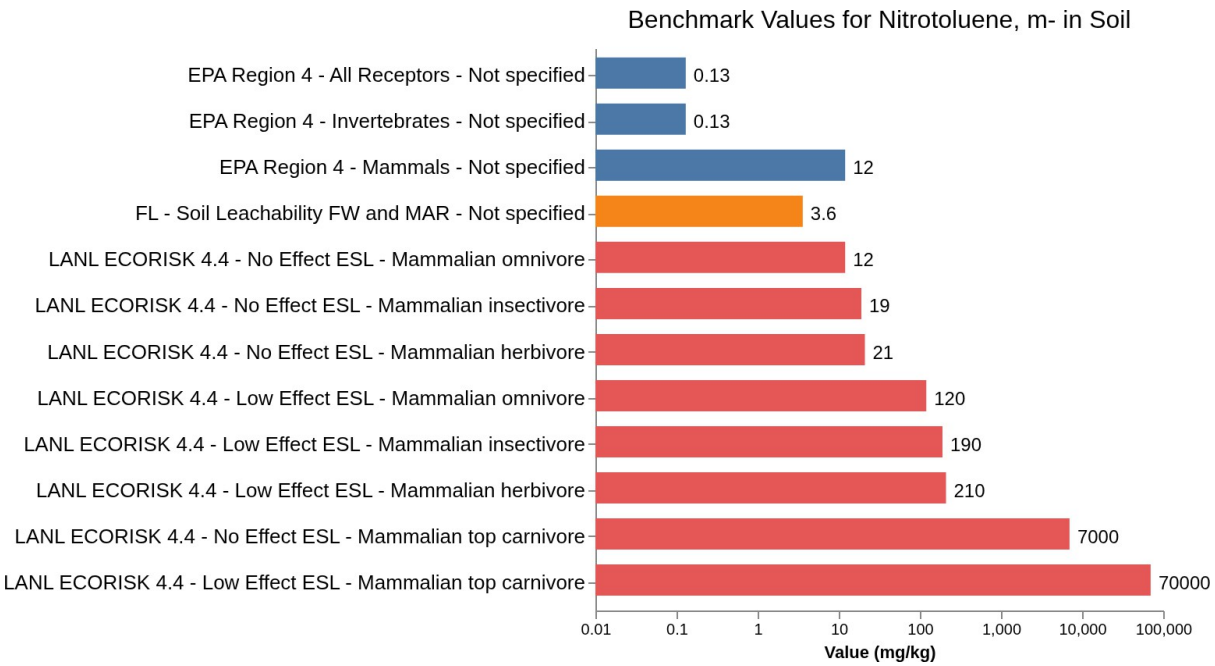


Table 371: Benchmark Values for Nitrotoluene, o− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
88−72−2	EPA Region 4	Soil All Receptors	Not specified	0.19
88−72−2	EPA Region 4	Soil Invertebrates	Not specified	0.19
88−72−2	EPA Region 4	Soil Mammals	Not specified	9.80
88−72−2	Florida	Soil Leachability Freshwater and Marine	Not specified	7.30
88−72−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	9.80
88−72−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	15.00
88−72−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	22.00
88−72−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	98.00
88−72−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	150.00
88−72−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	220.00
88−72−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	6000.00
88−72−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	60000.00

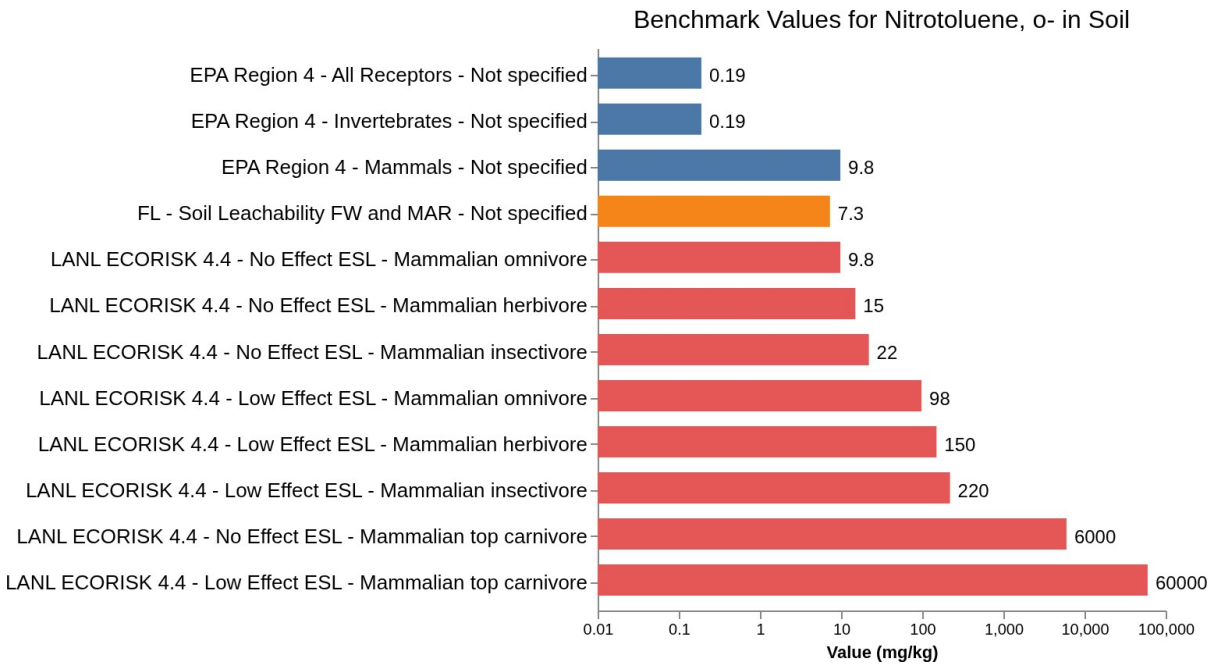


Table 372: Benchmark Values for Nitrotoluene, p− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
99−99−0	EPA Region 4	Soil All Receptors	Not specified	0.14
99−99−0	EPA Region 4	Soil Invertebrates	Not specified	0.14
99−99−0	EPA Region 4	Soil Mammals	Not specified	21.00
99−99−0	Florida	Soil Leachability Freshwater and Marine	Not specified	7.30
99−99−0	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	21.00
99−99−0	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	36.00
99−99−0	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	41.00
99−99−0	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	210.00
99−99−0	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	360.00
99−99−0	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	410.00
99−99−0	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	13000.00
99−99−0	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	130000.00

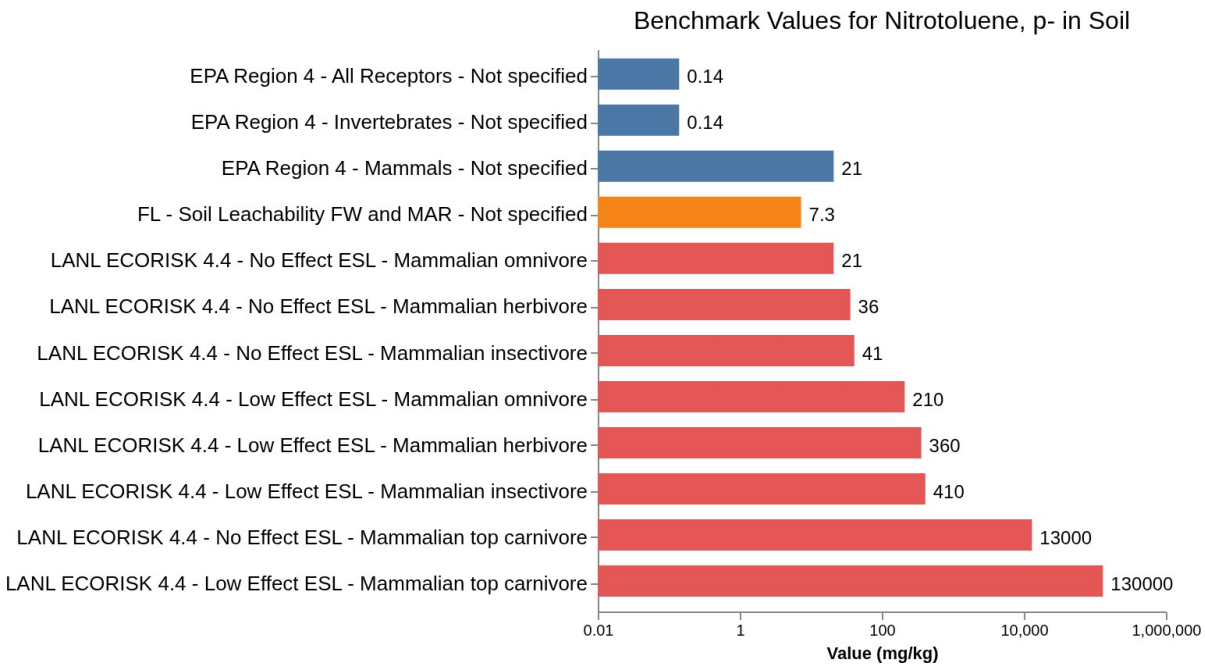


Table 373: Benchmark Values for Nonylphenol (branched) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
84852−15−3	Canada	Soil Agricultural	Not specified	5.7
84852−15−3	Canada	Soil Residential/Parkland	Not specified	5.7
84852−15−3	Canada	Soil Commercial	Not specified	14.0
84852−15−3	Canada	Soil Industrial	Not specified	14.0

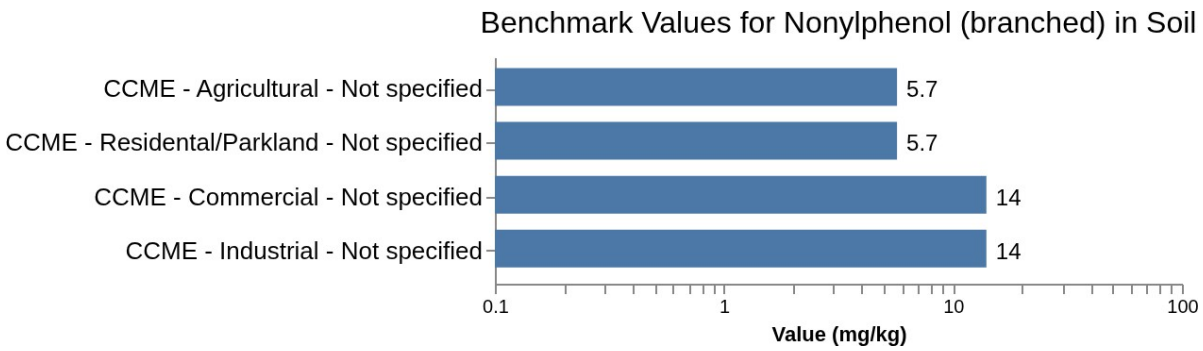


Table 374: Benchmark Values for Nonylphenol in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
25154−52−3	EPA Region 4	Soil Invertebrates	Not specified	1.27
25154−52−3	EPA Region 4	Soil All Receptors	Not specified	1.27
25154−52−3	Florida	Soil Leachability Marine	Not specified	3.40
25154−52−3	Florida	Soil Leachability Freshwater	Not specified	14.00

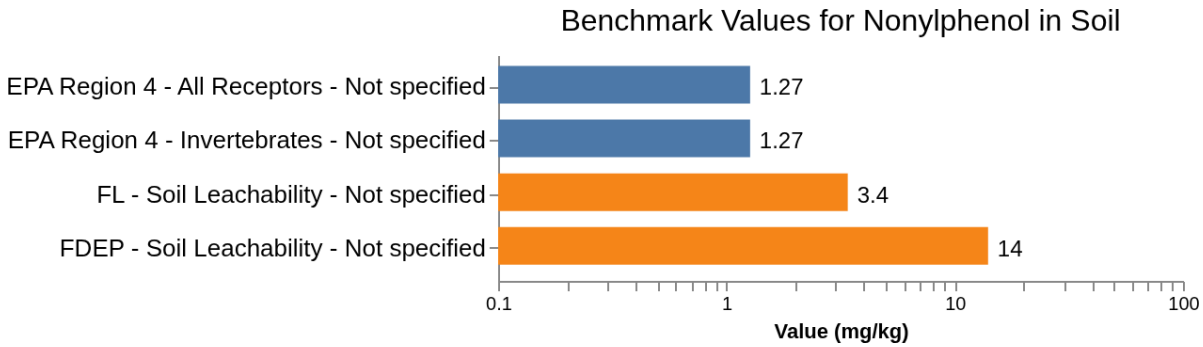


Table 375: Benchmark Values for OCDD in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
3268−87−9	Washington	Soil Wildlife	Not specified	0.000002	208

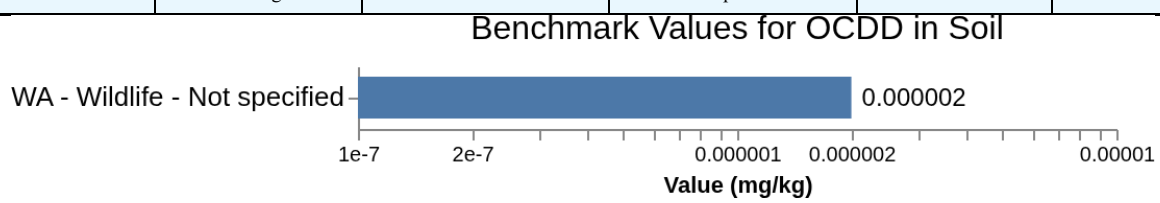


Table 376: Benchmark Values for OCDF in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
39001−02−0	Washington	Soil Wildlife	Not specified	0.000002	207

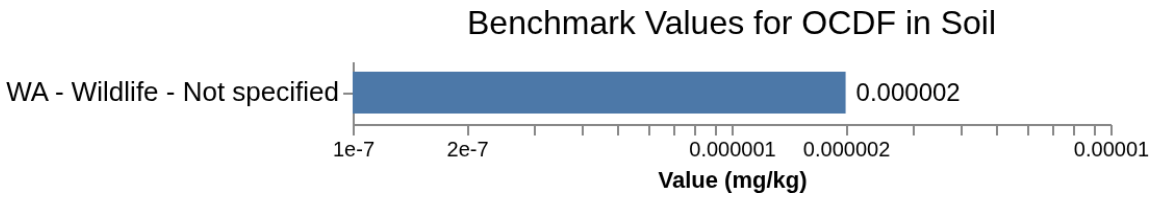


Table 377: Benchmark Values for Octahydro−1,3,5,7−tetranitro−1,3,5,7−tetrazocine (HMX) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
2691−41−0	EPA Region 4	Soil All Receptors	Not specified	16.0
2691−41−0	EPA Region 4	Soil Invertebrates	Not specified	16.0
2691−41−0	EPA Region 4	Soil Mammals	Not specified	290.0
2691−41−0	EPA Region 4	Soil Plants	Not specified	2700.0
2691−41−0	EPA Region 6	Soil Invertebrates	Not specified	16.0
2691−41−0	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	16.0
2691−41−0	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	160.0
2691−41−0	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	290.0
2691−41−0	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	410.0
2691−41−0	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	790.0
2691−41−0	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	1100.0
2691−41−0	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1100.0
2691−41−0	LANL ECORISK	Soil No Effect ESL	Generic Plant	2700.0
2691−41−0	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	2900.0
2691−41−0	LANL ECORISK	Soil Low Effect ESL	Generic Plant	3500.0
2691−41−0	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	59000.0
2691−41−0	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	150000.0

Benchmark Values for Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) in Soil

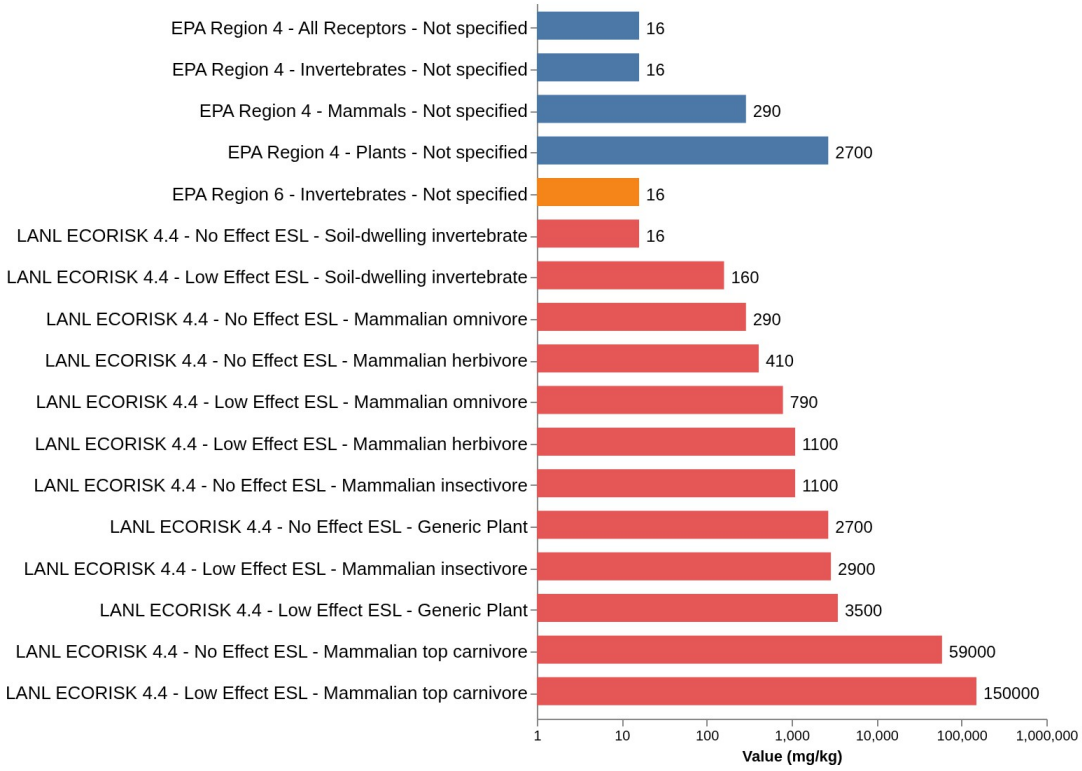


Table 378: Benchmark Values for Octyl Phthalate, di−N− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
117−84−0	EPA Region 4	Soil All Receptors	Not specified	0.91
117−84−0	EPA Region 4	Soil Mammals	Not specified	0.91
117−84−0	EPA Region 4	Soil Invertebrates	Not specified	303.00
117−84−0	EPA Region 5	EPA RCRA Soil	Not specified	709.00
117−84−0	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.91
117−84−0	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	1.80
117−84−0	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	9.10
117−84−0	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	18.00
117−84−0	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	1300.00
117−84−0	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	8400.00
117−84−0	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	13000.00
117−84−0	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	84000.00

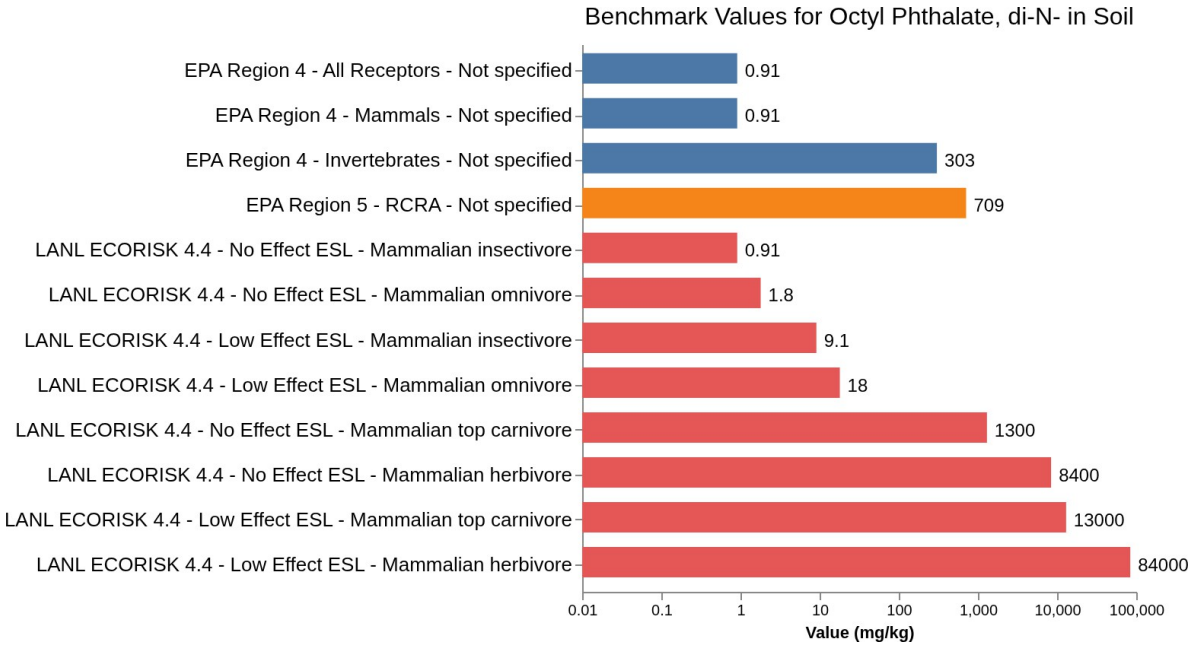


Table 379: Benchmark Values for Organonitrogen and organophosphorus pesticides in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
000000−16−7	Dutch Soil Protection Act	Background	Not specified	0.09	71

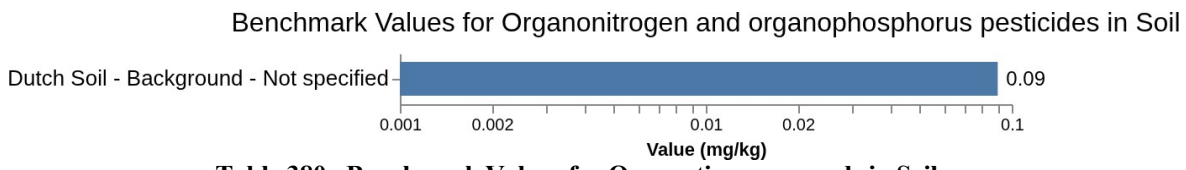


Table 380: Benchmark Values for Organotin compounds in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−16−5	Dutch Soil Protection Act	Background	Not specified	0.15
000000−16−5	Dutch Soil Protection Act	Intervention Value	Not specified	2.50
000000−16−5	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	2.50

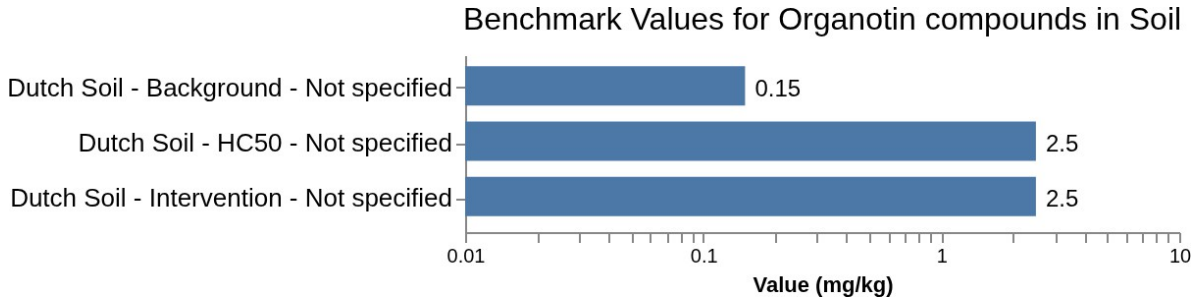


Table 381: Benchmark Values for Oxamyl in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
23135−22−0	Florida	Soil Leachability Freshwater and Marine	Not specified	0.04

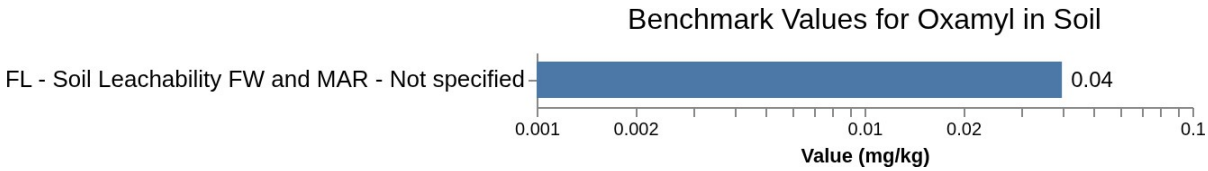


Table 382: Benchmark Values for Paraquat Dichloride in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
1910−42−5	Florida	Soil Leachability Freshwater and Marine	Not specified	230.0

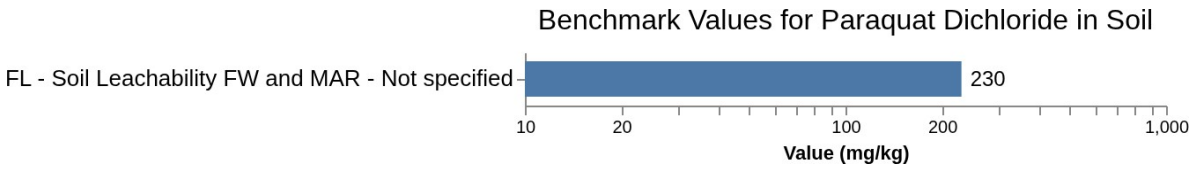


Table 383: Benchmark Values for Parathion in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
56−38−2	EPA Region 4	Soil All Receptors	Not specified	0.00019
56−38−2	EPA Region 4	Soil Invertebrates	Not specified	0.00019
56−38−2	EPA Region 5	EPA RCRA Soil	Not specified	0.00034
56−38−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.01000

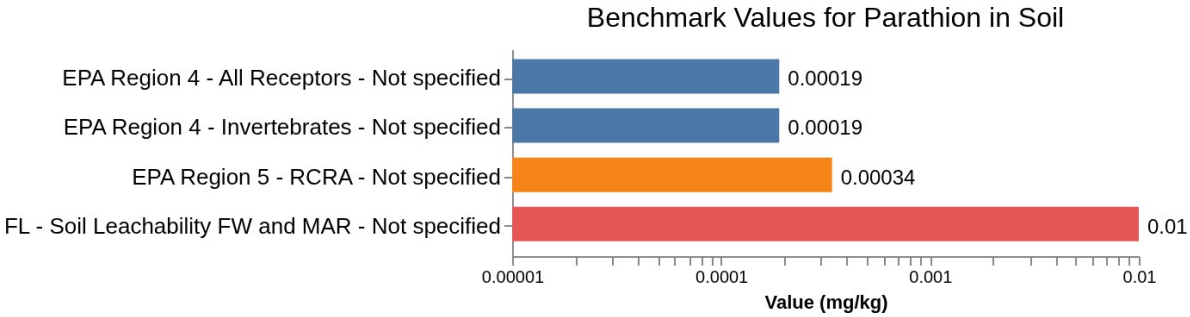


Table 384: Benchmark Values for Pebulate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
1114−71−2	Florida	Soil Leachability Freshwater and Marine	Not specified	7.4

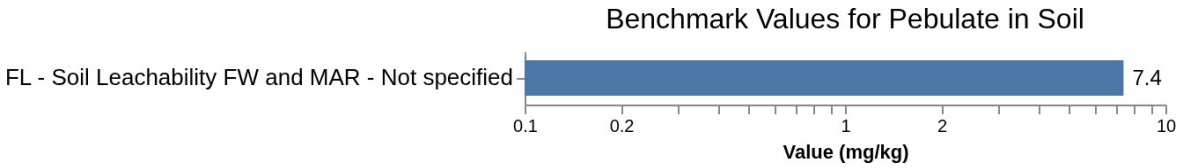


Table 385: Benchmark Values for PeCDD, 2,3,7,8− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
36088−22−9	EPA Region 5	EPA RCRA Soil	Not specified	1.990000e-07	
36088−22−9	Washington	Soil Wildlife	Not specified	2.000000e-06	208

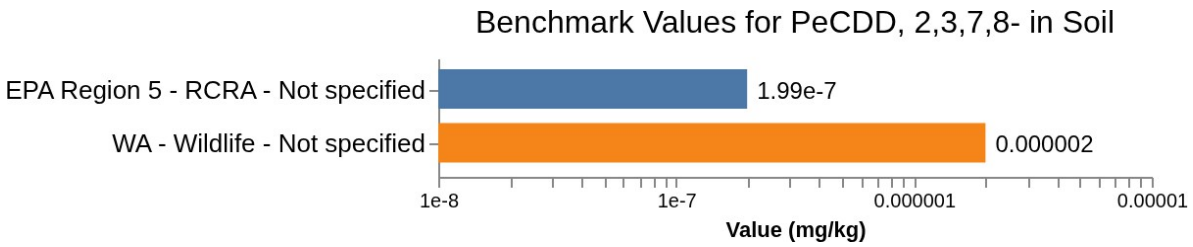


Table 386: Benchmark Values for PeCDF, 1,2,3,7,8− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
57117−41−6	Washington	Soil Wildlife	Not specified	0.000002	207

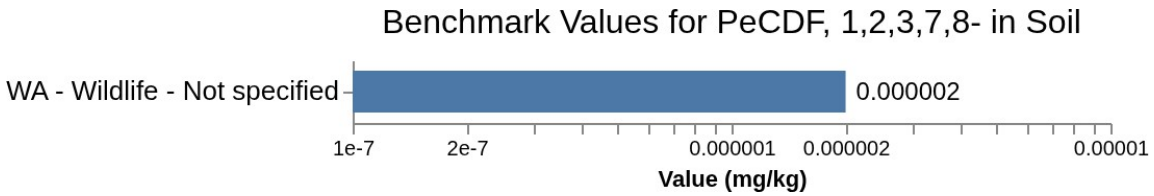


Table 387: Benchmark Values for PeCDF, 2,3,4,7,8− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
57117−31−4	Washington	Soil Wildlife	Not specified	0.000002	207

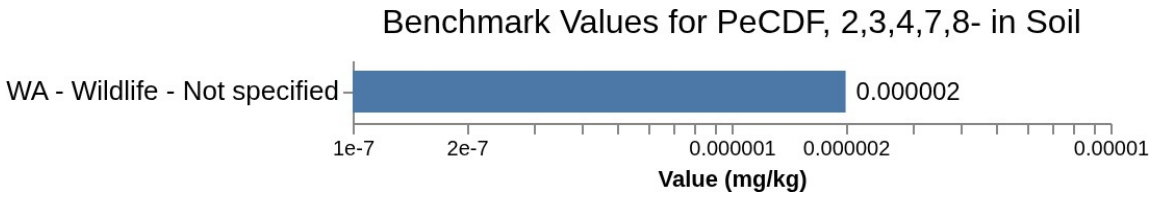


Table 388: Benchmark Values for Pendimethalin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
40487−42−1	Florida	Soil Leachability Freshwater and Marine	Not specified	1.0

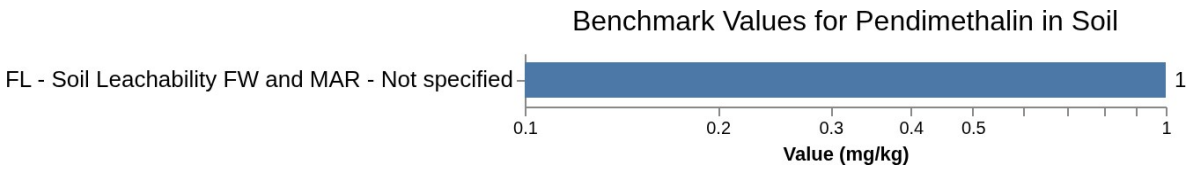


Table 389: Benchmark Values for Pentachloroaniline in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
527−20−8	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	5.9	80
527−20−8	Dutch Soil Protection Act	Intervention Value	Not specified	10.0	73, 80
527−20−8	EPA Region 4	Soil Invertebrates	Not specified	100.0	
527−20−8	EPA Region 4	Soil All Receptors	Not specified	100.0	
527−20−8	EPA Region 6	Soil Invertebrates	Not specified	100.0	
527−20−8	ORNL	Soil Screening − Invertebrates	Not specified	100.0	

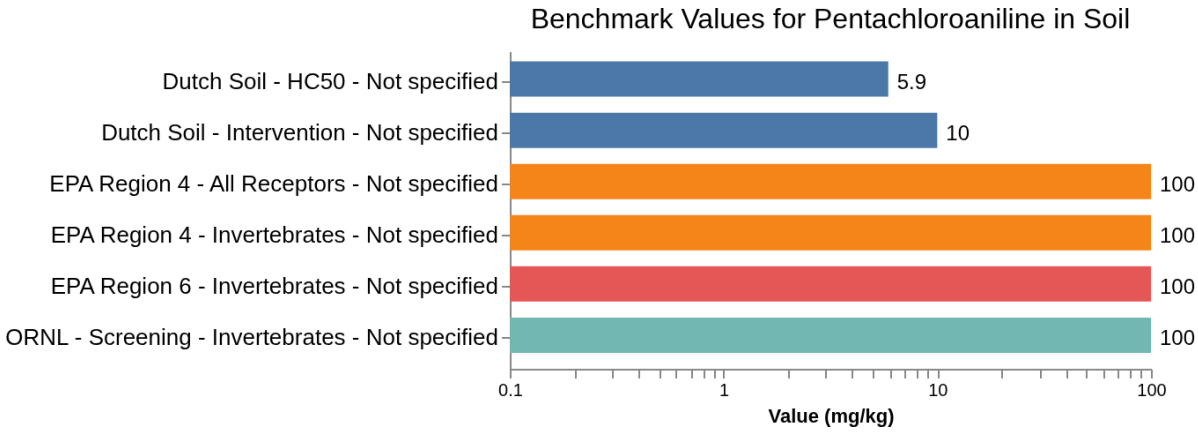


Table 390: Benchmark Values for Pentachlorobenzene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
608−93−5	Canada	Soil Agricultural	Not specified	0.0500	
608−93−5	Canada	Soil Residential/Parkland	Not specified	2.0000	
608−93−5	Canada	Soil Industrial	Not specified	10.0000	
608−93−5	Canada	Soil Commercial	Not specified	10.0000	
608−93−5	Dutch Soil Protection Act	Background	Not specified	0.0025	
608−93−5	Dutch Soil Protection Act	Intervention Value	Not specified	6.7000	
608−93−5	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	16.0000	
608−93−5	EPA Region 4	Soil Mammals	Not specified	0.5000	7
608−93−5	EPA Region 4	Soil All Receptors	Not specified	0.5000	7
608−93−5	EPA Region 4	Soil Invertebrates	Not specified	20.0000	7
608−93−5	EPA Region 5	EPA RCRA Soil	Not specified	0.4970	
608−93−5	EPA Region 6	Soil Invertebrates	Not specified	20.0000	
608−93−5	Florida	Soil Leachability Freshwater and Marine	Not specified	1.2000	
608−93−5	ORNL	Soil Screening − Invertebrates	Not specified	20.0000	

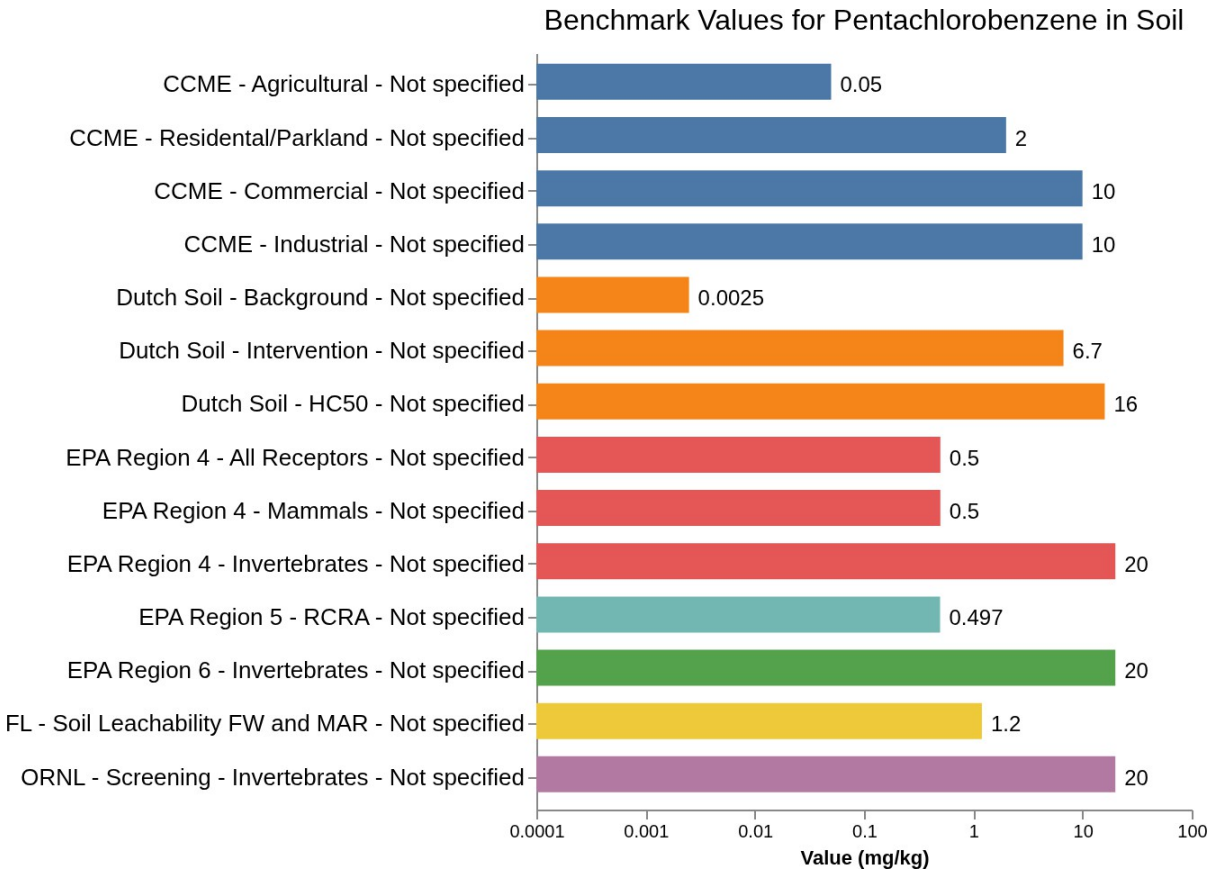


Table 391: Benchmark Values for Pentachlorodibenzofuran, 1,2,3,4,8− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
67517−48−0	Washington	Soil Wildlife	Not specified	0.000002	207

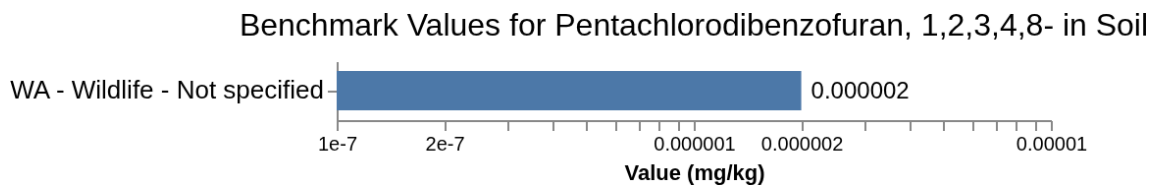


Table 392: Benchmark Values for Pentachlorodibenzo−p−dioxin, 1,2,3,7,8− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
40321−76−4	Washington	Soil Wildlife	Not specified	0.000002	208

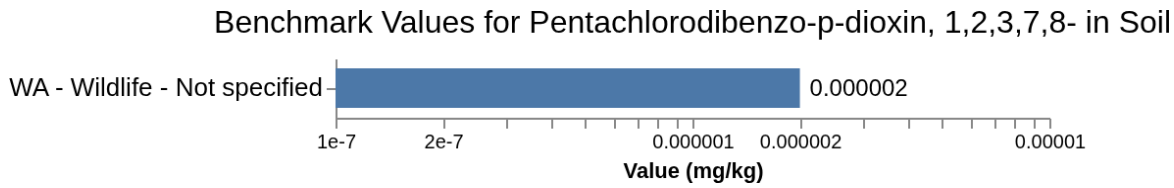


Table 393: Benchmark Values for Pentachloroethane in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
76−01−7	EPA Region 5	EPA RCRA Soil	Not specified	10.7

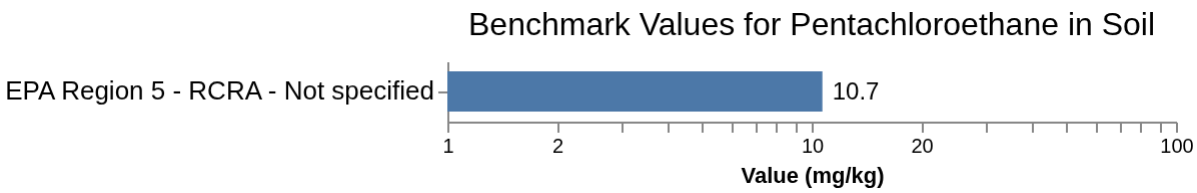


Table 394: Benchmark Values for Pentachloronitrobenzene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
82−68−8	EPA Region 4	Soil Invertebrates	Not specified	0.09
82−68−8	EPA Region 4	Soil All Receptors	Not specified	0.09
82−68−8	EPA Region 4	Soil Avians	Not specified	0.70
82−68−8	EPA Region 4	Soil Mammals	Not specified	11.00
82−68−8	EPA Region 5	EPA RCRA Soil	Not specified	7.09
82−68−8	Florida	Soil Leachability Freshwater and Marine	Not specified	0.03
82−68−8	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.70
82−68−8	LANL ECORISK	Soil No Effect ESL	Avian omnivore	1.30
82−68−8	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	3.30
82−68−8	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	7.00
82−68−8	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	11.00
82−68−8	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	13.00
82−68−8	LANL ECORISK	Soil No Effect ESL	Avian herbivore	21.00
82−68−8	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	22.00
82−68−8	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	33.00
82−68−8	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	110.00
82−68−8	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	110.00
82−68−8	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	210.00
82−68−8	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	220.00
82−68−8	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	930.00
82−68−8	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	1100.00
82−68−8	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	3500.00
82−68−8	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	9300.00
82−68−8	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	35000.00

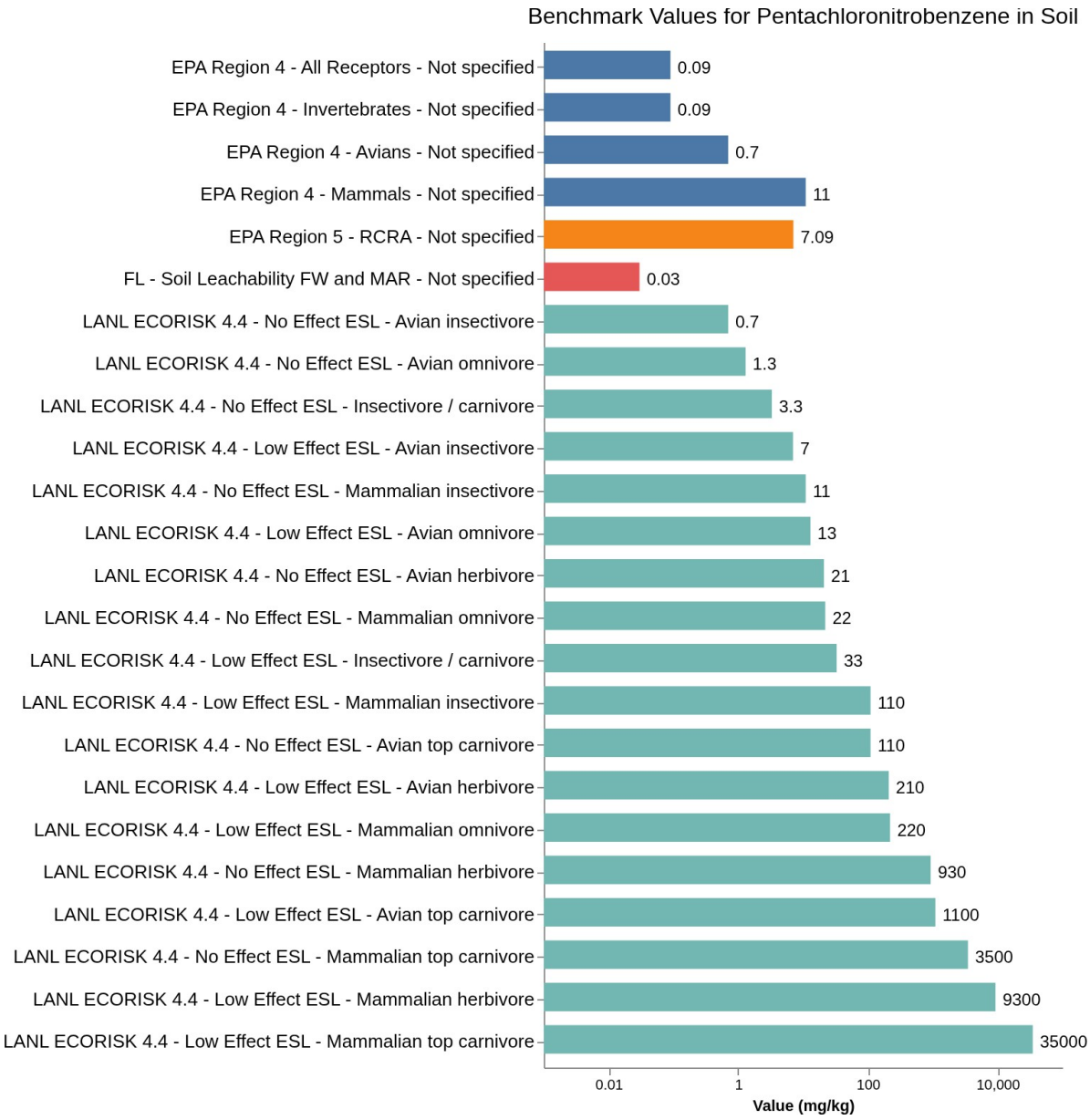

Benchmark Values for Pentachloronitrobenzene in Soil
EPA Region 4 - All Receptors - Not specified
0.09
EPA Region 4 - Invertebrates - Not specified
0.09
EPA Region 4 - Avians - Not specified
0.7
EPA Region 4 - Mammals - Not specified
11
EPA Region 5 - RCRA - Not specified
7.09
FL - Soil Leachability FW and MAR - Not specified
0.03
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
0.7
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
1.3
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
3.3
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
7
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
11
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
13
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
21
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
22
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
33
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
110
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
110
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
210
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
220
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
930
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
1100
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
3500
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
9300
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
35000
0.01
1
100
10,000
Value (mg/kg)

Table 395: Benchmark Values for Pentachlorophenol in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
87−86−5	Canada	Soil Commercial	Not specified	7.600	
87−86−5	Canada	Soil Agricultural	Not specified	7.600	
87−86−5	Canada	Soil Industrial	Not specified	7.600	
87−86−5	Canada	Soil Residential/Parkland	Not specified	7.600	
87−86−5	Dutch Soil Protection Act	Background	Not specified	0.003	71
87−86−5	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	12.000	
87−86−5	Dutch Soil Protection Act	Intervention Value	Not specified	12.000	
87−86−5	EPA ECO−SSL	Avian	Not specified	2.100	
87−86−5	EPA ECO−SSL	Mammalian	Not specified	2.800	
87−86−5	EPA ECO−SSL	Plants	Not specified	5.000	
87−86−5	EPA ECO−SSL	Soil Invertebrates	Not specified	31.000	
87−86−5	EPA Region 4	Soil Avians	Not specified	2.100	7
87−86−5	EPA Region 4	Soil All Receptors	Not specified	2.100	7
87−86−5	EPA Region 4	Soil Mammals	Not specified	2.800	7
87−86−5	EPA Region 4	Soil Plants	Not specified	5.000	7
87−86−5	EPA Region 4	Soil Invertebrates	Not specified	31.000	7
87−86−5	EPA Region 5	EPA RCRA Soil	Not specified	0.119	
87−86−5	EPA Region 6	Soil Plants	Not specified	5.000	
87−86−5	EPA Region 6	Soil Invertebrates	Not specified	31.000	
87−86−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.200	
87−86−5	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.360	
87−86−5	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.720	
87−86−5	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.810	
87−86−5	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	1.500	
87−86−5	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	1.700	
87−86−5	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	3.600	
87−86−5	LANL ECORISK	Soil No Effect ESL	Generic Plant	5.000	
87−86−5	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	7.200	
87−86−5	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	8.100	
87−86−5	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	15.000	
87−86−5	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	17.000	
87−86−5	LANL ECORISK	Soil No Effect ESL	Avian herbivore	29.000	
87−86−5	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	31.000	
87−86−5	LANL ECORISK	Soil Low Effect ESL	Generic Plant	50.000	
87−86−5	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	57.000	
87−86−5	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	150.000	
87−86−5	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	180.000	
87−86−5	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	230.000	
87−86−5	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	290.000	
87−86−5	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	570.000	
87−86−5	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1800.000	
87−86−5	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	2300.000	
87−86−5	ORNL	Soil Screening − Plants	Not specified	3.000	
87−86−5	ORNL	Soil Screening − Invertebrates	Not specified	6.000	
87−86−5	ORNL	Soil Screening − Microbes	Not specified	400.000	
87−86−5	UK	Soil Screening Values	Not specified	0.600	
87−86−5	Washington	Soil Wildlife	Not specified	4.500	

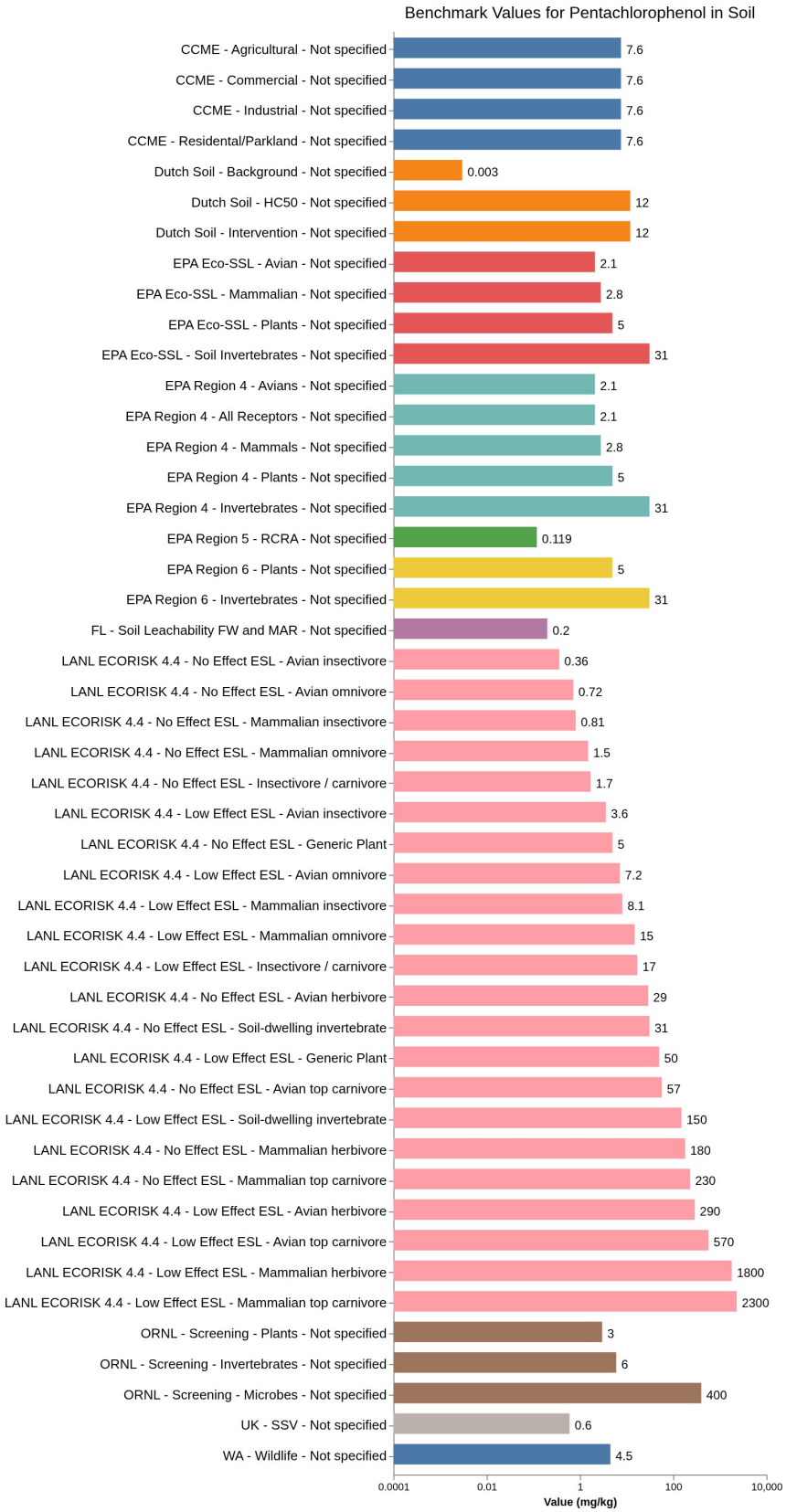

Benchmark Values for Pentachlorophenol in Soil
CCME - Agricultural - Not specified 7.6
CCME - Commercial - Not specified 7.6
CCME - Industrial - Not specified 7.6
CCME - Residental/Parkland - Not specified 7.6
Dutch Soil - Background - Not specified 0.003
Dutch Soil - HC50 - Not specified 12
Dutch Soil - Intervention - Not specified 12
EPA Eco-SSL - Avian - Not specified 2.1
EPA Eco-SSL - Mammalian - Not specified 2.8
EPA Eco-SSL - Plants - Not specified 5
EPA Eco-SSL - Soil Invertebrates - Not specified 31
EPA Region 4 - Avians - Not specified 2.1
EPA Region 4 - All Receptors - Not specified 2.1
EPA Region 4 - Mammals - Not specified 2.8
EPA Region 4 - Plants - Not specified 5
EPA Region 4 - Invertebrates - Not specified 31
EPA Region 5 - RCRA - Not specified 0.119
EPA Region 6 - Plants - Not specified 5
EPA Region 6 - Invertebrates - Not specified 31
FL - Soil Leachability FW and MAR - Not specified 0.2
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore 0.36
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore 0.72
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore 0.81
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore 1.5
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore 1.7
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore 3.6
LANL ECORISK 4.4 - No Effect ESL - Generic Plant 5
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore 7.2
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore 8.1
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore 15
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore 17
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore 29
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate 31
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant 50
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore 57
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate 150
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore 180
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore 230
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore 290
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore 570
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore 1800
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore 2300
ORNL - Screening - Plants - Not specified 3
ORNL - Screening - Invertebrates - Not specified 6
ORNL - Screening - Microbes - Not specified 400
UK - SSV - Not specified 0.6
WA - Wildlife - Not specified 4.5
0.0001
0.01
1
100
10,000
Value (mg/kg)

Table 396: Benchmark Values for Pentaerythritol tetranitrate (PETN) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
78−11−5	EPA Region 4	Soil Invertebrates	Not specified	2.2
78−11−5	EPA Region 4	Soil All Receptors	Not specified	2.2
78−11−5	EPA Region 4	Soil Mammals	Not specified	100.0
78−11−5	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	100.0
78−11−5	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	120.0
78−11−5	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1000.0
78−11−5	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	1000.0
78−11−5	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1200.0
78−11−5	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	10000.0
78−11−5	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	47000.0
78−11−5	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	470000.0

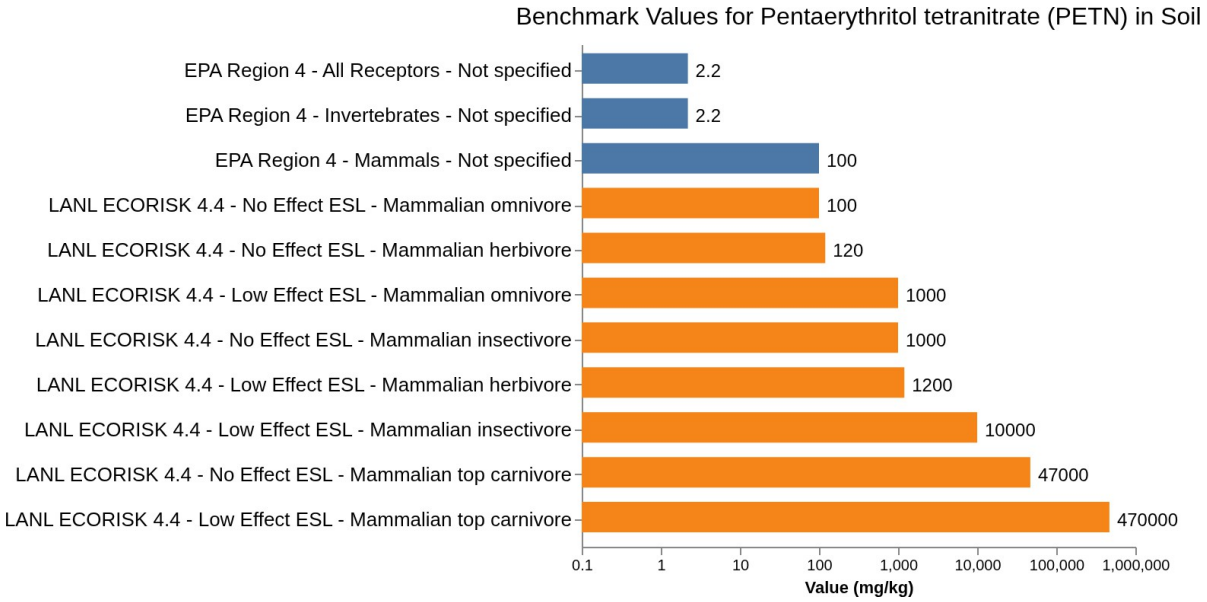


Table 397: Benchmark Values for Perchlorate and Perchlorate Salts in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
14797−73−0	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.12
14797−73−0	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.21
14797−73−0	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	0.24
14797−73−0	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.24
14797−73−0	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	0.26
14797−73−0	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	0.49
14797−73−0	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1.00
14797−73−0	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1.30
14797−73−0	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	2.00
14797−73−0	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	3.30
14797−73−0	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	3.50
14797−73−0	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	3.90
14797−73−0	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	4.00
14797−73−0	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	8.00
14797−73−0	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	16.00
14797−73−0	LANL ECORISK	Soil No Effect ESL	Avian insectivore	31.00
14797−73−0	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	31.00
14797−73−0	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	35.00
14797−73−0	LANL ECORISK	Soil No Effect ESL	Generic Plant	40.00
14797−73−0	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	64.00
14797−73−0	LANL ECORISK	Soil Low Effect ESL	Generic Plant	80.00
14797−73−0	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	150.00

Benchmark Values for Perchlorate and Perchlorate Salts in Soil

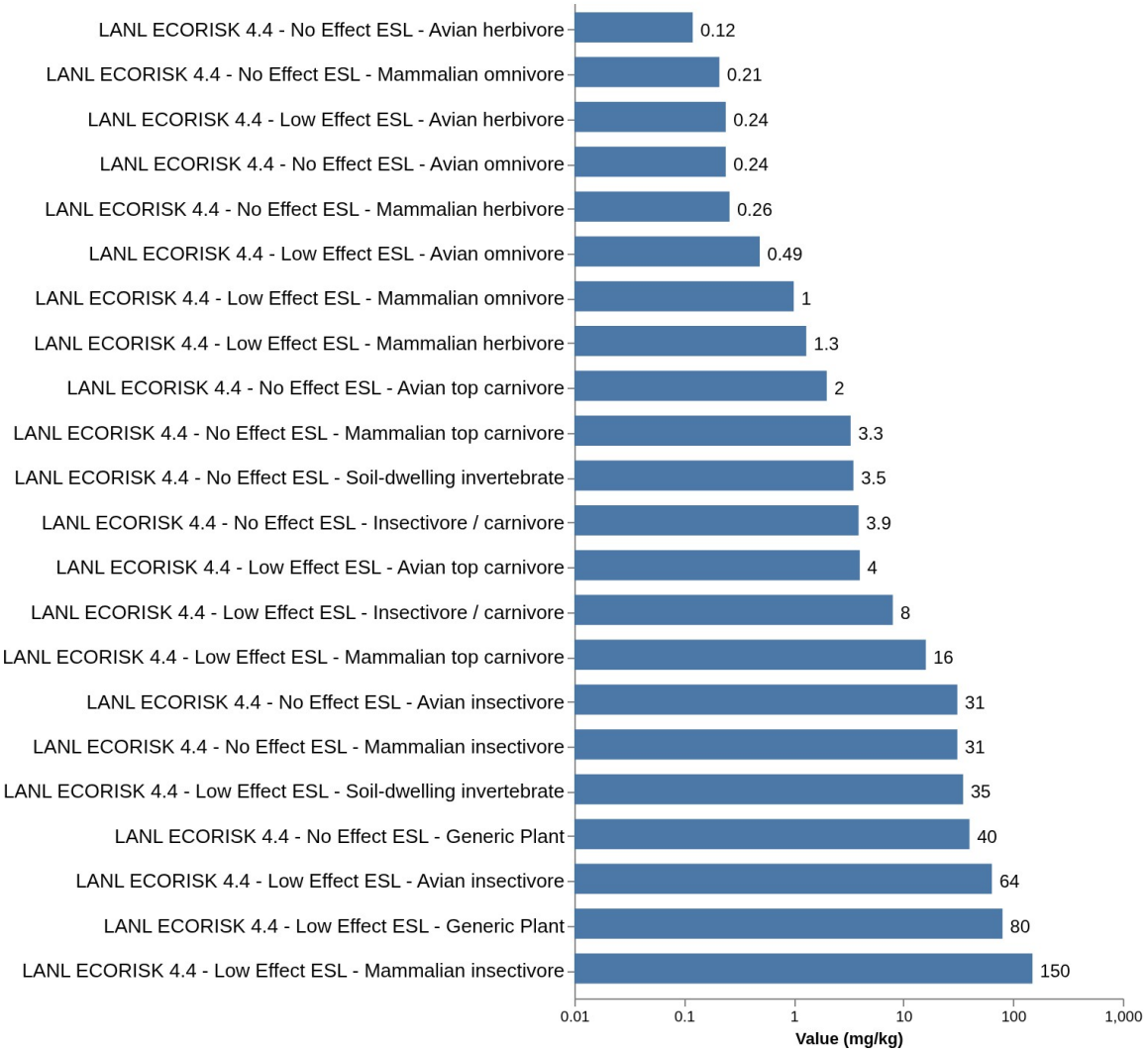


Table 398: Benchmark Values for Perfluorobutanesulfonic acid (PFBS) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
375−73−5	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	8.1
375−73−5	LANL ECORISK	Soil No Effect ESL	Avian insectivore	8.4
375−73−5	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	10.0
375−73−5	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	14.0
375−73−5	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	14.0
375−73−5	LANL ECORISK	Soil No Effect ESL	Avian omnivore	15.0
375−73−5	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	25.0
375−73−5	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	29.0
375−73−5	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	32.0
375−73−5	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	32.0
375−73−5	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	49.0
375−73−5	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	56.0
375−73−5	LANL ECORISK	Soil No Effect ESL	Avian herbivore	70.0
375−73−5	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	93.0
375−73−5	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	100.0
375−73−5	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	110.0
375−73−5	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	160.0
375−73−5	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	400.0
375−73−5	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	660.0

Benchmark Values for Perfluorobutanesulfonic acid (PFBS) in Soil

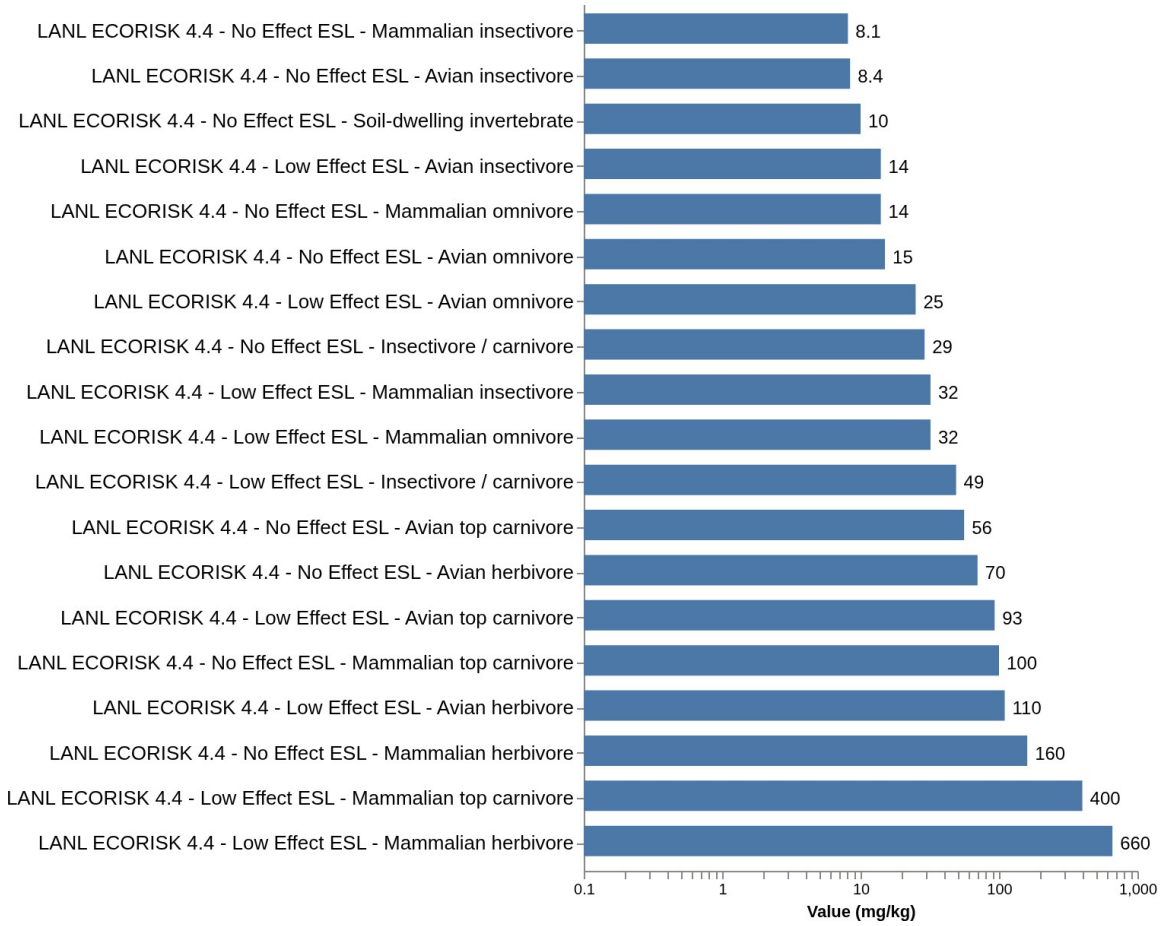


Table 399: Benchmark Values for Perfluorobutanoic acid (PFBA) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
375−22−4	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	48.0
375−22−4	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	51.0
375−22−4	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	110.0
375−22−4	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	120.0
375−22−4	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	120.0
375−22−4	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	140.0
375−22−4	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	260.0
375−22−4	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	350.0
375−22−4	LANL ECORISK	Soil No Effect ESL	Generic Plant	640.0

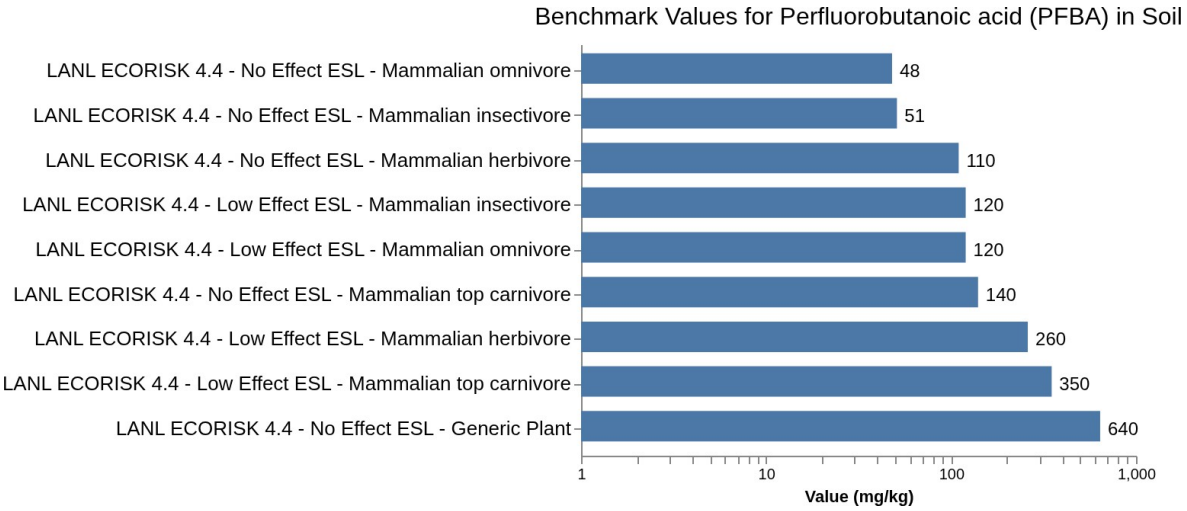


Table 400: Benchmark Values for Perfluorodecanoic acid (PFDA) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
335−76−2	LANL ECORISK	Soil No Effect ESL	Generic Plant	51.0	

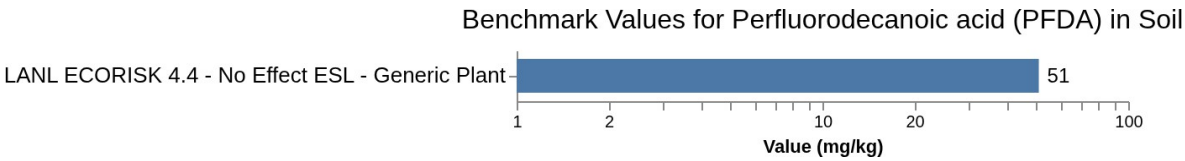


Table 401: Benchmark Values for Perfluoroheptanoic acid (PFHpA) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
375−85−9	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	1.0
375−85−9	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	100.0

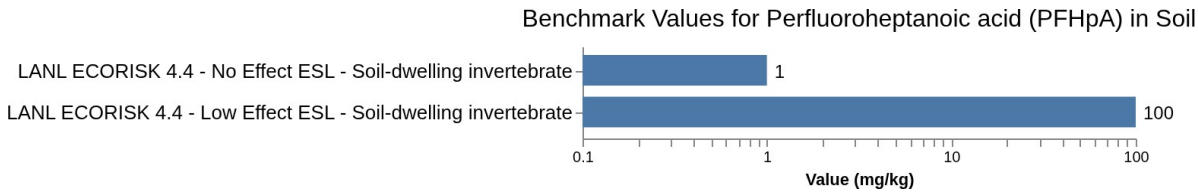


Table 402: Benchmark Values for Perfluorohexanesulfonic acid (PFHxS) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
355−46−4	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	1.0
355−46−4	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	100.0

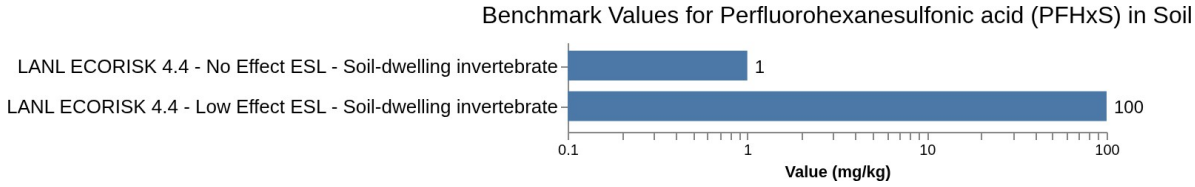


Table 403: Benchmark Values for Perfluorohexanoic acid (PFHxA) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
307−24−4	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	170.0
307−24−4	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	200.0
307−24−4	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	210.0
307−24−4	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	350.0
307−24−4	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	450.0
307−24−4	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	450.0
307−24−4	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	450.0
307−24−4	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	940.0

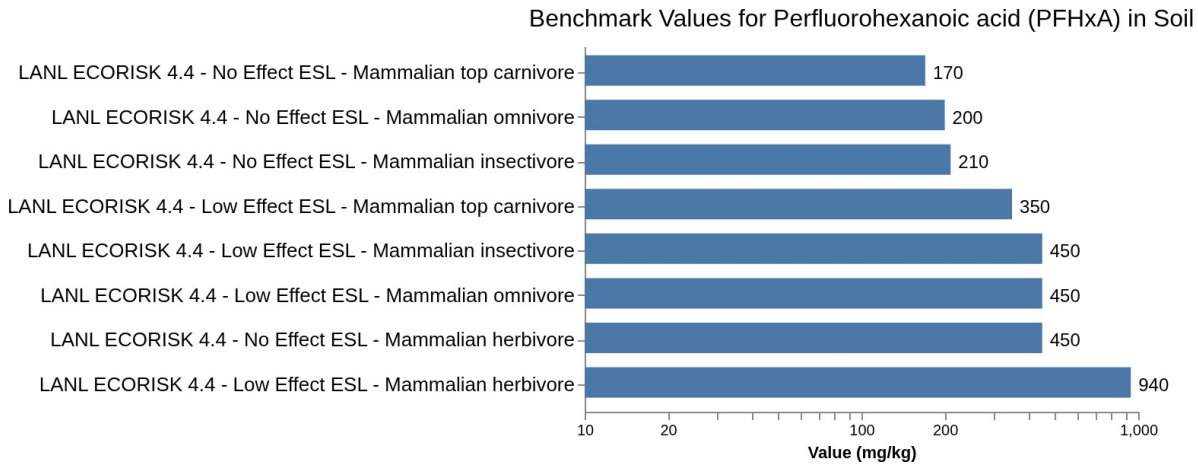


Table 404: Benchmark Values for Perfluorononanoic acid (PFNA) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
375−95−1	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.9
375−95−1	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	1.0
375−95−1	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	1.1
375−95−1	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	1.4
375−95−1	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	1.6
375−95−1	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1.9
375−95−1	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	2.2
375−95−1	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	8.7
375−95−1	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	11.0
375−95−1	LANL ECORISK	Soil No Effect ESL	Generic Plant	46.0
375−95−1	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	100.0

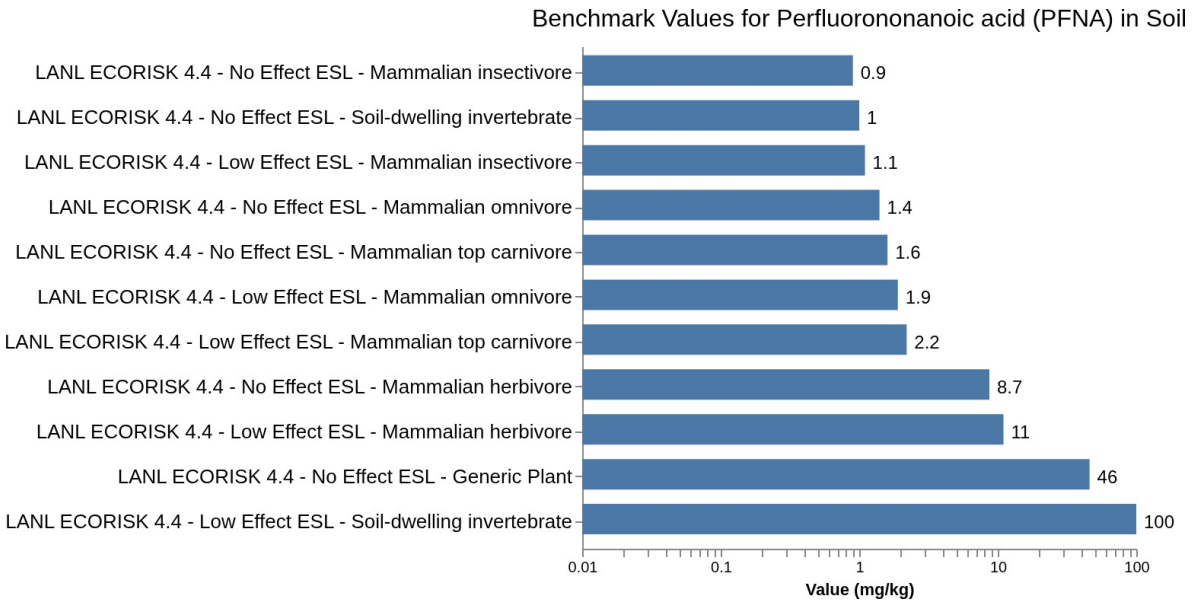


Table 405: Benchmark Values for Perfluorooctanesulfonate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
45298−90−6	UK	Soil Screening Values	Not specified	0.013

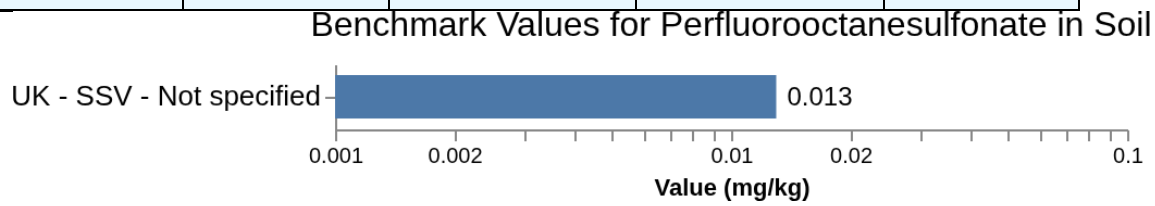


Table 406: Benchmark Values for Perfluorooctanesulfonic acid (PFOS) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
1763−23−1	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.011
1763−23−1	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.022
1763−23−1	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.026
1763−23−1	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	0.035
1763−23−1	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	0.044
1763−23−1	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	0.048
1763−23−1	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.051
1763−23−1	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	0.085
1763−23−1	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	0.110
1763−23−1	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	0.200
1763−23−1	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	0.220
1763−23−1	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.280
1763−23−1	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	0.330
1763−23−1	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	0.350
1763−23−1	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	0.480
1763−23−1	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	1.600
1763−23−1	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	2.800
1763−23−1	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	2.800
1763−23−1	LANL ECORISK	Soil No Effect ESL	Earthworm	7.700
1763−23−1	LANL ECORISK	Soil No Effect ESL	Generic plant	11.000
1763−23−1	LANL ECORISK	Soil Low Effect ESL	Generic plant	33.000
1763−23−1	LANL ECORISK	Soil Low Effect ESL	Earthworm	140.000

Benchmark Values for Perfluorooctanesulfonic acid (PFOS) in Soil

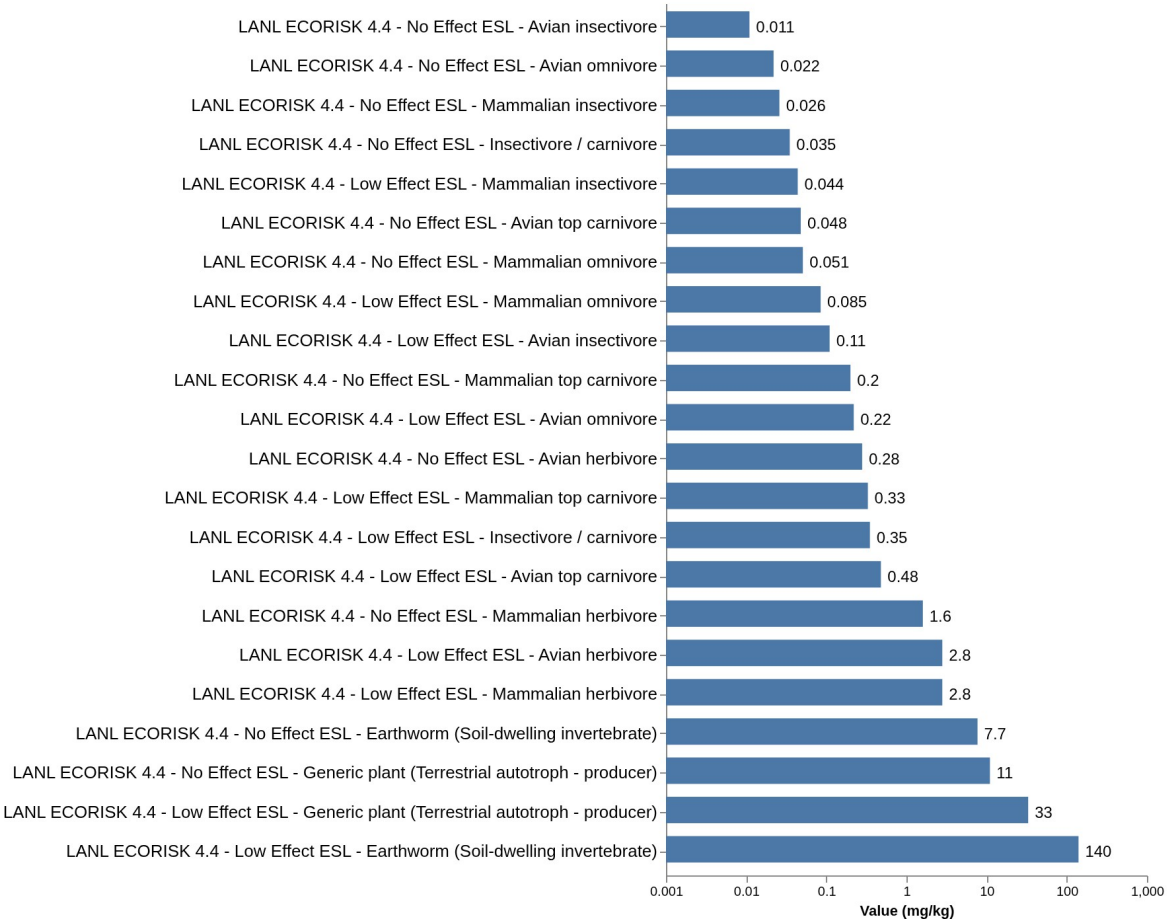


Table 407: Benchmark Values for Perfluorooctanoic acid (PFOA) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
335−67−1	LANL ECORISK	Soil No Effect ESL	Generic plant	0.084
335−67−1	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	0.600
335−67−1	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.740
335−67−1	LANL ECORISK	Soil Low Effect ESL	Generic plant	0.840
335−67−1	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	1.200
335−67−1	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	1.400
335−67−1	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	1.400
335−67−1	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1.400
335−67−1	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	21.000
335−67−1	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	42.000
335−67−1	LANL ECORISK	Soil No Effect ESL	Earthworm	50.000
335−67−1	UK	Soil Screening Values	Not specified	0.019

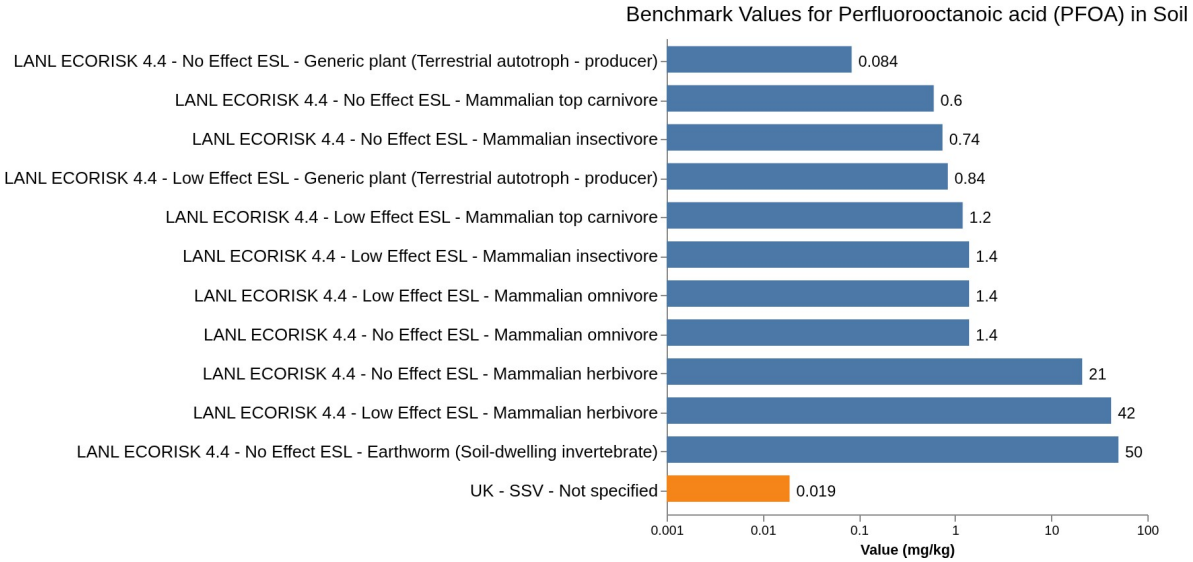


Table 408: Benchmark Values for Perfluoropentanol, 1H,1H,5H− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
355−80−6	LANL ECORISK	Soil No Effect ESL	Generic Plant	23.0

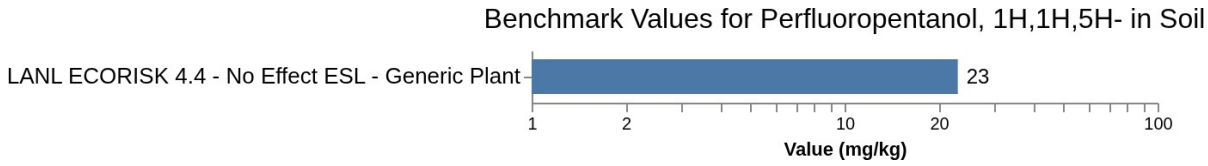


Table 409: Benchmark Values for Permethrin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
52645−53−1	Florida	Soil Leachability Freshwater and Marine	Not specified	0.007

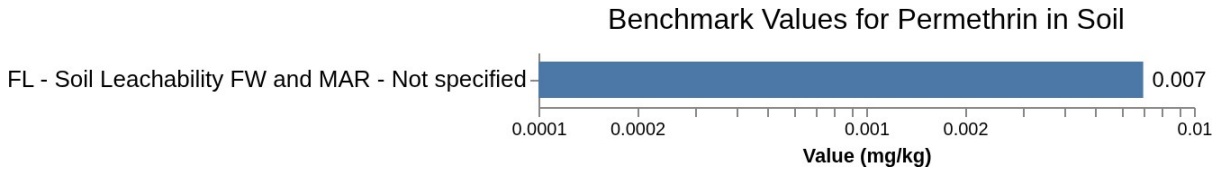


Table 410: Benchmark Values for Perylene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
198−55−0	EPA Region 4	Soil Invertebrates	Not specified	0.17	7
198−55−0	EPA Region 4	Soil All Receptors	Not specified	1.10	7

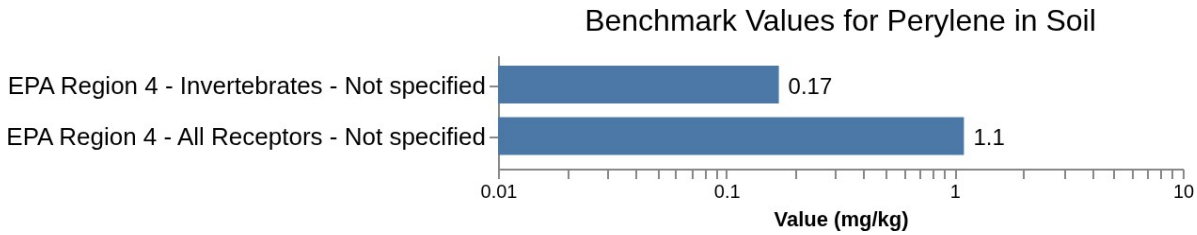


Table 411: Benchmark Values for Pesticides, organochlorinated (each) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−04−7	Dutch Soil Protection Act	Background	Not specified	0.4

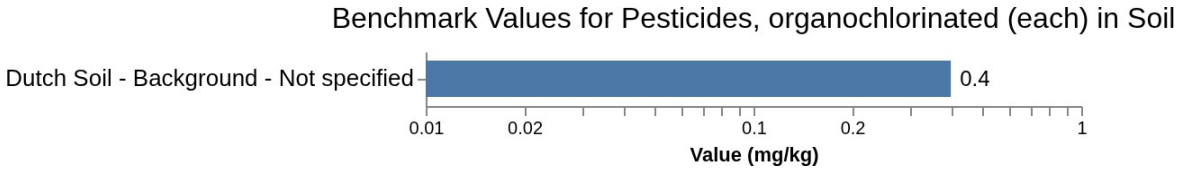


Table 412: Benchmark Values for Pesticides, organochlorinated (total) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−04−8	Dutch Soil Protection Act	Background	Not specified	0.4

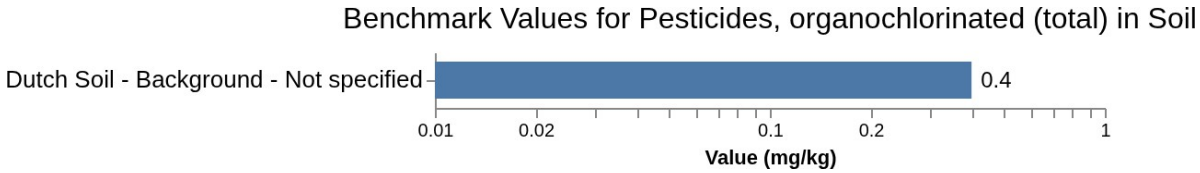


Table 413: Benchmark Values for Phenacetin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
62−44−2	EPA Region 5	EPA RCRA Soil	Not specified	11.7

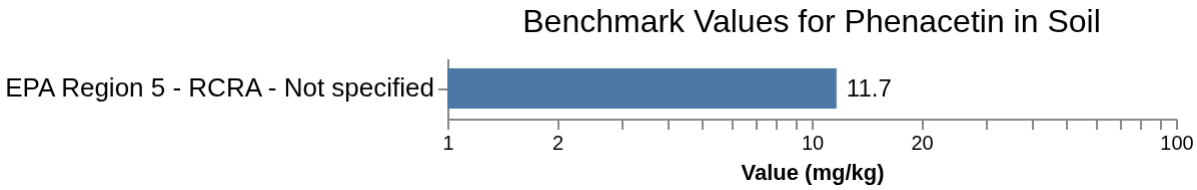


Table 414: Benchmark Values for Phenanthrene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
85−01−8	Canada	Soil Residential/Parkland	Not specified		36
85−01−8	Canada	Soil Commercial	Not specified		36
85−01−8	Canada	Soil Agricultural	Not specified		36
85−01−8	Canada	Soil Industrial	Not specified		36
85−01−8	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	31	
85−01−8	EPA Region 4	Soil Invertebrates	Not specified	5.5	7
85−01−8	EPA Region 4	Soil Mammals	Not specified	11	7
85−01−8	EPA Region 4	Soil All Receptors	Not specified	29	7
85−01−8	EPA Region 5	EPA RCRA Soil	Not specified	45.7	
85−01−8	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	5.5	
85−01−8	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	11	
85−01−8	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	12	
85−01−8	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	15	
85−01−8	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	62	
85−01−8	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	110	
85−01−8	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	150	
85−01−8	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	620	
85−01−8	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	1900	
85−01−8	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	19000	

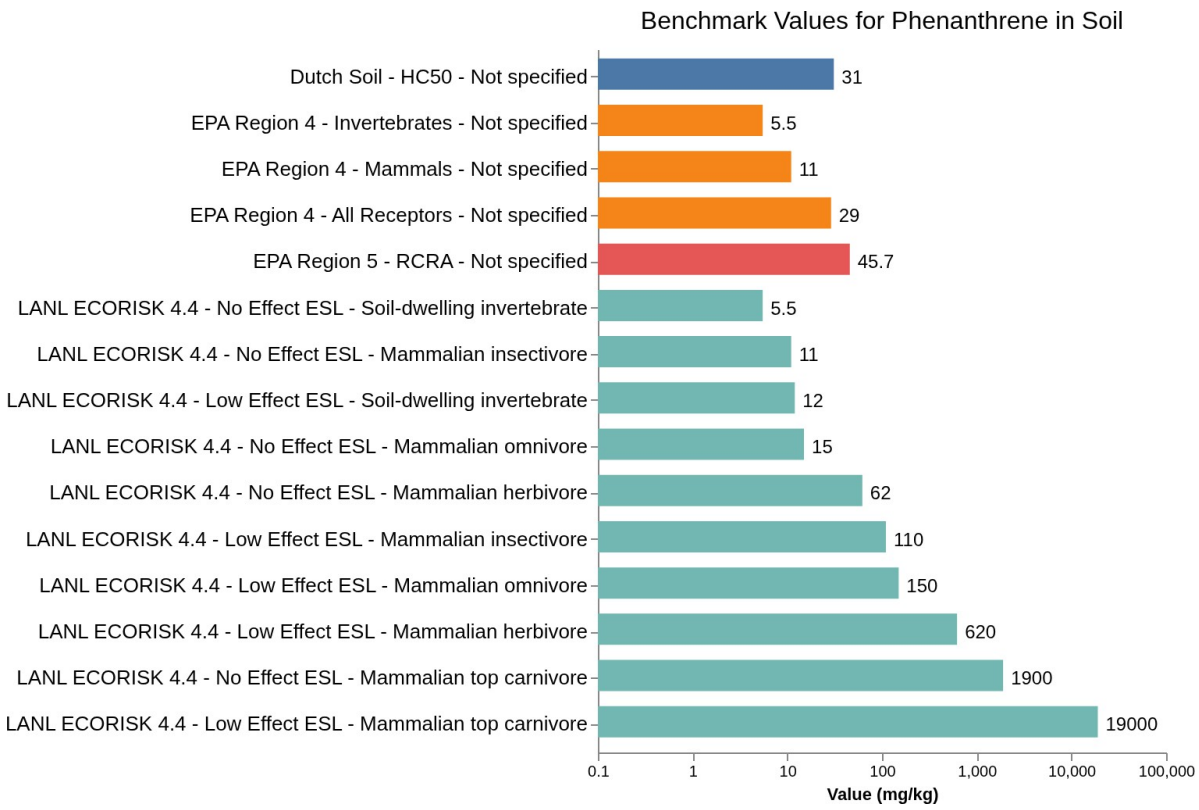


Table 415: Benchmark Values for Phenmedipham in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
13684−63−4	Florida	Soil Leachability Freshwater and Marine	Not specified	18

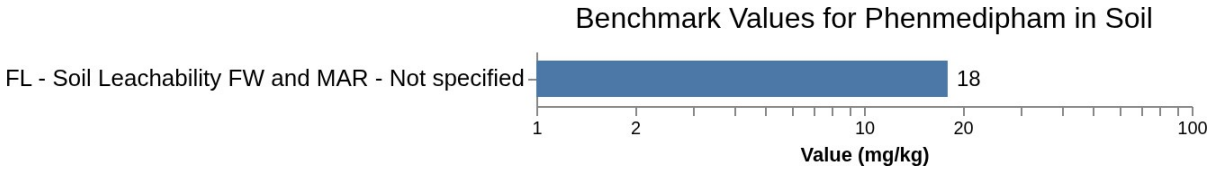


Table 416: Benchmark Values for Phenol, 2−(1−methylethoxy)−, methylcarbamate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
114−26−1	Florida	Soil Leachability Freshwater and Marine	Not specified	0.002

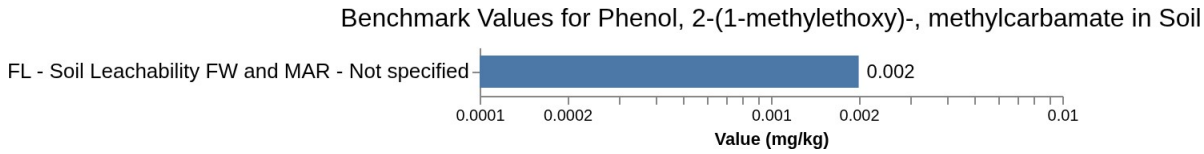


Table 417: Benchmark Values for Phenol in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
108−95−2	Canada	Soil Industrial	Not specified	3.80
108−95−2	Canada	Soil Commercial	Not specified	3.80
108−95−2	Canada	Soil Agricultural	Not specified	3.80
108−95−2	Canada	Soil Residential/Parkland	Not specified	3.80
108−95−2	Dutch Soil Protection Act	Background	Not specified	0.25
108−95−2	Dutch Soil Protection Act	Intervention Value	Not specified	14.00
108−95−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	14.00
108−95−2	EPA Region 4	Soil All Receptors	Not specified	0.79
108−95−2	EPA Region 4	Soil Plants	Not specified	0.79
108−95−2	EPA Region 4	Soil Invertebrates	Not specified	1.80
108−95−2	EPA Region 4	Soil Mammals	Not specified	37.00
108−95−2	EPA Region 5	EPA RCRA Soil	Not specified	120.00
108−95−2	EPA Region 6	Soil Invertebrates	Not specified	30.00
108−95−2	EPA Region 6	Soil Plants	Not specified	70.00
108−95−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.03
108−95−2	LANL ECORISK	Soil No Effect ESL	Generic Plant	0.79
108−95−2	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	1.80
108−95−2	LANL ECORISK	Soil Low Effect ESL	Generic Plant	8.00
108−95−2	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	18.00
108−95−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	37.00
108−95−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	47.00
108−95−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	370.00
108−95−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	470.00
108−95−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	640.00
108−95−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	6400.00
108−95−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	43000.00
108−95−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	430000.00
108−95−2	ORNL	Soil Screening − Invertebrates	Not specified	30.00
108−95−2	ORNL	Soil Screening − Plants	Not specified	70.00
108−95−2	ORNL	Soil Screening − Microbes	Not specified	100.00

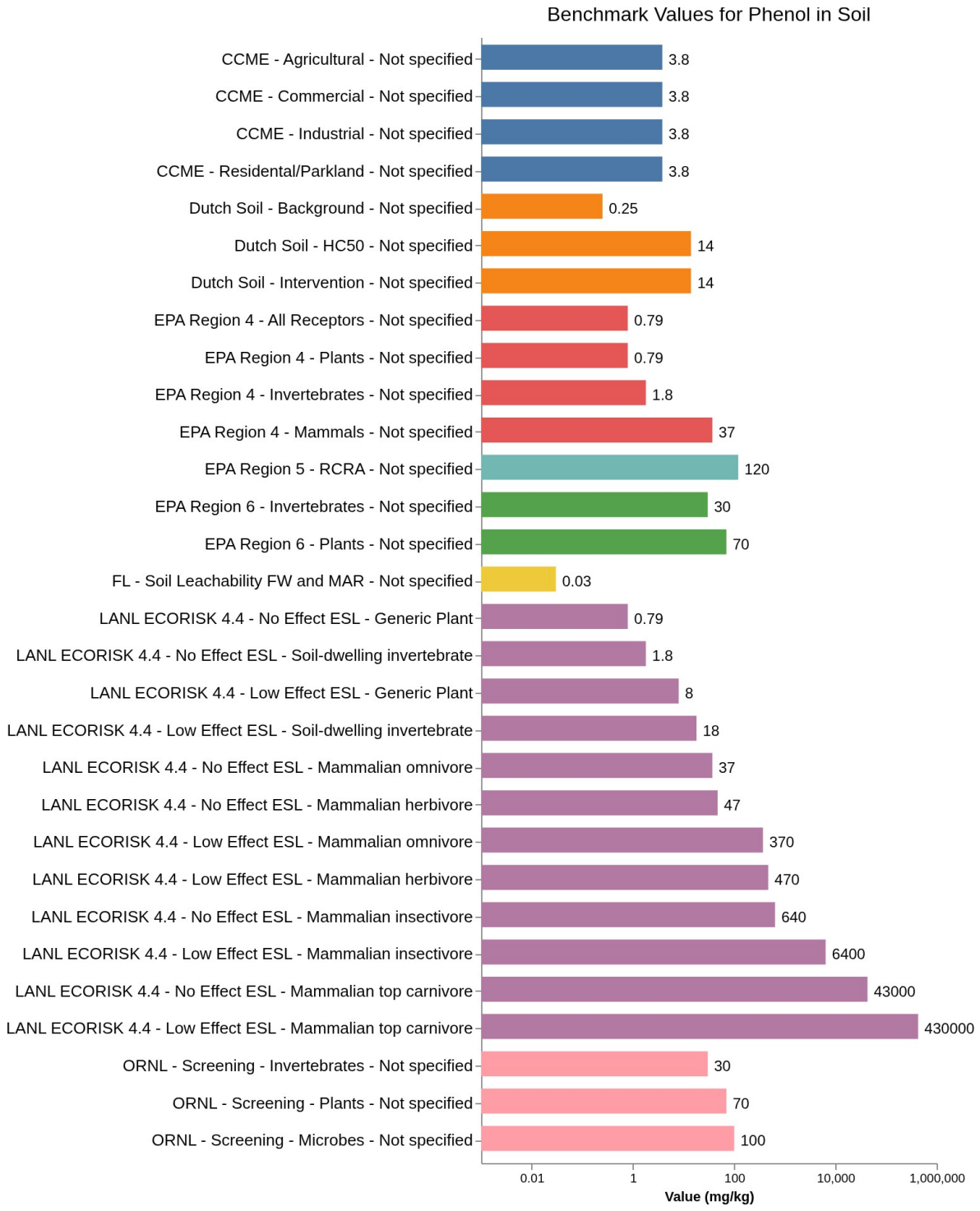

Benchmark Values for Phenol in Soil
CCME - Agricultural - Not specified
3.8
CCME - Commercial - Not specified
3.8
CCME - Industrial - Not specified
3.8
CCME - Residental/Parkland - Not specified
3.8
Dutch Soil - Background - Not specified
0.25
Dutch Soil - HC50 - Not specified
14
Dutch Soil - Intervention - Not specified
14
EPA Region 4 - All Receptors - Not specified
0.79
EPA Region 4 - Plants - Not specified
0.79
EPA Region 4 - Invertebrates - Not specified
1.8
EPA Region 4 - Mammals - Not specified
37
EPA Region 5 - RCRA - Not specified
120
EPA Region 6 - Invertebrates - Not specified
30
EPA Region 6 - Plants - Not specified
70
FL - Soil Leachability FW and MAR - Not specified
0.03
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
0.79
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
1.8
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
8
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
18
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
37
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
47
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
370
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
470
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
640
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
6400
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
43000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
430000
ORNL - Screening - Invertebrates - Not specified
30
ORNL - Screening - Plants - Not specified
70
ORNL - Screening - Microbes - Not specified
100
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 418: Benchmark Values for Phenolic compounds, nonchlorinated in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−16−1	Canada	Soil Agricultural	Not specified	0.1
000000−16−1	Canada	Soil Residential/Parkland	Not specified	1.0
000000−16−1	Canada	Soil Industrial	Not specified	10.0
000000−16−1	Canada	Soil Commercial	Not specified	10.0

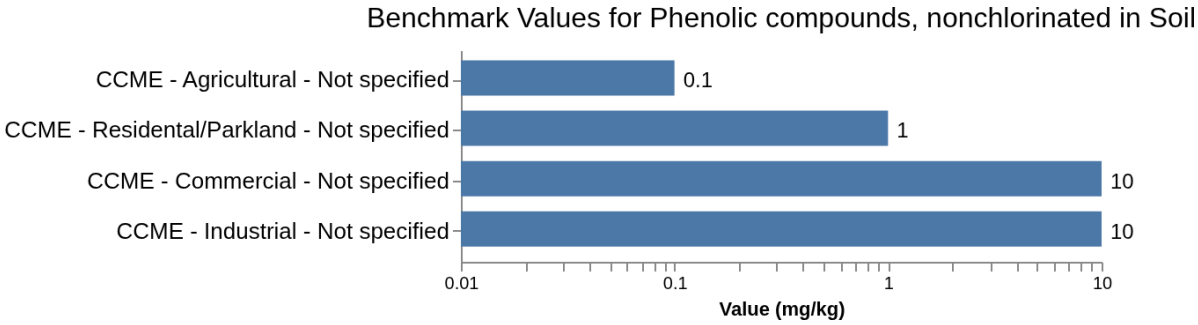


Table 419: Benchmark Values for Phenylenediamine, p− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
106−50−3	EPA Region 5	EPA RCRA Soil	Not specified	6.16

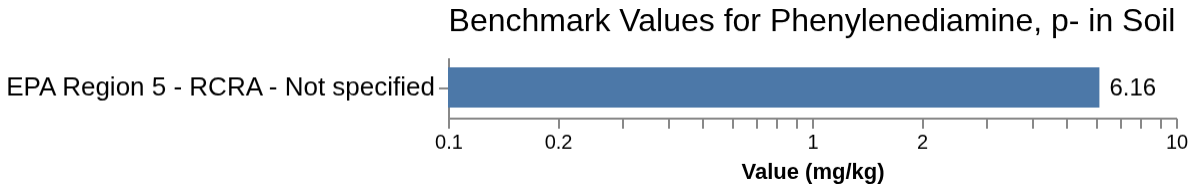


Table 420: Benchmark Values for Phenylphenol, 2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
90−43−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.8

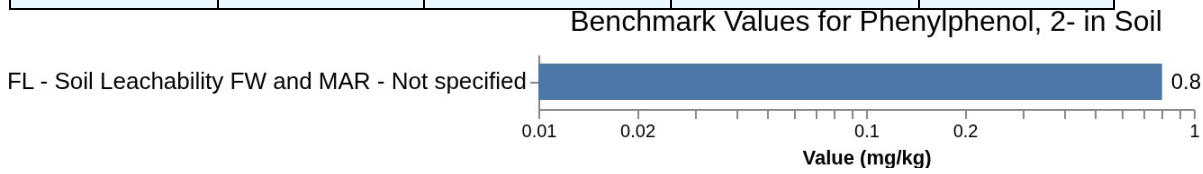


Table 421: Benchmark Values for Phorate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
298−02−2	EPA Region 5	EPA RCRA Soil	Not specified	0.000496
298−02−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.001000

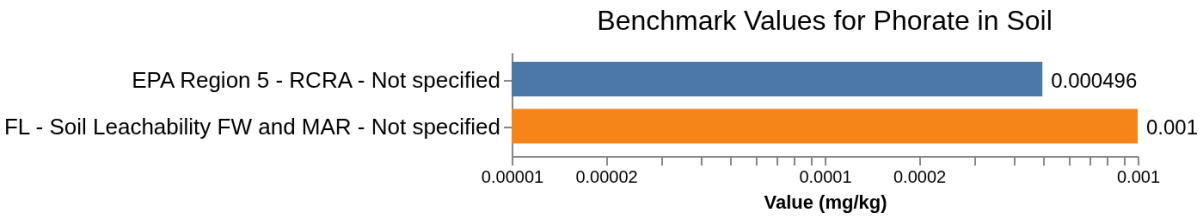


Table 422: Benchmark Values for Phosmet in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
732−11−6	Florida	Soil Leachability Freshwater and Marine	Not specified	0.004

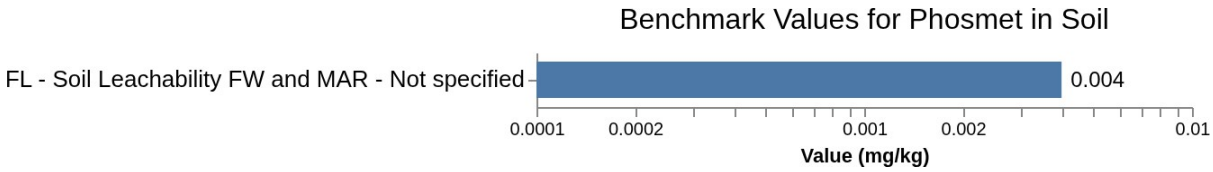


Table 423: Benchmark Values for Phthalic acid esters (each) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−16−2	Canada	Soil Agricultural	Not specified	30

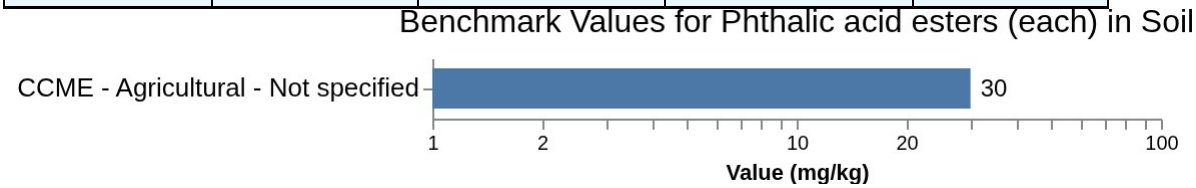


Table 424: Benchmark Values for Picoline, 2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
109−06−8	EPA Region 5	EPA RCRA Soil	Not specified	9.9

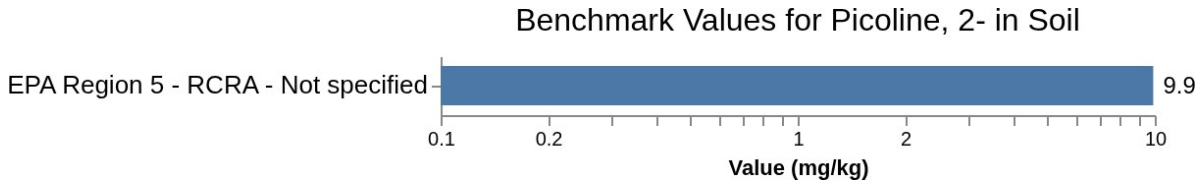


Table 425: Benchmark Values for Polychlorinated alkanes (medium chain) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−48−3	UK	Soil Screening Values	Not specified	2.2

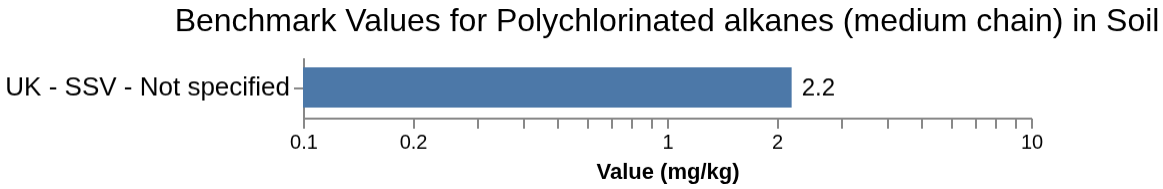


Table 426: Benchmark Values for Polychlorinated Biphenyls (high risk) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
1336−36−3	Canada	Soil Agricultural	Not specified	0.500000	
1336−36−3	Canada	Soil Residential/Parkland	Not specified	1.300000	
1336−36−3	Canada	Soil Industrial	Not specified	33.000000	
1336−36−3	Canada	Soil Commercial	Not specified	33.000000	
1336−36−3	Dutch Soil Protection Act	Background	Not specified	0.020000	
1336−36−3	Dutch Soil Protection Act	Intervention Value	Not specified	1.000000	
1336−36−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	3.400000	
1336−36−3	EPA Region 4	Soil All Receptors	Not specified	0.041000	7
1336−36−3	EPA Region 4	Soil Avians	Not specified	0.041000	7
1336−36−3	EPA Region 4	Soil Invertebrates	Not specified	0.330000	7
1336−36−3	EPA Region 4	Soil Mammals	Not specified	0.371000	7
1336−36−3	EPA Region 4	Soil Plants	Not specified	40.000000	7
1336−36−3	EPA Region 5	EPA RCRA Soil	Not specified	0.000332	
1336−36−3	EPA Region 6	Soil Plants	Not specified	40.000000	
1336−36−3	Florida	Soil Leachability Freshwater and Marine	Not specified	0.002000	
1336−36−3	ORNL	Soil Screening − Plants	Not specified	40.000000	

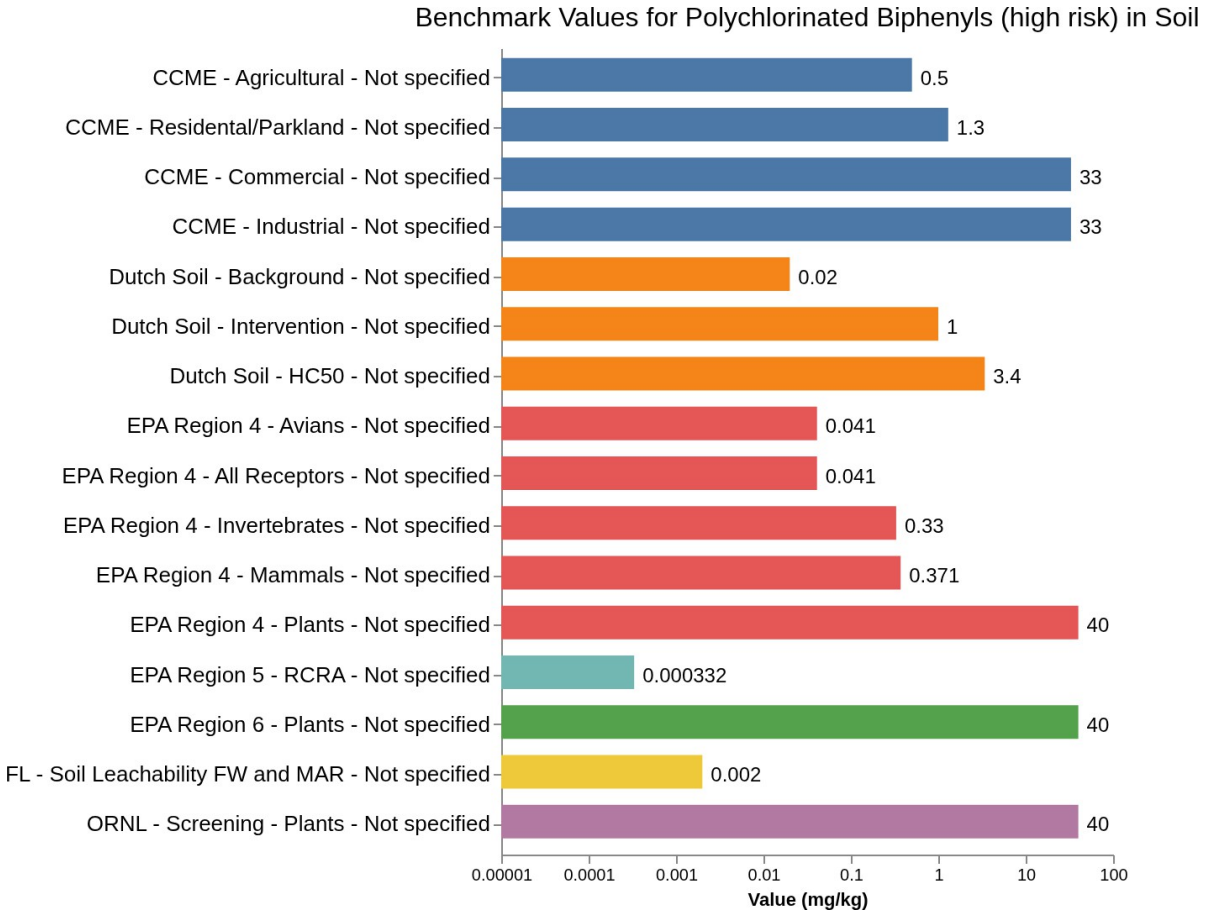


Table 427: Benchmark Values for Polychlorinated Biphenyls (PCBs) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−17−0	Washington	Soil Wildlife	Not specified	0.65

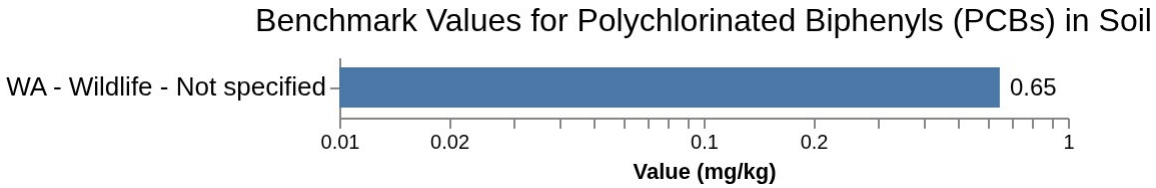


Table 428: Benchmark Values for Polycyclic aromatic hydrocarbons (PAH), Total (high molecular weight) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
000000−03−4	Dutch Soil Protection Act	Background	Not specified	1.5	
000000−03−4	Dutch Soil Protection Act	Intervention Value	Not specified	40.0	
000000−03−4	EPA ECO−SSL	Mammalian	Not specified	1.1	
000000−03−4	EPA ECO−SSL	Soil Invertebrates	Not specified	18.0	
000000−03−4	EPA Region 4	Soil Mammals	Not specified	1.1	10
000000−03−4	EPA Region 4	Soil All Receptors	Not specified	1.1	10
000000−03−4	EPA Region 4	Soil Invertebrates	Not specified	18.0	10

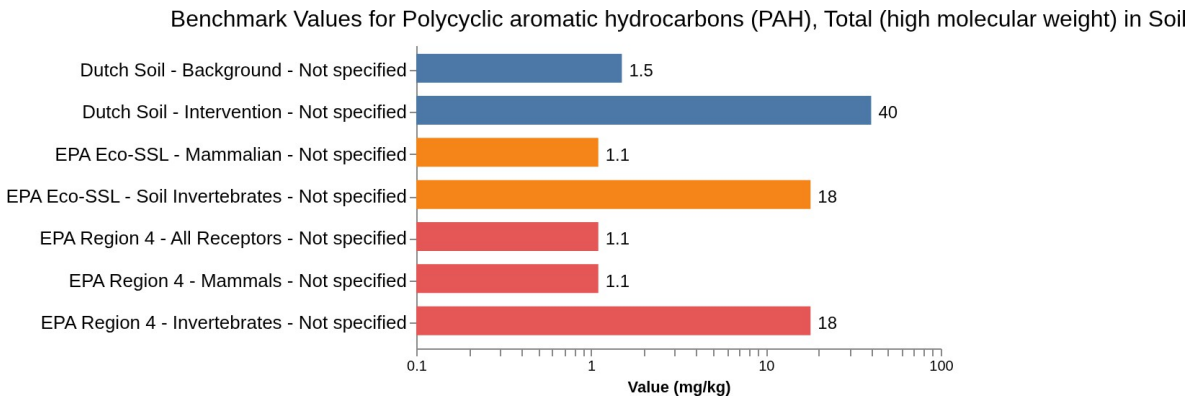


Table 429: Benchmark Values for Polycyclic aromatic hydrocarbons (PAH), Total (low molecular weight) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−03−3	Dutch Soil Protection Act	Background	Not specified	1.5
000000−03−3	Dutch Soil Protection Act	Intervention Value	Not specified	40.0
000000−03−3	EPA ECO−SSL	Soil Invertebrates	Not specified	29.0
000000−03−3	EPA ECO−SSL	Mammalian	Not specified	100.0
000000−03−3	EPA Region 4	Soil Invertebrates	Not specified	29.0
000000−03−3	EPA Region 4	Soil All Receptors	Not specified	29.0
000000−03−3	EPA Region 4	Soil Mammals	Not specified	100.0

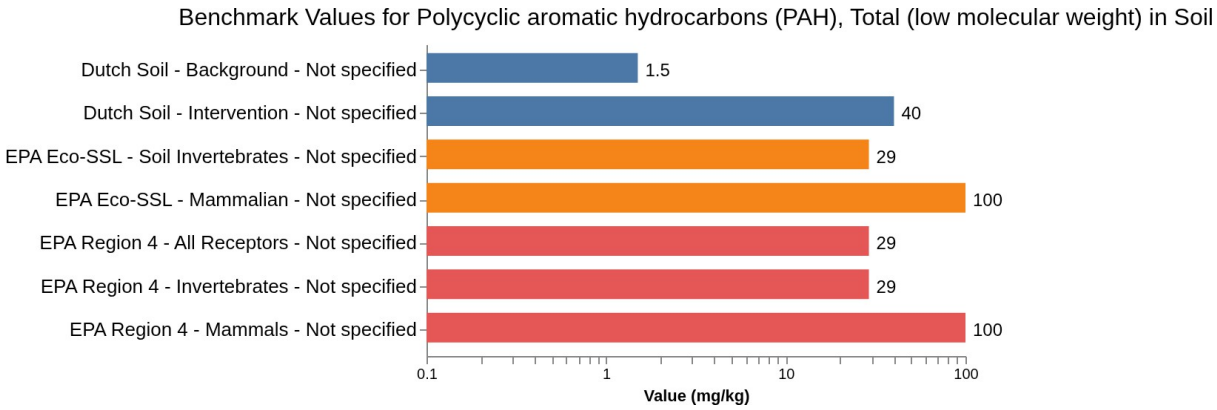


Table 430: Benchmark Values for Polycyclic aromatic hydrocarbons (PAH), Total in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−04−1	Dutch Soil Protection Act	Background	Not specified	1.5
000000−04−1	Dutch Soil Protection Act	Intervention Value	Not specified	40.0
000000−04−1	EPA Region 6	Soil Plants	Not specified	2.8
000000−04−1	EPA Region 6	Soil Invertebrates	Not specified	2.8

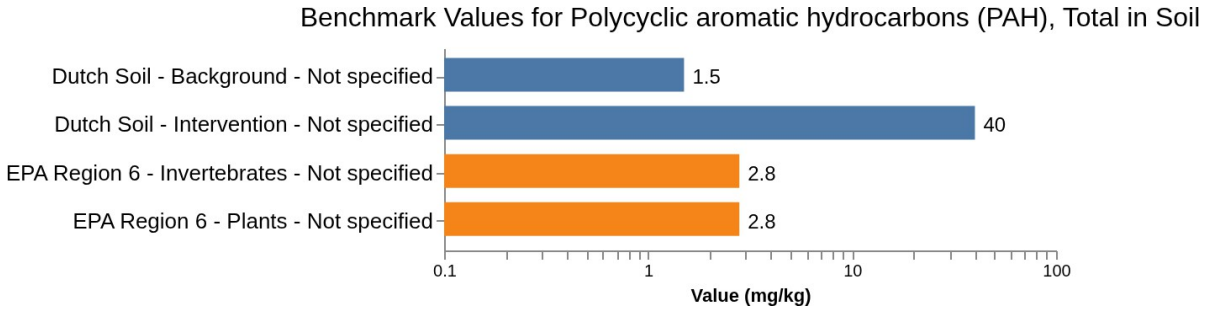


Table 431: Benchmark Values for Prometon in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
1610−18−0	Florida	Soil Leachability Freshwater and Marine	Not specified	14.0

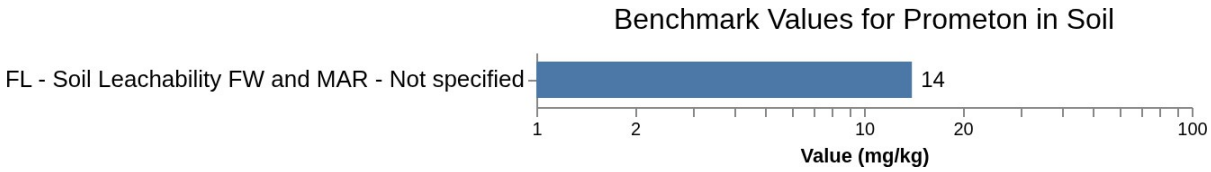


Table 432: Benchmark Values for Prometryn in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7287−19−6	Florida	Soil Leachability Freshwater and Marine	Not specified	0.5

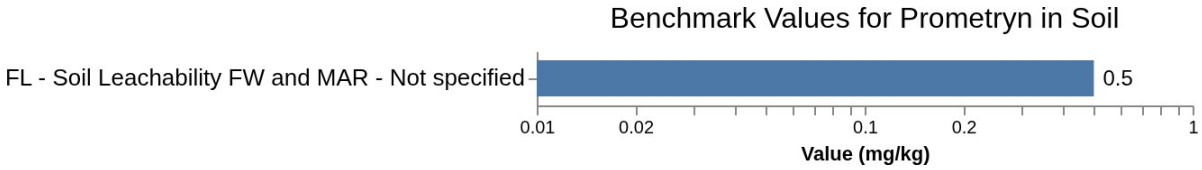


Table 433: Benchmark Values for Pronamide in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
23950−58−5	EPA Region 5	EPA RCRA Soil	Not specified	0.0136

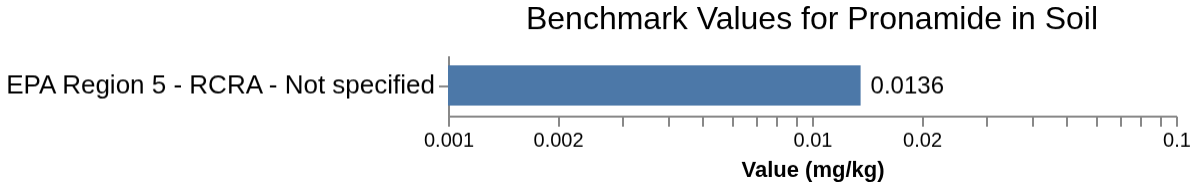


Table 434: Benchmark Values for Propachlor in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
1918−16−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.1

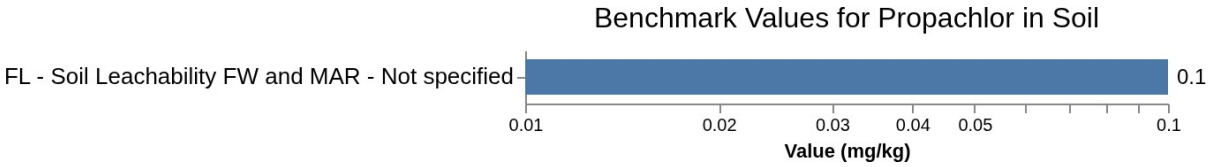


Table 435: Benchmark Values for Propanil in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
709−98−8	Florida	Soil Leachability Freshwater and Marine	Not specified	0.2

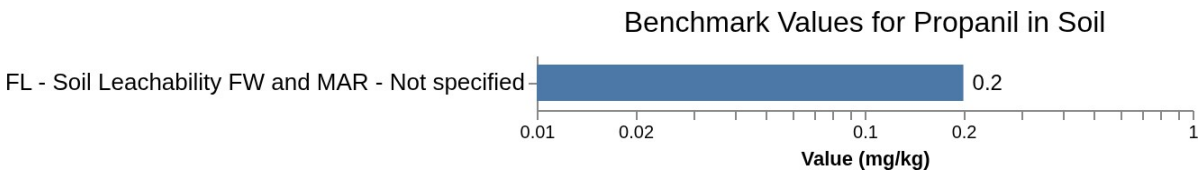


Table 436: Benchmark Values for Propanoic acid, 2−(2,4−dichlorophenoxy)− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
120−36−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.3

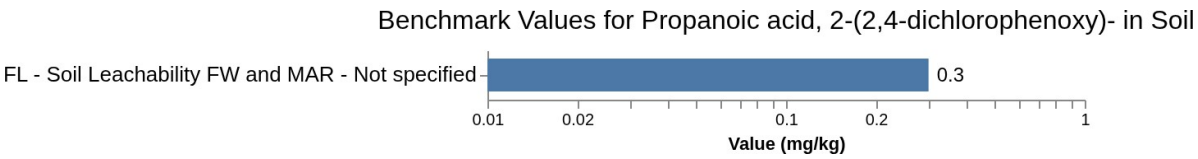


Table 437: Benchmark Values for Propazine in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
139−40−2	Florida	Soil Leachability Freshwater and Marine	Not specified	2.7

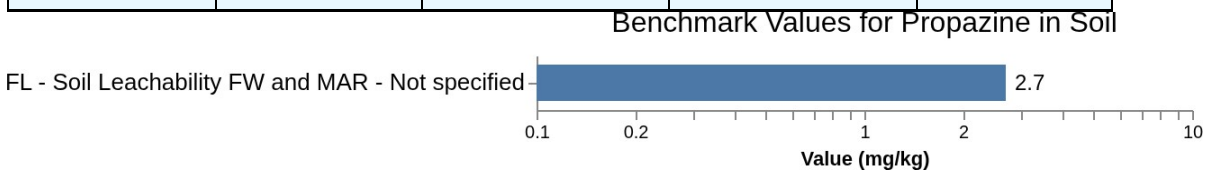


Table 438: Benchmark Values for Propionitrile in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
107−12−0	EPA Region 5	EPA RCRA Soil	Not specified	0.0498

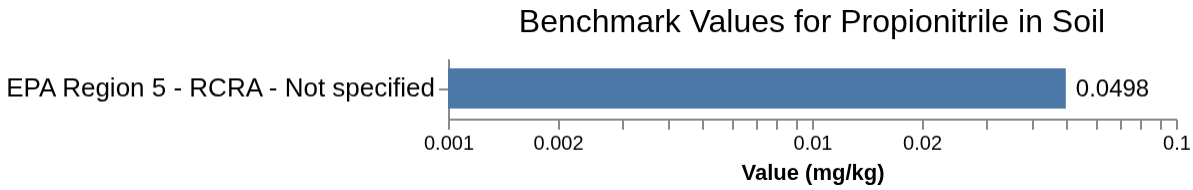


Table 439: Benchmark Values for Propylene Glycol in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
57−55−6	Florida	Soil Leachability Freshwater and Marine	Not specified	140.0

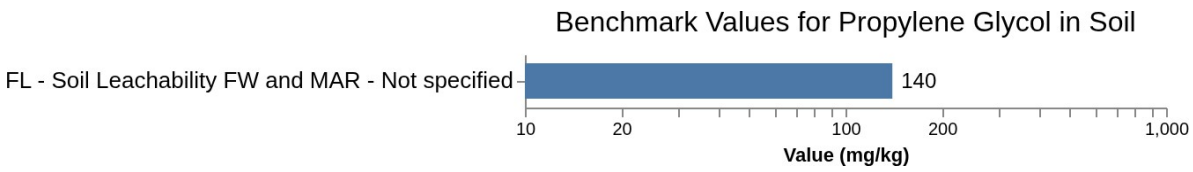


Table 440: Benchmark Values for Pyrazinyl phosphorothioate, O,O−diethyl O−2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
297−97−2	EPA Region 5	EPA RCRA Soil	Not specified	0.799

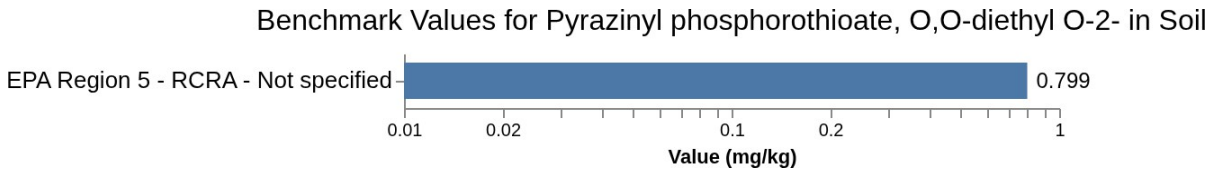


Table 441: Benchmark Values for Pyrene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
129−00−0	Canada	Soil Agricultural	Not specified		36
129−00−0	Canada	Soil Residential/Parkland	Not specified		36
129−00−0	Canada	Soil Industrial	Not specified		36
129−00−0	Canada	Soil Commercial	Not specified		36
129−00−0	EPA Region 4	Soil All Receptors	Not specified	1.1	
129−00−0	EPA Region 4	Soil Invertebrates	Not specified	10	
129−00−0	EPA Region 4	Soil Mammals	Not specified	23	
129−00−0	EPA Region 4	Soil Avians	Not specified	33	
129−00−0	EPA Region 5	EPA RCRA Soil	Not specified	78.5	
129−00−0	Florida	Soil Leachability Freshwater and Marine	Not specified	1.3	
129−00−0	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	10	
129−00−0	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	20	
129−00−0	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	23	
129−00−0	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	31	
129−00−0	LANL ECORISK	Soil No Effect ESL	Avian insectivore	33	
129−00−0	LANL ECORISK	Soil No Effect ESL	Avian omnivore	44	
129−00−0	LANL ECORISK	Soil No Effect ESL	Avian herbivore	68	
129−00−0	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	110	
129−00−0	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	160	
129−00−0	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	230	
129−00−0	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	310	
129−00−0	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	330	
129−00−0	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	440	
129−00−0	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	680	
129−00−0	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1100	
129−00−0	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	1600	
129−00−0	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	3000	
129−00−0	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	3100	
129−00−0	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	30000	
129−00−0	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	31000	

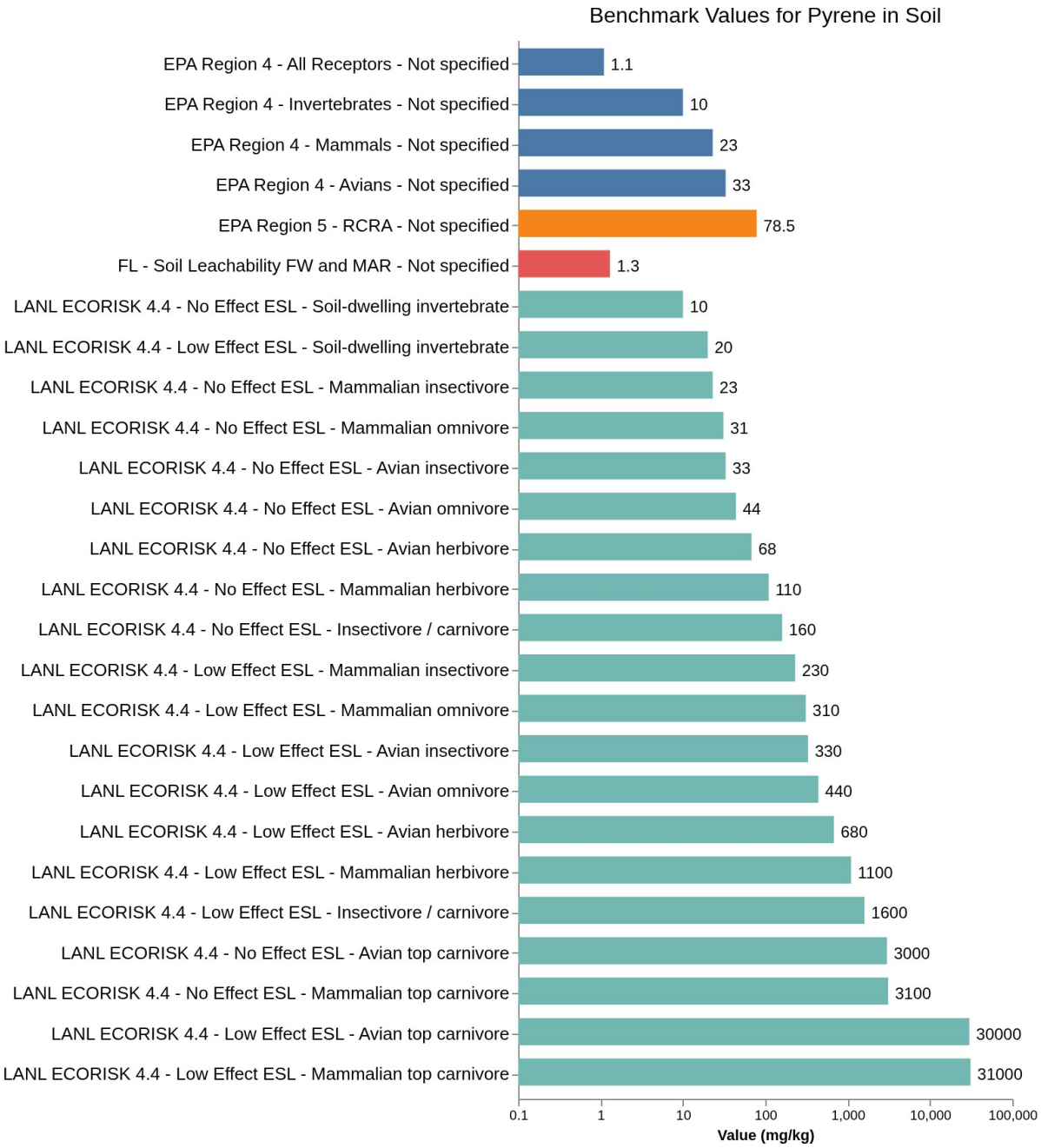

Benchmark Values for Pyrene in Soil
EPA Region 4 - All Receptors - Not specified
1.1
EPA Region 4 - Invertebrates - Not specified
10
EPA Region 4 - Mammals - Not specified
23
EPA Region 4 - Avians - Not specified
33
EPA Region 5 - RCRA - Not specified
78.5
FL - Soil Leachability FW and MAR - Not specified
1.3
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
10
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
20
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
23
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
31
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
33
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
44
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
68
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
110
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
160
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
230
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
310
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
330
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
440
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
680
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
1100
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
1600
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
3000
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
3100
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
30000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
31000
0.1
1
10
100
1,000
10,000
100,000
Value (mg/kg)

Table 442: Benchmark Values for Pyridine in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
110−86−1	Dutch Soil Protection Act	Background	Not specified	0.15	71
110−86−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	11.00	
110−86−1	Dutch Soil Protection Act	Intervention Value	Not specified	11.00	
110−86−1	EPA Region 5	EPA RCRA Soil	Not specified	1.03	
110−86−1	Florida	Soil Leachability Freshwater and Marine	Not specified	5.40	

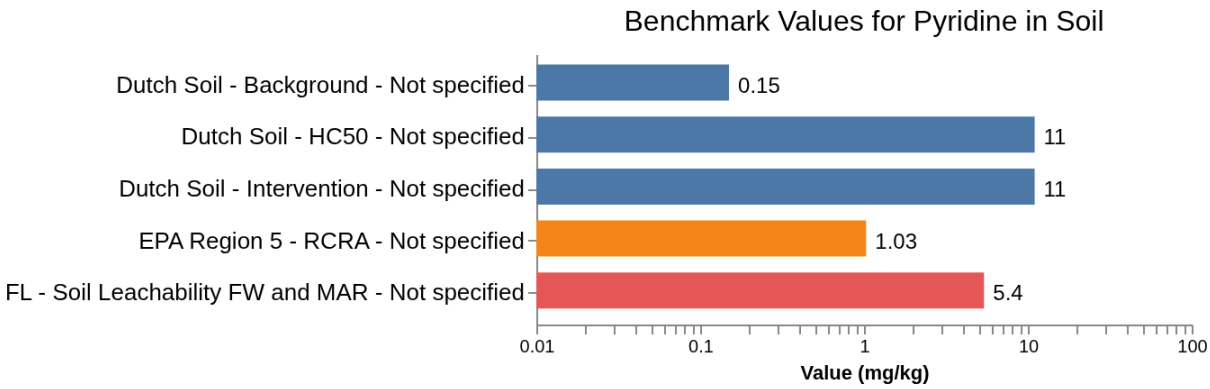


Table 443: Benchmark Values for Quinoline in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
91−22−5	Canada	Soil Agricultural	Not specified	0.1

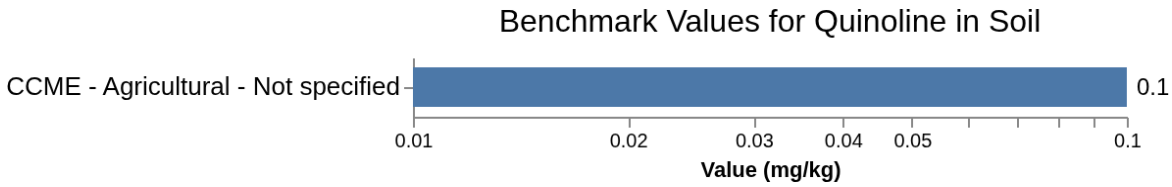


Table 444: Benchmark Values for Resmethrin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
10453−86−8	Florida	Soil Leachability Freshwater and Marine	Not specified	0.01

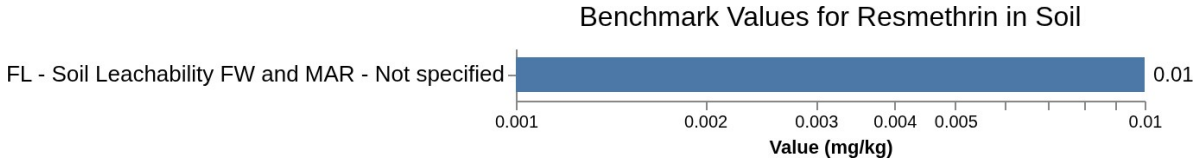


Table 445: Benchmark Values for Resorcinol in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
108−46−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	4.6	
108−46−3	Dutch Soil Protection Act	Intervention Value	Not specified	8.0	73, 75

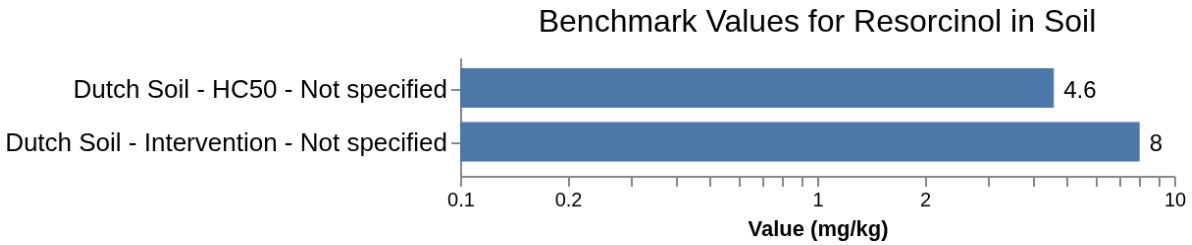


Table 446: Benchmark Values for Ronnel in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
299−84−3	Florida	Soil Leachability Freshwater and Marine	Not specified	0.2

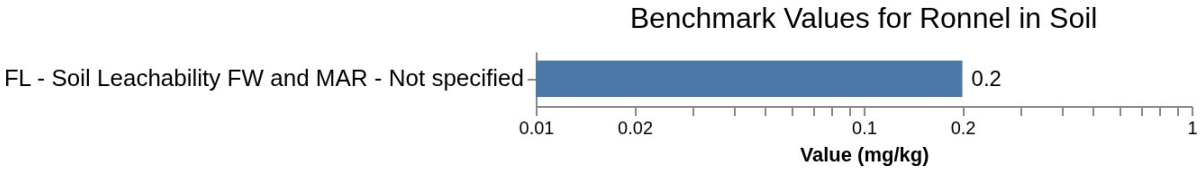


Table 447: Benchmark Values for Safrole in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
94−59−7	EPA Region 5	EPA RCRA Soil	Not specified	0.404

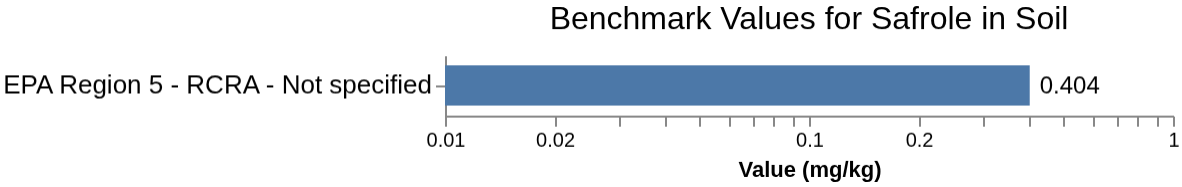


Table 448: Benchmark Values for Selenium in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
7782−49−2	Canada	Soil Agricultural	Not specified	1.0000	
7782−49−2	Canada	Soil Residential/Parkland	Not specified	1.0000	
7782−49−2	Canada	Soil Commercial	Not specified	2.9000	
7782−49−2	Canada	Soil Industrial	Not specified	2.9000	
7782−49−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	9.0000	
7782−49−2	Dutch Soil Protection Act	Intervention Value	Not specified	100.0000	73
7782−49−2	EPA ECO−SSL	Plants	Not specified	0.5200	
7782−49−2	EPA ECO−SSL	Mammalian	Not specified	0.6300	
7782−49−2	EPA ECO−SSL	Avian	Not specified	1.2000	
7782−49−2	EPA ECO−SSL	Soil Invertebrates	Not specified	4.1000	
7782−49−2	EPA Region 4	Soil All Receptors	Not specified	0.5200	7
7782−49−2	EPA Region 4	Soil Plants	Not specified	0.5200	7
7782−49−2	EPA Region 4	Soil Mammals	Not specified	0.6300	7
7782−49−2	EPA Region 4	Soil Avians	Not specified	1.2000	7
7782−49−2	EPA Region 4	Soil Invertebrates	Not specified	4.1000	7
7782−49−2	EPA Region 5	EPA RCRA Soil	Not specified	0.0276	
7782−49−2	EPA Region 6	Soil Plants	Not specified	0.5200	
7782−49−2	EPA Region 6	Soil Invertebrates	Not specified	4.1000	
7782−49−2	Florida	Soil Leachability Freshwater	Not specified	0.5000	211, 212
7782−49−2	Florida	Soil Leachability Marine	Not specified	7.4000	211, 212
7782−49−2	LANL ECORISK	Soil No Effect ESL	Generic Plant	0.5200	
7782−49−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.7000	
7782−49−2	LANL ECORISK	Soil No Effect ESL	Avian insectivore	0.7100	
7782−49−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.8200	
7782−49−2	LANL ECORISK	Soil No Effect ESL	Avian omnivore	0.8300	
7782−49−2	LANL ECORISK	Soil No Effect ESL	Avian herbivore	0.9800	
7782−49−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	1.0000	
7782−49−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1.2000	
7782−49−2	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	1.4000	
7782−49−2	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	1.6000	
7782−49−2	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	1.9000	
7782−49−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	2.2000	
7782−49−2	LANL ECORISK	Soil Low Effect ESL	Generic Plant	3.0000	
7782−49−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	3.4000	
7782−49−2	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	3.7000	
7782−49−2	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	4.1000	
7782−49−2	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	7.5000	
7782−49−2	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	41.0000	
7782−49−2	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	74.0000	
7782−49−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	92.0000	
7782−49−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	130.0000	
7782−49−2	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	140.0000	
7782−49−2	ORNL	Soil Screening − Plants	Not specified	1.0000	
7782−49−2	ORNL	Soil Screening − Invertebrates	Not specified	70.0000	
7782−49−2	ORNL	Soil Screening − Microbes	Not specified	100.0000	
7782−49−2	Washington	Soil Wildlife	Not specified	0.3000	

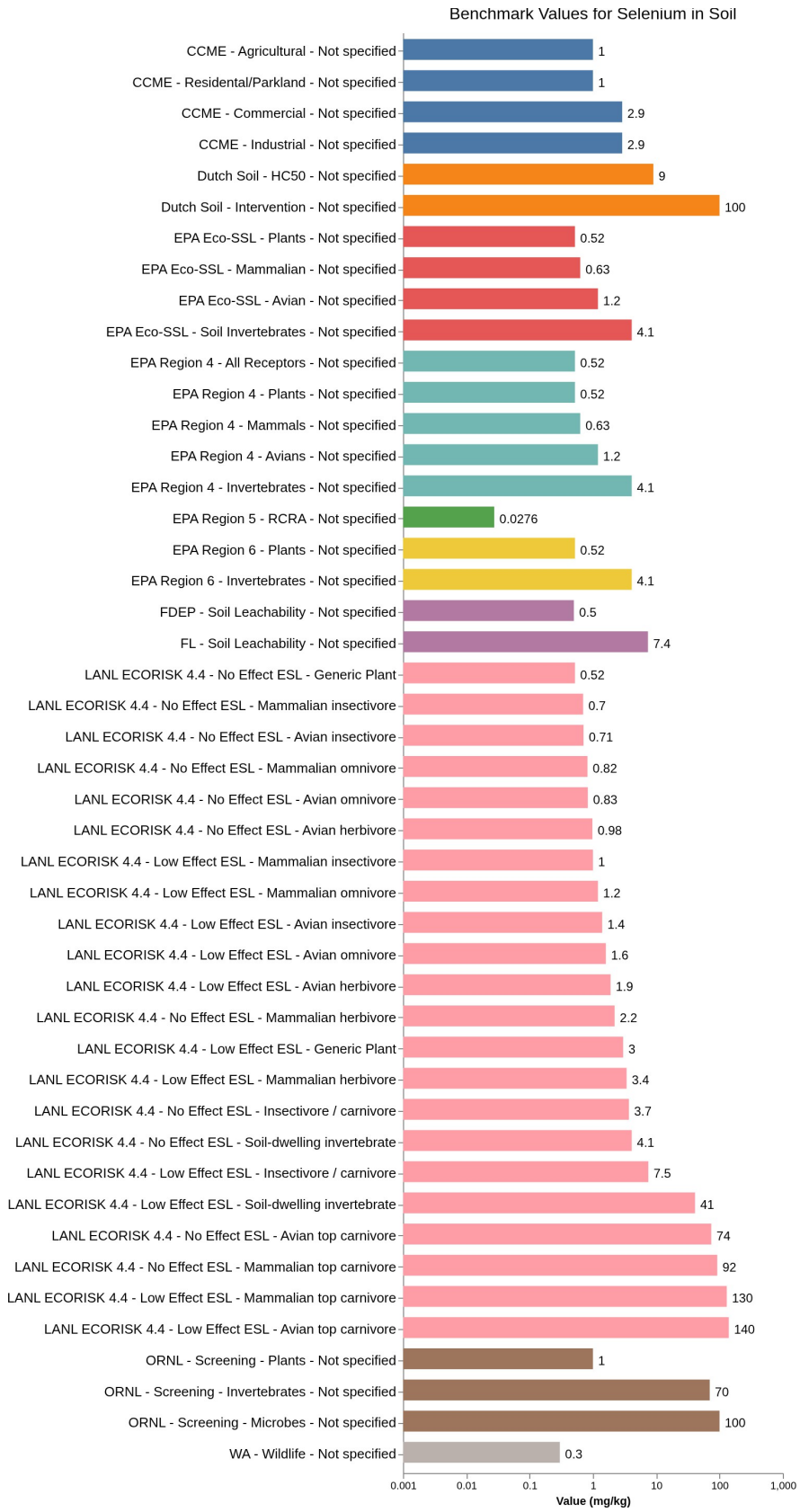

Benchmark Values for Selenium in Soil
CCME - Agricultural - Not specified 1
CCME - Residental/Parkland - Not specified 1
CCME - Commercial - Not specified 2.9
CCME - Industrial - Not specified 2.9
Dutch Soil - HC50 - Not specified 9
Dutch Soil - Intervention - Not specified 100
EPA Eco-SSL - Plants - Not specified 0.52
EPA Eco-SSL - Mammalian - Not specified 0.63
EPA Eco-SSL - Avian - Not specified 1.2
EPA Eco-SSL - Soil Invertebrates - Not specified 4.1
EPA Region 4 - All Receptors - Not specified 0.52
EPA Region 4 - Plants - Not specified 0.52
EPA Region 4 - Mammals - Not specified 0.63
EPA Region 4 - Avians - Not specified 1.2
EPA Region 4 - Invertebrates - Not specified 4.1
EPA Region 5 - RCRA - Not specified 0.0276
EPA Region 6 - Plants - Not specified 0.52
EPA Region 6 - Invertebrates - Not specified 4.1
FDEP - Soil Leachability - Not specified 0.5
FL - Soil Leachability - Not specified 7.4
LANL ECORISK 4.4 - No Effect ESL - Generic Plant 0.52
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore 0.7
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore 0.71
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore 0.82
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore 0.83
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore 0.98
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore 1
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore 1.2
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore 1.4
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore 1.6
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore 1.9
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore 2.2
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant 3
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore 3.4
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore 3.7
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate 4.1
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore 7.5
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate 41
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore 74
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore 92
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore 130
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore 140
ORNL - Screening - Plants - Not specified 1
ORNL - Screening - Invertebrates - Not specified 70
ORNL - Screening - Microbes - Not specified 100
WA - Wildlife - Not specified 0.3
0.001
0.01
0.1
1
10
100
1,000
Value (mg/kg)

Table 449: Benchmark Values for Silver in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
7440−22−4	Canada	Soil Residential/Parkland	Not specified	20.00	
7440−22−4	Canada	Soil Agricultural	Not specified	20.00	
7440−22−4	Canada	Soil Industrial	Not specified	40.00	
7440−22−4	Canada	Soil Commercial	Not specified	40.00	
7440−22−4	Dutch Soil Protection Act	Intervention Value	Not specified	15.00	73
7440−22−4	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	15.00	
7440−22−4	EPA ECO−SSL	Avian	Not specified	4.20	
7440−22−4	EPA ECO−SSL	Mammalian	Not specified	14.00	
7440−22−4	EPA ECO−SSL	Plants	Not specified	560.00	
7440−22−4	EPA Region 4	Soil Avians	Not specified	4.20	
7440−22−4	EPA Region 4	Soil All Receptors	Not specified	4.20	
7440−22−4	EPA Region 4	Soil Mammals	Not specified	14.00	
7440−22−4	EPA Region 4	Soil Plants	Not specified	560.00	
7440−22−4	EPA Region 5	EPA RCRA Soil	Not specified	4.04	
7440−22−4	EPA Region 6	Soil Plants	Not specified	560.00	
7440−22−4	Florida	Soil Leachability Freshwater	Not specified	0.01	211
7440−22−4	Florida	Soil Leachability Marine	Not specified	0.06	211
7440−22−4	LANL ECORISK	Soil No Effect ESL	Avian insectivore	2.60	
7440−22−4	LANL ECORISK	Soil No Effect ESL	Avian omnivore	4.10	
7440−22−4	LANL ECORISK	Soil No Effect ESL	Avian herbivore	10.00	
7440−22−4	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	13.00	
7440−22−4	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	14.00	
7440−22−4	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	24.00	
7440−22−4	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	26.00	
7440−22−4	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	41.00	
7440−22−4	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	100.00	
7440−22−4	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	130.00	
7440−22−4	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	140.00	
7440−22−4	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	150.00	
7440−22−4	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	240.00	
7440−22−4	LANL ECORISK	Soil No Effect ESL	Generic Plant	560.00	
7440−22−4	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	600.00	
7440−22−4	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1500.00	
7440−22−4	LANL ECORISK	Soil Low Effect ESL	Generic Plant	2800.00	
7440−22−4	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	4400.00	
7440−22−4	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	6000.00	
7440−22−4	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	44000.00	
7440−22−4	ORNL	Soil Screening − Plants	Not specified	2.00	
7440−22−4	ORNL	Soil Screening − Microbes	Not specified	50.00	
7440−22−4	UK	Soil Screening Values	Not specified	0.30	

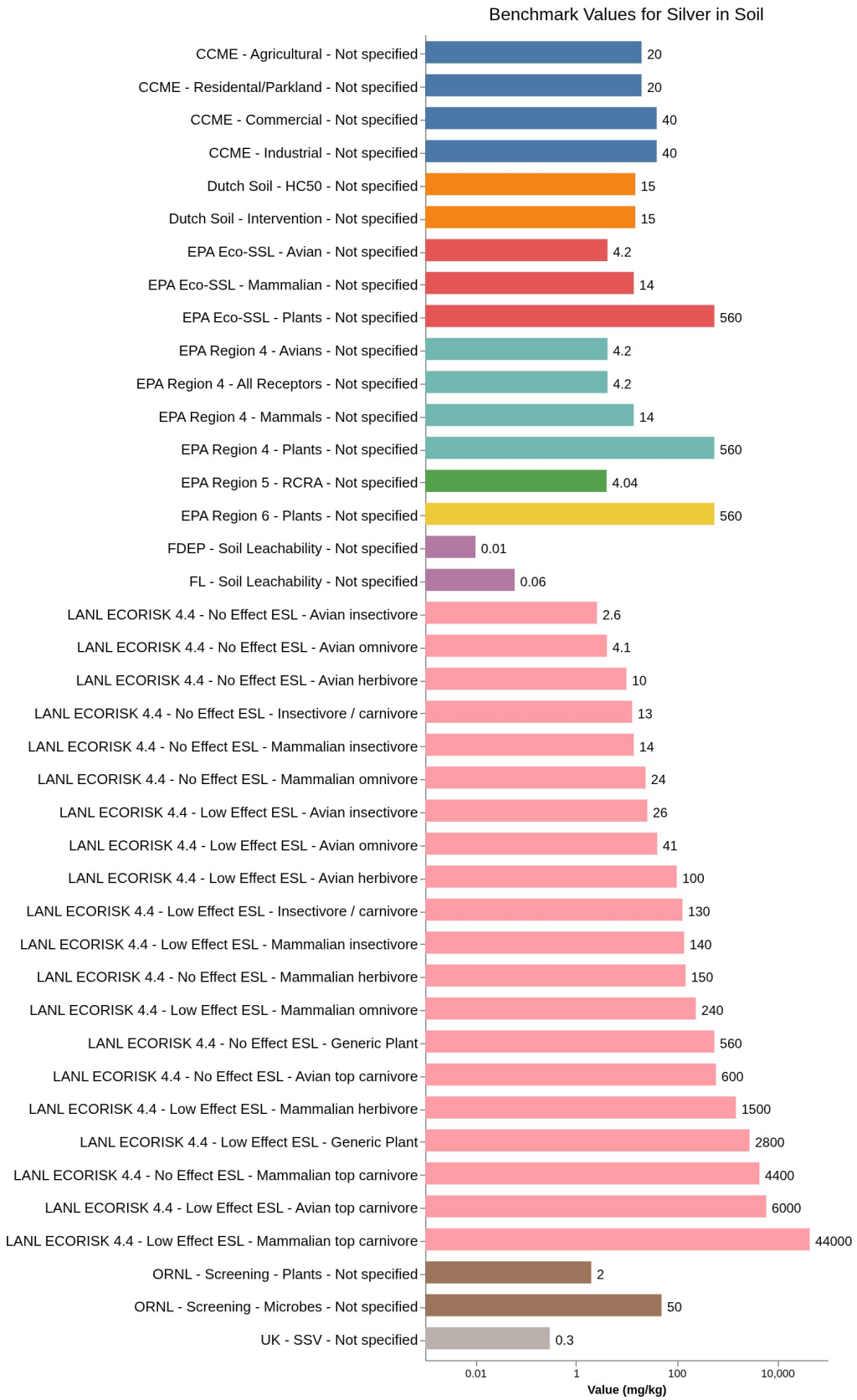

Benchmark Values for Silver in Soil
CCME - Agricultural - Not specified 20
CCME - Residental/Parkland - Not specified 20
CCME - Commercial - Not specified 40
CCME - Industrial - Not specified 40
Dutch Soil - HC50 - Not specified 15
Dutch Soil - Intervention - Not specified 15
EPA Eco-SSL - Avian - Not specified 4.2
EPA Eco-SSL - Mammalian - Not specified 14
EPA Eco-SSL - Plants - Not specified 560
EPA Region 4 - Avians - Not specified 4.2
EPA Region 4 - All Receptors - Not specified 4.2
EPA Region 4 - Mammals - Not specified 14
EPA Region 4 - Plants - Not specified 560
EPA Region 5 - RCRA - Not specified 4.04
EPA Region 6 - Plants - Not specified 560
FDEP - Soil Leachability - Not specified 0.01
FL - Soil Leachability - Not specified 0.06
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore 2.6
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore 4.1
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore 10
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore 13
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore 14
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore 24
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore 26
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore 41
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore 100
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore 130
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore 140
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore 150
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore 240
LANL ECORISK 4.4 - No Effect ESL - Generic Plant 560
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore 600
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore 1500
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant 2800
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore 4400
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore 6000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore 44000
ORNL - Screening - Plants - Not specified 2
ORNL - Screening - Microbes - Not specified 50
UK - SSV - Not specified 0.3
0.01
1
100
10,000
Value (mg/kg)

Table 450: Benchmark Values for Simazine in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
122−34−9	EPA Region 4	Soil All Receptors	Not specified	0.0083
122−34−9	EPA Region 4	Soil Invertebrates	Not specified	0.0083
122−34−9	Florida	Soil Leachability Freshwater and Marine	Not specified	0.1000

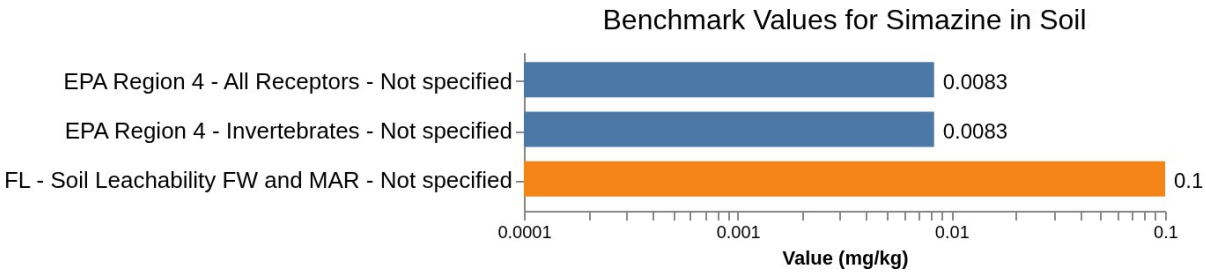


Table 451: Benchmark Values for Sodium Acifluorfen in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
62476−59−9	Florida	Soil Leachability Freshwater and Marine	Not specified	25

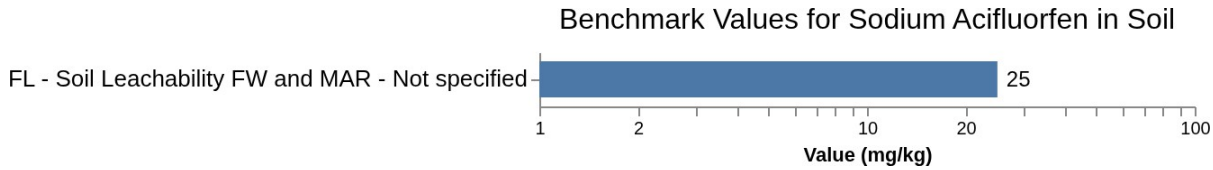


Table 452: Benchmark Values for Sodium adsorption ratio (SAR) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−16−3	Canada	Soil Agricultural	Not specified	5.0
000000−16−3	Canada	Soil Residential/Parkland	Not specified	5.0
000000−16−3	Canada	Soil Commercial	Not specified	12.0
000000−16−3	Canada	Soil Industrial	Not specified	12.0

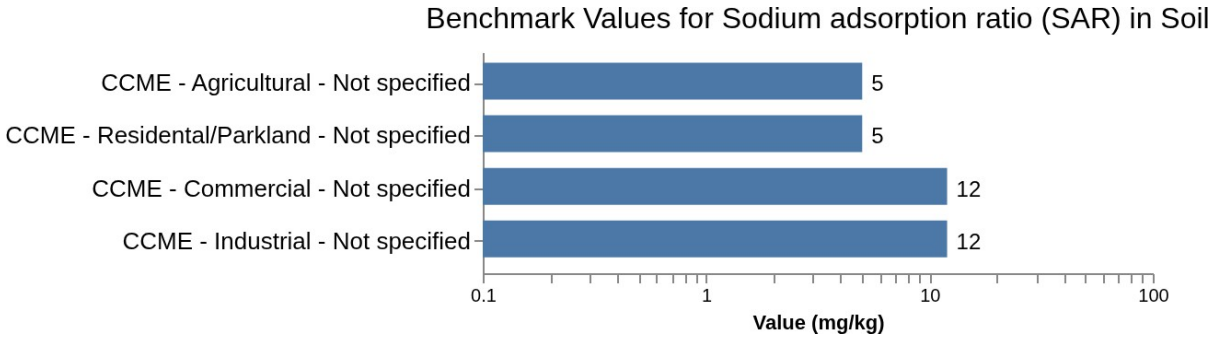


Table 453: Benchmark Values for Strontium, Stable in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7440−24−6	EPA Region 4	Soil Mammals	Not specified	95.0
7440−24−6	EPA Region 4	Soil All Receptors	Not specified	96.0
7440−24−6	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	95.0
7440−24−6	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	110.0
7440−24−6	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	950.0
7440−24−6	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	1000.0
7440−24−6	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1100.0
7440−24−6	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	10000.0
7440−24−6	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	19000.0
7440−24−6	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	190000.0

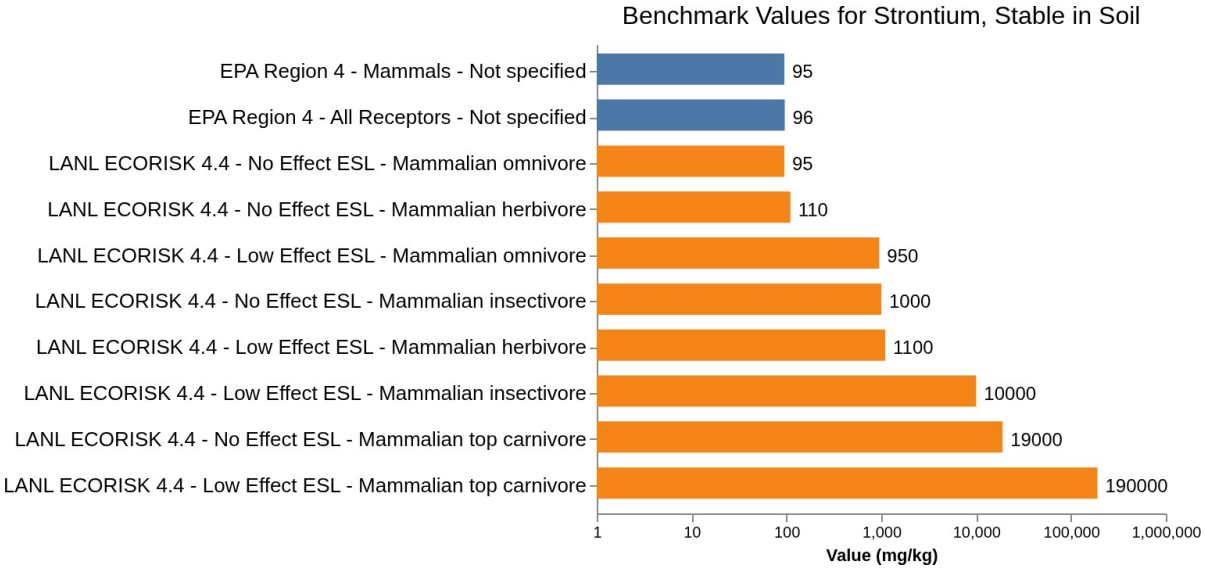


Table 454: Benchmark Values for Strychnine in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
57−24−9	Florida	Soil Leachability Freshwater and Marine	Not specified	0.3

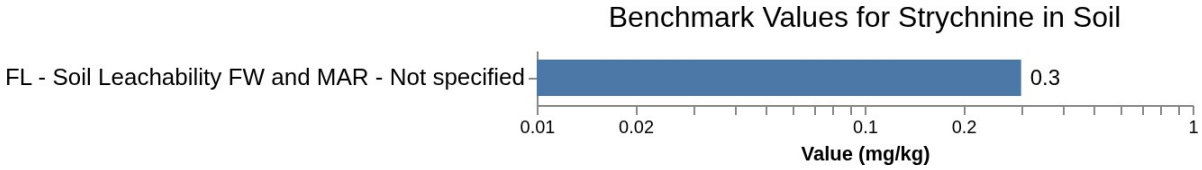


Table 455: Benchmark Values for Styrene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
100−42−5	Canada	Soil Agricultural	Not specified	0.10	
100−42−5	Canada	Soil Residential/Parkland	Not specified	5.00	
100−42−5	Canada	Soil Industrial	Not specified	50.00	
100−42−5	Canada	Soil Commercial	Not specified	50.00	
100−42−5	Dutch Soil Protection Act	Background	Not specified	0.25	71
100−42−5	Dutch Soil Protection Act	Intervention Value	Not specified	86.00	
100−42−5	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	86.00	
100−42−5	EPA Region 4	Soil All Receptors	Not specified	1.20	
100−42−5	EPA Region 4	Soil Invertebrates	Not specified	1.20	
100−42−5	EPA Region 4	Soil Plants	Not specified	3.20	
100−42−5	EPA Region 5	EPA RCRA Soil	Not specified	4.69	
100−42−5	EPA Region 6	Soil Plants	Not specified	300.00	
100−42−5	Florida	Soil Leachability Freshwater and Marine	Not specified	16.00	
100−42−5	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	1.20	
100−42−5	LANL ECORISK	Soil No Effect ESL	Generic Plant	3.20	
100−42−5	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	12.00	
100−42−5	LANL ECORISK	Soil Low Effect ESL	Generic Plant	32.00	
100−42−5	ORNL	Soil Screening − Plants	Not specified	300.00	

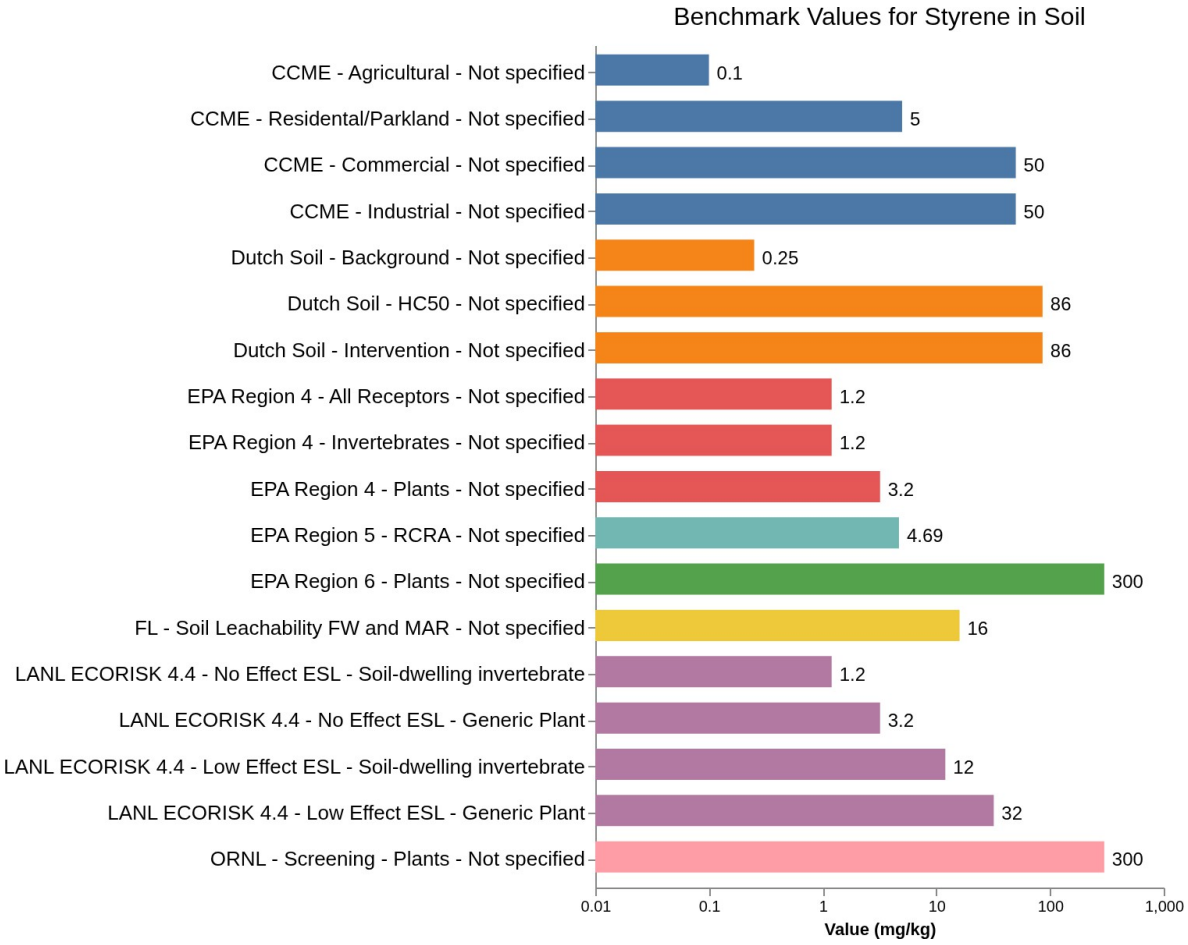


Table 456: Benchmark Values for Sulfide in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
18496−25−8	EPA Region 5	EPA RCRA Soil	Not specified	0.00358

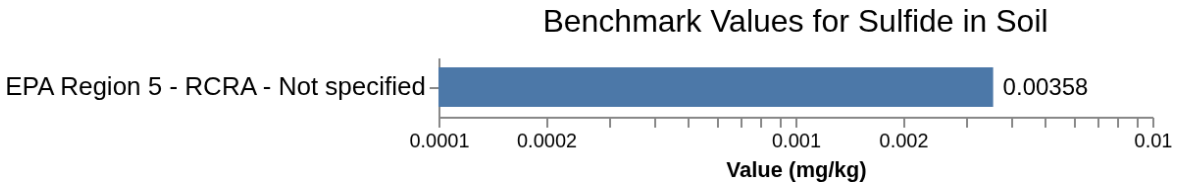


Table 457: Benchmark Values for Sulfolane in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
126−33−0	Canada	Soil Residential/Parkland	Not specified	0.8
126−33−0	Canada	Soil Commercial	Not specified	0.8
126−33−0	Canada	Soil Industrial	Not specified	0.8
126−33−0	Canada	Soil Agricultural	Not specified	0.8

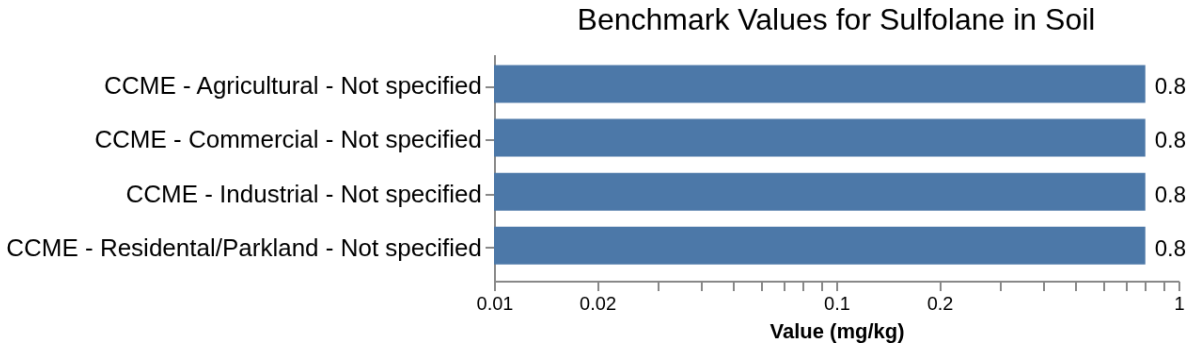


Table 458: Benchmark Values for Sulfur in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7704−34−9	Canada	Soil Agricultural	Not specified	500.0

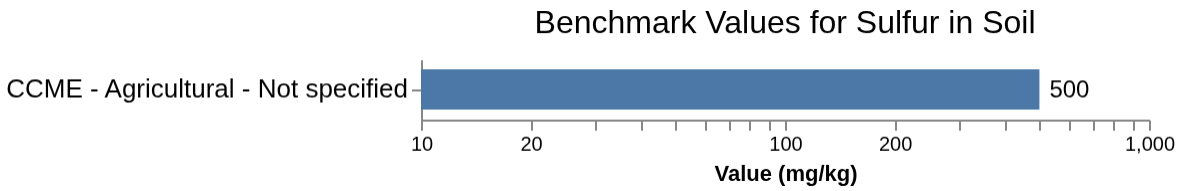


Table 459: Benchmark Values for Sulfurous acid, 2−chloroethyl 2−[4−(1,1−dimethylethyl)phenoxy]−1−methylethyl ester in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
140−57−8	EPA Region 5	EPA RCRA Soil	Not specified	166.0

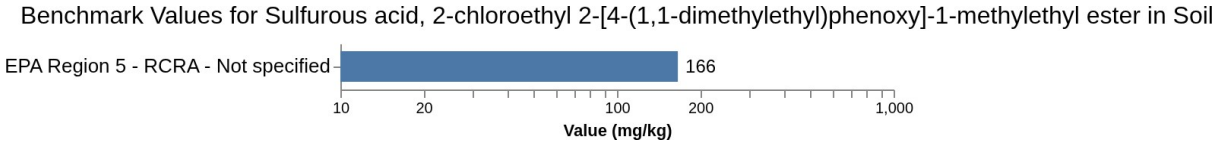


Table 460: Benchmark Values for TCDD, 2,3,7,8− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
1746−01−6	EPA Region 4	Soil Mammals	Not specified	3.150000e-06	7
1746−01−6	EPA Region 4	Soil All Receptors	Not specified	3.150000e-06	7
1746−01−6	EPA Region 4	Soil Avians	Not specified	1.600000e-05	7
1746−01−6	EPA Region 4	Soil Invertebrates	Not specified	5.000000e+00	7
1746−01−6	EPA Region 5	EPA RCRA Soil	Not specified	1.990000e-07	
1746−01−6	Florida	Soil Leachability Freshwater and Marine	Not specified	6.000000e-07	
1746−01−6	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	2.900000e-07	
1746−01−6	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	5.800000e-07	
1746−01−6	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	1.900000e-06	
1746−01−6	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	3.800000e-06	
1746−01−6	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	4.000000e-05	
1746−01−6	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	1.000000e-04	
1746−01−6	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	2.700000e-04	
1746−01−6	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	6.800000e-04	
1746−01−6	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	5.000000e+00	
1746−01−6	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	1.000000e+01	
1746−01−6	Washington	Soil Wildlife	Not specified	2.000000e-06	208

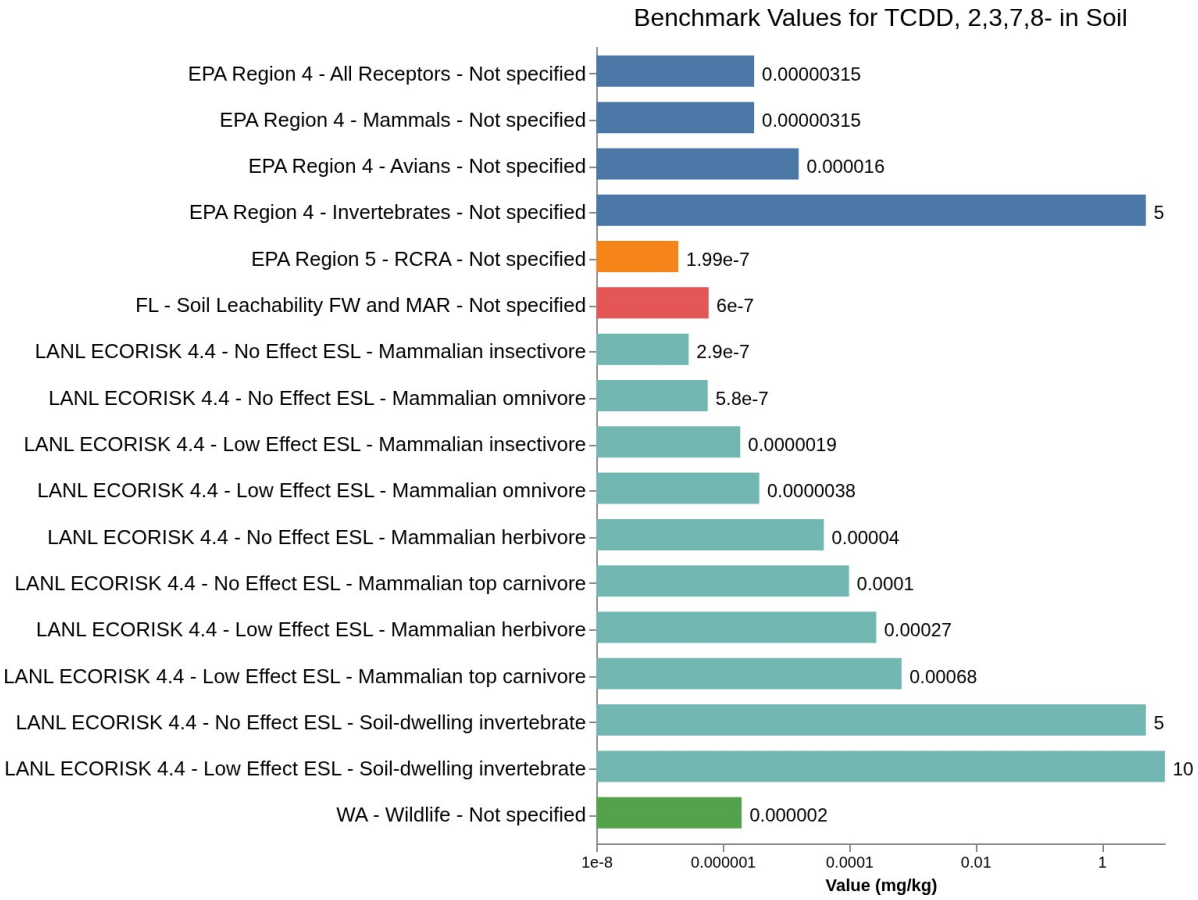


Table 461: Benchmark Values for TCDF, 2,3,7,8− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
51207−31−9	EPA Region 5	EPA RCRA Soil	Not specified	0.000039	
51207−31−9	Washington	Soil Wildlife	Not specified	0.000002	207

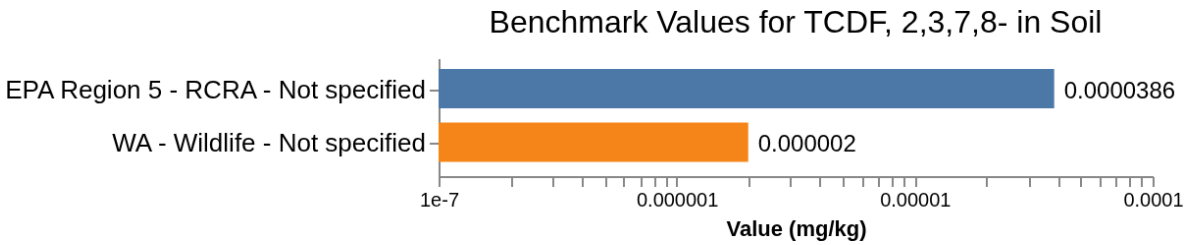


Table 462: Benchmark Values for Technetium in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7440−26−8	EPA Region 6	Soil Plants	Not specified	0.2
7440−26−8	ORNL	Soil Screening − Plants	Not specified	0.2

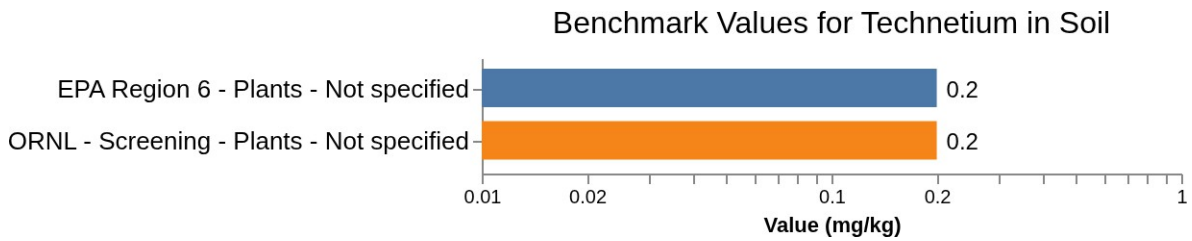


Table 463: Benchmark Values for Tellurium in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
13494−80−9	Dutch Soil Protection Act	Intervention Value	Not specified	600.0	73

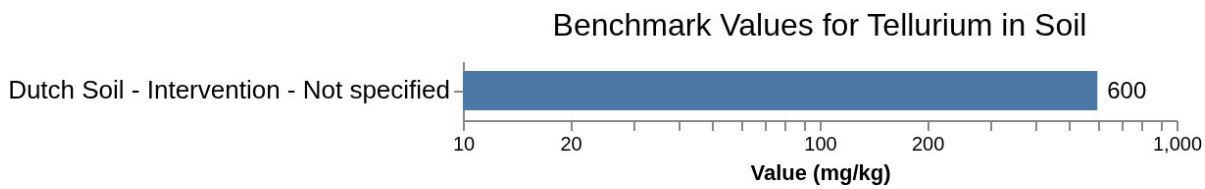


Table 464: Benchmark Values for Terbacil in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
5902−51−2	Florida	Soil Leachability Freshwater and Marine	Not specified	14.0

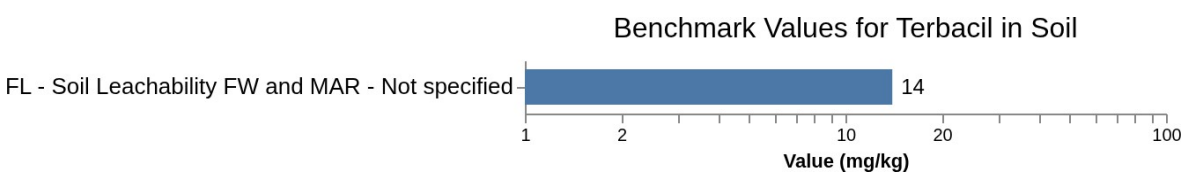


Table 465: Benchmark Values for Terbufos in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
13071−79−9	Florida	Soil Leachability Freshwater and Marine	Not specified	0.001

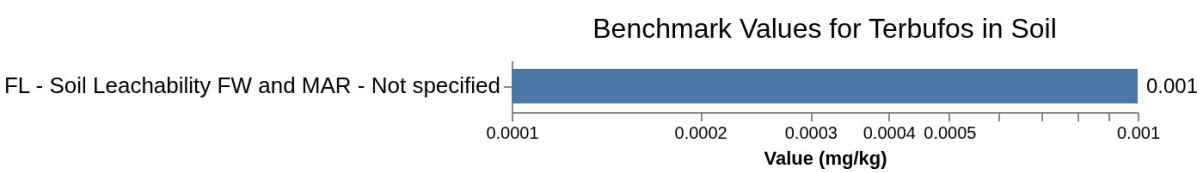


Table 466: Benchmark Values for Terbutryn in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
886−50−0	Florida	Soil Leachability Freshwater and Marine	Not specified	0.09

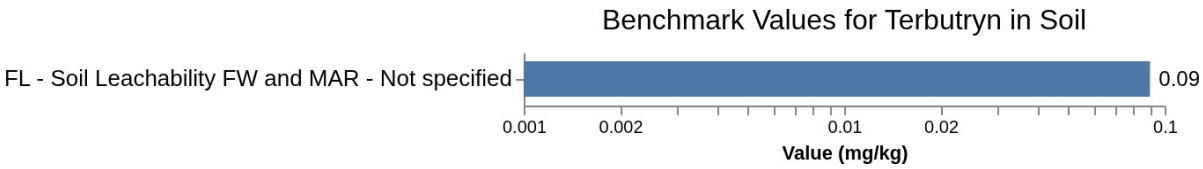


Table 467: Benchmark Values for Tetrachloroaniline, 2,3,5,6− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
3481−20−7	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	27.0	79
3481−20−7	Dutch Soil Protection Act	Intervention Value	Not specified	30.0	73, 79
3481−20−7	EPA Region 6	Soil Plants	Not specified	20.0	
3481−20−7	EPA Region 6	Soil Invertebrates	Not specified	20.0	
3481−20−7	ORNL	Soil Screening − Invertebrates	Not specified	20.0	
3481−20−7	ORNL	Soil Screening − Plants	Not specified	20.0	

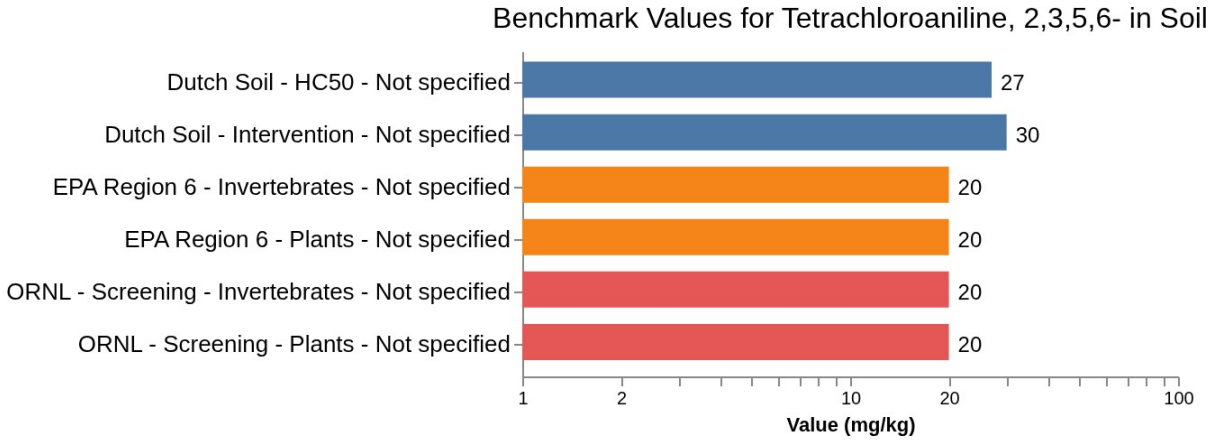


Table 468: Benchmark Values for Tetrachlorobenzene, 1,2,3,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
634−66−2	Canada	Soil Agricultural	Not specified	0.050	
634−66−2	Canada	Soil Residential/Parkland	Not specified	2.000	
634−66−2	Canada	Soil Industrial	Not specified	10.000	
634−66−2	Canada	Soil Commercial	Not specified	10.000	
634−66−2	Dutch Soil Protection Act	Background	Not specified	0.009	71
634−66−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	2.200	
634−66−2	EPA Region 4	Soil All Receptors	Not specified	10.000	
634−66−2	EPA Region 4	Soil Invertebrates	Not specified	10.000	
634−66−2	EPA Region 6	Soil Invertebrates	Not specified	10.000	
634−66−2	ORNL	Soil Screening − Invertebrates	Not specified	10.000	

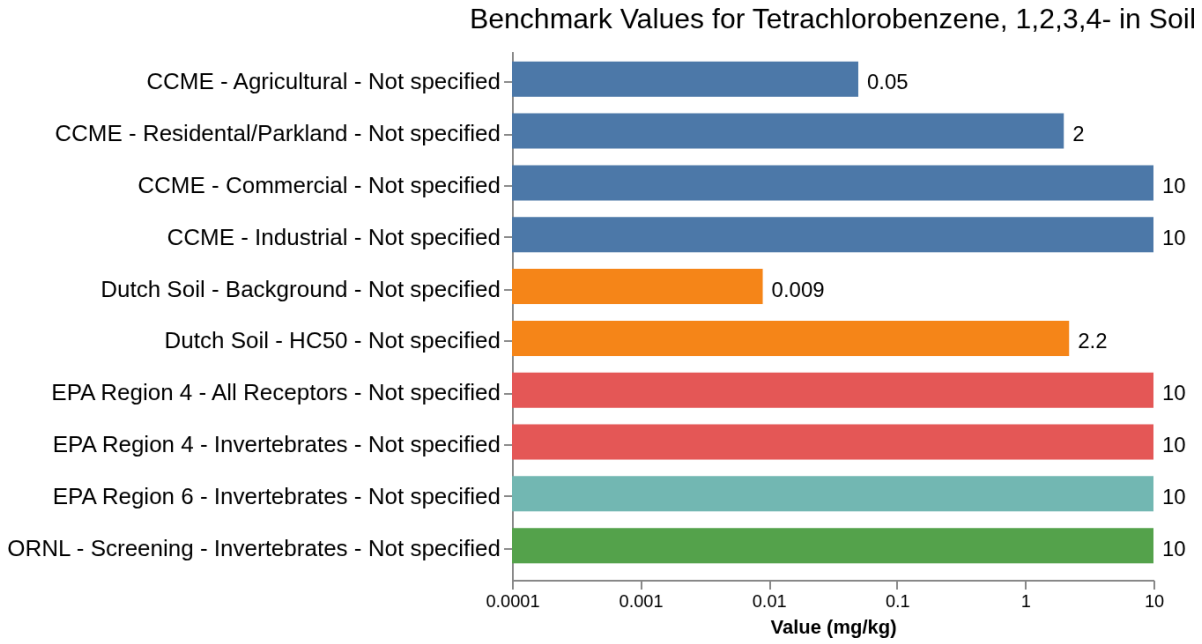


Table 469: Benchmark Values for Tetrachlorobenzene, 1,2,3,5− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
634−90−2	Canada	Soil Agricultural	Not specified	0.050	
634−90−2	Canada	Soil Residential/Parkland	Not specified	2.000	
634−90−2	Canada	Soil Commercial	Not specified	10.000	
634−90−2	Canada	Soil Industrial	Not specified	10.000	
634−90−2	Dutch Soil Protection Act	Background	Not specified	0.009	71
634−90−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	2.200	

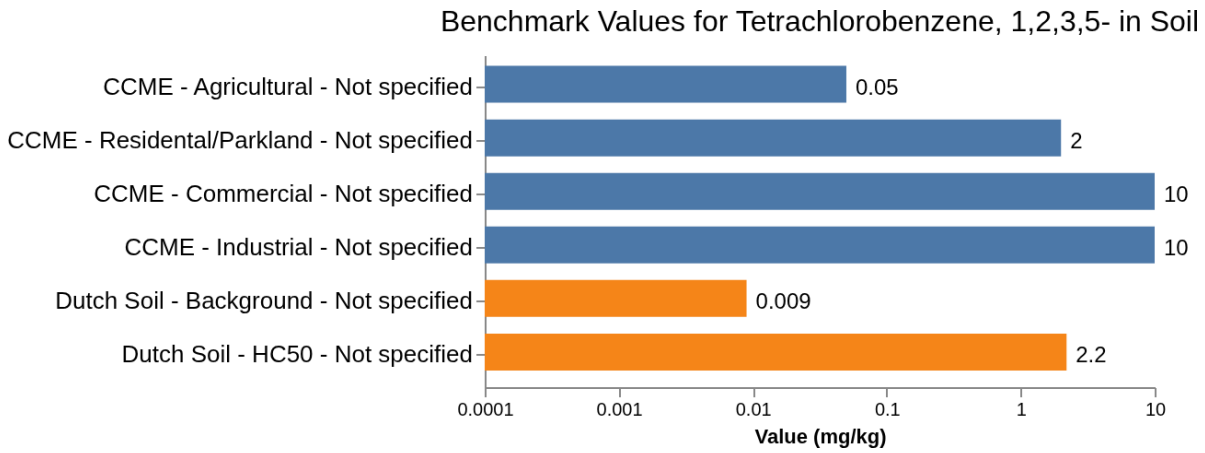


Table 470: Benchmark Values for Tetrachlorobenzene, 1,2,4,5− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
95−94−3	Canada	Soil Agricultural	Not specified	0.050	
95−94−3	Canada	Soil Residential/Parkland	Not specified	2.000	
95−94−3	Canada	Soil Commercial	Not specified	10.000	
95−94−3	Canada	Soil Industrial	Not specified	10.000	
95−94−3	Dutch Soil Protection Act	Background	Not specified	0.009	71
95−94−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	2.200	
95−94−3	EPA Region 4	Soil Invertebrates	Not specified	0.180	
95−94−3	EPA Region 4	Soil All Receptors	Not specified	0.180	
95−94−3	EPA Region 4	Soil Mammals	Not specified	2.020	
95−94−3	EPA Region 5	EPA RCRA Soil	Not specified	2.020	
95−94−3	Florida	Soil Leachability Freshwater and Marine	Not specified	0.400	

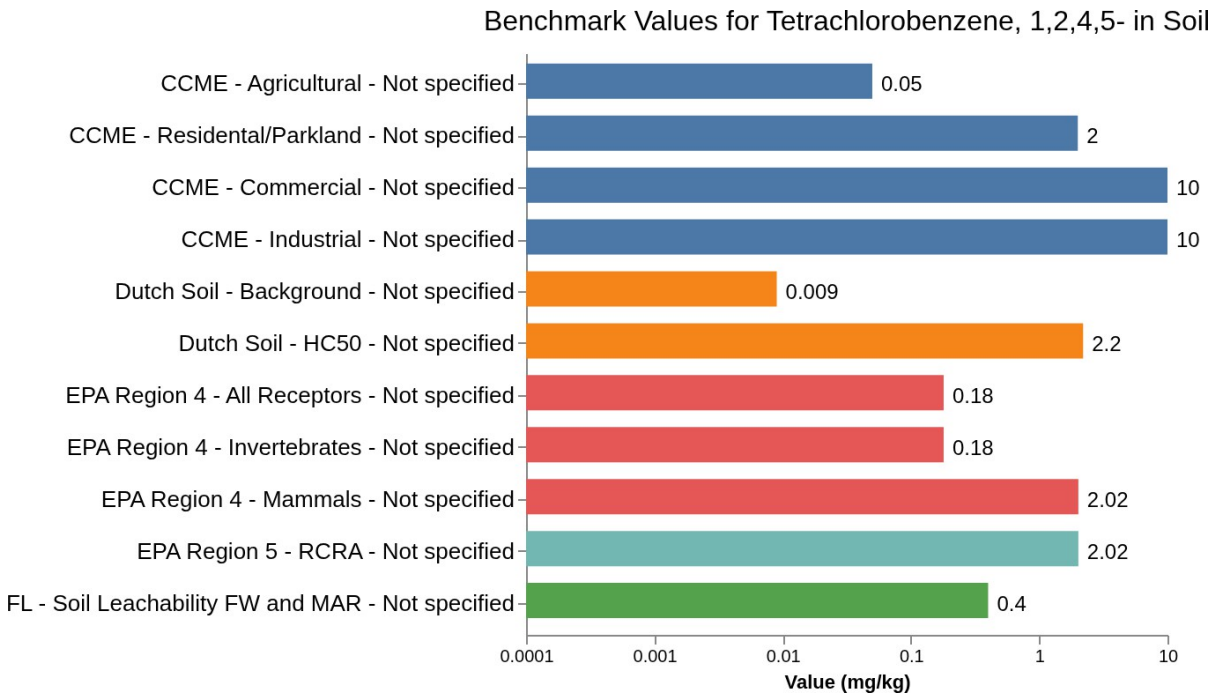


Table 471: Benchmark Values for Tetrachlorobenzenes (total) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
000000−02−3	Dutch Soil Protection Act	Background	Not specified	0.009	71
000000−02−3	Dutch Soil Protection Act	Intervention Value	Not specified	2.200	
000000−02−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	2.200	

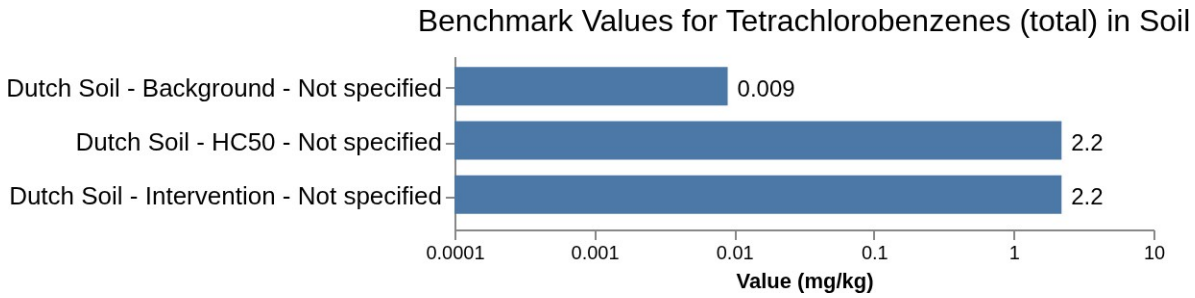


Table 472: Benchmark Values for Tetrachloroethane, 1,1,1,2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
630−20−6	EPA Region 4	Soil All Receptors	Not specified	0.07
630−20−6	EPA Region 4	Soil Invertebrates	Not specified	0.07
630−20−6	EPA Region 4	Soil Mammals	Not specified	225.00
630−20−6	EPA Region 5	EPA RCRA Soil	Not specified	225.00

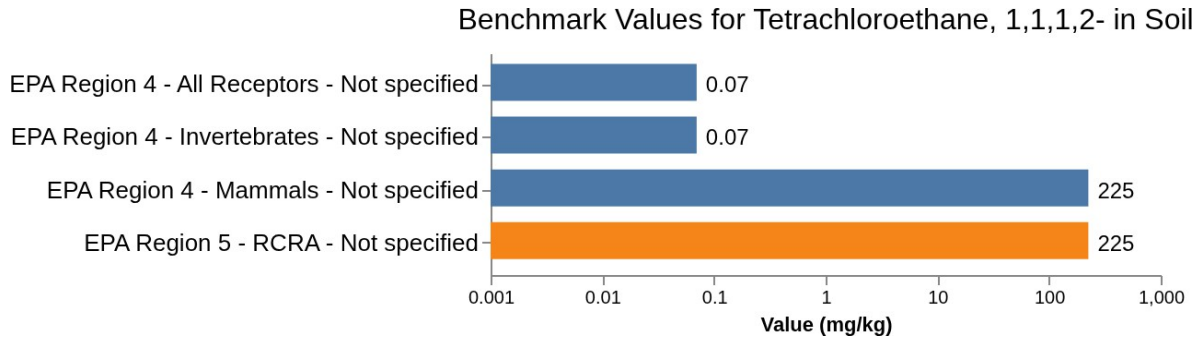


Table 473: Benchmark Values for Tetrachloroethane, 1,1,2,2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
79−34−5	Canada	Soil Agricultural	Not specified	0.100
79−34−5	Canada	Soil Residential/Parkland	Not specified	5.000
79−34−5	Canada	Soil Commercial	Not specified	50.000
79−34−5	Canada	Soil Industrial	Not specified	50.000
79−34−5	EPA Region 4	Soil All Receptors	Not specified	0.127
79−34−5	EPA Region 4	Soil Mammals	Not specified	0.127
79−34−5	EPA Region 4	Soil Invertebrates	Not specified	0.190
79−34−5	EPA Region 5	EPA RCRA Soil	Not specified	0.127
79−34−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.080

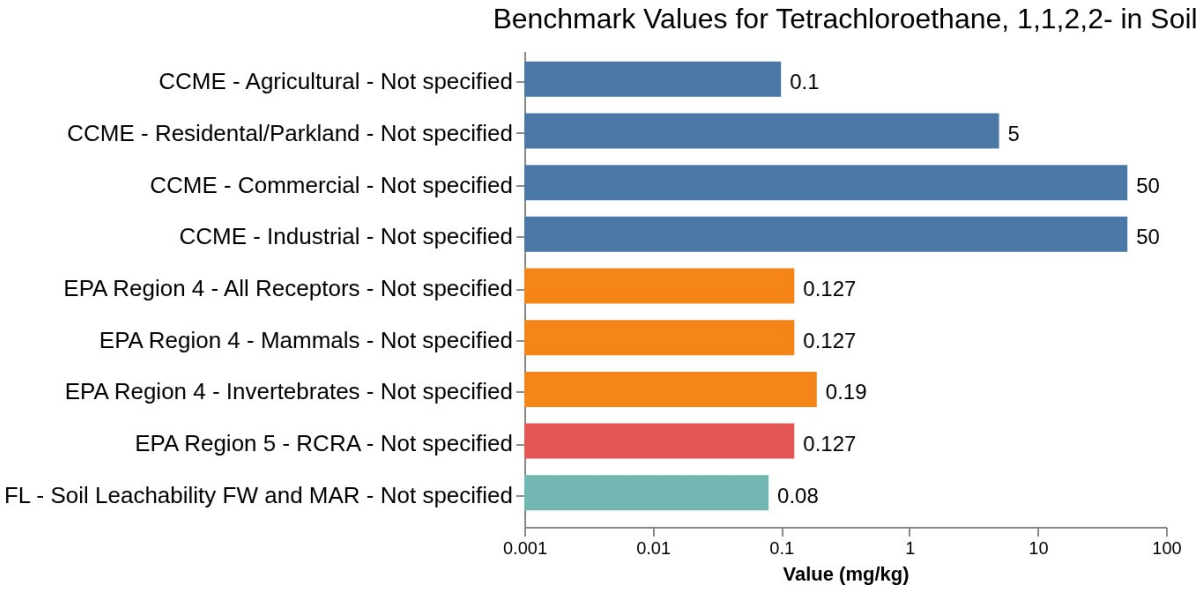


Table 474: Benchmark Values for Tetrachloroethylene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
127−18−4	Canada	Soil Agricultural	Not specified	0.10	164
127−18−4	Canada	Soil Residential/Parkland	Not specified	0.20	164
127−18−4	Canada	Soil Commercial	Not specified	0.50	164
127−18−4	Canada	Soil Industrial	Not specified	0.60	164
127−18−4	Dutch Soil Protection Act	Background	Not specified	0.15	
127−18−4	Dutch Soil Protection Act	Intervention Value	Not specified	8.80	
127−18−4	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	16.00	
127−18−4	EPA Region 4	Soil All Receptors	Not specified	0.06	
127−18−4	EPA Region 4	Soil Invertebrates	Not specified	0.06	
127−18−4	EPA Region 4	Soil Mammals	Not specified	0.18	
127−18−4	EPA Region 4	Soil Plants	Not specified	10.00	
127−18−4	EPA Region 5	EPA RCRA Soil	Not specified	9.92	
127−18−4	Florida	Soil Leachability Freshwater and Marine	Not specified	0.10	
127−18−4	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.18	
127−18−4	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.35	
127−18−4	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	0.94	
127−18−4	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1.70	
127−18−4	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	9.50	
127−18−4	LANL ECORISK	Soil No Effect ESL	Generic Plant	10.00	
127−18−4	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	47.00	
127−18−4	LANL ECORISK	Soil Low Effect ESL	Generic Plant	100.00	
127−18−4	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	120.00	
127−18−4	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	630.00	

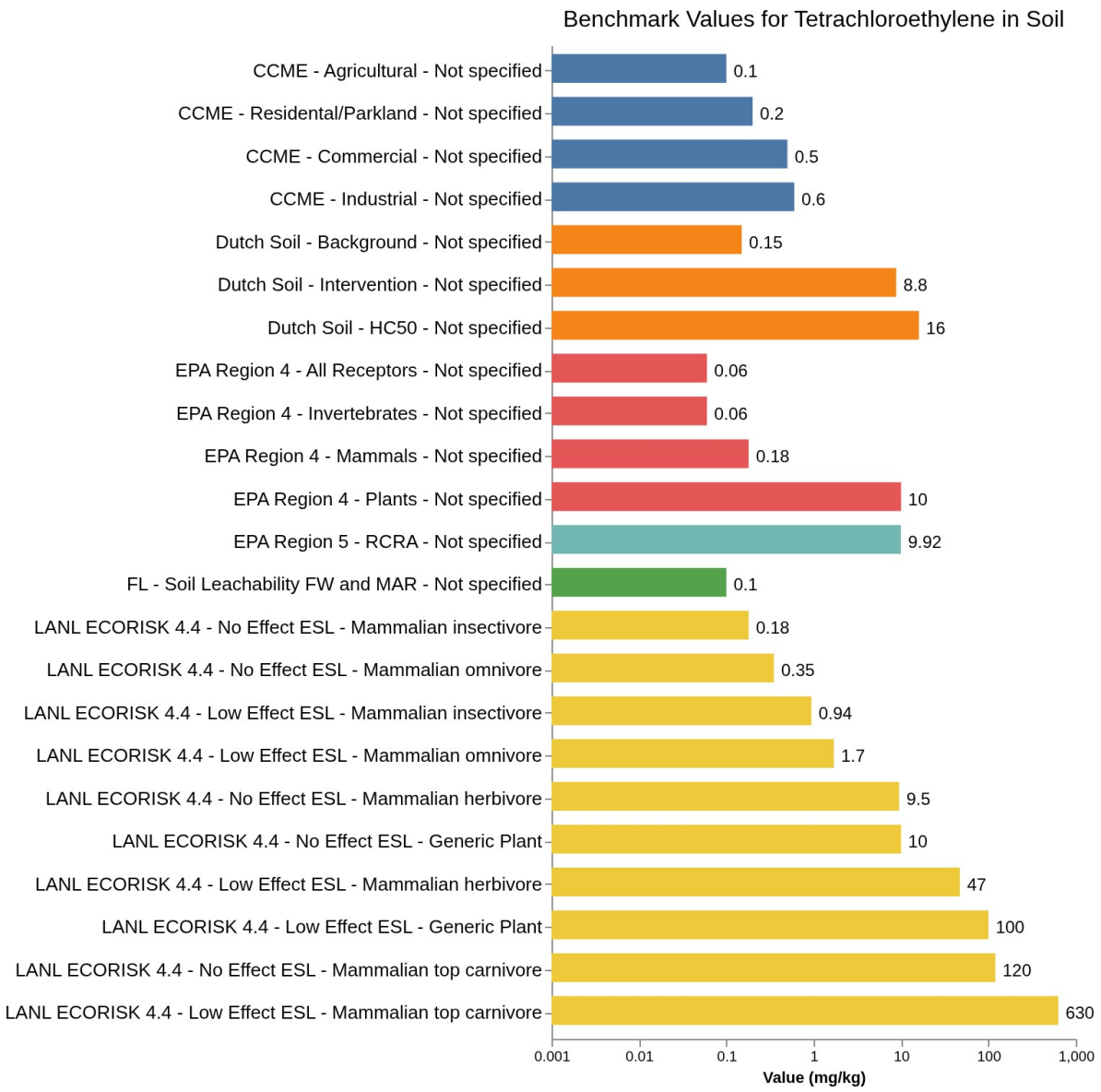

Benchmark Values for Tetrachloroethylene in Soil
CCME - Agricultural - Not specified
0.1
CCME - Residental/Parkland - Not specified
0.2
CCME - Commercial - Not specified
0.5
CCME - Industrial - Not specified
0.6
Dutch Soil - Background - Not specified
0.15
Dutch Soil - Intervention - Not specified
8.8
Dutch Soil - HC50 - Not specified
16
EPA Region 4 - All Receptors - Not specified
0.06
EPA Region 4 - Invertebrates - Not specified
0.06
EPA Region 4 - Mammals - Not specified
0.18
EPA Region 4 - Plants - Not specified
10
EPA Region 5 - RCRA - Not specified
9.92
FL - Soil Leachability FW and MAR - Not specified
0.1
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
0.18
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
0.35
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
0.94
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
1.7
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
9.5
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
10
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
47
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
100
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
120
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
630
0.001
0.01
0.1
1
10
100
1,000
Value (mg/kg)

Table 475: Benchmark Values for Tetrachlorophenol, 2,3,4,5− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
4901−51−3	Dutch Soil Protection Act	Background	Not specified	0.015	71
4901−51−3	Dutch Soil Protection Act	Intervention Value	Not specified	21.000	
4901−51−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	21.000	
4901−51−3	EPA Region 4	Soil All Receptors	Not specified	20.000	
4901−51−3	EPA Region 4	Soil Invertebrates	Not specified	20.000	
4901−51−3	EPA Region 6	Soil Invertebrates	Not specified	20.000	
4901−51−3	ORNL	Soil Screening − Invertebrates	Not specified	20.000	

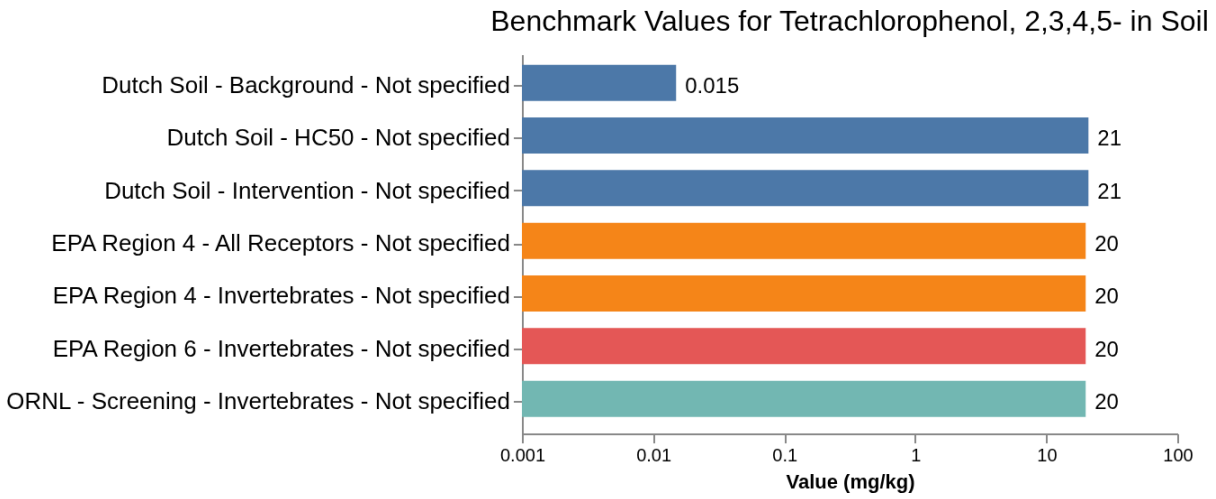


Table 476: Benchmark Values for Tetrachlorophenol, 2,3,4,6− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
58−90−2	Canada	Soil Agricultural	Not specified	0.050	
58−90−2	Canada	Soil Residential/Parkland	Not specified	0.500	
58−90−2	Canada	Soil Commercial	Not specified	5.000	
58−90−2	Canada	Soil Industrial	Not specified	5.000	
58−90−2	Dutch Soil Protection Act	Background	Not specified	0.015	71
58−90−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	21.000	
58−90−2	Dutch Soil Protection Act	Intervention Value	Not specified	21.000	
58−90−2	EPA Region 4	Soil Invertebrates	Not specified	0.040	
58−90−2	EPA Region 4	Soil All Receptors	Not specified	0.040	
58−90−2	EPA Region 4	Soil Mammals	Not specified	0.200	
58−90−2	EPA Region 5	EPA RCRA Soil	Not specified	0.199	
58−90−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.070	

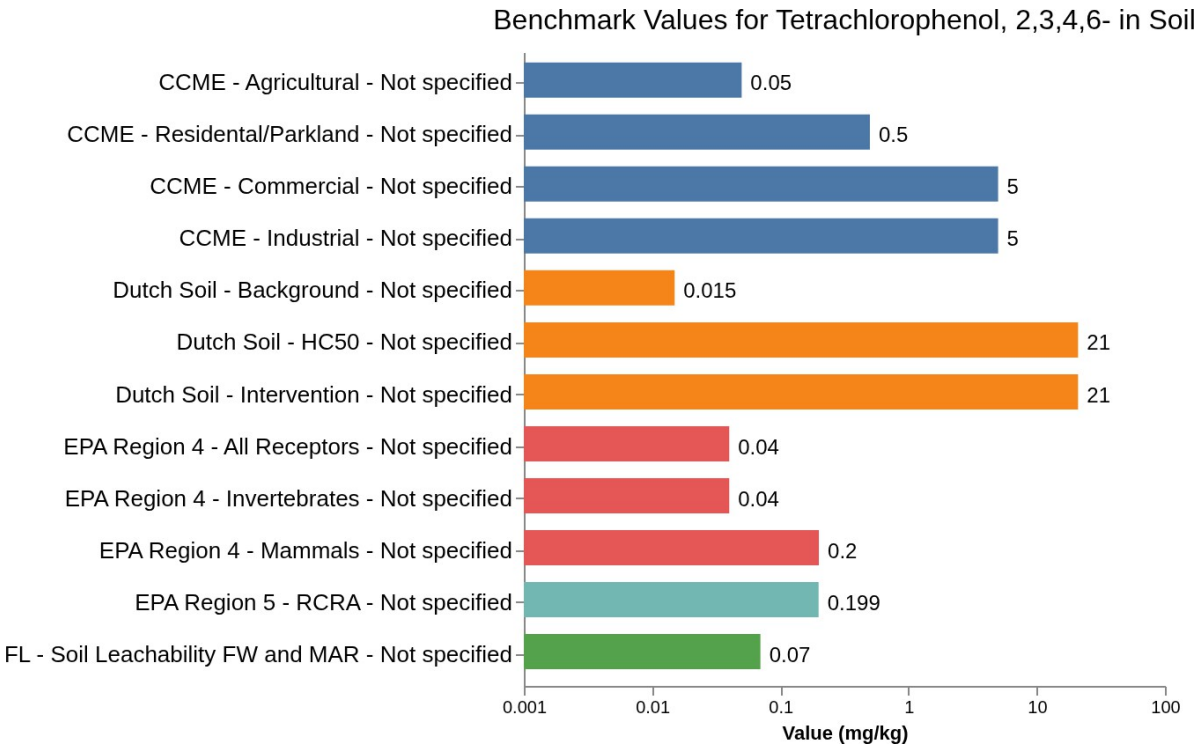


Table 477: Benchmark Values for Tetrachlorophenols (total) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
25167−83−3	Canada	Soil Agricultural	Not specified	0.050	
25167−83−3	Canada	Soil Residential/Parkland	Not specified	0.500	
25167−83−3	Canada	Soil Commercial	Not specified	5.000	
25167−83−3	Canada	Soil Industrial	Not specified	5.000	
25167−83−3	Dutch Soil Protection Act	Background	Not specified	0.015	71
25167−83−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	21.000	
25167−83−3	Dutch Soil Protection Act	Intervention Value	Not specified	21.000	

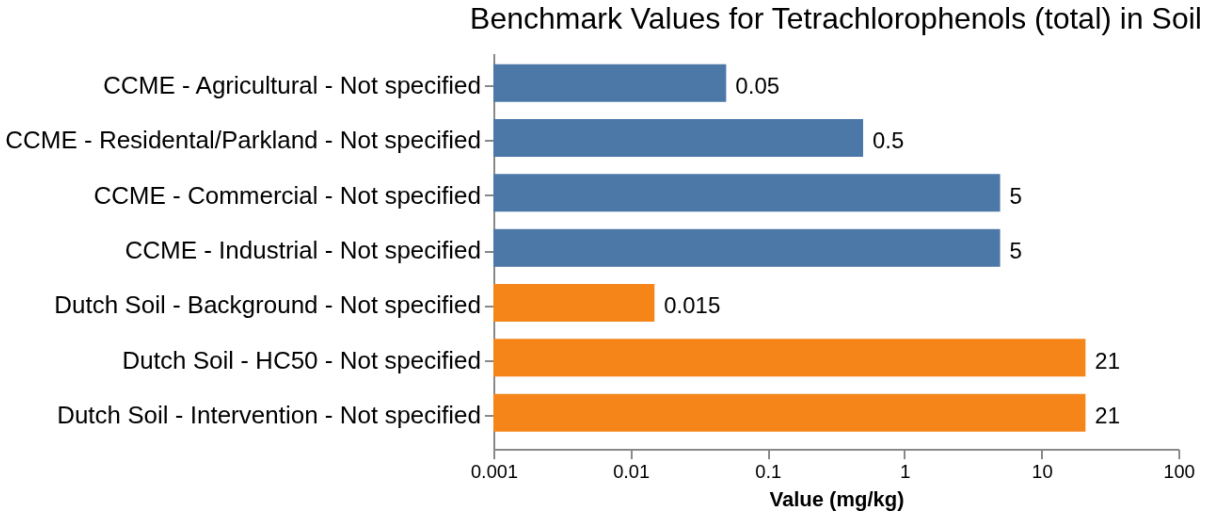


Table 478: Benchmark Values for Tetraethyl Dithiopyrophosphate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
3689−24−5	EPA Region 5	EPA RCRA Soil	Not specified	0.5960
3689−24−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.0004

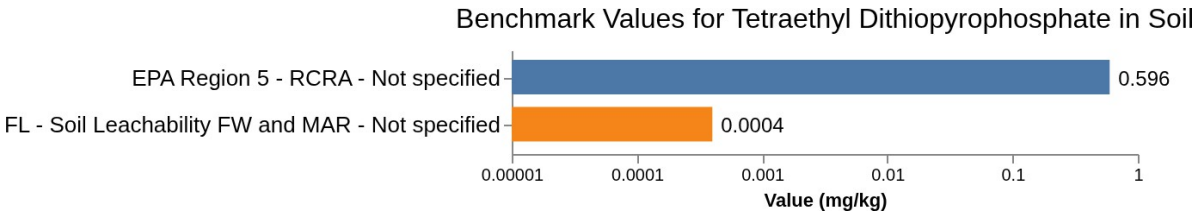


Table 479: Benchmark Values for Tetrahydrofuran in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
109−99−9	Dutch Soil Protection Act	Background	Not specified	0.45
109−99−9	Dutch Soil Protection Act	Intervention Value	Not specified	7.00
109−99−9	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	120.00

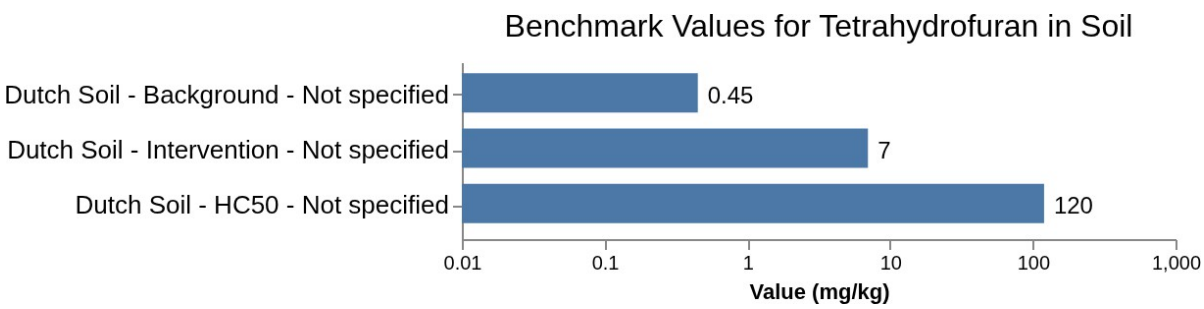


Table 480: Benchmark Values for Tetrahydrothiophene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
110−01−0	Dutch Soil Protection Act	Background	Not specified	1.5	71
110−01−0	Dutch Soil Protection Act	Intervention Value	Not specified	8.8	
110−01−0	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	8.8	

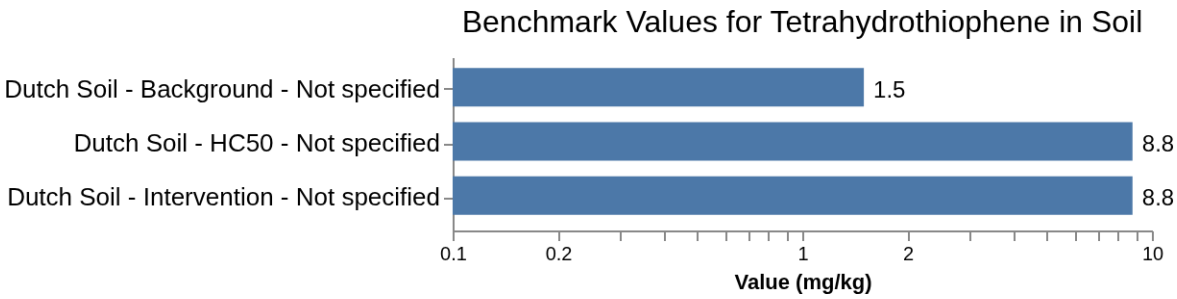


Table 481: Benchmark Values for Tetryl (Trinitrophenylmethylnitramine) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
479−45−8	EPA Region 4	Soil Invertebrates	Not specified	0.018
479−45−8	EPA Region 4	Soil All Receptors	Not specified	0.018
479−45−8	EPA Region 4	Soil Mammals	Not specified	1.500
479−45−8	EPA Region 4	Soil Plants	Not specified	25.000
479−45−8	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	1.500
479−45−8	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	1.800
479−45−8	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	7.200
479−45−8	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	8.900
479−45−8	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	60.000
479−45−8	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	280.000
479−45−8	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	960.000
479−45−8	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	4600.000

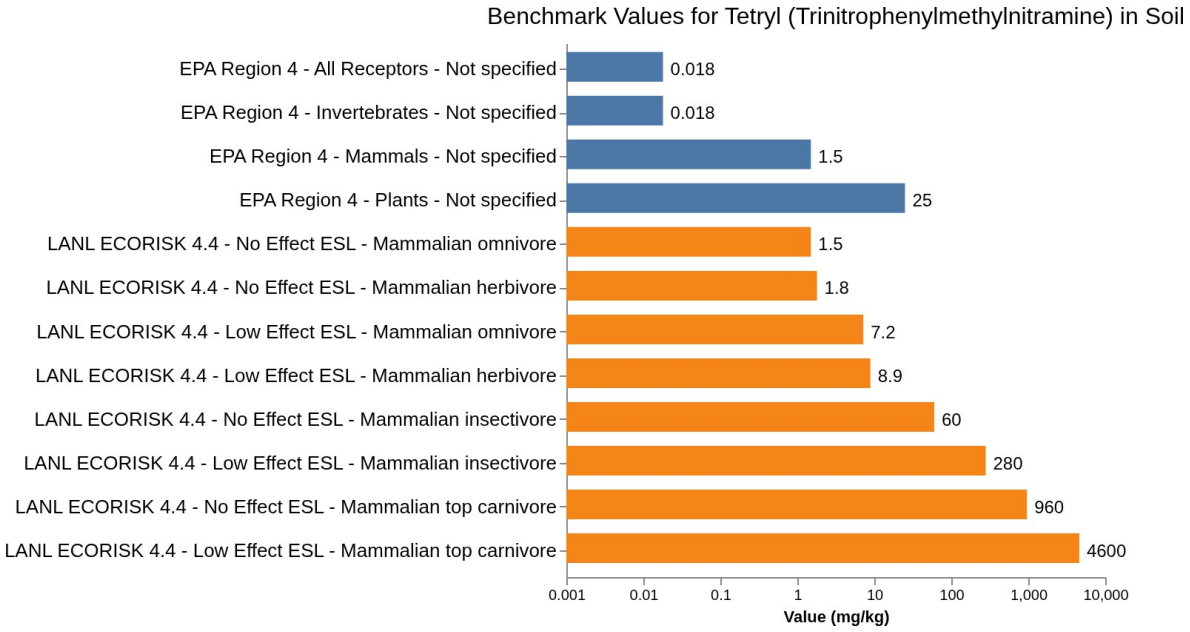


Table 482: Benchmark Values for Thallium (Soluble Salts) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
7440−28−0	Canada	Soil Residential/Parkland	Not specified	1.0000	
7440−28−0	Canada	Soil Industrial	Not specified	1.0000	
7440−28−0	Canada	Soil Commercial	Not specified	1.0000	
7440−28−0	Canada	Soil Agricultural	Not specified	1.0000	
7440−28−0	Dutch Soil Protection Act	Intervention Value	Not specified	15.0000	73
7440−28−0	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	16.0000	
7440−28−0	EPA Region 4	Soil Plants	Not specified	0.0500	
7440−28−0	EPA Region 4	Soil All Receptors	Not specified	0.0500	
7440−28−0	EPA Region 4	Soil Mammals	Not specified	0.4200	
7440−28−0	EPA Region 4	Soil Avians	Not specified	4.5000	
7440−28−0	EPA Region 5	EPA RCRA Soil	Not specified	0.0569	
7440−28−0	EPA Region 6	Soil Plants	Not specified	1.0000	
7440−28−0	Florida	Soil Leachability Freshwater and Marine	Not specified	9.0000	
7440−28−0	LANL ECORISK	Soil No Effect ESL	Generic Plant	0.0500	
7440−28−0	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.4200	
7440−28−0	LANL ECORISK	Soil Low Effect ESL	Generic Plant	0.5000	
7440−28−0	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.7200	
7440−28−0	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	1.2000	
7440−28−0	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	4.2000	
7440−28−0	LANL ECORISK	Soil No Effect ESL	Avian insectivore	4.5000	
7440−28−0	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	5.0000	
7440−28−0	LANL ECORISK	Soil No Effect ESL	Avian omnivore	5.5000	
7440−28−0	LANL ECORISK	Soil No Effect ESL	Avian herbivore	6.9000	
7440−28−0	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	7.2000	
7440−28−0	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	12.0000	
7440−28−0	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	45.0000	
7440−28−0	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	48.0000	
7440−28−0	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	50.0000	
7440−28−0	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	55.0000	
7440−28−0	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	69.0000	
7440−28−0	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	100.0000	
7440−28−0	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	480.0000	
7440−28−0	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	1000.0000	
7440−28−0	ORNL	Soil Screening − Plants	Not specified	1.0000	

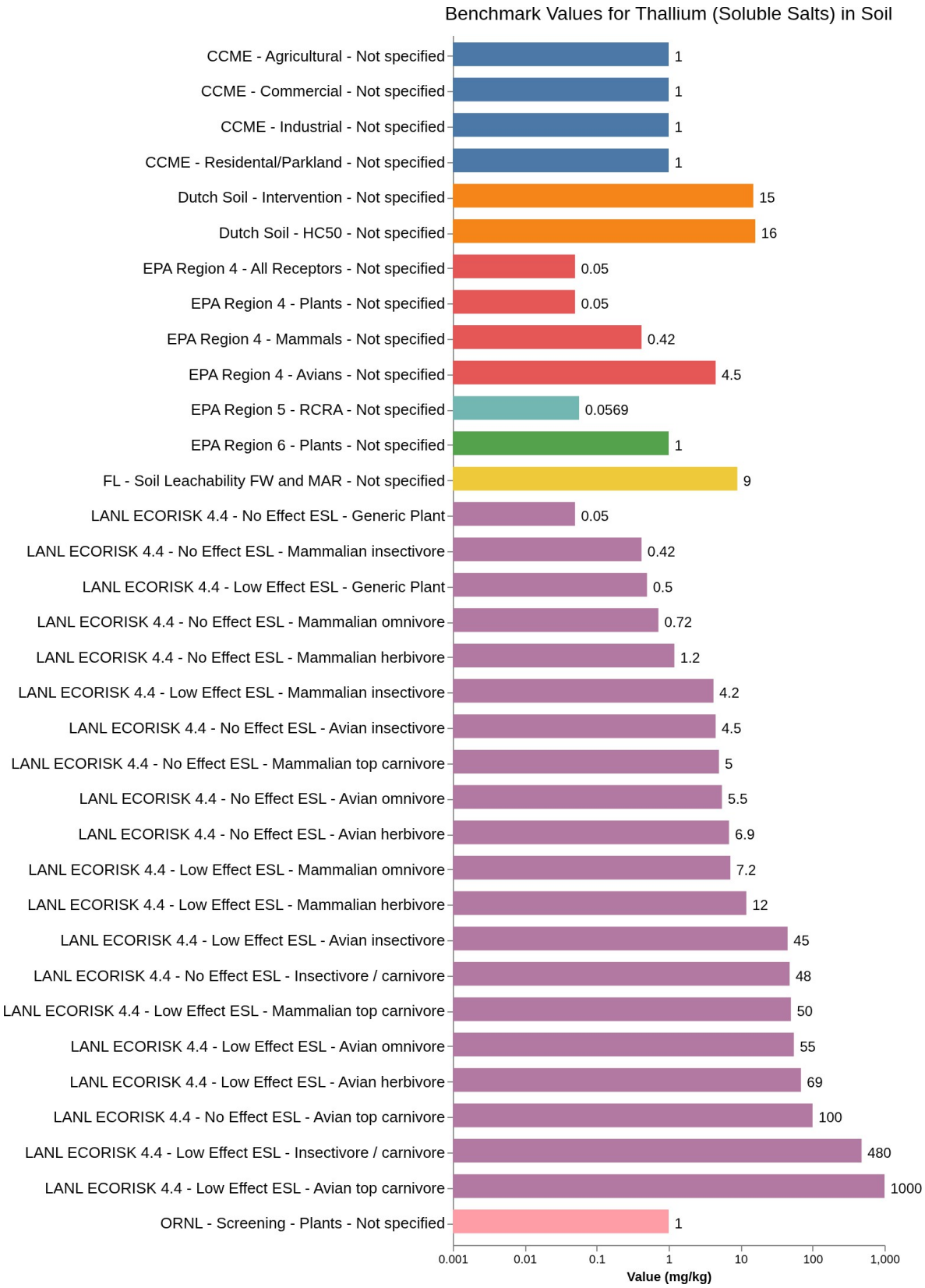

Benchmark Values for Thallium (Soluble Salts) in Soil
CCME - Agricultural - Not specified
1
CCME - Commercial - Not specified
1
CCME - Industrial - Not specified
1
CCME - Residental/Parkland - Not specified
1
Dutch Soil - Intervention - Not specified
15
Dutch Soil - HC50 - Not specified
16
EPA Region 4 - All Receptors - Not specified
0.05
EPA Region 4 - Plants - Not specified
0.05
EPA Region 4 - Mammals - Not specified
0.42
EPA Region 4 - Avians - Not specified
4.5
EPA Region 5 - RCRA - Not specified
0.0569
EPA Region 6 - Plants - Not specified
1
FL - Soil Leachability FW and MAR - Not specified
9
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
0.05
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
0.42
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
0.5
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
0.72
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
1.2
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
4.2
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
4.5
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
5
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
5.5
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
6.9
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
7.2
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
12
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
45
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
48
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
50
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
55
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
69
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
100
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
480
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
1000
ORNL - Screening - Plants - Not specified
1
0.001
0.01
0.1
1
10
100
1,000
Value (mg/kg)

Table 483: Benchmark Values for Thiocyanates in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−08−9	Dutch Soil Protection Act	Background	Not specified	6.0
000000−08−9	Dutch Soil Protection Act	Intervention Value	Not specified	20.0
000000−08−9	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	620.0

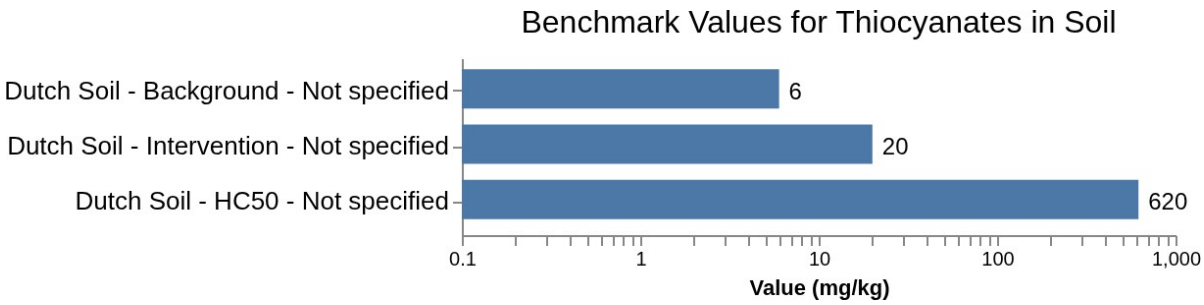


Table 484: Benchmark Values for Thiophene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
110−02−1	Canada	Soil Agricultural	Not specified	0.1

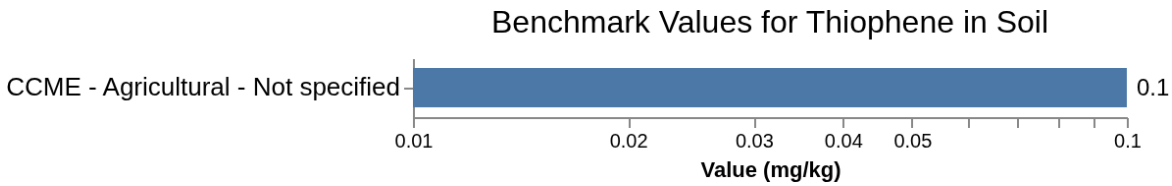


Table 485: Benchmark Values for Thiram in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
137−26−8	Florida	Soil Leachability Freshwater and Marine	Not specified	0.005

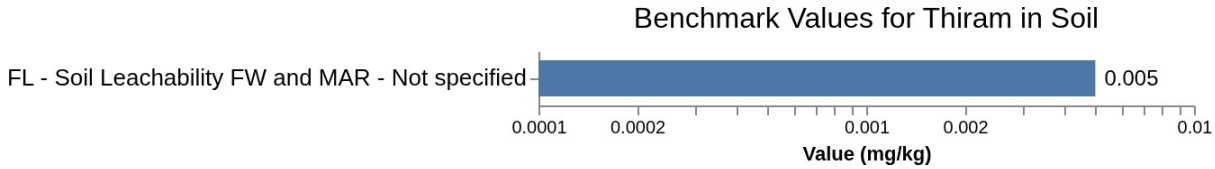


Table 486: Benchmark Values for Tin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
7440−31−5	Canada	Soil Agricultural	Not specified	5.00	
7440−31−5	Canada	Soil Residential/Parkland	Not specified	50.00	
7440−31−5	Canada	Soil Commercial	Not specified	300.00	
7440−31−5	Canada	Soil Industrial	Not specified	300.00	
7440−31−5	Dutch Soil Protection Act	Background	Not specified	6.50	
7440−31−5	Dutch Soil Protection Act	Intervention Value	Not specified	900.00	73
7440−31−5	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	917.00	
7440−31−5	EPA Region 4	Soil All Receptors	Not specified	7.60	
7440−31−5	EPA Region 4	Soil Mammals	Not specified	7.62	
7440−31−5	EPA Region 4	Soil Plants	Not specified	50.00	
7440−31−5	EPA Region 5	EPA RCRA Soil	Not specified	7.62	
7440−31−5	EPA Region 6	Soil Plants	Not specified	50.00	
7440−31−5	ORNL	Soil Screening − Plants	Not specified	50.00	
7440−31−5	ORNL	Soil Screening − Microbes	Not specified	2000.00	

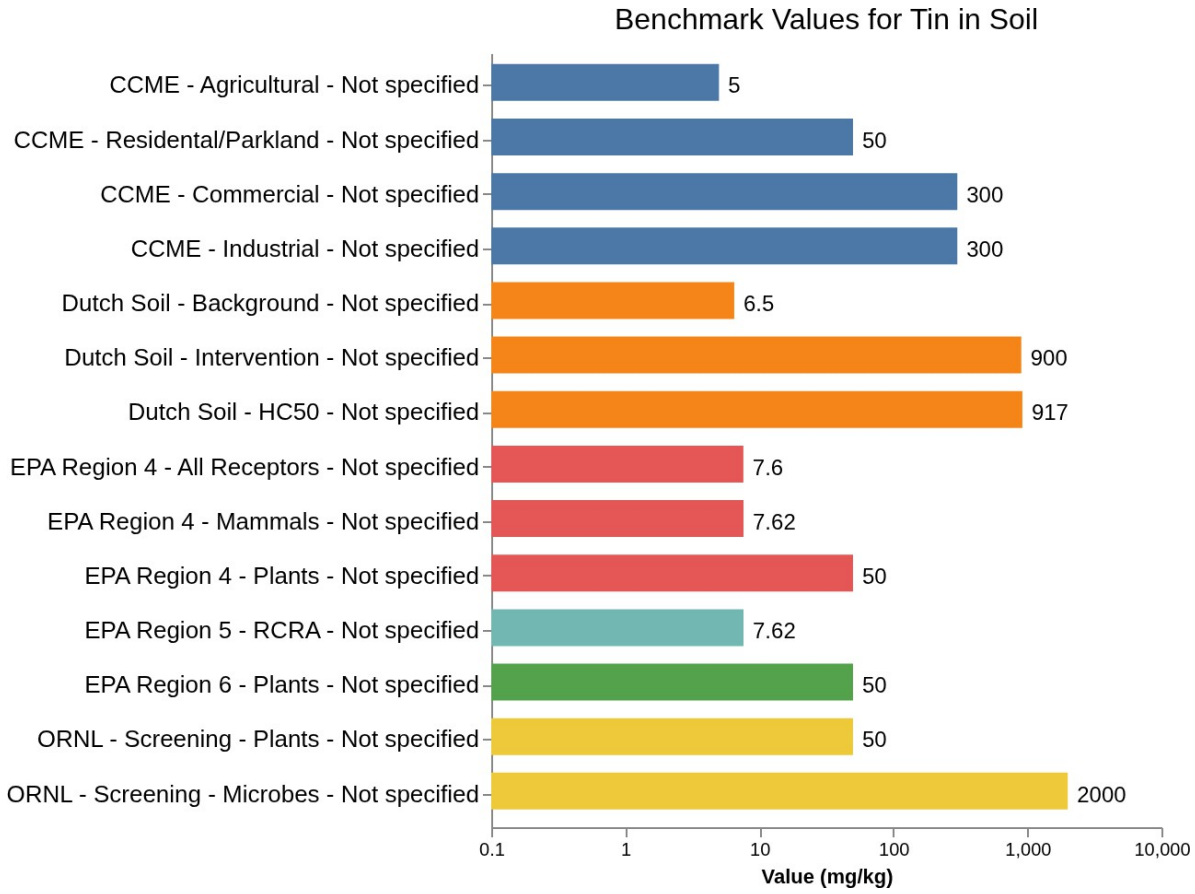


Table 487: Benchmark Values for Titanium in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7440−32−6	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	77
7440−32−6	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	150
7440−32−6	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	770
7440−32−6	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1500
7440−32−6	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	2800
7440−32−6	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	8600
7440−32−6	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	28000
7440−32−6	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	86000
7440−32−6	ORNL	Soil Screening − Microbes	Not specified	1000

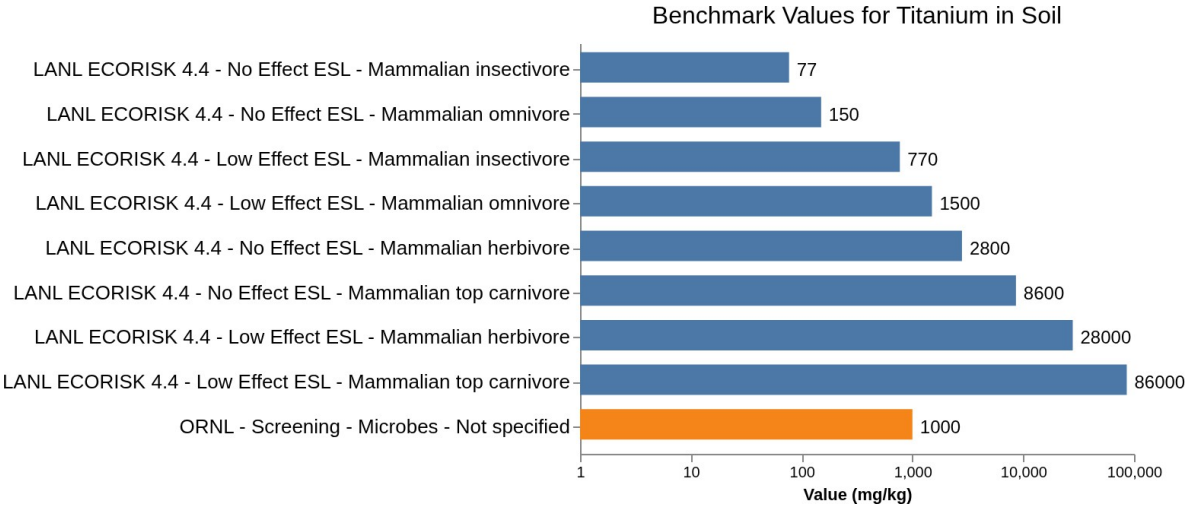


Table 488: Benchmark Values for Toluene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
108−88−3	Canada	Soil Industrial	Not specified		40
108−88−3	Canada	Soil Commercial	Not specified		40
108−88−3	Canada	Soil Agricultural	Not specified		40
108−88−3	Canada	Soil Residential/Parkland	Not specified		40
108−88−3	Dutch Soil Protection Act	Background	Not specified	0.2	71
108−88−3	Dutch Soil Protection Act	Intervention Value	Not specified	32	
108−88−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	47	
108−88−3	EPA Region 4	Soil Invertebrates	Not specified	0.15	
108−88−3	EPA Region 4	Soil All Receptors	Not specified	0.15	
108−88−3	EPA Region 4	Soil Mammals	Not specified	23	
108−88−3	EPA Region 4	Soil Plants	Not specified	200	
108−88−3	EPA Region 5	EPA RCRA Soil	Not specified	5.45	
108−88−3	EPA Region 6	Soil Plants	Not specified	200	
108−88−3	Florida	Soil Leachability Freshwater and Marine	Not specified	5.6	
108−88−3	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	23	
108−88−3	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	25	
108−88−3	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	66	
108−88−3	LANL ECORISK	Soil No Effect ESL	Generic Plant	200	
108−88−3	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	230	
108−88−3	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	250	
108−88−3	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	660	
108−88−3	LANL ECORISK	Soil Low Effect ESL	Generic Plant	2000	
108−88−3	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	12000	
108−88−3	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	120000	
108−88−3	ORNL	Soil Screening − Plants	Not specified	200	

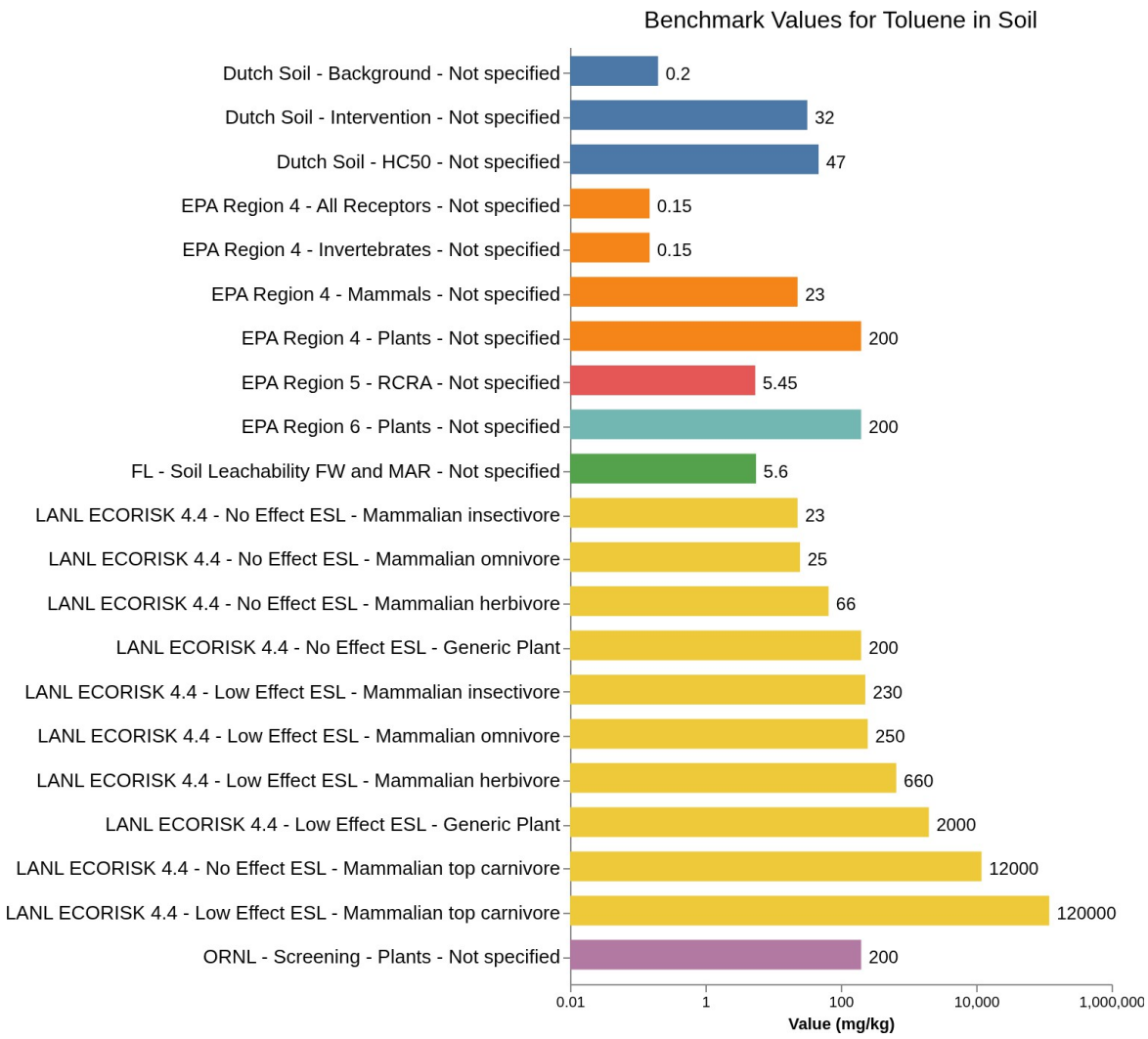

Benchmark Values for Toluene in Soil
Dutch Soil - Background - Not specified
0.2
Dutch Soil - Intervention - Not specified
32
Dutch Soil - HC50 - Not specified
47
EPA Region 4 - All Receptors - Not specified
0.15
EPA Region 4 - Invertebrates - Not specified
0.15
EPA Region 4 - Mammals - Not specified
23
EPA Region 4 - Plants - Not specified
200
EPA Region 5 - RCRA - Not specified
5.45
EPA Region 6 - Plants - Not specified
200
FL - Soil Leachability FW and MAR - Not specified
5.6
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
23
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
25
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
66
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
200
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
230
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
250
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
660
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
2000
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
12000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
120000
ORNL - Screening - Plants - Not specified
200
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 489: Benchmark Values for Toluidine, o− (Methylaniline, 2−) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
95−53−4	EPA Region 5	EPA RCRA Soil	Not specified	2.97
95−53−4	Florida	Soil Leachability Freshwater and Marine	Not specified	0.20

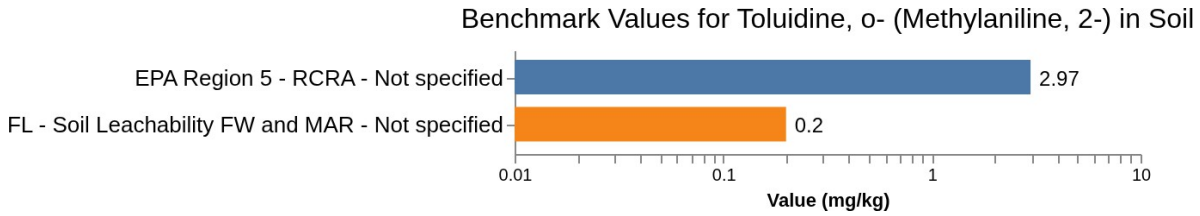


Table 490: Benchmark Values for Total Petroleum Hydrocarbon (Fraction 2, Fraction 3) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−48−1	LANL ECORISK	Soil No Effect ESL	Generic plant	81.2
000000−48−1	LANL ECORISK	Soil No Effect ESL	Generic Plant	81.2
000000−48−1	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	198.0
000000−48−1	LANL ECORISK	Soil No Effect ESL	Earthworm	198.0
000000−48−1	LANL ECORISK	Soil Low Effect ESL	Generic plant	419.0
000000−48−1	LANL ECORISK	Soil Low Effect ESL	Generic Plant	419.0
000000−48−1	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	1977.0
000000−48−1	LANL ECORISK	Soil Low Effect ESL	Earthworm	1977.0

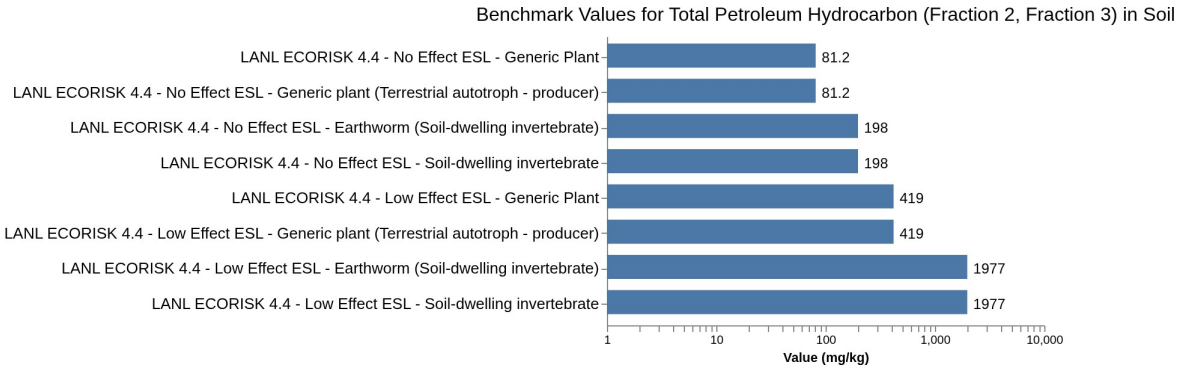


Table 491: Benchmark Values for Total Recoverable Petroleum Hydrocarbons (TRPH) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
000000−48−2	Florida	Soil Leachability Freshwater and Marine	Not specified	340

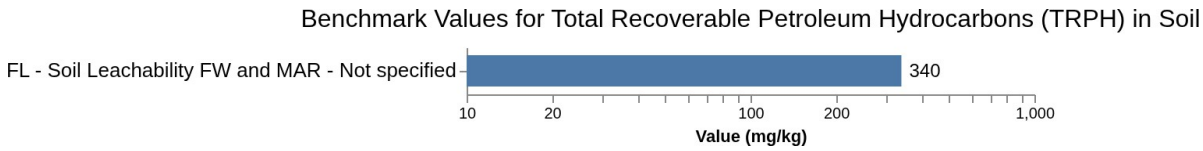


Table 492: Benchmark Values for Toxaphene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
8001−35−2	EPA Region 4	Soil Invertebrates	Not specified	0.00015	7
8001−35−2	EPA Region 4	Soil All Receptors	Not specified	0.00015	7
8001−35−2	EPA Region 4	Soil Avians	Not specified	4.10000	7
8001−35−2	EPA Region 4	Soil Mammals	Not specified	5.90000	7
8001−35−2	EPA Region 5	EPA RCRA Soil	Not specified	0.11900	
8001−35−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.00200	
8001−35−2	LANL ECORISK	Soil No Effect ESL	Avian insectivore	4.10000	
8001−35−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	5.90000	
8001−35−2	LANL ECORISK	Soil No Effect ESL	Avian omnivore	7.80000	
8001−35−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	11.00000	
8001−35−2	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	19.00000	
8001−35−2	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	41.00000	
8001−35−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	59.00000	
8001−35−2	LANL ECORISK	Soil No Effect ESL	Avian herbivore	69.00000	
8001−35−2	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	78.00000	
8001−35−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	110.00000	
8001−35−2	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	190.00000	
8001−35−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	290.00000	
8001−35−2	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	550.00000	
8001−35−2	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	690.00000	
8001−35−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	1300.00000	
8001−35−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	2900.00000	
8001−35−2	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	5500.00000	
8001−35−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	13000.00000	

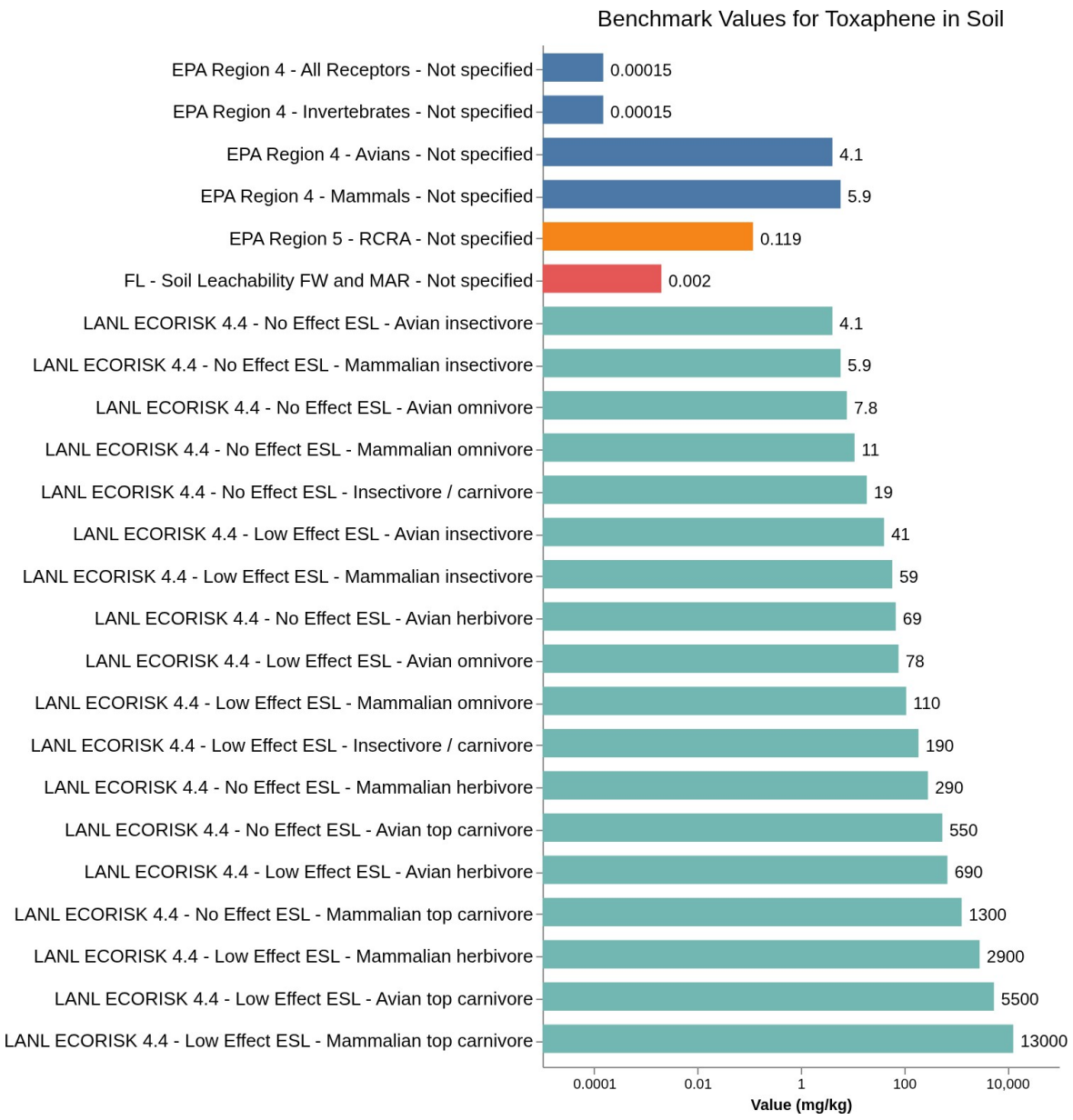

Benchmark Values for Toxaphene in Soil
EPA Region 4 - All Receptors - Not specified
0.00015
EPA Region 4 - Invertebrates - Not specified
0.00015
EPA Region 4 - Avians - Not specified
4.1
EPA Region 4 - Mammals - Not specified
5.9
EPA Region 5 - RCRA - Not specified
0.119
FL - Soil Leachability FW and MAR - Not specified
0.002
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
4.1
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
5.9
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
7.8
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
11
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
19
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
41
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
59
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
69
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
78
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
110
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
190
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
290
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
550
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
690
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
1300
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
2900
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
5500
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
13000
0.0001
0.01
1
100
10,000
Value (mg/kg)

Table 493: Benchmark Values for Triadimefon in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
43121−43−3	Florida	Soil Leachability Freshwater and Marine	Not specified	11

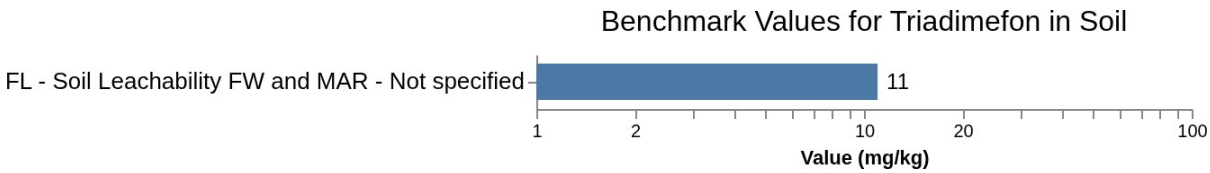


Table 494: Benchmark Values for Triallate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
2303−17−5	Florida	Soil Leachability Freshwater and Marine	Not specified	6

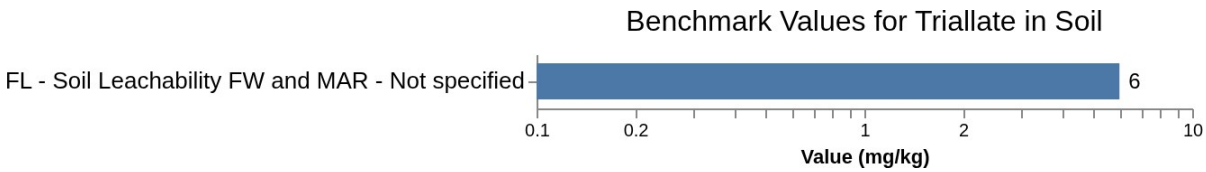


Table 495: Benchmark Values for Tribufos in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
78−48−8	Florida	Soil Leachability Freshwater and Marine	Not specified	0.3

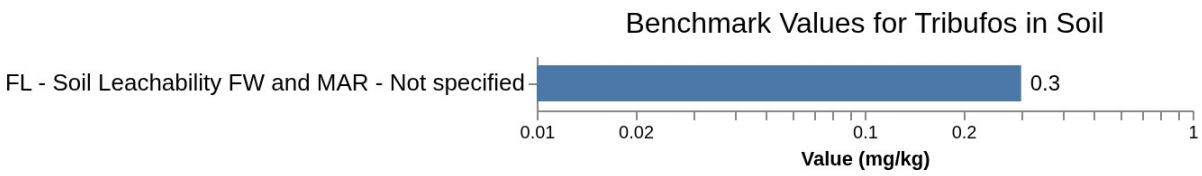


Table 496: Benchmark Values for Tributyltin Oxide in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
56−35−9	Dutch Soil Protection Act	Background	Not specified	0.065
56−35−9	Florida	Soil Leachability Freshwater and Marine	Not specified	0.200

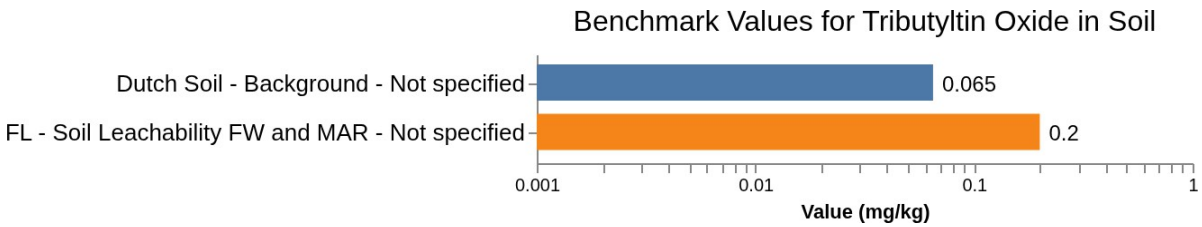


Table 497: Benchmark Values for Trichloro−2'−hydroxydiphenylether in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
3380−34−5	UK	Soil Screening Values	Not specified	0.13

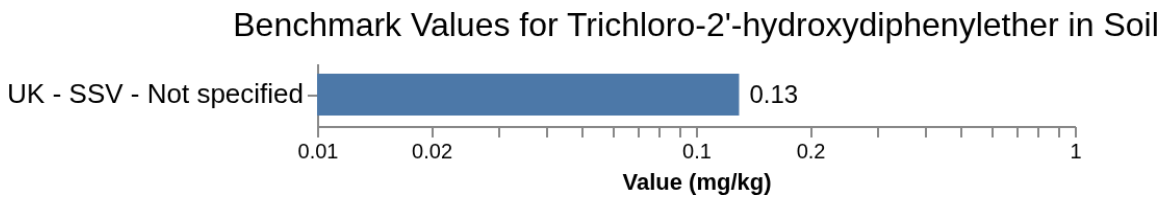


Table 498: Benchmark Values for Trichloroacetic Acid in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
76−03−9	Florida	Soil Leachability Freshwater and Marine	Not specified	400.0

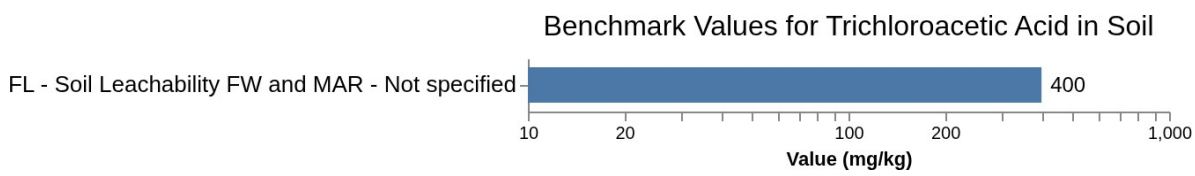


Table 499: Benchmark Values for Trichloroaniline HCl, 2,4,6− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
33663−50−2	Dutch Soil Protection Act	Intervention Value	Not specified	10.0	73, 78

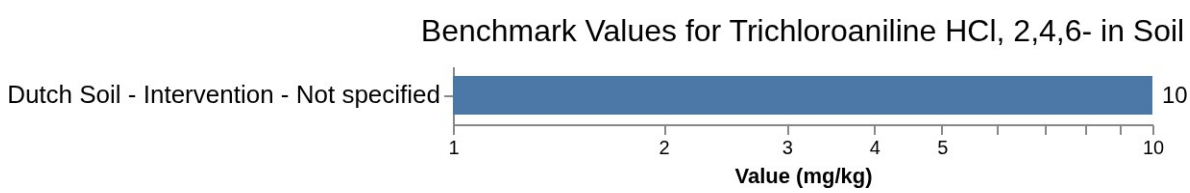


Table 500: Benchmark Values for Trichloroaniline, 2,4,5− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
636−30−6	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	7.8	78
636−30−6	Dutch Soil Protection Act	Intervention Value	Not specified	10.0	73, 78
636−30−6	EPA Region 4	Soil All Receptors	Not specified	20.0	
636−30−6	EPA Region 4	Soil Invertebrates	Not specified	20.0	
636−30−6	EPA Region 4	Soil Plants	Not specified	20.0	
636−30−6	EPA Region 6	Soil Invertebrates	Not specified	20.0	
636−30−6	EPA Region 6	Soil Plants	Not specified	20.0	
636−30−6	ORNL	Soil Screening − Plants	Not specified	20.0	
636−30−6	ORNL	Soil Screening − Invertebrates	Not specified	20.0	

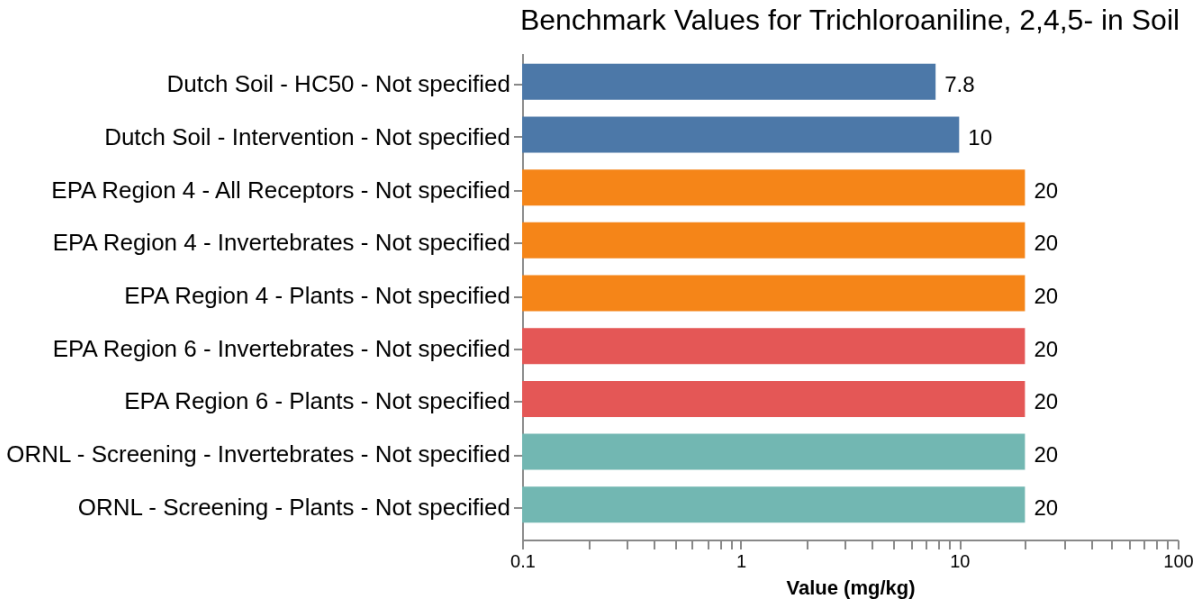


Table 501: Benchmark Values for Trichloroaniline, 2,4,6− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
634−93−5	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	7.8	78
634−93−5	Dutch Soil Protection Act	Intervention Value	Not specified	10.0	73, 78

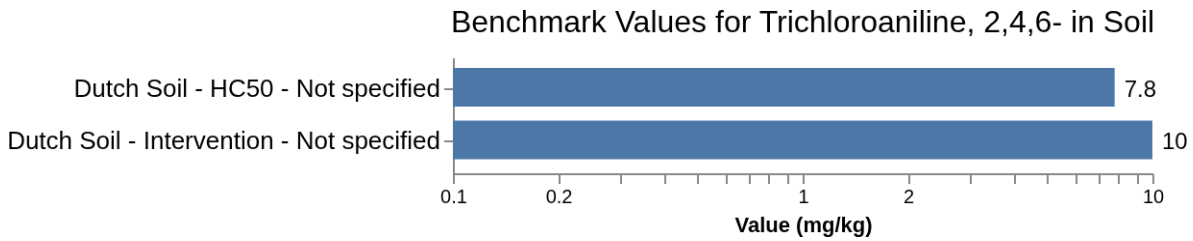


Table 502: Benchmark Values for Trichlorobenzene, 1,2,3− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
87−61−6	Canada	Soil Agricultural	Not specified	0.050
87−61−6	Canada	Soil Residential/Parkland	Not specified	2.000
87−61−6	Canada	Soil Industrial	Not specified	10.000
87−61−6	Canada	Soil Commercial	Not specified	10.000
87−61−6	Dutch Soil Protection Act	Background	Not specified	0.015
87−61−6	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	11.000
87−61−6	EPA Region 4	Soil All Receptors	Not specified	20.000
87−61−6	EPA Region 4	Soil Invertebrates	Not specified	20.000
87−61−6	EPA Region 6	Soil Invertebrates	Not specified	20.000
87−61−6	Florida	Soil Leachability Freshwater and Marine	Not specified	5.600
87−61−6	ORNL	Soil Screening − Invertebrates	Not specified	20.000

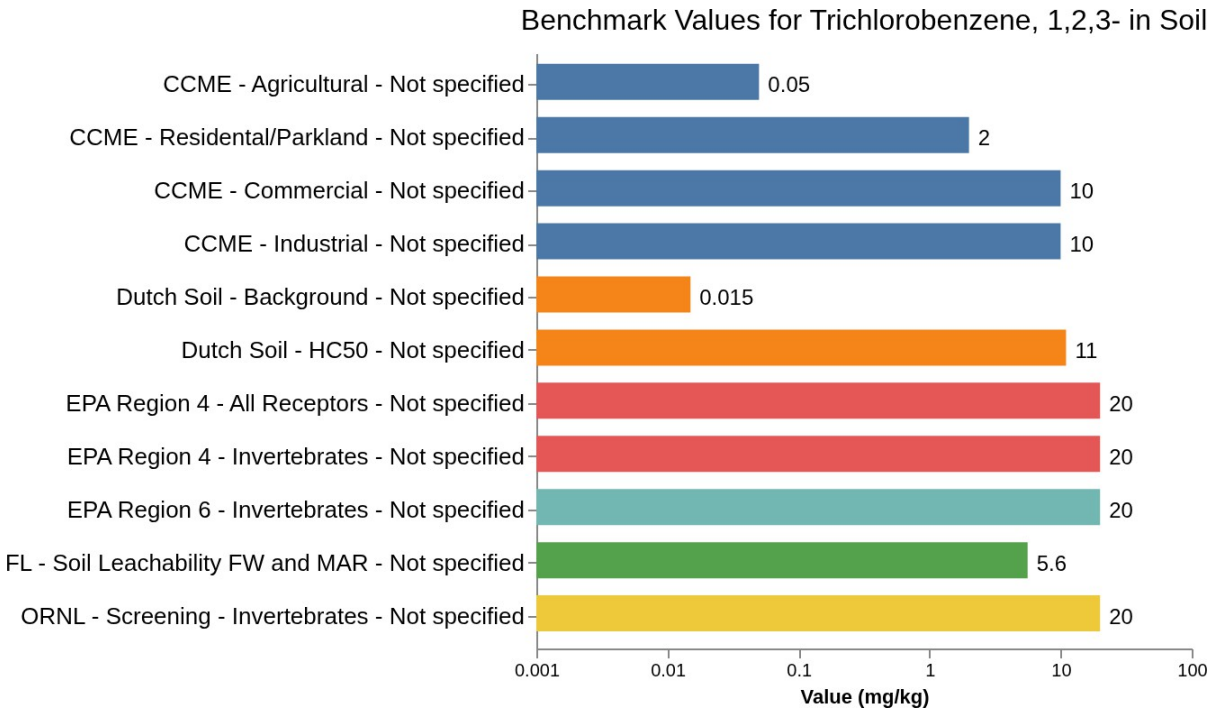


Table 503: Benchmark Values for Trichlorobenzene, 1,2,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
120−82−1	Canada	Soil Agricultural	Not specified	0.050	
120−82−1	Canada	Soil Residential/Parkland	Not specified	2.000	
120−82−1	Canada	Soil Commercial	Not specified	10.000	
120−82−1	Canada	Soil Industrial	Not specified	10.000	
120−82−1	Dutch Soil Protection Act	Background	Not specified	0.015	
120−82−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	11.000	
120−82−1	EPA Region 4	Soil Mammals	Not specified	0.270	
120−82−1	EPA Region 4	Soil All Receptors	Not specified	0.270	
120−82−1	EPA Region 4	Soil Invertebrates	Not specified	1.200	
120−82−1	EPA Region 5	EPA RCRA Soil	Not specified	11.100	
120−82−1	EPA Region 6	Soil Invertebrates	Not specified	20.000	
120−82−1	Florida	Soil Leachability Freshwater and Marine	Not specified	1.700	
120−82−1	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.270	
120−82−1	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.510	
120−82−1	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	1.200	
120−82−1	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	2.700	
120−82−1	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	5.100	
120−82−1	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	12.000	
120−82−1	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	12.000	
120−82−1	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	110.000	
120−82−1	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	120.000	
120−82−1	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	1100.000	
120−82−1	ORNL	Soil Screening − Invertebrates	Not specified	20.000	

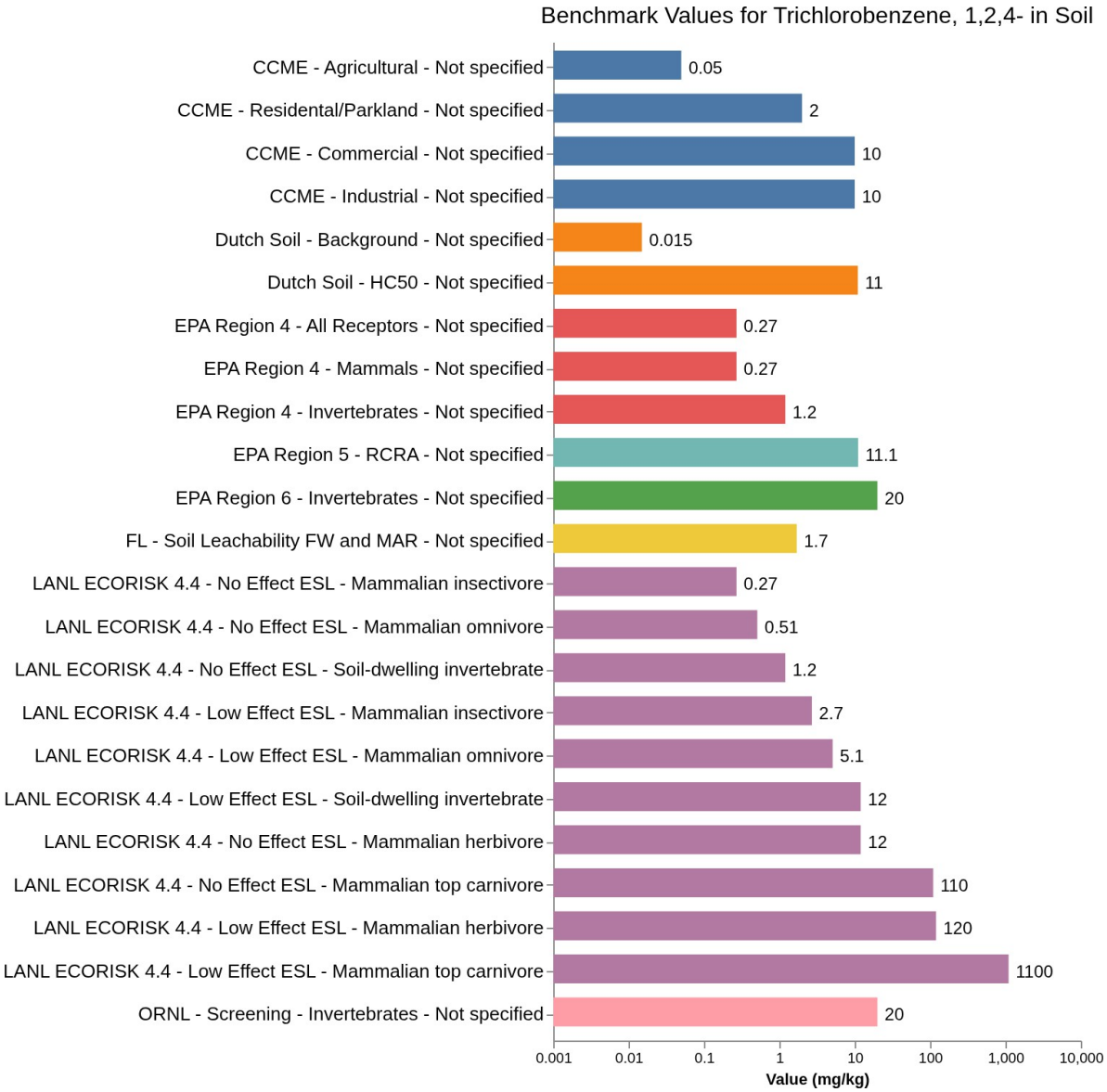

Benchmark Values for Trichlorobenzene, 1,2,4- in Soil
CCME - Agricultural - Not specified
0.05
CCME - Residental/Parkland - Not specified
2
CCME - Commercial - Not specified
10
CCME - Industrial - Not specified
10
Dutch Soil - Background - Not specified
0.015
Dutch Soil - HC50 - Not specified
11
EPA Region 4 - All Receptors - Not specified
0.27
EPA Region 4 - Mammals - Not specified
0.27
EPA Region 4 - Invertebrates - Not specified
1.2
EPA Region 5 - RCRA - Not specified
11.1
EPA Region 6 - Invertebrates - Not specified
20
FL - Soil Leachability FW and MAR - Not specified
1.7
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
0.27
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
0.51
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
1.2
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
2.7
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
5.1
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
12
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
12
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
110
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
120
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
1100
ORNL - Screening - Invertebrates - Not specified
20
0.001
0.01
0.1
1
10
100
1,000
10,000
Value (mg/kg)

Table 504: Benchmark Values for Trichlorobenzene, 1,3,5− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
108−70−3	Canada	Soil Agricultural	Not specified	0.05
108−70−3	Canada	Soil Residential/Parkland	Not specified	2.00
108−70−3	Canada	Soil Commercial	Not specified	10.00
108−70−3	Canada	Soil Industrial	Not specified	10.00
108−70−3	EPA Region 4	Soil Invertebrates	Not specified	0.07
108−70−3	EPA Region 4	Soil All Receptors	Not specified	0.07

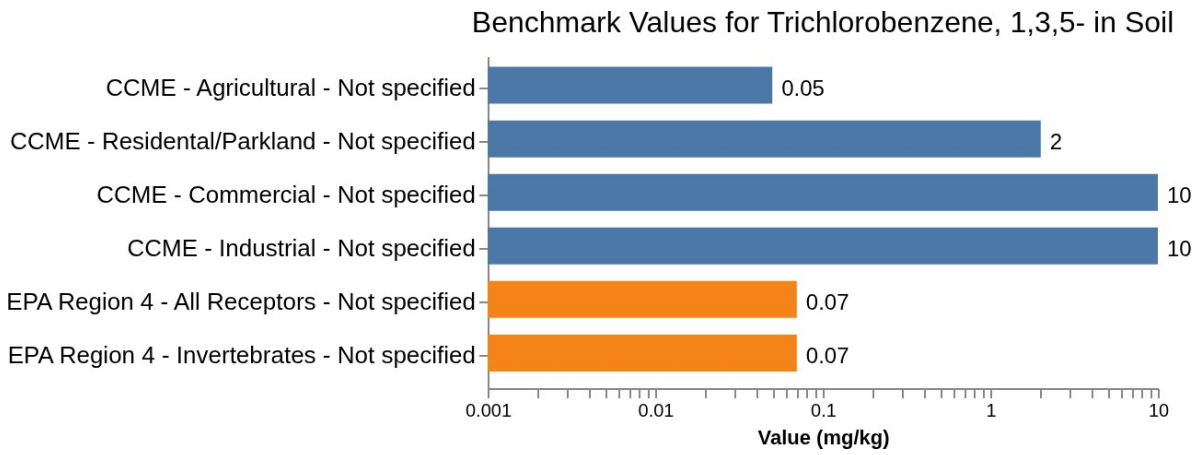


Table 505: Benchmark Values for Trichlorobenzene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
12002−48−1	Dutch Soil Protection Act	Background	Not specified	0.015	71
12002−48−1	Dutch Soil Protection Act	Intervention Value	Not specified	11.000	
12002−48−1	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	11.000	

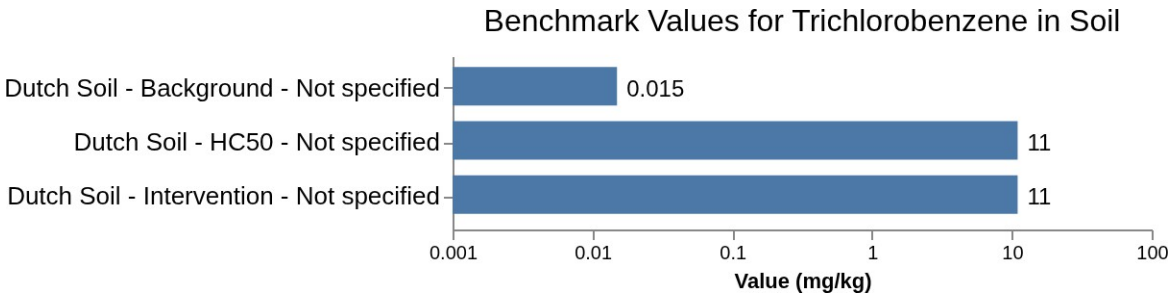


Table 506: Benchmark Values for Trichloroethane, 1,1,1− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
71−55−6	Canada	Soil Agricultural	Not specified	0.1	
71−55−6	Canada	Soil Residential/Parkland	Not specified	5	
71−55−6	Canada	Soil Commercial	Not specified	50	
71−55−6	Canada	Soil Industrial	Not specified	50	
71−55−6	Dutch Soil Protection Act	Background	Not specified	0.25	71
71−55−6	Dutch Soil Protection Act	Intervention Value	Not specified	15	
71−55−6	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	88	
71−55−6	EPA Region 4	Soil Invertebrates	Not specified	0.04	
71−55−6	EPA Region 4	Soil All Receptors	Not specified	0.04	
71−55−6	EPA Region 4	Soil Mammals	Not specified	260	
71−55−6	EPA Region 5	EPA RCRA Soil	Not specified	29.8	
71−55−6	Florida	Soil Leachability Freshwater and Marine	Not specified	2.6	
71−55−6	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	260	
71−55−6	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	400	
71−55−6	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	2000	
71−55−6	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	2600	
71−55−6	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	4000	
71−55−6	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	20000	
71−55−6	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	310000	
71−55−6	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	3.10e+06	

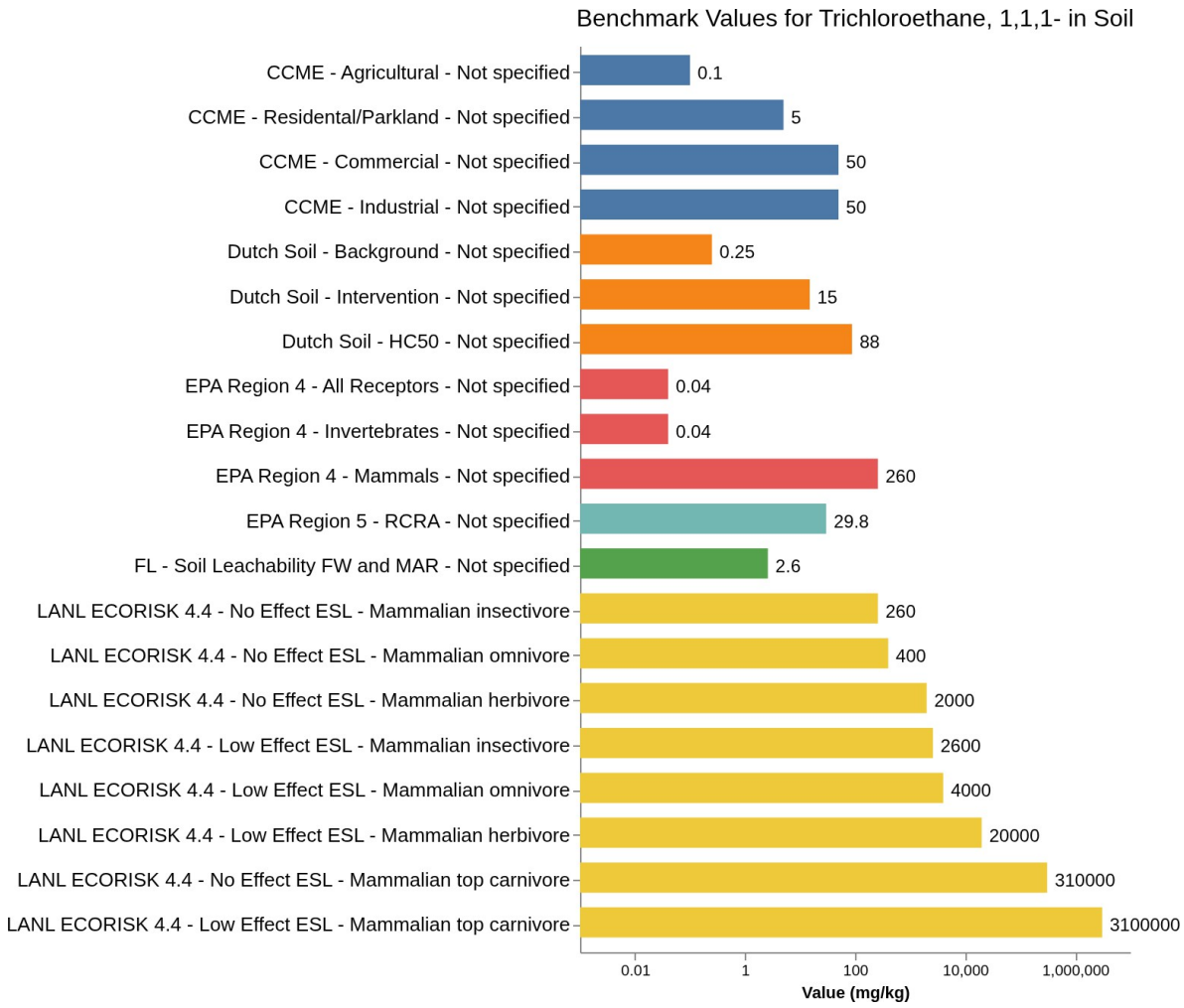

Benchmark Values for Trichloroethane, 1,1,1- in Soil
CCME - Agricultural - Not specified
0.1
CCME - Residental/Parkland - Not specified
5
CCME - Commercial - Not specified
50
CCME - Industrial - Not specified
50
Dutch Soil - Background - Not specified
0.25
Dutch Soil - Intervention - Not specified
15
Dutch Soil - HC50 - Not specified
88
EPA Region 4 - All Receptors - Not specified
0.04
EPA Region 4 - Invertebrates - Not specified
0.04
EPA Region 4 - Mammals - Not specified
260
EPA Region 5 - RCRA - Not specified
29.8
FL - Soil Leachability FW and MAR - Not specified
2.6
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
260
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
400
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
2000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
2600
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
4000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
20000
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
310000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
3100000
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 507: Benchmark Values for Trichloroethane, 1,1,2− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
79−00−5	Canada	Soil Agricultural	Not specified	0.10	
79−00−5	Canada	Soil Residential/Parkland	Not specified	5.00	
79−00−5	Canada	Soil Industrial	Not specified	50.00	
79−00−5	Canada	Soil Commercial	Not specified	50.00	
79−00−5	Dutch Soil Protection Act	Background	Not specified	0.30	71
79−00−5	Dutch Soil Protection Act	Intervention Value	Not specified	10.00	
79−00−5	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	400.00	
79−00−5	EPA Region 4	Soil Invertebrates	Not specified	0.32	
79−00−5	EPA Region 4	Soil All Receptors	Not specified	0.32	
79−00−5	EPA Region 4	Soil Mammals	Not specified	28.60	
79−00−5	EPA Region 5	EPA RCRA Soil	Not specified	28.60	
79−00−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.09	

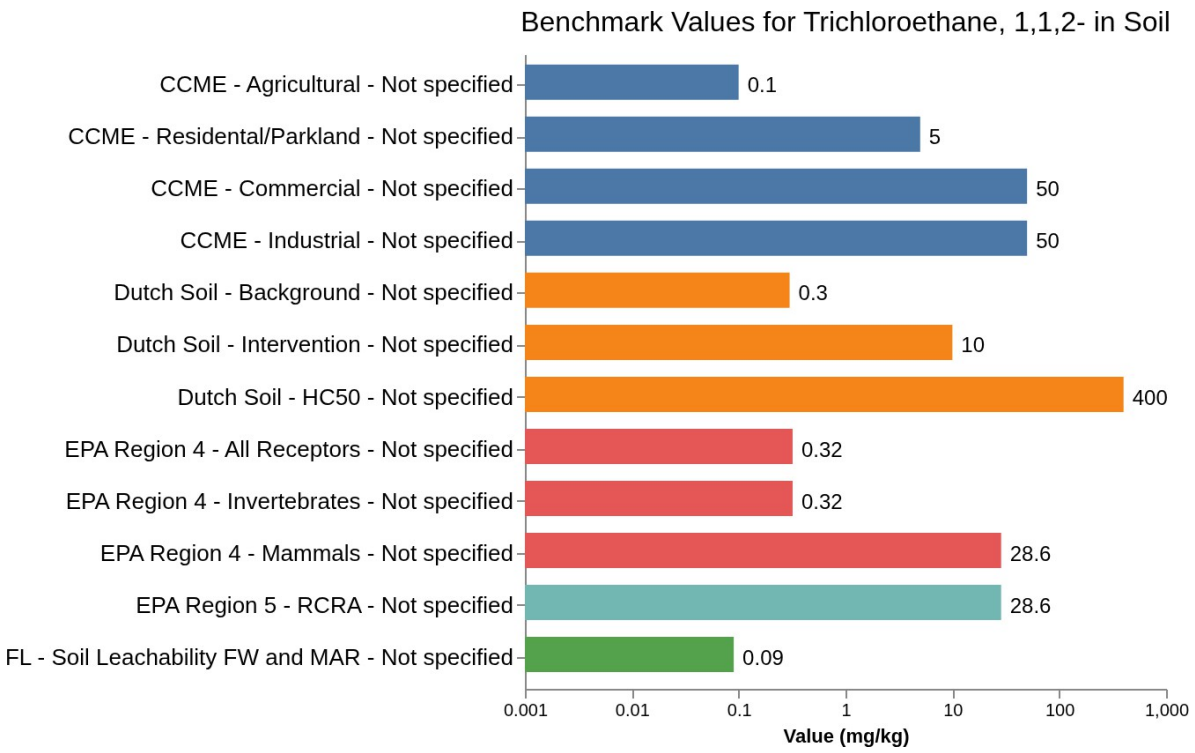


Table 508: Benchmark Values for Trichloroethylene in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
79−01−6	Canada	Soil Agricultural	Not specified	0.01	
79−01−6	Canada	Soil Residential/Parkland	Not specified	0.01	
79−01−6	Canada	Soil Industrial	Not specified	0.01	
79−01−6	Canada	Soil Commercial	Not specified	0.01	
79−01−6	Dutch Soil Protection Act	Background	Not specified	0.25	71
79−01−6	Dutch Soil Protection Act	Intervention Value	Not specified	2.50	
79−01−6	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	2.50	
79−01−6	EPA Region 4	Soil All Receptors	Not specified	0.06	
79−01−6	EPA Region 4	Soil Invertebrates	Not specified	0.06	
79−01−6	EPA Region 4	Soil Mammals	Not specified	42.00	
79−01−6	EPA Region 5	EPA RCRA Soil	Not specified	12.40	
79−01−6	Florida	Soil Leachability Freshwater and Marine	Not specified	0.90	
79−01−6	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	42.00	
79−01−6	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	54.00	
79−01−6	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	190.00	
79−01−6	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	420.00	
79−01−6	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	540.00	
79−01−6	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1900.00	
79−01−6	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	42000.00	
79−01−6	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	420000.00	

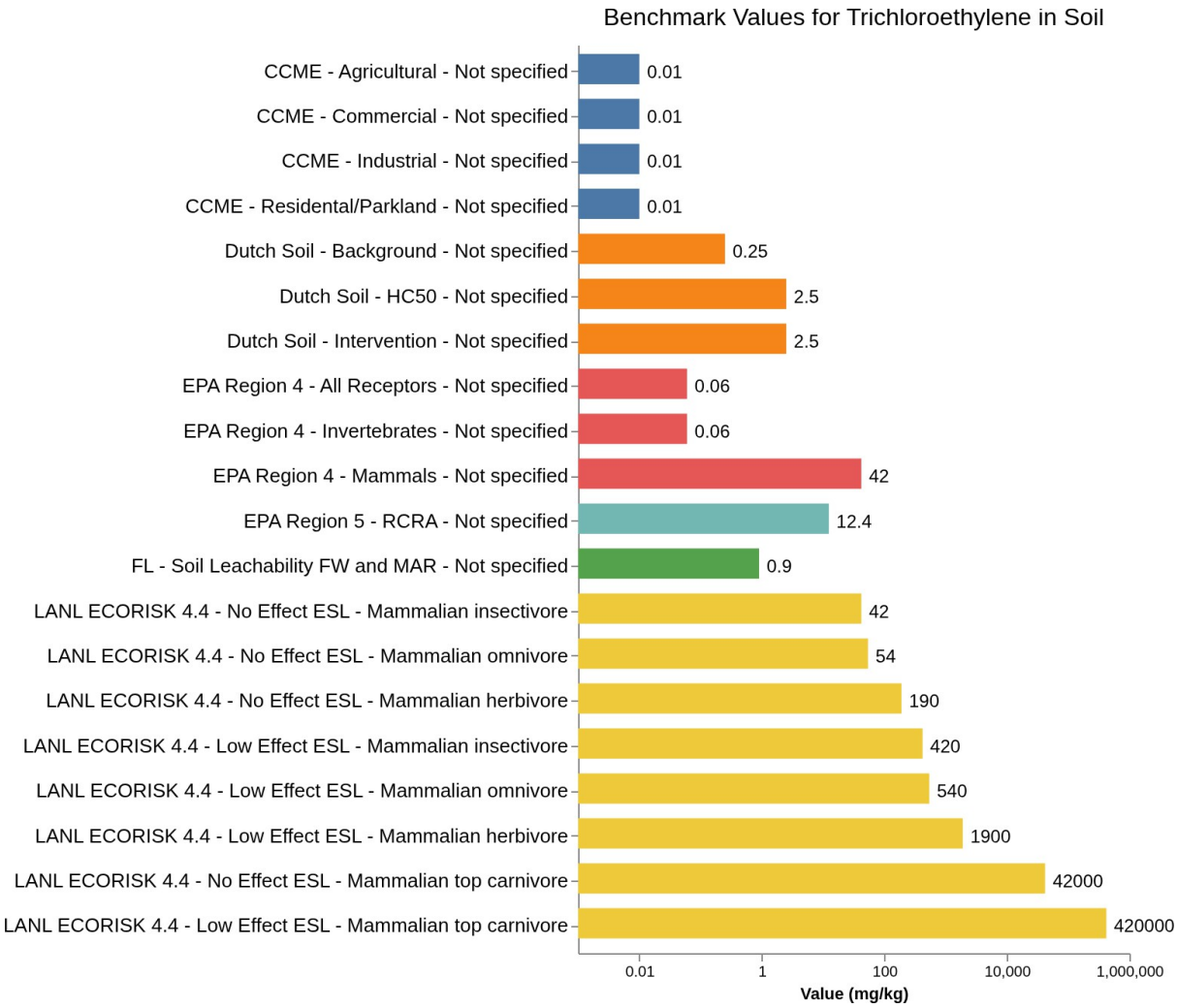

Benchmark Values for Trichloroethylene in Soil
CCME - Agricultural - Not specified
0.01
CCME - Commercial - Not specified
0.01
CCME - Industrial - Not specified
0.01
CCME - Residental/Parkland - Not specified
0.01
Dutch Soil - Background - Not specified
0.25
Dutch Soil - HC50 - Not specified
2.5
Dutch Soil - Intervention - Not specified
2.5
EPA Region 4 - All Receptors - Not specified
0.06
EPA Region 4 - Invertebrates - Not specified
0.06
EPA Region 4 - Mammals - Not specified
42
EPA Region 5 - RCRA - Not specified
12.4
FL - Soil Leachability FW and MAR - Not specified
0.9
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
42
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
54
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
190
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
420
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
540
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
1900
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
42000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
420000
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 509: Benchmark Values for Trichlorofluoromethane in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
75−69−4	EPA Region 4	Soil All Receptors	Not specified	16.4
75−69−4	EPA Region 4	Soil Mammals	Not specified	16.4
75−69−4	EPA Region 5	EPA RCRA Soil	Not specified	16.4
75−69−4	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	52.0
75−69−4	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	97.0
75−69−4	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	350.0
75−69−4	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	650.0
75−69−4	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	1800.0
75−69−4	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	12000.0
75−69−4	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	62000.0
75−69−4	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	420000.0

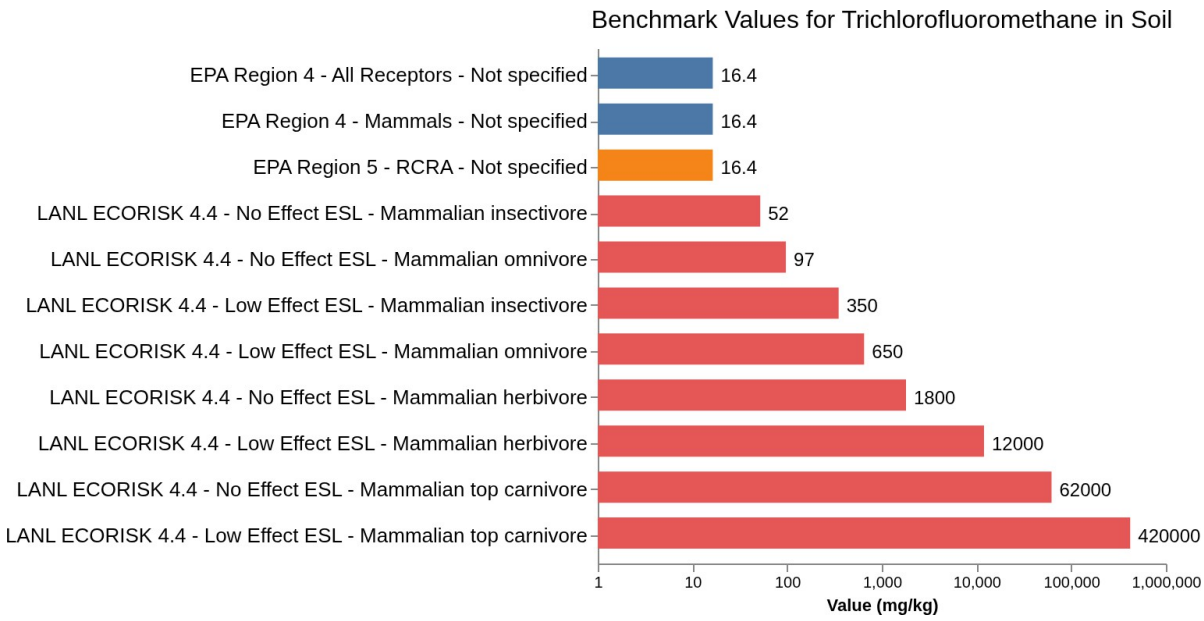


Table 510: Benchmark Values for Trichlorophenol, 2,3,5− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
933−78−8	Dutch Soil Protection Act	Background	Not specified	0.003	71
933−78−8	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	22.000	
933−78−8	Dutch Soil Protection Act	Intervention Value	Not specified	22.000	

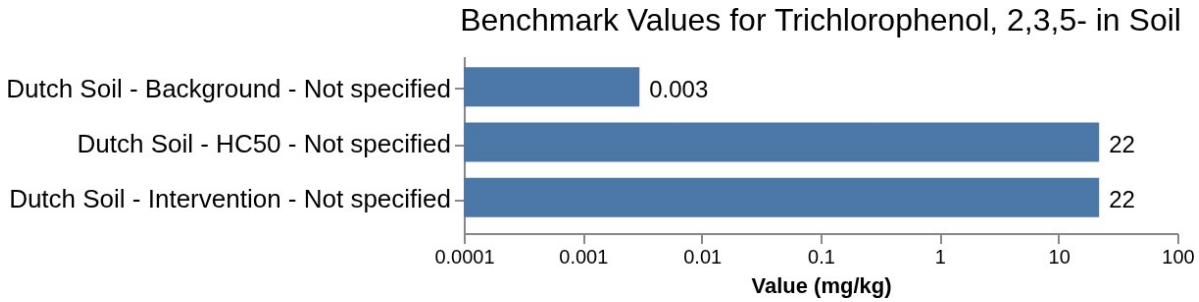


Table 511: Benchmark Values for Trichlorophenol, 2,4,5− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
95−95−4	Dutch Soil Protection Act	Background	Not specified	0.003	71
95−95−4	Dutch Soil Protection Act	Intervention Value	Not specified	22.000	
95−95−4	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	22.000	
95−95−4	EPA Region 4	Soil Plants	Not specified	4.000	
95−95−4	EPA Region 4	Soil All Receptors	Not specified	4.000	
95−95−4	EPA Region 4	Soil Invertebrates	Not specified	9.000	
95−95−4	EPA Region 4	Soil Mammals	Not specified	14.100	
95−95−4	EPA Region 5	EPA RCRA Soil	Not specified	14.100	
95−95−4	EPA Region 6	Soil Plants	Not specified	4.000	
95−95−4	EPA Region 6	Soil Invertebrates	Not specified	9.000	
95−95−4	Florida	Soil Leachability Freshwater and Marine	Not specified	1.500	
95−95−4	ORNL	Soil Screening − Plants	Not specified	4.000	
95−95−4	ORNL	Soil Screening − Invertebrates	Not specified	9.000	

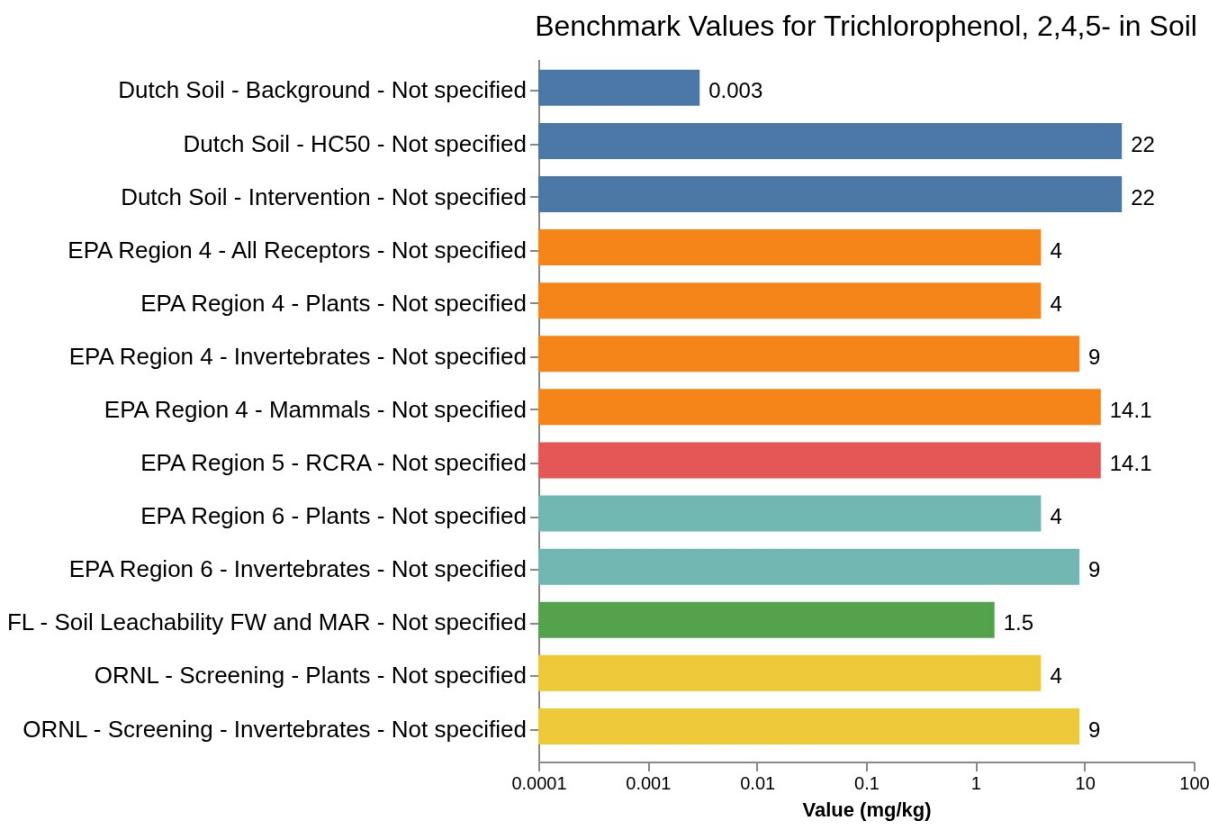


Table 512: Benchmark Values for Trichlorophenol, 2,4,6− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
88−06−2	Canada	Soil Agricultural	Not specified	0.050	
88−06−2	Canada	Soil Residential/Parkland	Not specified	0.500	
88−06−2	Canada	Soil Commercial	Not specified	5.000	
88−06−2	Canada	Soil Industrial	Not specified	5.000	
88−06−2	Dutch Soil Protection Act	Background	Not specified	0.003	71
88−06−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	22.000	
88−06−2	Dutch Soil Protection Act	Intervention Value	Not specified	22.000	
88−06−2	EPA Region 4	Soil Mammals	Not specified	9.940	
88−06−2	EPA Region 4	Soil All Receptors	Not specified	9.940	
88−06−2	EPA Region 4	Soil Invertebrates	Not specified	10.000	
88−06−2	EPA Region 5	EPA RCRA Soil	Not specified	9.940	
88−06−2	EPA Region 6	Soil Invertebrates	Not specified	10.000	
88−06−2	Florida	Soil Leachability Freshwater and Marine	Not specified	0.100	
88−06−2	ORNL	Soil Screening − Invertebrates	Not specified	10.000	

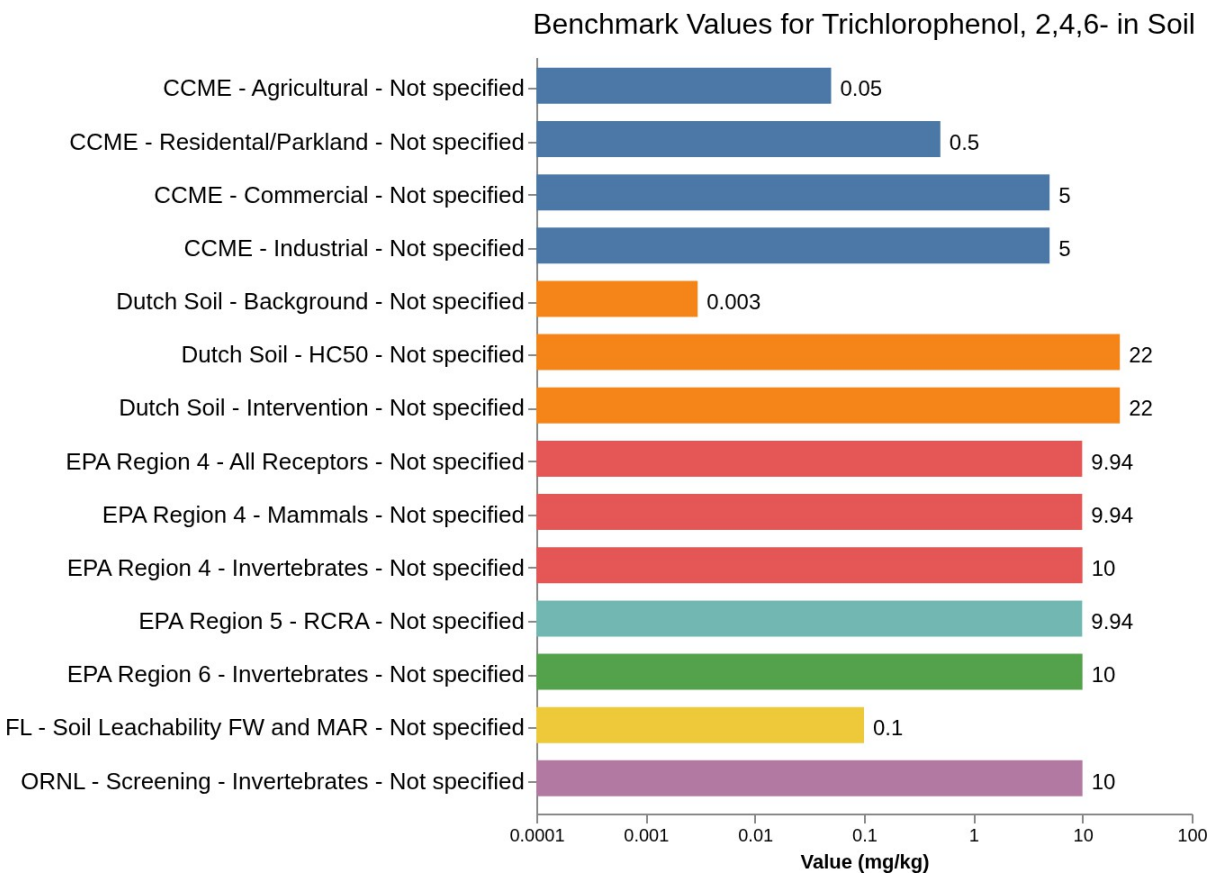


Table 513: Benchmark Values for Trichlorophenols (total) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
25167−82−2	Canada	Soil Agricultural	Not specified	0.050	
25167−82−2	Canada	Soil Residential/Parkland	Not specified	0.500	
25167−82−2	Canada	Soil Industrial	Not specified	5.000	
25167−82−2	Canada	Soil Commercial	Not specified	5.000	
25167−82−2	Dutch Soil Protection Act	Background	Not specified	0.003	71
25167−82−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	22.000	
25167−82−2	Dutch Soil Protection Act	Intervention Value	Not specified	22.000	
25167−82−2	ORNL	Soil Screening − Plants	Not specified	4.000	

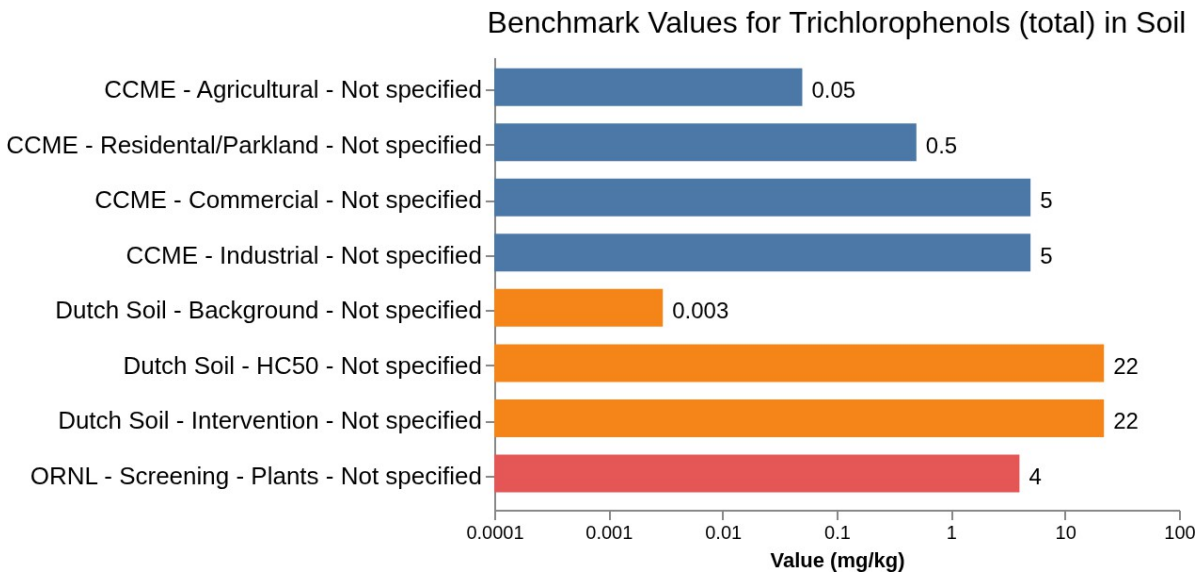


Table 514: Benchmark Values for Trichlorophenoxyacetic Acid, 2,4,5− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
93−76−5	EPA Region 5	EPA RCRA Soil	Not specified	0.596
93−76−5	Florida	Soil Leachability Freshwater and Marine	Not specified	0.800

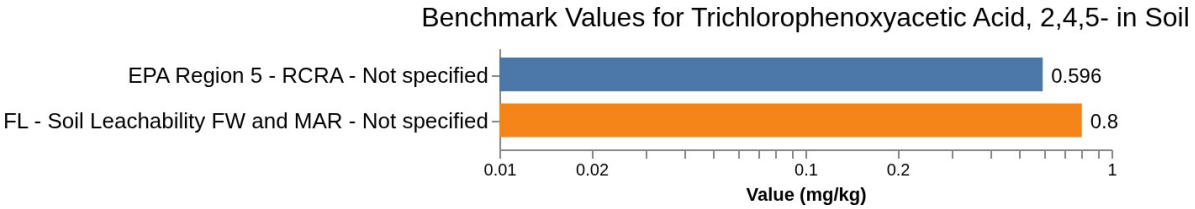


Table 515: Benchmark Values for Trichlorophenoxypropionic acid, −2,4,5 in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
93−72−1	EPA Region 4	Soil All Receptors	Not specified	0.055
93−72−1	EPA Region 4	Soil Invertebrates	Not specified	0.055
93−72−1	EPA Region 5	EPA RCRA Soil	Not specified	0.109

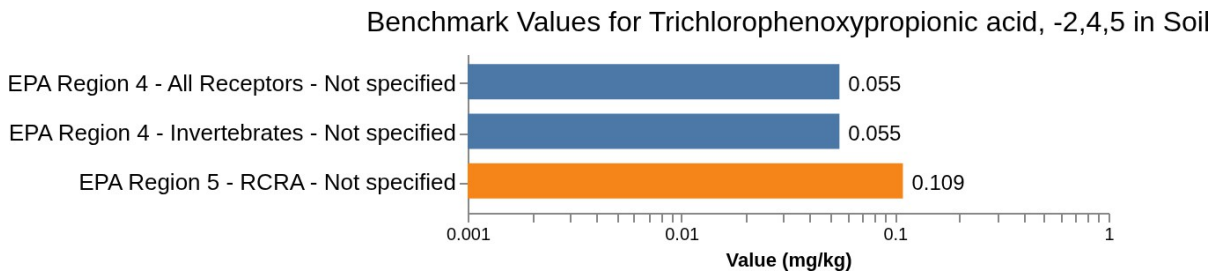


Table 516: Benchmark Values for Trichloropropane, 1,2,3− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
96−18−4	EPA Region 5	EPA RCRA Soil	Not specified	3.360
96−18−4	Florida	Soil Leachability Freshwater and Marine	Not specified	0.001

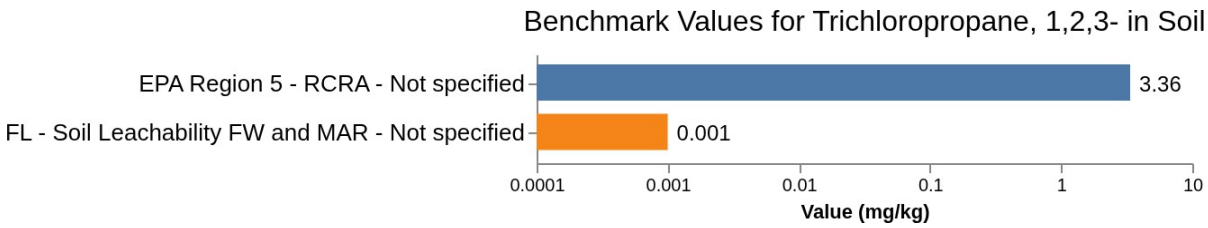


Table 517: Benchmark Values for Triethyl phosphorothioate [O,O,O−] in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
126−68−1	EPA Region 5	EPA RCRA Soil	Not specified	0.818

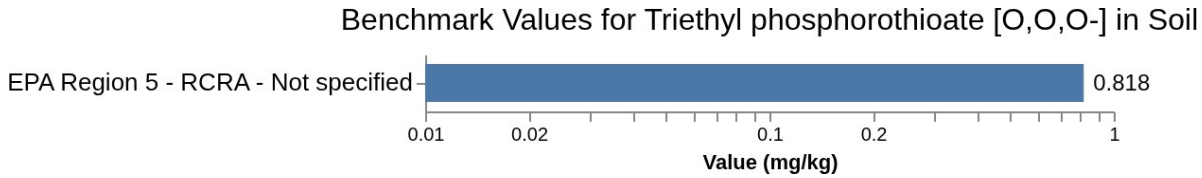


Table 518: Benchmark Values for Trifluralin in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
1582−09−8	EPA Region 4	Soil All Receptors	Not specified	0.079	7
1582−09−8	EPA Region 4	Soil Invertebrates	Not specified	0.079	7
1582−09−8	Florida	Soil Leachability Freshwater and Marine	Not specified	0.200	

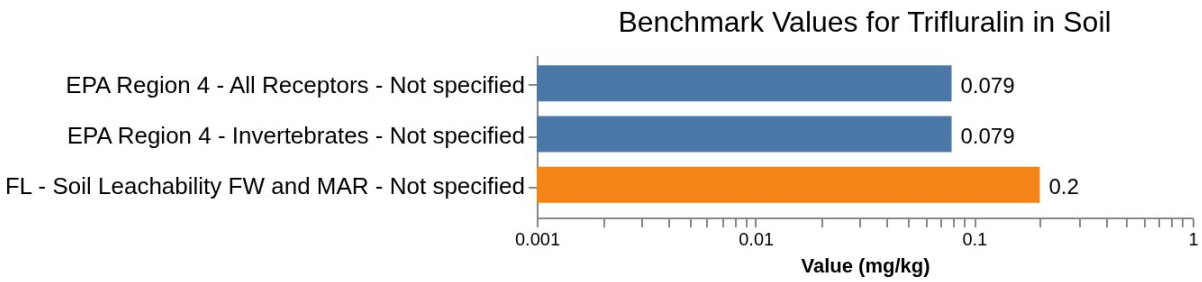


Table 519: Benchmark Values for Trimethylbenzene, 1,2,4− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
95−63−6	EPA Region 4	Soil All Receptors	Not specified	0.09
95−63−6	EPA Region 4	Soil Invertebrates	Not specified	0.09
95−63−6	Florida	Soil Leachability Freshwater and Marine	Not specified	7.20

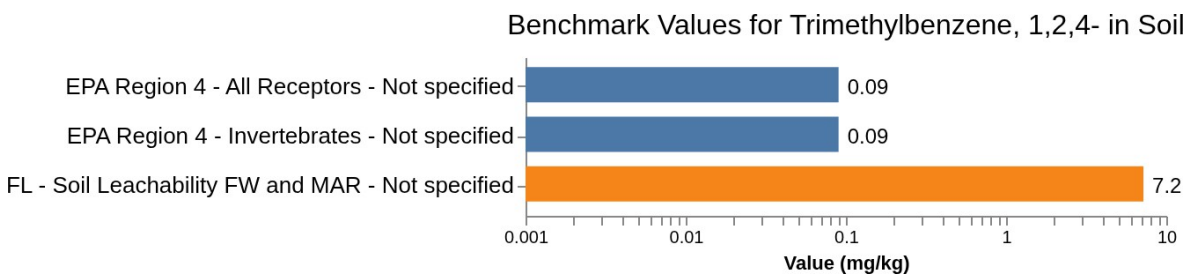


Table 520: Benchmark Values for Trimethylbenzene, 1,3,5− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
108−67−8	EPA Region 4	Soil All Receptors	Not specified	0.16
108−67−8	EPA Region 4	Soil Invertebrates	Not specified	0.16
108−67−8	Florida	Soil Leachability Freshwater and Marine	Not specified	6.70

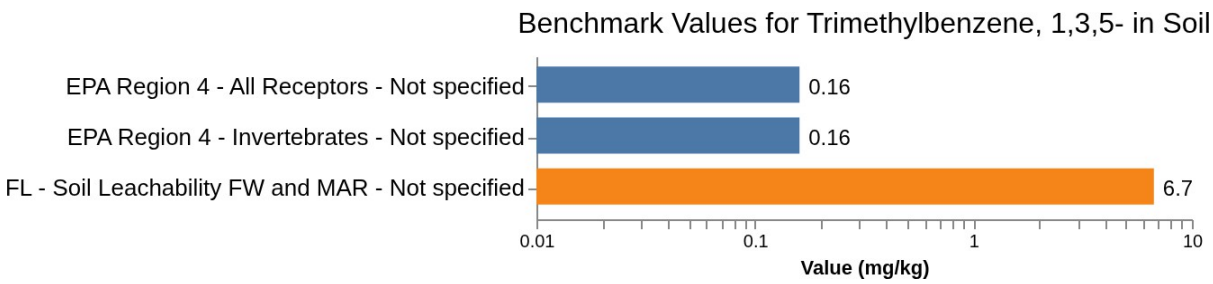


Table 521: Benchmark Values for Trimethylnaphthalene, 2,3,5− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
2245−38−7	EPA Region 4	Soil Invertebrates	Not specified	0.13
2245−38−7	EPA Region 4	Soil All Receptors	Not specified	29.00

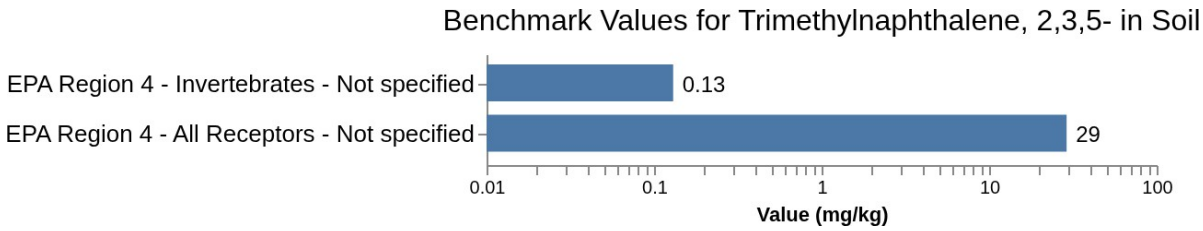


Table 522: Benchmark Values for Trinitrobenzene, 1,3,5− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
99−35−4	EPA Region 4	Soil Plants	Not specified	0.300
99−35−4	EPA Region 4	Soil All Receptors	Not specified	0.300
99−35−4	EPA Region 4	Soil Invertebrates	Not specified	10.000
99−35−4	EPA Region 5	EPA RCRA Soil	Not specified	0.376
99−35−4	EPA Region 6	Soil Plants	Not specified	9.000
99−35−4	EPA Region 6	Soil Invertebrates	Not specified	18.000
99−35−4	Florida	Soil Leachability Freshwater and Marine	Not specified	0.090
99−35−4	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	10.000
99−35−4	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	28.000
99−35−4	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	110.000
99−35−4	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	150.000
99−35−4	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	720.000
99−35−4	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1100.000
99−35−4	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1500.000
99−35−4	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	7200.000
99−35−4	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	10000.000
99−35−4	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	100000.000

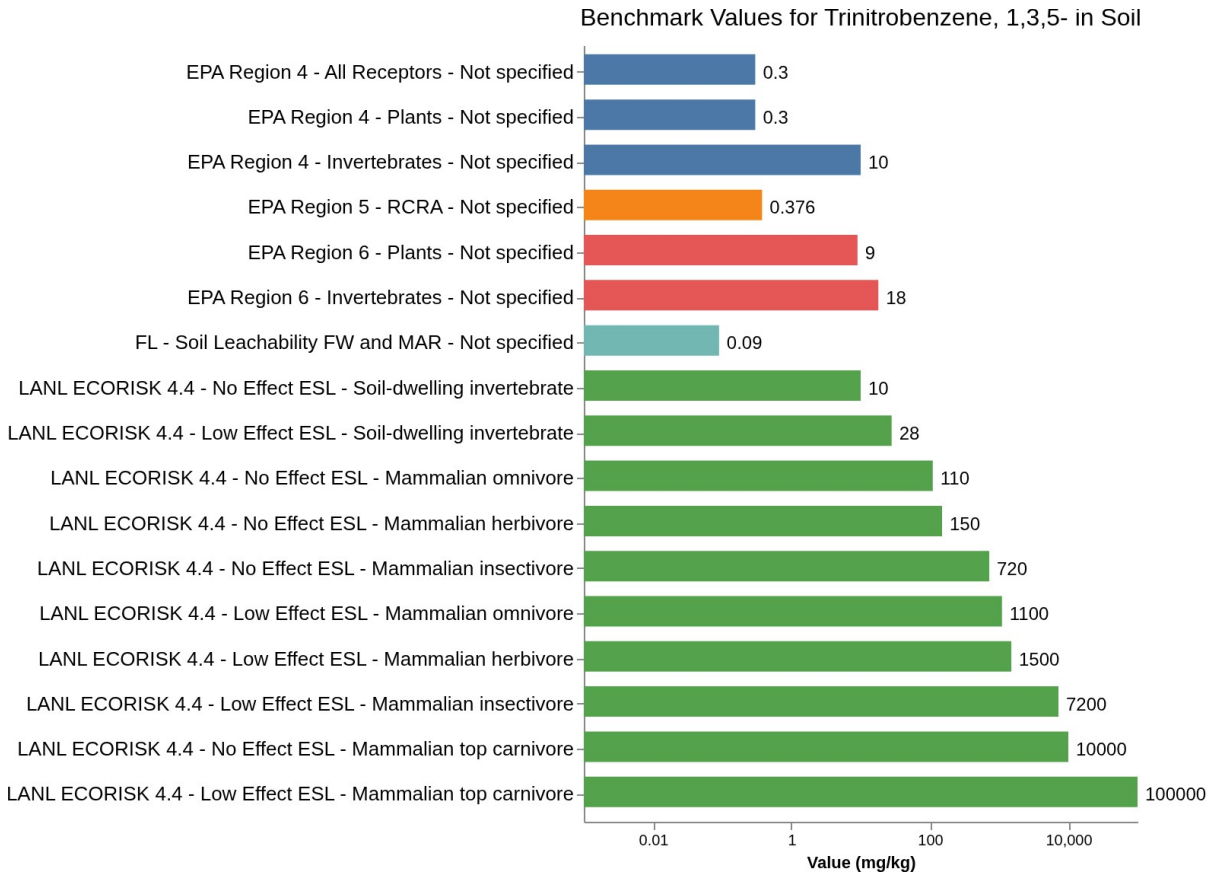

Benchmark Values for Trinitrobenzene, 1,3,5- in Soil
EPA Region 4 - All Receptors - Not specified
0.3
EPA Region 4 - Plants - Not specified
0.3
EPA Region 4 - Invertebrates - Not specified
10
EPA Region 5 - RCRA - Not specified
0.376
EPA Region 6 - Plants - Not specified
9
EPA Region 6 - Invertebrates - Not specified
18
FL - Soil Leachability FW and MAR - Not specified
0.09
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
10
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
28
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
110
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
150
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
720
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
1100
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
1500
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
7200
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
10000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
100000
0.01
1
100
10,000
Value (mg/kg)

Table 523: Benchmark Values for Trinitrotoluene, 2,4,6− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
118−96−7	EPA Region 4	Soil All Receptors	Not specified	7.5
118−96−7	EPA Region 4	Soil Avians	Not specified	7.5
118−96−7	EPA Region 4	Soil Invertebrates	Not specified	32.0
118−96−7	EPA Region 4	Soil Plants	Not specified	62.0
118−96−7	EPA Region 4	Soil Mammals	Not specified	95.0
118−96−7	EPA Region 6	Soil Plants	Not specified	8.0
118−96−7	EPA Region 6	Soil Invertebrates	Not specified	15.0
118−96−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.3
118−96−7	LANL ECORISK	Soil No Effect ESL	Avian herbivore	7.5
118−96−7	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	13.0
118−96−7	LANL ECORISK	Soil No Effect ESL	Avian omnivore	14.0
118−96−7	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	26.0
118−96−7	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	32.0
118−96−7	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	58.0
118−96−7	LANL ECORISK	Soil No Effect ESL	Generic Plant	62.0
118−96−7	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	95.0
118−96−7	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	110.0
118−96−7	LANL ECORISK	Soil No Effect ESL	Avian insectivore	120.0
118−96−7	LANL ECORISK	Soil Low Effect ESL	Generic Plant	120.0
118−96−7	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	220.0
118−96−7	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	440.0
118−96−7	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	540.0
118−96−7	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	1300.0
118−96−7	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	1900.0
118−96−7	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	2400.0
118−96−7	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	3100.0
118−96−7	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	5700.0
118−96−7	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	9100.0
118−96−7	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	26000.0
118−96−7	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	120000.0

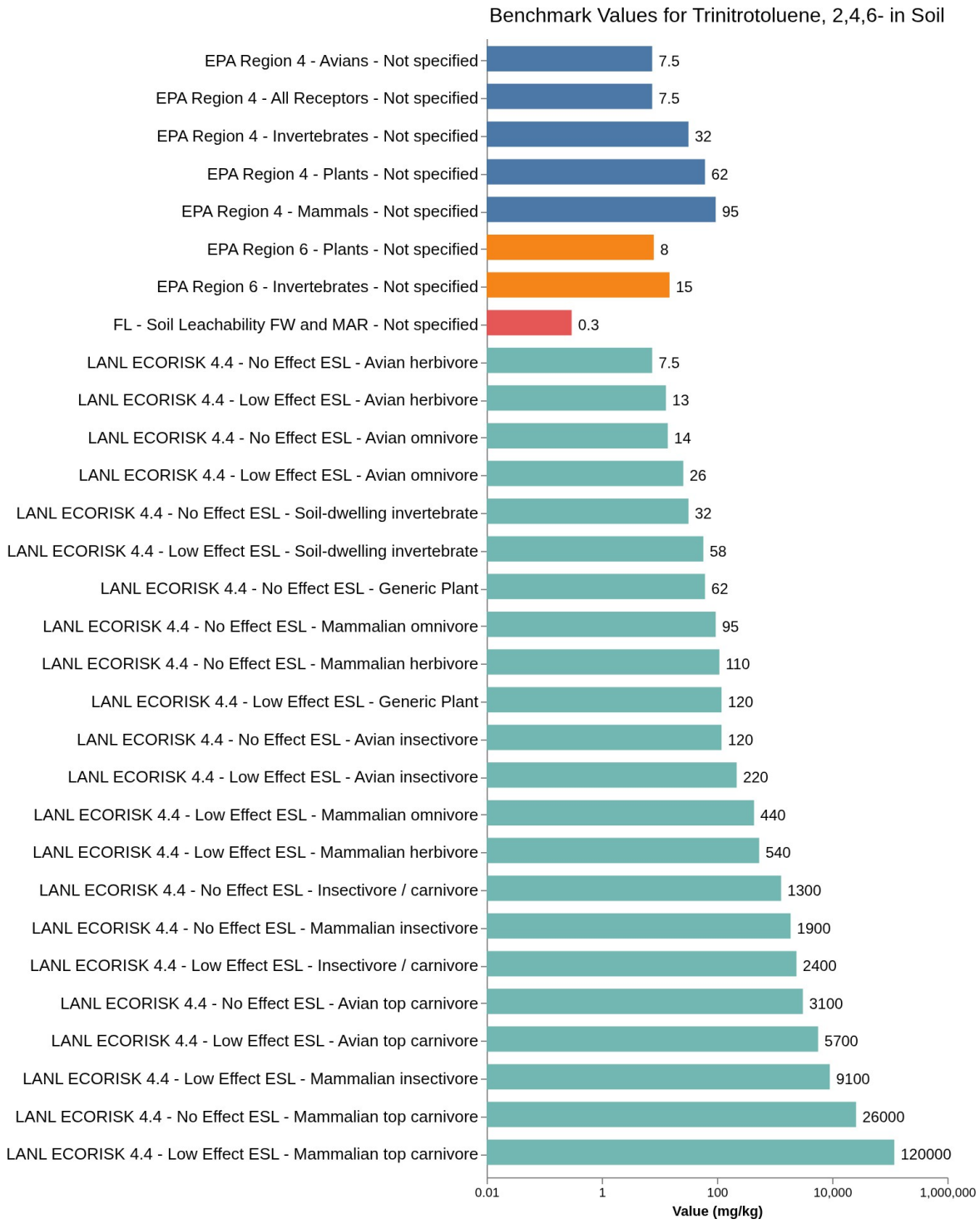

Benchmark Values for Trinitrotoluene, 2,4,6- in Soil
EPA Region 4 - Avians - Not specified
7.5
EPA Region 4 - All Receptors - Not specified
7.5
EPA Region 4 - Invertebrates - Not specified
32
EPA Region 4 - Plants - Not specified
62
EPA Region 4 - Mammals - Not specified
95
EPA Region 6 - Plants - Not specified
8
EPA Region 6 - Invertebrates - Not specified
15
FL - Soil Leachability FW and MAR - Not specified
0.3
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
7.5
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
13
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
14
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
26
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate
32
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate
58
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
62
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
95
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
110
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
120
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
120
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
220
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
440
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
540
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
1300
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
1900
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
2400
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
3100
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
5700
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
9100
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
26000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
120000
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 524: Benchmark Values for Tris(1−chloro−2−propyl)phosphate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
13674−84−5	UK	Soil Screening Values	Not specified	1.8

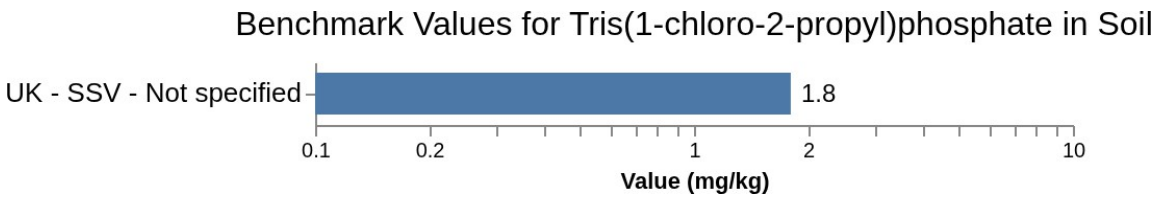


Table 525: Benchmark Values for Tris(2−chloroethyl)phosphate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
115−96−8	UK	Soil Screening Values	Not specified	1.1

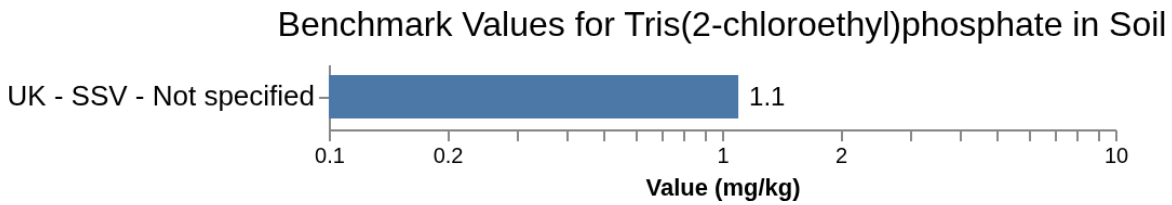


Table 526: Benchmark Values for Trithion in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
786−19−6	Florida	Soil Leachability Freshwater and Marine	Not specified	1.5

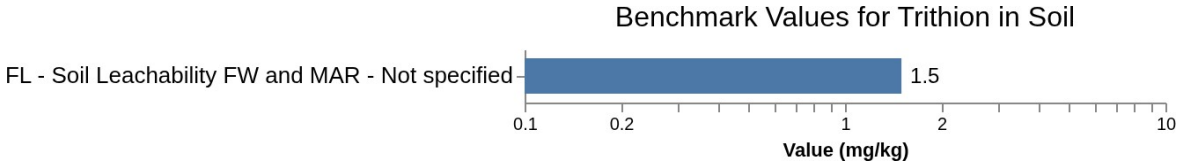


Table 527: Benchmark Values for Tungsten in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7440−33−7	ORNL	Soil Screening − Microbes	Not specified	400

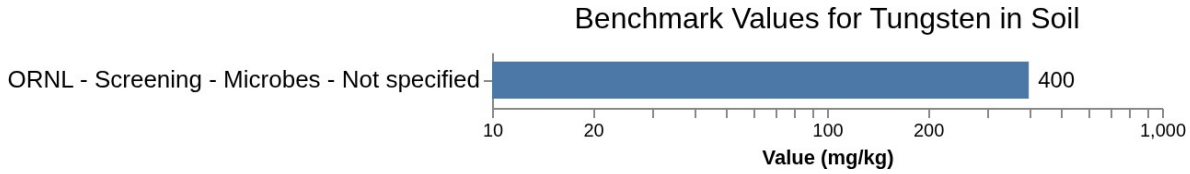


Table 528: Benchmark Values for Uranium (Soluble Salts) in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7440−61−1	Canada	Soil Agricultural	Not specified	23
7440−61−1	Canada	Soil Residential/Parkland	Not specified	23
7440−61−1	Canada	Soil Commercial	Not specified	33
7440−61−1	Canada	Soil Industrial	Not specified	300
7440−61−1	EPA Region 4	Soil Plants	Not specified	25
7440−61−1	EPA Region 4	Soil All Receptors	Not specified	25
7440−61−1	EPA Region 4	Soil Mammals	Not specified	480
7440−61−1	EPA Region 4	Soil Avians	Not specified	1100
7440−61−1	EPA Region 6	Soil Plants	Not specified	5
7440−61−1	LANL ECORISK	Soil No Effect ESL	Generic Plant	25
7440−61−1	LANL ECORISK	Soil Low Effect ESL	Generic Plant	250
7440−61−1	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	480
7440−61−1	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	740
7440−61−1	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	1000
7440−61−1	LANL ECORISK	Soil No Effect ESL	Avian insectivore	1100
7440−61−1	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	1200
7440−61−1	LANL ECORISK	Soil No Effect ESL	Avian omnivore	1200
7440−61−1	LANL ECORISK	Soil No Effect ESL	Avian herbivore	1500
7440−61−1	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1800
7440−61−1	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	2600
7440−61−1	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	4800
7440−61−1	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	11000
7440−61−1	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	12000
7440−61−1	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	12000
7440−61−1	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	14000
7440−61−1	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	15000
7440−61−1	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	26000
7440−61−1	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	140000
7440−61−1	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	260000
7440−61−1	ORNL	Soil Screening − Plants	Not specified	5

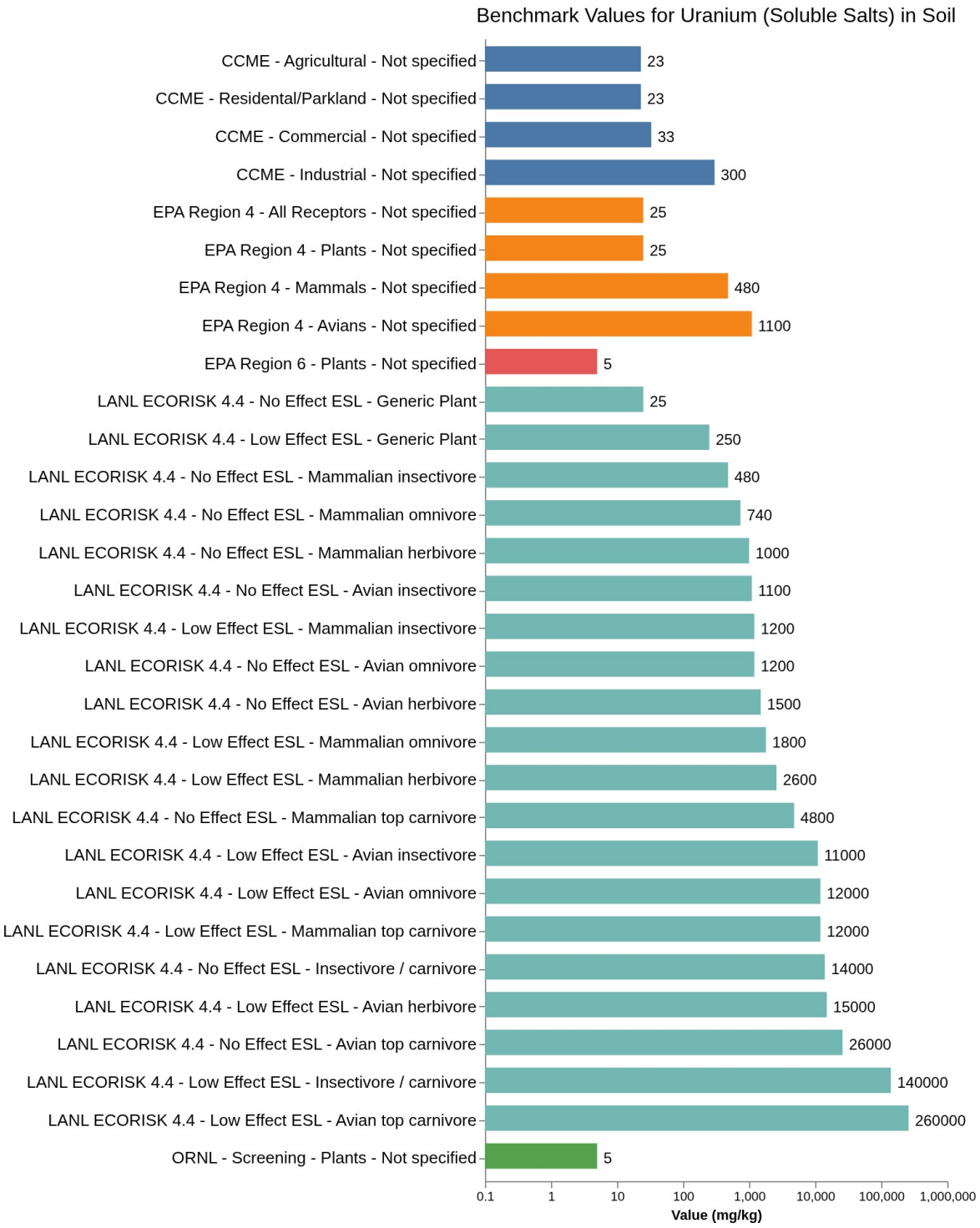

Benchmark Values for Uranium (Soluble Salts) in Soil
CCME - Agricultural - Not specified
23
CCME - Residental/Parkland - Not specified
23
CCME - Commercial - Not specified
33
CCME - Industrial - Not specified
300
EPA Region 4 - All Receptors - Not specified
25
EPA Region 4 - Plants - Not specified
25
EPA Region 4 - Mammals - Not specified
480
EPA Region 4 - Avians - Not specified
1100
EPA Region 6 - Plants - Not specified
5
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
25
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
250
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
480
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
740
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
1000
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
1100
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
1200
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
1200
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
1500
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
1800
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
2600
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
4800
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
11000
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
12000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
12000
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
14000
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
15000
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
26000
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
140000
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
260000
ORNL - Screening - Plants - Not specified
5
0.1
1
10
100
1,000
10,000
100,000
1,000,000
Value (mg/kg)

Table 529: Benchmark Values for Vanadium and Compounds in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
7440−62−2	Canada	Soil Industrial	Not specified	130.00	
7440−62−2	Canada	Soil Residential/Parkland	Not specified	130.00	
7440−62−2	Canada	Soil Commercial	Not specified	130.00	
7440−62−2	Canada	Soil Agricultural	Not specified	130.00	
7440−62−2	Dutch Soil Protection Act	Background	Not specified	80.00	
7440−62−2	Dutch Soil Protection Act	Intervention Value	Not specified	250.00	73
7440−62−2	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	330.00	
7440−62−2	EPA ECO−SSL	Avian	Not specified	7.80	
7440−62−2	EPA ECO−SSL	Mammalian	Not specified	280.00	
7440−62−2	EPA Region 4	Soil All Receptors	Not specified	7.80	
7440−62−2	EPA Region 4	Soil Avians	Not specified	7.80	
7440−62−2	EPA Region 4	Soil Plants	Not specified	60.00	
7440−62−2	EPA Region 4	Soil Mammals	Not specified	280.00	
7440−62−2	EPA Region 5	EPA RCRA Soil	Not specified	1.59	
7440−62−2	EPA Region 6	Soil Plants	Not specified	2.00	
7440−62−2	LANL ECORISK	Soil No Effect ESL	Avian insectivore	4.70	
7440−62−2	LANL ECORISK	Soil No Effect ESL	Avian omnivore	5.50	
7440−62−2	LANL ECORISK	Soil No Effect ESL	Avian herbivore	6.80	
7440−62−2	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	9.50	
7440−62−2	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	11.00	
7440−62−2	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	13.00	
7440−62−2	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	56.00	
7440−62−2	LANL ECORISK	Soil No Effect ESL	Generic Plant	60.00	
7440−62−2	LANL ECORISK	Soil Low Effect ESL	Generic Plant	80.00	
7440−62−2	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	110.00	
7440−62−2	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	110.00	
7440−62−2	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	230.00	
7440−62−2	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	290.00	
7440−62−2	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	470.00	
7440−62−2	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	610.00	
7440−62−2	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	740.00	
7440−62−2	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1000.00	
7440−62−2	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	1500.00	
7440−62−2	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	3200.00	
7440−62−2	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	6900.00	
7440−62−2	ORNL	Soil Screening − Plants	Not specified	2.00	
7440−62−2	ORNL	Soil Screening − Microbes	Not specified	20.00	
7440−62−2	UK	Soil Screening Values	Not specified	2.00	

Benchmark Values for Vanadium and Compounds in Soil

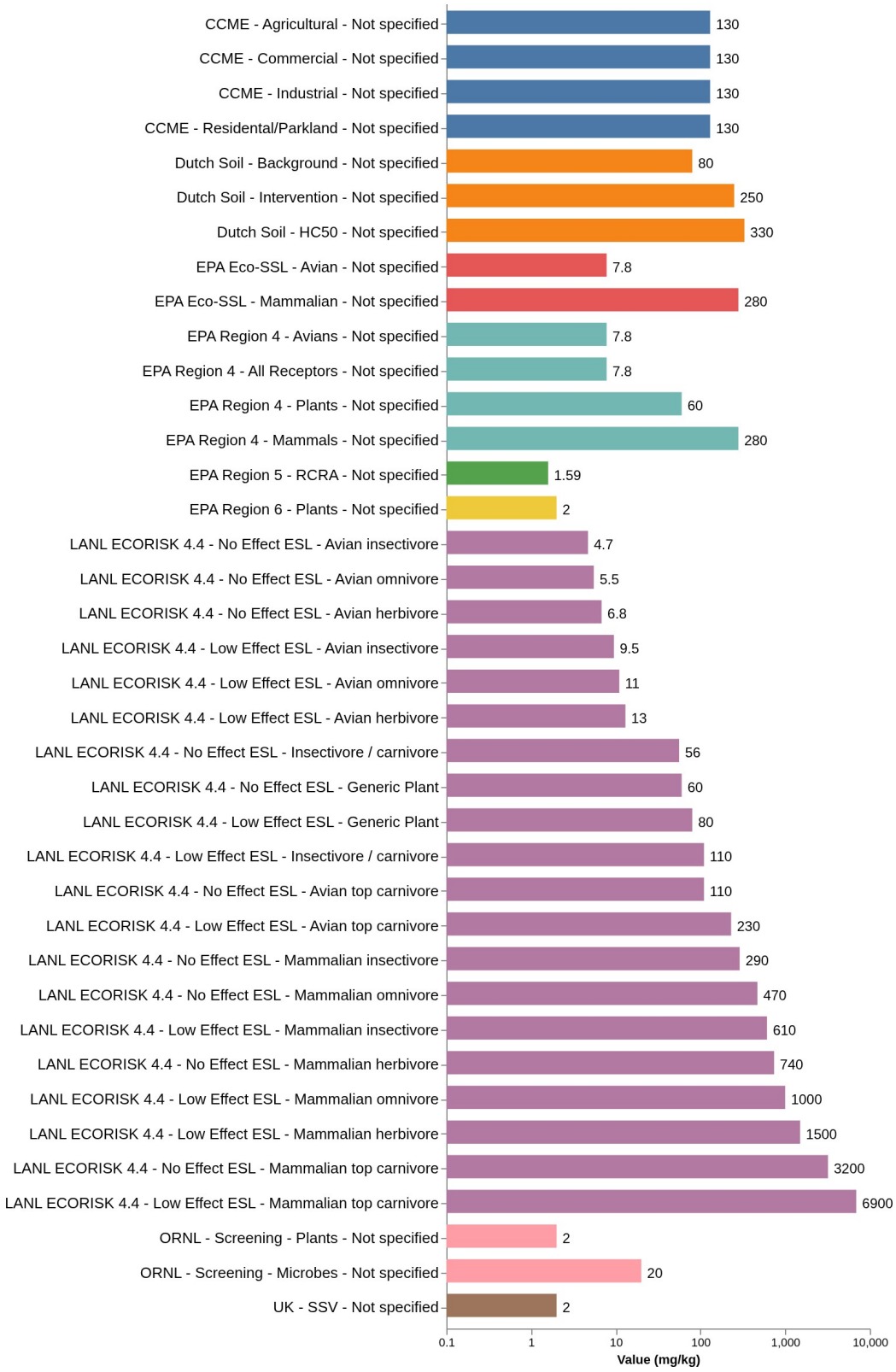


Table 530: Benchmark Values for Vernolate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
1929−77−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.2

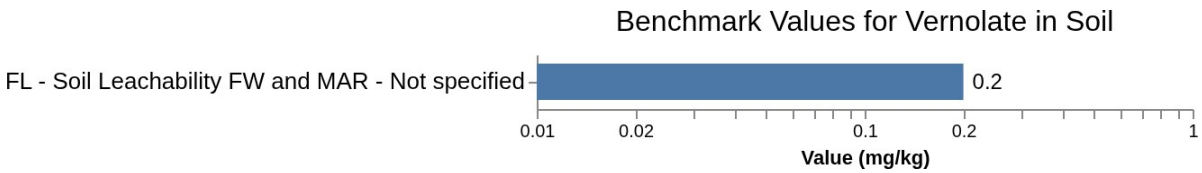


Table 531: Benchmark Values for Vinyl Acetate in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
108−05−4	EPA Region 5	EPA RCRA Soil	Not specified	12.7
108−05−4	Florida	Soil Leachability Freshwater and Marine	Not specified	3.0

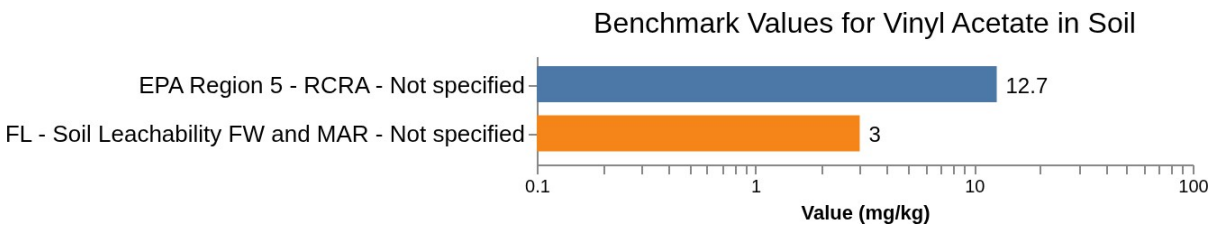


Table 532: Benchmark Values for Vinyl Chloride in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
75−01−4	Dutch Soil Protection Act	Background	Not specified	0.100	71
75−01−4	Dutch Soil Protection Act	Intervention Value	Not specified	0.100	
75−01−4	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	17.000	
75−01−4	EPA Region 4	Soil All Receptors	Not specified	0.030	
75−01−4	EPA Region 4	Soil Invertebrates	Not specified	0.030	
75−01−4	EPA Region 4	Soil Mammals	Not specified	0.120	
75−01−4	EPA Region 5	EPA RCRA Soil	Not specified	0.646	
75−01−4	Florida	Soil Leachability Freshwater and Marine	Not specified	0.020	
75−01−4	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	0.120	
75−01−4	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	0.130	
75−01−4	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	0.340	
75−01−4	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	1.200	
75−01−4	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1.300	
75−01−4	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	3.400	
75−01−4	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	110.000	
75−01−4	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	1100.000	

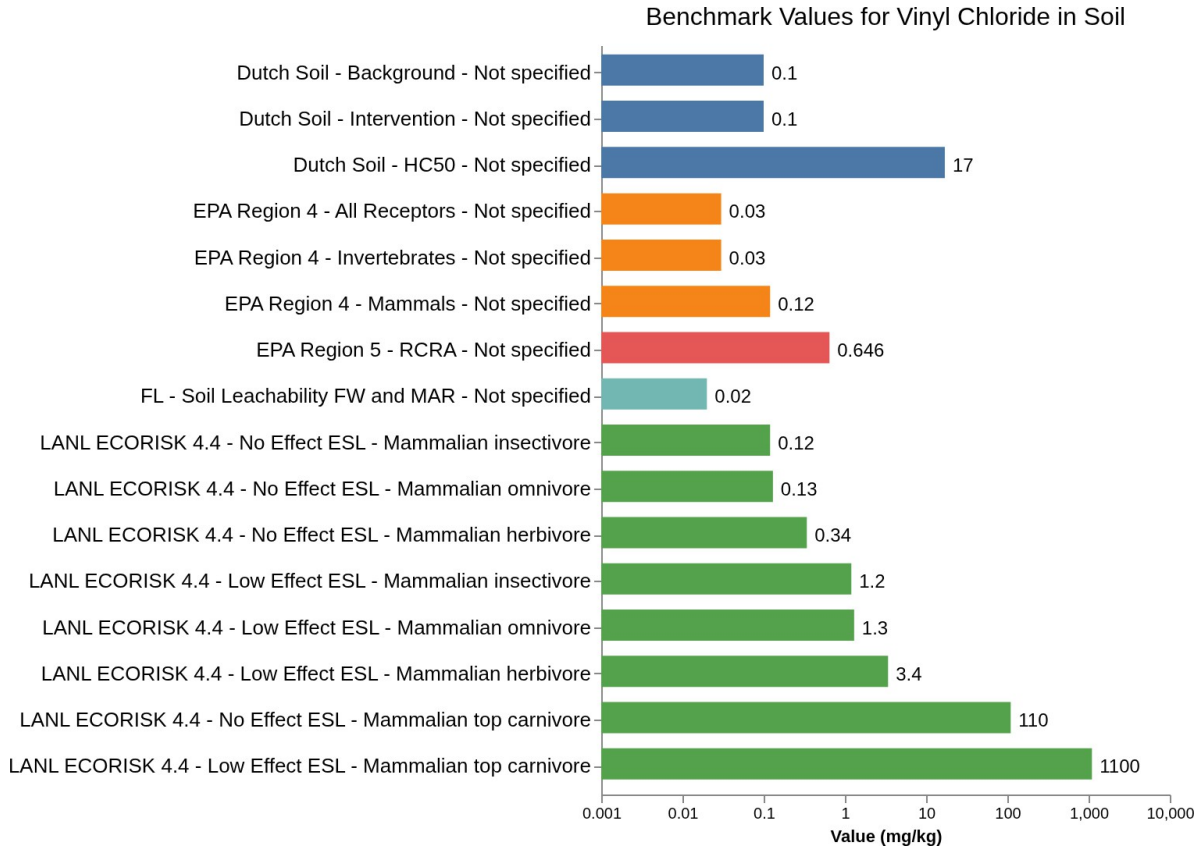


Table 533: Benchmark Values for Xylene, m− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
108−38−3	Dutch Soil Protection Act	Background	Not specified	0.45	71
108−38−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	17.00	
108−38−3	Dutch Soil Protection Act	Intervention Value	Not specified	17.00	

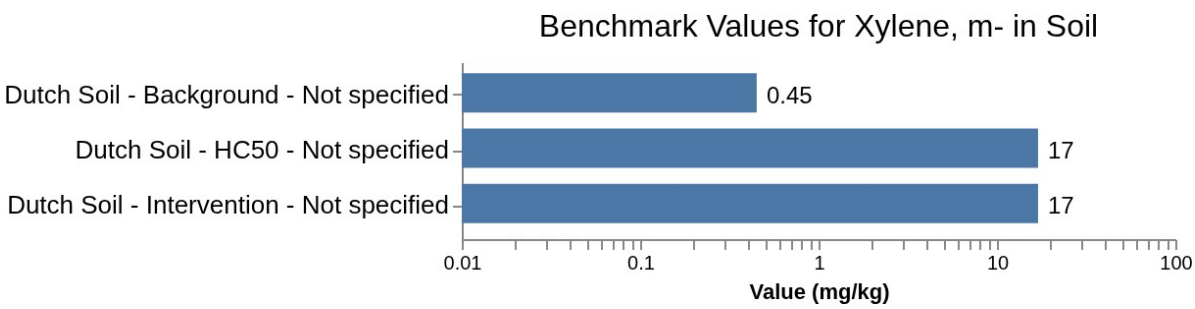


Table 534: Benchmark Values for Xylene, o− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
95−47−6	Dutch Soil Protection Act	Background	Not specified	0.45	71
95−47−6	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	17.00	
95−47−6	Dutch Soil Protection Act	Intervention Value	Not specified	17.00	

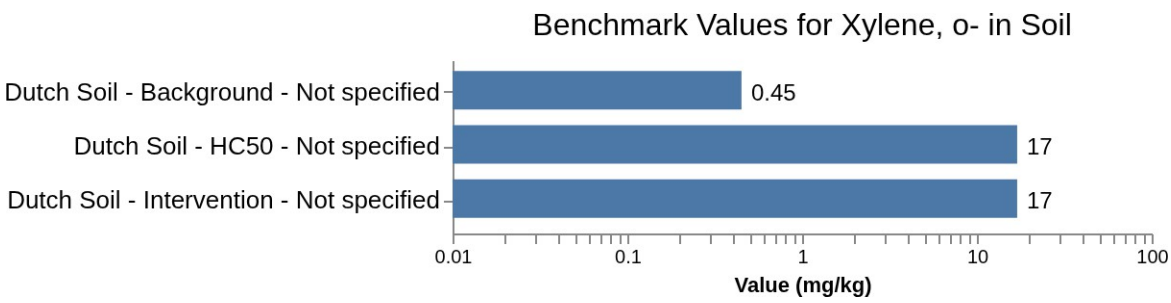


Table 535: Benchmark Values for Xylene, p− in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
106−42−3	Dutch Soil Protection Act	Background	Not specified	0.45	71
106−42−3	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	17.00	
106−42−3	Dutch Soil Protection Act	Intervention Value	Not specified	17.00	

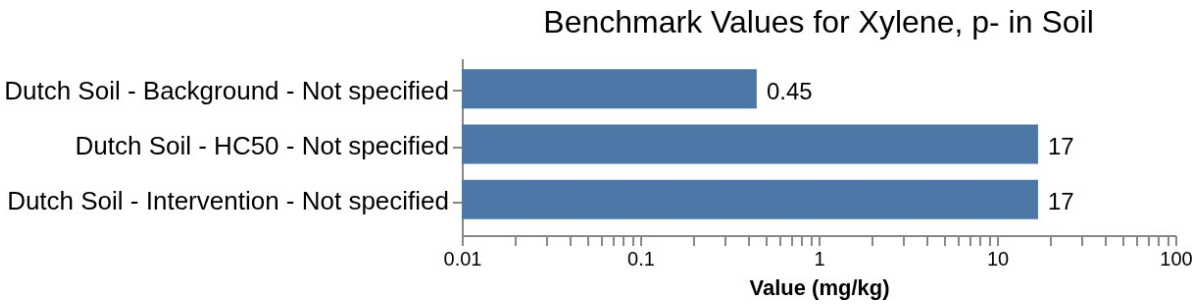


Table 536: Benchmark Values for Xylenes in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)	Footnotes
1330−20−7	Canada	Soil Residential/Parkland	Not specified		41
1330−20−7	Canada	Soil Industrial	Not specified		41
1330−20−7	Canada	Soil Commercial	Not specified		41
1330−20−7	Canada	Soil Agricultural	Not specified		41
1330−20−7	Dutch Soil Protection Act	Background	Not specified	0.45	71
1330−20−7	Dutch Soil Protection Act	Intervention Value	Not specified	17	
1330−20−7	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	17	
1330−20−7	EPA Region 4	Soil All Receptors	Not specified	0.1	
1330−20−7	EPA Region 4	Soil Invertebrates	Not specified	0.1	
1330−20−7	EPA Region 4	Soil Mammals	Not specified	1.4	
1330−20−7	EPA Region 4	Soil Avians	Not specified	41	
1330−20−7	EPA Region 4	Soil Plants	Not specified	100	
1330−20−7	EPA Region 5	EPA RCRA Soil	Not specified	10	
1330−20−7	Florida	Soil Leachability Freshwater and Marine	Not specified	3.9	
1330−20−7	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	1.4	
1330−20−7	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	1.8	
1330−20−7	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	1.9	
1330−20−7	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	2.4	
1330−20−7	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	7.6	
1330−20−7	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	9.5	
1330−20−7	LANL ECORISK	Soil No Effect ESL	Avian insectivore	41	
1330−20−7	LANL ECORISK	Soil No Effect ESL	Avian omnivore	56	
1330−20−7	LANL ECORISK	Soil No Effect ESL	Avian herbivore	89	
1330−20−7	LANL ECORISK	Soil No Effect ESL	Generic Plant	100	
1330−20−7	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	190	
1330−20−7	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	410	
1330−20−7	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	560	
1330−20−7	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	750	
1330−20−7	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	890	
1330−20−7	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	930	
1330−20−7	LANL ECORISK	Soil Low Effect ESL	Generic Plant	1000	
1330−20−7	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	1900	
1330−20−7	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	13000	
1330−20−7	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	130000	

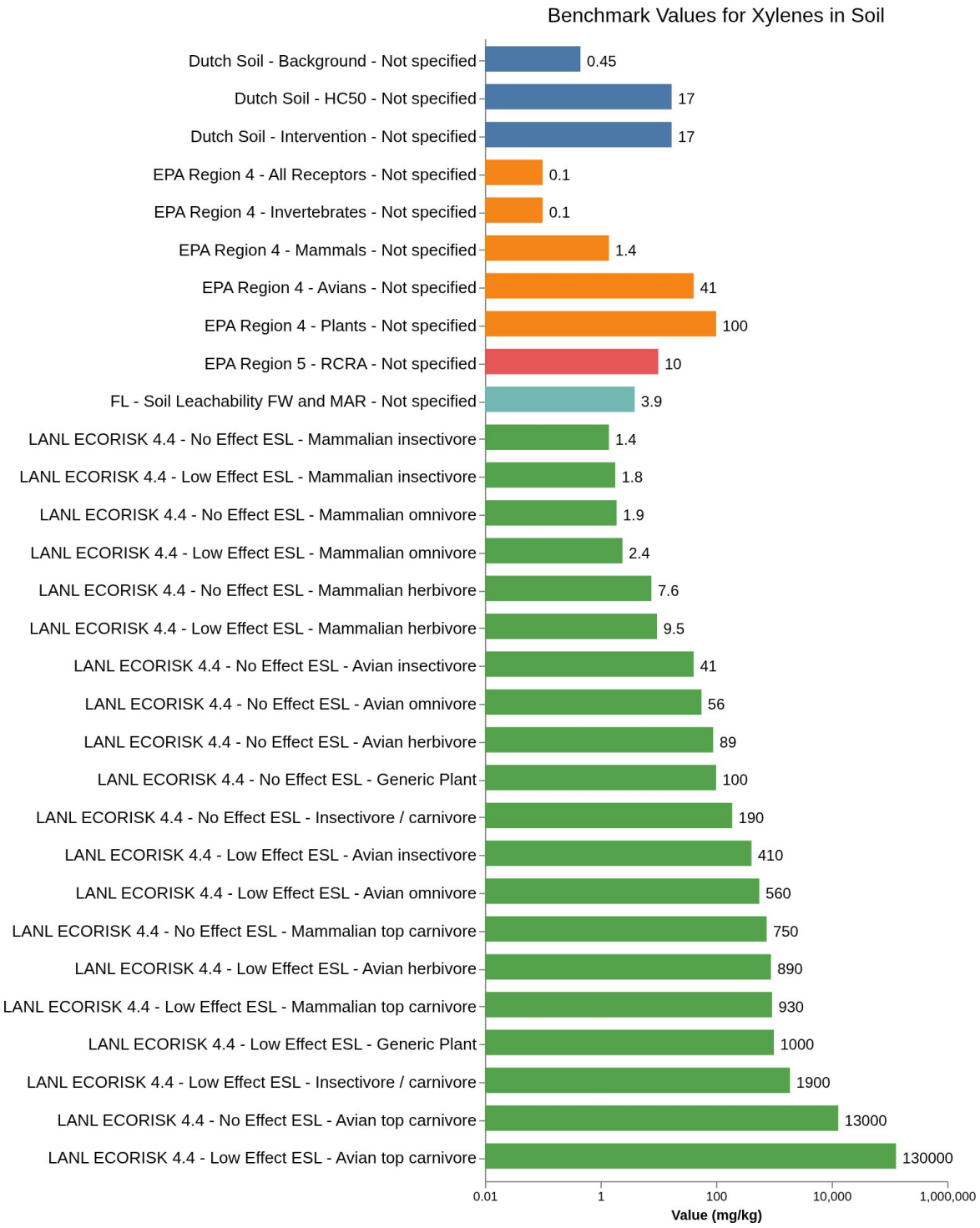

Benchmark Values for Xylenes in Soil
Dutch Soil - Background - Not specified
0.45
Dutch Soil - HC50 - Not specified
17
Dutch Soil - Intervention - Not specified
17
EPA Region 4 - All Receptors - Not specified
0.1
EPA Region 4 - Invertebrates - Not specified
0.1
EPA Region 4 - Mammals - Not specified
1.4
EPA Region 4 - Avians - Not specified
41
EPA Region 4 - Plants - Not specified
100
EPA Region 5 - RCRA - Not specified
10
FL - Soil Leachability FW and MAR - Not specified
3.9
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore
1.4
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore
1.8
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore
1.9
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore
2.4
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore
7.6
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore
9.5
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore
41
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore
56
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore
89
LANL ECORISK 4.4 - No Effect ESL - Generic Plant
100
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore
190
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore
410
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore
560
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore
750
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore
890
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore
930
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant
1000
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore
1900
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore
13000
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore
130000
0.01
1
100
10,000
1,000,000
Value (mg/kg)

Table 537: Benchmark Values for Zinc and Compounds in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
7440−66−6	Canada	Soil Agricultural	Not specified	250.00
7440−66−6	Canada	Soil Residential/Parkland	Not specified	250.00
7440−66−6	Canada	Soil Industrial	Not specified	410.00
7440−66−6	Canada	Soil Commercial	Not specified	410.00
7440−66−6	Dutch Soil Protection Act	Background	Not specified	140.00
7440−66−6	Dutch Soil Protection Act	Ecologically−based risk Limit Intervention	Not specified	350.00
7440−66−6	Dutch Soil Protection Act	Intervention Value	Not specified	720.00
7440−66−6	EPA ECO−SSL	Avian	Not specified	46.00
7440−66−6	EPA ECO−SSL	Mammalian	Not specified	79.00
7440−66−6	EPA ECO−SSL	Soil Invertebrates	Not specified	120.00
7440−66−6	EPA ECO−SSL	Plants	Not specified	160.00
7440−66−6	EPA Region 4	Soil Avians	Not specified	46.00
7440−66−6	EPA Region 4	Soil All Receptors	Not specified	46.00
7440−66−6	EPA Region 4	Soil Mammals	Not specified	79.00
7440−66−6	EPA Region 4	Soil Invertebrates	Not specified	120.00
7440−66−6	EPA Region 4	Soil Plants	Not specified	160.00
7440−66−6	EPA Region 5	EPA RCRA Soil	Not specified	6.62
7440−66−6	EPA Region 6	Soil Invertebrates	Not specified	120.00
7440−66−6	EPA Region 6	Soil Plants	Not specified	160.00
7440−66−6	LANL ECORISK	Soil No Effect ESL	Avian insectivore	47.00
7440−66−6	LANL ECORISK	Soil No Effect ESL	Avian omnivore	83.00
7440−66−6	LANL ECORISK	Soil No Effect ESL	Mammalian insectivore	99.00
7440−66−6	LANL ECORISK	Soil No Effect ESL	Soil−dwelling invertebrate	120.00
7440−66−6	LANL ECORISK	Soil Low Effect ESL	Avian insectivore	120.00
7440−66−6	LANL ECORISK	Soil No Effect ESL	Generic Plant	160.00
7440−66−6	LANL ECORISK	Soil No Effect ESL	Mammalian omnivore	170.00
7440−66−6	LANL ECORISK	Soil No Effect ESL	Insectivore / carnivore	220.00
7440−66−6	LANL ECORISK	Soil Low Effect ESL	Avian omnivore	220.00
7440−66−6	LANL ECORISK	Soil No Effect ESL	Avian herbivore	330.00
7440−66−6	LANL ECORISK	Soil Low Effect ESL	Insectivore / carnivore	590.00
7440−66−6	LANL ECORISK	Soil Low Effect ESL	Generic Plant	810.00
7440−66−6	LANL ECORISK	Soil Low Effect ESL	Avian herbivore	870.00
7440−66−6	LANL ECORISK	Soil Low Effect ESL	Soil−dwelling invertebrate	930.00
7440−66−6	LANL ECORISK	Soil Low Effect ESL	Mammalian insectivore	980.00
7440−66−6	LANL ECORISK	Soil Low Effect ESL	Mammalian omnivore	1700.00
7440−66−6	LANL ECORISK	Soil No Effect ESL	Mammalian herbivore	1800.00
7440−66−6	LANL ECORISK	Soil No Effect ESL	Avian top carnivore	2600.00
7440−66−6	LANL ECORISK	Soil Low Effect ESL	Avian top carnivore	7000.00
7440−66−6	LANL ECORISK	Soil No Effect ESL	Mammalian top carnivore	9600.00
7440−66−6	LANL ECORISK	Soil Low Effect ESL	Mammalian herbivore	18000.00
7440−66−6	LANL ECORISK	Soil Low Effect ESL	Mammalian top carnivore	94000.00
7440−66−6	ORNL	Soil Screening − Plants	Not specified	50.00
7440−66−6	ORNL	Soil Screening − Invertebrates	Not specified	100.00
7440−66−6	ORNL	Soil Screening − Microbes	Not specified	100.00
7440−66−6	UK	Soil Screening Values	Not specified	35.60
7440−66−6	Washington	Soil Wildlife	Not specified	360.00

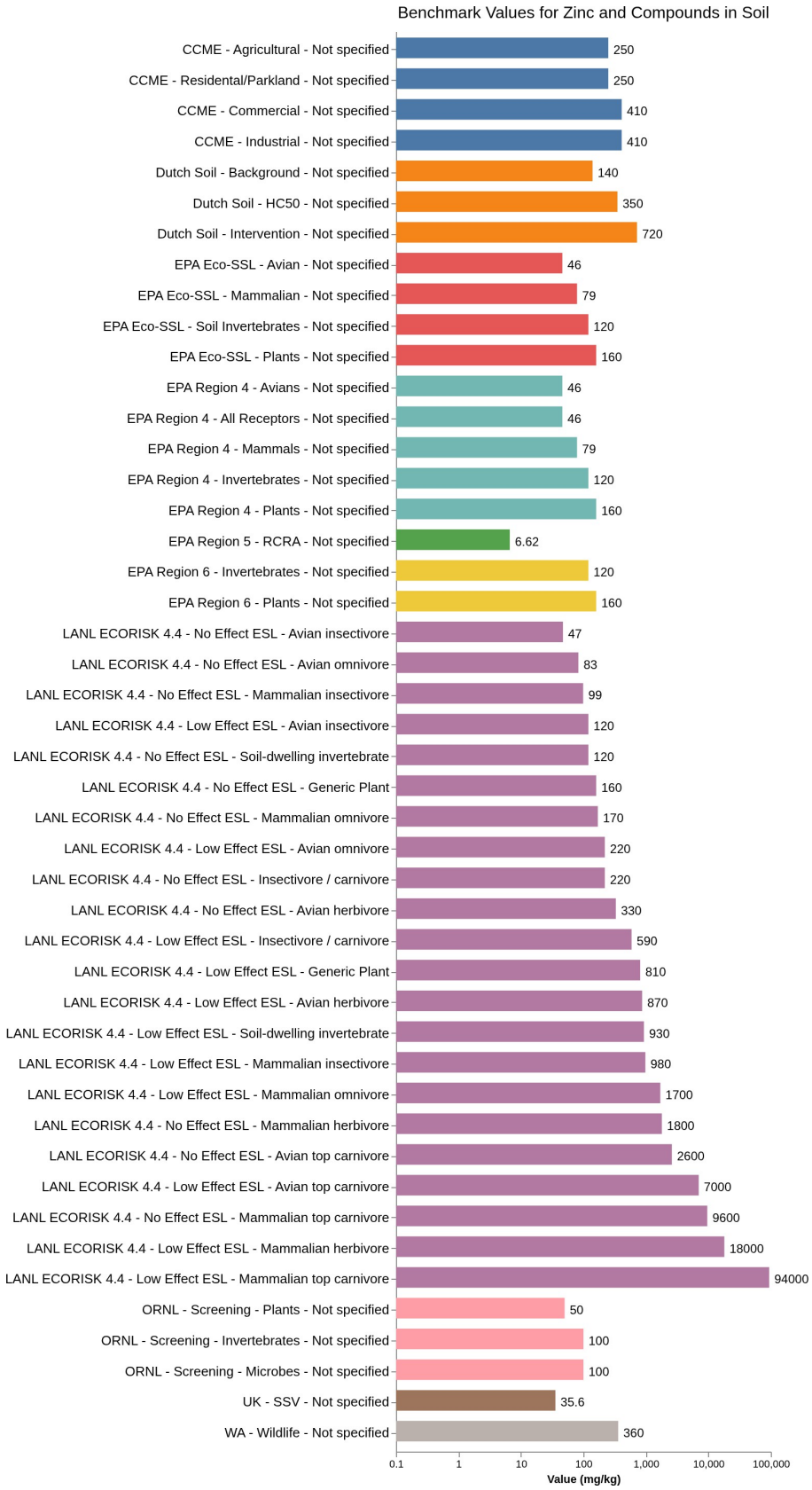
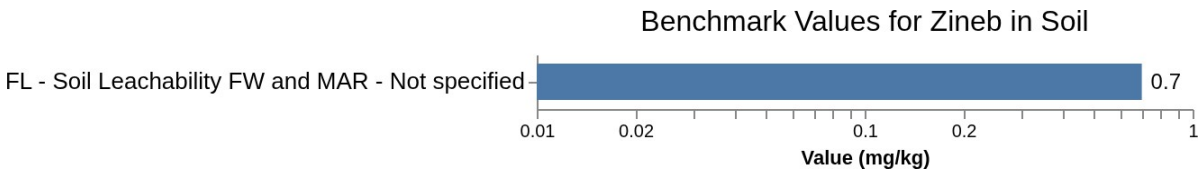

Benchmark Values for Zinc and Compounds in Soil
CCME - Agricultural - Not specified 250
CCME - Residental/Parkland - Not specified 250
CCME - Commercial - Not specified 410
CCME - Industrial - Not specified 410
Dutch Soil - Background - Not specified 140
Dutch Soil - HC50 - Not specified 350
Dutch Soil - Intervention - Not specified 720
EPA Eco-SSL - Avian - Not specified 46
EPA Eco-SSL - Mammalian - Not specified 79
EPA Eco-SSL - Soil Invertebrates - Not specified 120
EPA Eco-SSL - Plants - Not specified 160
EPA Region 4 - Avians - Not specified 46
EPA Region 4 - All Receptors - Not specified 46
EPA Region 4 - Mammals - Not specified 79
EPA Region 4 - Invertebrates - Not specified 120
EPA Region 4 - Plants - Not specified 160
EPA Region 5 - RCRA - Not specified 6.62
EPA Region 6 - Invertebrates - Not specified 120
EPA Region 6 - Plants - Not specified 160
LANL ECORISK 4.4 - No Effect ESL - Avian insectivore 47
LANL ECORISK 4.4 - No Effect ESL - Avian omnivore 83
LANL ECORISK 4.4 - No Effect ESL - Mammalian insectivore 99
LANL ECORISK 4.4 - Low Effect ESL - Avian insectivore 120
LANL ECORISK 4.4 - No Effect ESL - Soil-dwelling invertebrate 120
LANL ECORISK 4.4 - No Effect ESL - Generic Plant 160
LANL ECORISK 4.4 - No Effect ESL - Mammalian omnivore 170
LANL ECORISK 4.4 - Low Effect ESL - Avian omnivore 220
LANL ECORISK 4.4 - No Effect ESL - Insectivore / carnivore 220
LANL ECORISK 4.4 - No Effect ESL - Avian herbivore 330
LANL ECORISK 4.4 - Low Effect ESL - Insectivore / carnivore 590
LANL ECORISK 4.4 - Low Effect ESL - Generic Plant 810
LANL ECORISK 4.4 - Low Effect ESL - Avian herbivore 870
LANL ECORISK 4.4 - Low Effect ESL - Soil-dwelling invertebrate 930
LANL ECORISK 4.4 - Low Effect ESL - Mammalian insectivore 980
LANL ECORISK 4.4 - Low Effect ESL - Mammalian omnivore 1700
LANL ECORISK 4.4 - No Effect ESL - Mammalian herbivore 1800
LANL ECORISK 4.4 - No Effect ESL - Avian top carnivore 2600
LANL ECORISK 4.4 - Low Effect ESL - Avian top carnivore 7000
LANL ECORISK 4.4 - No Effect ESL - Mammalian top carnivore 9600
LANL ECORISK 4.4 - Low Effect ESL - Mammalian herbivore 18000
LANL ECORISK 4.4 - Low Effect ESL - Mammalian top carnivore 94000
ORNL - Screening - Plants - Not specified 50
ORNL - Screening - Invertebrates - Not specified 100
ORNL - Screening - Microbes - Not specified 100
UK - SSV - Not specified 35.6
WA - Wildlife - Not specified 360
0.1
1
10
100
1,000
10,000
100,000
Value (mg/kg)

Table 538: Benchmark Values for Zineb in Soil

CAS	Source	Benchmark	Organism	Value (mg/kg)
12122−67−7	Florida	Soil Leachability Freshwater and Marine	Not specified	0.7



3. CHEMICAL FOOTNOTES

1. Screening value is for filtered (dissolved) metals. A conversion factor (CF) was used to convert the screening value for total metals in surface water to a screening value for dissolved metals in surface water. CMC (dissolved) = CMC (total) × CF.
2. The freshwater screening value is hardness dependent. The screening value shown is for dissolved metals assuming a hardness of 50 mg/L as CaCO3. See Table 1C for screening values for varying degrees of water hardness.
3. Freshwater criteria for pentachlorophenol are pH Dependent. Values displayed are for a pH of 7.8.
4. Criteria for ammonia are pH, temperature, and lifestage dependent.
5. Selenium concentrations in water do not reflect dietary sources to aquatic life and screening against these numbers may not be adequately protective.
6. pH of 6.5−9.0
7. Bioaccumulative chemical
8. Sum for the Toxic Unit Approach. (See Table 2c at Region 4 Ecological Risk Assessment Supplemental Guidance)
9. Total value for Low Molecular Weight PAHs.
10. Total value for High Molecular Weight PAHs.
11. Subject to a narrative assessment. See Region 4 Ecological Risk Assessment Supplemental Guidance.
12. For hardness−dependent metals, freshwater chronic criteria are based on soft water with a total hardness of 50 mg/L as CaCO3. Soft water is common within Region 5; this water ESL may be recalculated when site specific water hardness is less than 50 mg/L.
13. Freshwater criteria for pentachlorophenol are pH Dependent. Values displayed are for a pH of 6.5.
14. The freshwater BTAG for Hydrazine depends on the hardness level. For hardness < 50, the BTAG is 5 ug/L. For hardness => 50, the BTAG is 10 ug/L.
15. Potential ecological risks associated with aluminum in soils are based on the measured soil pH. Where aluminum is a COC, it should only be retained for those soils with a pH less than 5.5. U.S. EPA. 2003. Ecological soil screening level for aluminum. Interim final. OSWER directive 9285.7−60. Washington.
16. Iron is not expected to be toxic to plants in well−aerated soils between pH 5 and 8. Importance is based less on its direct chemical toxicity than on its effect as a mediator in the geochemistry of other toxic metals and the physical hazard of depositing flocculent. EPA. 2003. Ecological soil screening levels for iron. Interim final. OSWER directive 9285.7−69. Washington.
17. When benchmarks represent the sum of individual compounds, isomers, or groups of congeners, and the chemical analysis indicates an undetected value, the proxy value specified at 30 TAC 350.51(n) shall be used for calculating the sum of the respective compounds, isomers, or congeners. This assumes that the particular COC has not been eliminated in accordance with the criteria at 350.71(k).
18. The low molecular weight PAH benchmark is to be compared to the sum of the concentrations of the following compounds: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, and 2−methyl naphthalene. The PAH benchmark is not the sum of the corresponding benchmarks listed for the individual compounds.
19. The high molecular weight PAH benchmark is to be compared to the sum of the concentrations of the following compounds: fluoranthene, pyrene, benz(a)anthracene, chrysene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluroanthene, indeno(1,2,3−cd)pyrene, benzo(g,h,i)perylene, and dibenzo(a,h)anthracene. The PAH benchmark is not the sum of the corresponding benchmarks listed for the individual compounds.
20. Total PAH refers to the sum of the concentrations of each of low and high molecular weight PAHs listed above and any other PAH compounds that are not eliminated in accordance with 30 TAC 350.71(k). The benchmarks for total PAHs are the most relevant in evaluating risk in an ERA, as PAHs almost always occur as mixtures. Values for individual, low molecular weight, and high molecular weight PAHs are included as guidelines to aid in the determination of disproportionate concentrations within the mixture that may be masked by the total.
21. Indicates that the benchmarks are for the dissolved portion in water.
22. Value was reported as greater than the listed number.

23. Value was reported as less than the listed number.
24. These values are estimates. Methods of estimation are described in Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision.
25. A range of 0.8 to 4.0 ug/L was reported.
26. The chronic NAWQC for mercury (0.012 μg/L) is based on the final residue value. FCVs are used as benchmarks to protect aquatic life.
27. The chronic NAWQC for DDT (0.001 μg/L), total PCBs (0.014 μg/L), and heptachlor (0.0038 μg/l) are based on the final residue values; for benchmarks to protect aquatic life, we use SCVs.
28. Units are in mg/Kg dry weight.
29. These values are estimates. Methods of estimation are described in the reference.
30. Study LC50s were used rather than species mean LC50s, so water hardness would correspond to EC20 values.
31. Benchmarks are based on tests that are not standard but are judged to be of high quality.
32. The value's sediment quality assessment guidelines (SQAGs) are within a factor of three of the probable effects level (PEL).
33. These values have a presumed maximum TOC of 10% (0.1) applied to the values from the source for use in comparing to bulk sediment data. If the TOC in measured data is less than 10%, adjust values accordingly.
34. These values have a presumed TOC of 1% (0.01) applied to the values from the source for use in comparing to bulk sediment data.
35. See Methylmercury.
36. Consult the 2010 Polycyclic Aromatic Hydrocarbons factsheet or the 2010 PAH Scientific Supporting Document for guidance.
37. Surface Coarse 0.082 mg/kg. Surface Fine 0.018 mg/kg. Subsoil Coarse 0.082 mg/kg. Subsoil Fine 0.018 mg/kg.
38. Coarse Soil Guideline 4.6 mg/kg. Fine Soil Guideline 5.6 mg/kg. Coarse Soil Human health soil quality guideline 4.6 mg/kg. Fine Soil Human health soil quality guideline 4.6 mg/kg, Coarse Soil Environmental soil quality guideline 7.7 mg/kg. Fine Soil Environmental soil quality guideline 190 mg/kg.
39. SQGF Coarse 0.49 mg/kg. SQGF Fine 6.5 mg/kg.
40. Surface Coarse 0.37 mg/kg. Surface Fine 0.08 mg/kg. Subsoil Coarse 0.37 mg/kg. Subsoil Fine 0.08 mg/kg.
41. Surface Coarse 11 mg/kg. Surface Fine 2.4 mg/kg. Subsoil Coarse 11 mg/kg. Subsoil Fine 2.4 mg/kg.
42. 10−5 Incremental Risk − Surface Coarse 0.030 mg/kg. 10−5 Incremental Risk − Surface Fine 0.0068 mg/kg. 10−5 Incremental Risk − Subsoil Coarse 0.030 mg/kg. 10−5 Incremental Risk − Subsoil Fine 0.0068 mg/kg. 10−6 Incremental Risk − Surface Coarse 0.030 mg/kg. 10−6 Incremental Risk − Surface Fine 0.0068 mg/kg. 10−6 Incremental Risk − Subsoil Coarse 0.030 mg/kg. 10−6 Incremental Risk − Subsoil Fine 0.0068 mg/kg.
43. SQGF Coarse 6.5 mg/kg. SQGF Fine 21 mg/kg.
44. 10−5 Incremental Risk − Surface Coarse 0.030 mg/kg. 10−5 Incremental Risk − Surface Fine 0.0068 mg/kg. 10−5 Incremental Risk − Subsoil Coarse 0.030 mg/kg. 10−5 Incremental Risk − Subsoil Fine 0.0068 mg/kg. 10−6 Incremental Risk − Surface Coarse 0.0095 mg/kg. 10−6 Incremental Risk − Surface Fine 0.0068 mg/kg. 10−6 Incremental Risk − Subsoil Coarse 0.011 mg/kg. 10−6 Incremental Risk − Subsoil Fine 0.0068 mg/kg.
45. This value was derived using TEFs. See the fact sheet for supporting documentation.
46. 500 μg/L for blackberries; 500−1000 μg/L for peaches, cherries, plums, grapes, cowpeas, onions, gar- lic, sweet potatoes, wheat barley, sunflowers, mung beans, sesame, lupins, strawberries, Jerusalem arti- chokes, kidney beans, and lima beans; 1000−2000 μg/L for red peppers, peas, carrots, radishes, potatoes, and cucumbers; 2000−4000 μg/L for lettuce, cabbage, celery, turnips, Kentucky bluegrass, oats, corn, artichokes, tobacco, mustard, clover, squash, and muskmelons; 4000−6000 μg/L for sorghum, tomatoes, alfalfa, purple vetch, parsley, red beets, and sugar beets; 6000 μg/L for asparagus.
47. Foliar: 100−178 mg/L for almond apricots and plums; 178−355 mg/L for grapes, peppers, potatoes and tomatoes; 355−710 mg/L for alfalfa, barley, corn, and cucumbers; >710 mg/L for cauliflower, cotton, safflower, sesame, sorghum, sugar beets, and sunflowers. Rootstocks: 180−600 mg/L for stone fruit (peaches, plums, etc.); 710−900 mg/L for grapes. Cultivars: 110−180 mg/L for strawberries, 230−460 mg/L for grapes, 250 mg/L for boysenberries, blackberries, and raspberries.

48. 200 μg/L for cereals, 1000 μg/L for tolerant crops.
49. The concentration should not exceed 10 μg/L for continuous use on all soils or 50 μg/L for short−term use on acidic soils.
50. 20 μg/L for continuous use on all soils, 50 μg/L for intermittent use on all soils.
51. 500 mg/L for strawberries, raspberries, beans, and carrots. 500−800 mg/L for boysenberries, currants, blackberries, gooseberries, plums, grapes, apricots, peaches, pears, cherries, apples, onions, parsnips, radishes, peas, pumpkins, lettuce, peppers, muskmelons, sweet potatoes, sweet corn, potatoes, celery, cabbage, kohlrabi, cauliflower, cowpeas, broadbeans, flax, sunflowers, and corn. 800−1500 mg/L for spinach, cantaloupe, cucumbers, tomatoes, squash, brussels, sprouts, broccoli, turnips, smooth brome, alfalfa, big trefoil, beardless wildrye, vetch, timothy, and crested wheat grass. 1500−2500 mg/L for beets, zucchini, rape, sorghum, oat hay, wheat hay, mountain brome, tall fescue, sweet clover, reed canary grass, birdsfoot trefoil, perennial ryegrass. 3500 mg/L for asparagus, soybeans, safflower, oats, rye, wheat, sugar beets, barley, barley hay, and tall wheat grass.
52. 1000 μg/L when soil pH < 6.5. 5000 μg/L when soil pH > 6.5.
53. 500 μg/L for sheep, 1000 μg/L for cattle, 5000 μg/L for swine and poultry.
54. The maximum concentration in livestock drinking water should not exceed 2000 μg/L, or 1000 μg/L in cases where the feed of animals contains fluoride.
55. The short−term benchmark concentration of 1.0 μg·L−1 is for waters of 50 mg CaCO3·L−1 hardness. The short−term benchmark for cadmium is related to water hardness (as CaCO3): When the water hardness is 0 to < 5.3 mg/L, the short−term benchmark is 0.11 μg/L. At hardness ≥ 5.3 to ≤ 360 mg/L, the short−term benchmark is calculated using this equation: Short−term benchmark (μg/L) = 10{1.016(log[hardness]) –1.71 }. At hardness > 360 mg/L, the short−term benchmark is 7.7 μg/L.
56. Benchmark = exp(0.878[ln(hardness)] + 4.76), where the benchmark is expressed in dissolved manganese concentration (μg/L), and hardness is measured as CaCO3 equivalents in mg/L.
57. 5 μg/L if pH < 6.5. 100 μg/L if pH ≥6.5.
58. The CWQG for cadmium (i.e., long−term guideline) of 0.09 μg·L−1 is for waters of 50 mg CaCO3·L−1 hardness. The CWQG for cadmium is related to water hardness (as CaCO3): When the water hardness is > 0 to < 17 mg/L, the CWQG is 0.04 μg/L. At hardness ≥ 17 to ≤ 280 mg/L, the CWQG is calculated using this equation: CWQG (μg/L) = 10{0.83(log[hardness]) – 2.46 }. At hardness > 280 mg/L, the CWQG is 0.37 μg/L.
59. The CWQG for copper is related to water hardness (as CaCO3): When the water hardness is 0 to < 82 mg/L, the CWQG is 2 μg/L. At hardness ≥82 to ≤180 mg/L the CWQG is calculated using this equation: CWQG (μg/L) = 0.2 * e{0.8545[ln(hardness)]−1.465}. At hardness >180 mg/L, the CWQG is 4 μg/L. If the hardness is unknown, the CWQG is 2 μg/L.
60. The CWQG for lead is related to water hardness (as CaCO3): When the hardness is 0 to ≤ 60 mg/L, the CWQG is 1 μg/L. At hardness >60 to ≤ 180 mg/L the CWQG is calculated using this equation: CWQG (μg/L)= e{1.273[ln(hardness)]−4.705}. At hardness >180 mg/L, the CWQG is 7 μg/L. If the hardness is unknown, the CWQG is 1 μg/L.
61. The CWQG for manganese (i.e., long−term guideline) is found using the CWQG calculator in Appendix B of the Scientific Criteria Document for the Development of the Canadian Water Quality Guidelines for the Protection of Aquatic Life: Manganese.
62. The CWQG for nickel is related to water hardness (as CaCO3): When the water hardness is 0 to ≤ 60 mg/L, the CWQG is 25 μg/L. At hardness > 60 to ≤ 180 mg/L the CWQG is calculated using this equation: CWQG (μg/L) = e{0.76[ln(hardness)]+1.06}. At hardness >180 mg/L, the CWQG is 150 μg/L. If the hardness is unknown, the CWQG is 25 μg/L.
63. Canadian Guidance Framework for Phosphorus is for developing phosphorus guidelines (does not provide guidance on other freshwater nutrients). It provides Trigger Ranges for Total Phosphorus (μg/L) (see Guidance Framework for Phosphorus factsheet): ultra−oligotrophic <4, oligotrophic 4−10, mesotrophic 10−20, meso−eutrophic 20−35, eutrophic 35−100, hyper−eutrophic >100.
64. The long−term CWQG is for dissolved zinc and is calculated using the following equation: CWQG = exp(0.947[ln(hardness mg·L−1)] − 0.815[pH] + 0.398[ln(DOC mg·L−1)] + 4.625). The short−term benchmark is for dissolved zinc and is calculated using the following equation: Benchmark = exp(0.833[ln(hardness mg·L−1)] + 0.240[ln(DOC mg·L−1)] + 0.526).
65. Supporting documents are available from the Canadian Council of Ministers of the Environment.
66. The listed values are dry weight.

67. This is a reactive species.
68. Guideline is crop−specific: Cereals and hay value is 46 ug/L and Legumes value is 93 ug/L, per the British Columbia data catalog.
69. Active ingredient WQG is 490 ug/L per the British Columbia data catalog.
70. Guildline is crop−specific. The value listed of 0.071 ug/L applies to crops other than cereals, hay, and pastures (e.g., tomato). The value of 3.3 ug/L applies to cereals, hay, and pastures per the British Columbia data catalog.
71. The contents of the measured substances are lower than the Intervention Value for soil, not being the bed or bank of a surface water body, and for organic substances: msPAF < 20%
72. The contents of the measured substances are lower than the Intervention Value for soil, not being the bed or bank of a surface water body, and for metals: msPAF < 50%, with a maximum content for cadmium.
73. This value is a so−called 'Indicative Level'. No reliable Intervention Value could be derived. Indicative Levels are based on the same principles as Intervention Values but have a lower status.
74. This is organic mercury.
75. The three types of dihydroxybenzenes are catechol, resorcinol, and hydroquinone.
76. This chemical was given a value 50 mg/kg for falling under the monochloroanilines category.
77. This chemical was given a value of 50 mg/kg for falling under the dichloroanilines category.
78. This chemical was given a value of 10 mg/kg for falling under the trichloroanilines category.
79. This chemical was given a value of 30 mg/kg for falling under the tetrachloroanilines category.
80. This chemical was given a value of 10 mg/kg for falling under the pentachloroanilines category.
81. The listed value is valid when Aluminum's pH is greater than 6.5. If the pH is less than 6.5, then it has an unknown LOSP value of 0.0008 mg/kg.
82. The Marine Water value was blank from the source, but the Freshwater value is presented as a reference. For other chemical benchmarks from this source, the Freshwater value is often recommended as a cau- tionary substitute for Marine Waters.
83. The toxicant reliability of these values is unknown.
84. The toxicant reliability of these values is very low.
85. The toxicant reliability of these values is very high.
86. The toxicant reliability of these values is high.
87. The toxicant reliability of these values is low.
88. The toxicant reliability of these values is moderate.
89. Recommended for application for slightly to moderately disturbed ecosystems. If the LOSP 99 is recommended, it is due to the bioaccumulating nature of the toxicant. This application protects key species from acute and chronic toxicity.
90. Recommended for application for slightly to moderately disturbed ecosystems (to protect key species from chronic toxicity). However, this DGV may still not protect key test species from chronic toxicity (this refers to experimental chronic values or geometric mean for species).
91. DGV may be below routine limits of reporting for most commercial laboratories, although some laboratories may be able to achieve lower limits of reporting.
92. DGV may not protect key test species from acute (and chronic) toxicity.
93. Recommended for application for slightly to moderately disturbed ecosystems. Although bioaccumulation may be an issue, rapid depuration of this chemical represents a mitigating factor, and the 95% species protection DGV should provide sufficient protection for slightly−moderately disturbed systems. If local data suggest that bioaccumulation is an issue at the specific site, the 99% protection level may be more appropriate.
94. DGV may not protect key test species from chronic toxicity (this refers to experimental chronic values or geometric mean for species).
95. This value was derived from an acute toxicity dataset comprising 23 species from three taxonomic groups (but which did not include plants). As diuron is a herbicide, the value should be treated with additional caution.
96. This DGV is derived from mesocosm NOEC data. This is the only DGV available for this toxicant.

97. Bioaccumulation and secondary poisoning effects should be considered for this toxicant. To account for the bioaccumulating nature of this toxicant, it is recommended to apply the species protection level DGV that is one level above that which would normally be applied (e.g., if 95% level of species protection would normally be applied, then the 99% DGV should be used).
98. Bioaccumulation and secondary poisoning effects should be considered for this toxicant. Tainting or flavour impairment of fish flesh might occur at concentrations below the DGV. To account for the bioaccumulating nature of this toxicant, it is recommended to apply the species protection level DGV one level above that which would normally be applied (e.g., if 95% level of species protection would normally be applied, then the 99% DGV should be used). Tainting or flavour impairment of fish flesh might occur at concentrations below the DGV.
99. Bioaccumulation and secondary poisoning effects should be considered for this toxicant. Tainting or flavour impairment of fish flesh might occur at concentrations below the DGV.
100. Bioaccumulation and secondary poisoning effects should be considered for this toxicant. Tainting or flavour impairment of fish flesh might occur at concentrations below the DGV. These DGVs and the information in the corresponding DGVs technical brief for this toxicant should be used in accordance with the detailed guidance provided on the Australian and New Zealand Guidelines for Fresh and Marine Water Quality website.
101. Bioaccumulation and secondary poisoning effects should be considered for this toxicant.
102. Ammonia as total ammonia nitrogen, measured as [NH3−N] at pH 8.
103. The DGVs apply to dissolved boron and are based on data from toxicity tests conducted for a pH range of 6.8–10 and hardness range of 9.3–250 mg CaCO3/L. They supersede the ANZECC/ARMCANZ (2000) trigger values for boron in freshwater.
104. Adjust DGVs for site−specific hardness using the hardness−dependent algorithm in Warne et al. (2018).
105. Chlorine as total chlorine, measured as [Cl].
106. The copper DGVs should not be adjusted for water hardness (see Warne et al. 2018).
107. Cyanide as un−ionised HCN, measured as [CN].
108. The DGVs are expressed in terms of the active ingredient (glyphosate) and do not relate to any of the breakdown products of glyphosate. They supersede the ANZECC/ARMCANZ (2000) trigger values for glyphosate in freshwater. Commercial formulations containing glyphosate can be more toxic than glyphosate alone. The Guidelines provide guidance on how to account for formulations (Also see Warne et al. 2018).
109. Sulfide as un−ionised H2S, measured as [S].
110. The DGVs relate to metolachlor only and not any of its breakdown products.
111. The DGVs are expressed in terms of the active ingredient (metsulfuron−methyl) and do not relate to any of the breakdown products of metsulfuron−methyl. They supersede the ANZECC/ARMCANZ (2000) trigger values for metsulfuron in freshwater. These DGVs and the information in the corresponding DGVs technical brief for this toxicant should be used in accordance with the detailed guidance provided on the Australian and New Zealand Guidelines for Fresh and Marine Water Quality website, including guidance on what to do if DGVs are below analytical detection limits.
112. The value listed as the saltwater CMC represents a benchmark value, not a criterion. Data limitations precluded the development of a CCC in saltwater.
113. The listed value of 0.752 mg/L is at a pH level of 6.5 with a temperature of 20˚C. For information on other temperatures and pH levels, refer to Table 3 here.
114. The listed value of 0.000038 mg/L is a lower−bound short−term maximum for varying water hardness and an upperbound maximum of 2.80 ug/L.
115. This value is a result of a pH level of 6.7 and 10˚C. For information on other temperatures and pH levels, refer to Table 3 here.
116. The listed value of 0.4 mg/L is a maximum, where the water hardness is 10 mg/L; otherwise, use the equation: LC50 fluoride = −51.73 + 92.57 log10 (Hardness) and multiply by 0.01.
117. Dissolved Pb WQG = exp(0.514 [ln(DOC)] + 0.214[ln(hardness)] + 0. 4354)
118. The listed value of 0.06 mg/L is for a chloride concentration of less than 2; 0.12 mg/L with a chloride concentration of 2−4; 0.18 mg/L with a chloride concentration of 4−6; 0.24 mg/L of a chloride concentration of

6−8; 0.3 mg/L with a chloride concentration of 8−10; and 0.6 mg/L with a chloride concentration greater than 10.

119. Instantaneous maximum calculated from: less than or equal to 0.01102 hardness + 0.54.
120. The listed value of 0.003 mg/L is for use under non−phototoxic conditions. For use under phototoxic conditions, the value 0.00005 mg/L should be used.
121. WQG=[e⁅[0.645·ln(*DOC*)]+[2.255·ln(*hardness*)]+[1.995·*pH*]+[−0.284 ·(ln(*hardness*)·*pH*)]−9.898⁆]/3 (e.g., for a water with the following chemistry (pH = 7.5, DOC = 0.5 mg/L, hardness = 50 mg/L) the AWQG is 55 μg Al/L (total Al).
122. The listed value of 1.22 mg/L is at a pH level of 6.5 with a temperature of 20°C. For information on other temperatures and pH levels, refer to Table 27C here.
123. The listed value of 0.004 mg/L is for use under non−phototoxic conditions. For use under phototoxic conditions, the value 0.0001 mg/L should be used.
124. The listed value of 0.0001 mg/L should be used under both non−phototoxic and phototoxic conditions.
125. The listed value of 0.0000176 mg/L is a lower−bound long−term average for varying water hardness and an upperbound average of 0.457 ug/L.
126. Average of five weekly measurements taken over a 30−day period. Calculated from: less than or equal to 0.0044 hardness + 0.605.
127. When MeHg = 0.5% of THg, the listed value of 0.00002 mg/L should be used. When MeHg = 1.0% of THg, the value of 0.01 ug/L should be used. When MeHg 8.0% of THg, the value of 0.00125 ug/L should be used.
128. The listed value of 0.02 mg/L is for a chloride concentration of less than 2; 0.04 mg/L for a chloride concentration of 2−4; 0.06 mg/L for a chloride concentration of 4−6; 0.08 mg/L for a chloride concentration of 6−8; 0.10 mg/L for a chloride concentration of 8−10; and 0.20 mg/L for a chloride concentration of more than 10.
129. Guideline is for lakes where salmonids are the predominant fish species. Total phosphorus in lakes is either the spring overturn concentration, if the residence time of the epilimnetic water exceeds 6 months, or the mean epilimnetic growing season concentration, if residence time of epilimnetic water is below 6 months.
130. The listed value of 0.00002 mg/L is for use under phototoxic conditions.
131. The listed value of 0.00005 mg/L is for use when hardness is less than or equal to 100 mg/L. If hardness is greater than 100 mg/L, then use the value of 1.5 ug/L.
132. Sulfate is dependent on water hardness (mg/L). The listed value of 128 is for a water hardness of very soft (0−30). 218 is for soft to moderately soft water hardness (31−75). 309 is for moderately soft/hard to hard water hardness (76−180). 429 is for very hard water hardness (181−250). For anything greater than 250, it needs to be determined based on site water.
133. The long−term chronic WQC = [exp(0.947[ln(hardness)] − 0.815[pH] + 0.398[ln(DOC)] + 4.625)] / 2. The short−term acute WQC = [exp(0.833[ln(hardness)] + 0.240[ln(DOC)] + 0.526)] / 2.
134. Sediment containing 1% organic carbon.
135. The listed value of 11 mg/kg applies to fish egg/ovary. A value of 4 mg/kg applies to fish muscle/muscle plug, fish, whole−body, and invertebrate tissue (dietary). This is Aquatic Life− Freshwater Long−term Chronic.
136. Duration < 2 hours within 24 hour period.
137. Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride expected at that time and depth.
138. Applies to all soil types.
139. The listed value of 0.2 mg/L is for all soil types except neutral and alkaline. 400 ug/L should be used for neutral and alkaline fine textured soils.
140. The listed value is only for forage crops.
141. The listed value of 2 mg/L is for moderately sensitive crops (red pepper, pea, carrot, radish, potato, cucumber). 4 mg/L is for moderately tolerant crops (lettuce, cabbage, celery, turnip, Kentucky bluegrass, oat, corn, artichoke, tobacco, mustard, clover, squash, muskmelon). 1 mg/L is for sensitive crops (peach, cherry, plum, grape, cowpea, onion, garlic, sweet potato, wheat, barley, sunflower, mung bean, sesame, lupin, strawberry, Jerusalem artichoke, kidney bean, lima bean). 6 mg/L is for tolerant crops (sorghum, tomato,

alfalfa, purple vetch, parsley, red beet, sugar beet). 0.5 mg/L is for very sensitive crops (black- berry). 15 mg/L is for very tolerant crops (asparagus).

142. This value is for non−forage crops. A value of 0.01 mg/L is for forage crops grown in poorly drained soils, and a value of 0.02 mg/L is for forage crops grown in well drained soil.
143. The guideline for Zinc is dependent upon the pH of the soil, not the irrigation water. For Soil pH<6, the WQC is 1 mg/L. For soil pH greater than or equal to 6 and < 7, the WQC is 2. For soil pH greater then or equal to 7, the WQC is 5.
144. The listed value of 4 mg/L is for all livestock except long lived animals, such as dairy cows and breeding stock fed normal diets. A value of 2 mg/L is for all livestock fed high fluoride diets including mineral or bone meal and feed additives. A value of 1.5 mg/L is for dairy cows, breeding stock, and long−lived animals.
145. For livestock consuming forages not irrigated or if no molybdenum containing fertilizers are applied to grow the feed consumed by livestock, a value of 0.08 mg/L should be used.
146. When nitrate and nitrite are present, total nitrate plus nitrite−nitrogen should not exceed the nitrate WQG.
147. The listed value of 1 mg/L is for dairy cows, breeding stock, and long−lived animals and all animals fed high fluoride diets including mineral or bone meal and feed additives. 2 mg/L is for all livestock except for long lived animals, such as dairy cows and breeding stock fed normal diets.
148. Guideline applies to fish or shellfish consumed by wildlife.
149. The listed value of 6 mg/kg applies to bird eggs.
150. Resin acids are pH dependent. The listed value of 0.009 mg/L is valid between pH > 6.0 and <= 6.5. A value of 1 ug/L is valid at a pH of 5.0. A value of 3 ug/L is valid between a pH > 5.0 and <= 5.5. A value of 4 ug/L is valid between a pH > 5.5 and <=6.0. A value of 25 ug/L is valid between a pH > 6.5 and <=7.0. A value of 45 ug/L is valid between a pH > 7.0 and <= 7.5. A value of 52 ug/L is valid between a pH > 7.5 and <= 8.0. A value of 60 ug/L is valid between a pH > 8.0 and <= 8.5. A value of 62 ug/L is valid between a pH > 8.5 and <= 9.0. Any pH less an 5.0 a site assessment may be necessary.
151. Dehydroabietic acid (DHA) is pH dependent. The listed value of 0.004 mg/L is valid between pH > 6.0 and<= 6.5. A value of 1 ug/L is valid at a pH of 5.0. A value of 2 ug/L is valid between a pH > 5.0 and <=5.5. A value of 2 ug/L is valid between a pH > 5.5 and <=6.0. A value of 8 ug/L is valid between a pH > 6.5 and <= 7.0. A value of 12 ug/L is valid between a pH > 7.0 and <= 7.5. A value of 13 ug/L is valid between a pH > 7.5 and <= 8.0. A value of 14 ug/L is valid between a pH > 8.0 and <= 8.5. A value of 14 ug/L is valid between a pH > 8.5 and <= 9.0. Any pH less an 5.0 a site assessment may be necessary.
152. The benchmark can be greater than or equal to this value.
153. The value listed of 0.0011 mg/kg is the sum of compounds Aldrin and Dieldrin.
154. The value listed of 0.0052 mg/kg is the sum of compounds Heptachlor and Heptachlor epoxide.
155. The value listed of 0.021 mg/kg is the sum of Hexachlorocyclohexanes isomers.
156. The value listed of 0.25 mg/kg is the sum of Trichlorobenzenes isomers.
157. Hardness−dependent ambient water quality criterion (100 mg/L as CaCO3 used).
158. Value is for total of all chemical forms.
159. pH−dependent ambient water quality criterion (7.8 pH used).
160. These lowest effect levels are based on 10% of the screening level concentration instead of the default value of 5%.
161. These severe effect levels are based on 90% of the screening level concentration instead of the default value of the 95%.
162. Values are tentative guidelines.
163. Aluminum is pH dependent.
164. There is a duplicate row with higher values in the source.
165. Values are the same for Arsenic dissolved and Arsenic total recoverable.
166. Mercury dissolved value is listed. Total Recoverable value is 0.0034 mg/L.
167. The value listed is for Warm Water Habitat (WWH), Exceptional Warm Water Habitat (EWH), Modified Warm Water Habitat (MWH), Cold Water Habitat (CWH), and Limited Resource Water (LRW). For Seasonal Salmonid Habitat (SSH), no chlorine is to be discharged.
168. Mercury dissolved value is listed. Total Recoverable value is 0.0017 mg/L.

169. The value listed is for Warm Water Habitat (WWH), Exceptional Warm Water Habitat (EWH), Modified Warm Water Habitat (MWH), and Cold Water Habitat (CWH). For Seasonal Salmonid Habitat (SSH), no chlorine is to be discharged.
170. Mercury dissolved value is listed. Total Recoverable value is 0.00091 mg/L. Lake Erie Basin Total Recoverable value is 0.0000013 mg/L.
171. Selenium dissolved value is listed. Total Recoverable value is 0.005 mg/L.
172. The listed value is for Warm Water Habitat (WWH), Exceptional Warm Water Habitat (EWH), and Modified Warm Water Habitat (MWH).
173. The listed value is for Seasonal Salmonid Habitat (SSH) and Cold Water Habitat (CWH).
174. Ammonia's value is pH dependent. For Warm Water Habitat (WWH), Modified Warm Water Habitat (MWH), and Limited Resource Habitat (LRW), pH ranges between 6.5 − 7.7 with a temperature between 0C and 26C the value of 13 mg/L should be used. All other pH levels and temperatures should be referenced in Table 35−2. Link to the tables is here.
175. For Exceptional Warm Water Habitats (EWH) with a pH range of 6.5 − 7.4 and a temperature between 0C and 25C, the value of 13 mg/L should be used. All other pH levels and temperatures should be referenced in Table 35−3. Link to the tables is here.
176. For Cold Water Habitat (CWH) and Seasonal Salmonid Habitat (SSH) with a pH range of 6.5 − 7.4 and a temperature between 0C and 20C, the value of 13 mg/L should be used. All other pH levels and temperatures should be referenced in Table 35−4. Link to the tables is here.
177. Pentachlorophenol is pH dependent. The listed value of 0.011 mg/L is for a pH level of 7.5. For other pH levels, refer to Table 35−10. Link to the tables is here.
178. Cadmium is water hardness dependent. The listed value is for a water hardness of 100. For other hardness levels and forms, see Table 35−9. Link to the tables is here.
179. Chromium is water hardness dependent. The listed value is for a water hardness of 100. For other hardness levels and forms, see Table 35−9 here.
180. In addition, any whole sample of any representative aquatic organisms shall not exceed 0.64 mg/kg (wet weight).
181. Ammonia's value is pH dependent. For Warm Water Habitat (WWH) with pH ranges between 6.5 − 7.7 with a temperature between 10C and 14C, and during the months of March to November the value of 2.3 mg/L should be used. All other pH levels, temperatures, and months should be referenced in Table 35−5. Link to the tables is here.
182. Ammonia's value is pH dependent. For Exceptional Warm Water Habitats (EWM) with pH ranges between6.5 − 7.7, a temperature between 10C and 13C, and during the months of March to November, the value of 2.2 mg/L should be used. All other pH levels, temperatures, and months should be referenced in Table 35−6. Link to the tables is here.
183. Ammonia's value is pH dependent. For Modified Warm Water Habitat (MWH) with pH ranges between 6.5 - 7.7, a temperature between 10C and 13C, and during the months of March to November, the value of 3.4 mg/L should be used. All other pH levels, temperatures, and months should be referenced in Table 35−7. Link to the tables is here.
184. Ammonia's value is pH dependent. For Cold Water Habitat (CWH) with pH ranges between 6.5 − 7.7 with a temperature between 8C and 13C, a value of 2.2 mg/L should be used. All other pH levels and temperatures should be referenced in Table 35−8. Link to the tables is here.
185. Copper is water hardness dependent. The listed value is for a water hardness of 100. For other hardness levels and forms, see Table 35−9 here.
186. Lead is water hardness dependent. The listed value is for a water hardness of 100. For other hardness levels and forms, see Table 35−9 here.
187. Nickel is water hardness dependent. The listed value is for a water hardness of 100. For other hardness levels and forms, see Table 35−9 here.
188. Zinc is water hardness dependent. The listed value is for a water hardness of 100. For other hardness levels and forms, see Table 35−9 here.
189. This criterion applies to the sum of DDT and metabolites.
190. The form of the chemical is dissolved.
191. The form of the chemical is total recoverable.
192. The form of the chemical is total.

193. The form of the chemical is total residual.
194. The form of the Cyanide is free.
195. Values enclosed by ”( )” were not calculated according to the regulations, due to limited data. These values should only be used for advisory purposes, such as establishing ”reasonable potential”.
196. Values enclosed by ”[ ]” are national criteria and should be used for advisory purposes only.
197. Values are estimates.
198. Values are pH based.
199. Criterion is expressed as a function of the Water Effect Ratio (WER). For criterion in the table, WER equates to the default value of 1.0.
200. Dissolved criterion.
201. Criteria expressed as free cyanide (as CN)/L.
202. The value listed is calculated with an assumed hardness level of 100. To calulcate additional hardness values, use the formulas provided in the document on page 34.
203. Westhollow Technical Center Levels were developed by Shell Oil for surface water and were approved for use by NJDEP with the following conditions: 1) the source area is removed, 2) these levels are on the fringe of the contamination area, and 3) active remediation is occurring. These levels are applicable to surface water and wetland areas.
204. The value listed is calculated with an assumed pH of 6.8 and temperature of 20C. For other values regarding various temperatures and pH levels, use the formulas provided in the document on page 33.
205. This value is for the total of Heptachlor/Heptachlor epoxide.
206. The benzene hexachloride (BHC) value applies to all stereoisomers of 1,2,3,4,5,6−hexachlorcyclohexane.
207. This value applies to all chlorinated dibenzofurans.
208. This value applies to all chlorinated dibenzo−p−dioxins.
209. Criteria for these metals are measured as total recoverable metal. However, they may be applied as dissolved metals when, as part of a permit application, a dissolved metals translator has been established according to the procedures described in the document, ”Guidance for Establishing a Metal Translator”, Florida Department of Environmental Protection, December 17, 2001.
210. In the absence of concentration data specific for the III and VI valence states of chromium, total chromium concentrations in surface water should be compared to the criteria for Chromium (hexavalent).
211. These values were derived assuming soil pH 6.8. These leachability values are dependent upon both the metal concentraion in soil and soil characteristics. Thus, if site−specific soil characteristics are different than the defaults, these leachability values may not apply. If this is the case, site−specific leachability values should be derived using methods such as TCLP or SPLP.
212. Phytotoxicity must be considered.
213. Unless concentrations for both chromium III and VI are known, total chromium concetrations should be compared with direct exposure SCTLs for chromium VI.
214. Expressed as dissolved.
215. Expressed as total recoverable.
216. Criteria do not apply to waters subject to water quality objectives in Tables III−2A and III−2B of the San Francisco Bay Regional Water Quality Control Board’s 1986 Basin Plan.
217. Criterion most appropriately applied to the sum of alpha−Endosulfan and beta−Endosulfan.
218. For nonchlorinated phenolic compounds.
219. For chlorinated phenolic compounds.
220. For benzene hexachloride isomers.
221. Value developed for chromium (VI); may be applied to total chromium if valence is unknown.
222. For the sum of alpha−Endosulfan, beta−Endosulfan, and Endosulfan sulfate.
223. Expressed as nitrogen.
224. For total chlorine residual.
225. For dissolved chloride associated with sodium; criterion probably will not be adequately protective when chloride is associated with potassium, calcium, or magnesium rather than sodium.
226. Expressed as free cyanide (as CN).

227. For pH between 6.5 and 9.0. Use of Water−Effects Ratios might be appropriate because: (1) aluminum is less toxic at higher pH and hardness but relationship not well quantified; (2) aluminum associated with clay particles may be less toxic than that associated with aluminum hydroxide particles; and (3) many high quality waters in U.S. exceed 87 ug/L as total or dissolved.
228. Applies to DDT and its metabolites (i.e., the total concentration of DDT and its metabolites should not exceed this value).
229. Interim.
230. This value is for ruminant livestock. For non−ruminants, use 0.284
231. See the Ecological Soil Screening Level for Aluminum, Interim Final, OSWER Directive 9285.7−60, available here
232. See the Ecological Soil Screening Level for Iron, Interim Final, OSWER Directive 9285.7−69, available here
233. The chronic freshwater−based and chronic tissue−based criteria are independently applicable and no one criterion takes primacy. The value here is for water. Other values are as follows: 0.000028 mg/kg wet weight for invertebrate whole−body tissue; 0.000201 mg/kg wet weight for fish whole−body tissue; and 0.000087 mg/kg wet weight for fish muscle tissue.
234. The chronic freshwater−based and chronic tissue−based criteria are independently applicable and no one criterion takes primacy. The value here is for water. Other values are as follows: 0.00108 mg/kg wet weight for invertebrate whole−body tissue; 0.00649 mg/kg wet weight for fish whole−body tissue; and 0.000133 mg/kg wet weight for fish muscle tissue.
235. pH 6.5−9.0
236. Criteria is for total dissolved form.
237. Freshwater criteria calculated using the EPA Biotic Ligand Model.
238. Cyanide measured as free cyanide at the lowest pH occurring in the receiving water or cyanide amenable to chlorination.
239. The one−hour average concentration of total ammonia nitrogen (in mg TAN/L) is not to exceed, more than once every three years on the average, the CMC (acute criterion magnitude) calculated using the following equation: CMC = MIN((0.275/(1+10ˆ(7.204−pH)))+(39/(1+10ˆ(pH−7.204)))), 0.7249*((0.0114/(1+10ˆ(7.204−pH)) +(1.6181/(1+10ˆ(pH−7.204)))*(23.12*10ˆ(0.036*(20−t))), where pH = pH of interest, t = temperature de- grees Celsius.
240. The thirty−day rolling average concentration of total ammonia nitrogen (in mg TAN/L) is not to exceed, more than once every three years on the average, the chronic criterion magnitude (CCC) calculated using the following equation: CCC = 0.8876*((0.0278/(1+10ˆ(7.688−pH)))+(1.1994/(1+10ˆ(pH−7.688))))* (2.126*10ˆ(0.028*(20−MAX(T) where pH = pH of interest, t = temperature degrees Celsius. In addition, the highest 4−day average within the 30−day averaging period should not be more than 2.5 times the CCC more than once in 3 years on average.
241. Value = EXPˆ(0.9789*LN(hardness)−3.866)*(1.136672−((LN(hardness)*(0.041838)))), where EXP = e =2.71828, LN = natural log base e, and hardness is expressed as mg/L as CaCO3.
242. Value = EXPˆ(0.7977*LN(hardness)−3.909)*(1.101672−((LN(hardness)*(0.041838)))), where EXP = e =2.71828, LN = natural log base e, and hardness is expressed as mg/L as CaCO3.
243. Value = 0.316*EXP(0.819*LN(hardness)+3.7256), where EXP = e =2.71828, LN = natural log base e, and hardness is expressed as mg/L as CaCO3.
244. Value = 0.86*EXP(0.819*LN(hardness)+0.6848), where EXP = e =2.71828, LN = natural log base e, and hardness is expressed as mg/L as CaCO3.
245. Value = (1.46203−LN(hardness)*0.145712)* EXP(1.273*LN(hardness)−1.460), where EXP = e =2.71828, LN = natural log base e, and hardness is expressed as mg/L as CaCO3.
246. Value = (1.46203−LN(hardness)*0.145712)* EXP(1.273*LN(hardness)−4.705), where EXP = e =2.71828, LN = natural log base e, and hardness is expressed as mg/L as CaCO3.
247. Value = 0.998*EXP(0.8460*LN(hardness)+2.255), where EXP = e =2.71828, LN = natural log base e, and hardness is expressed as mg/L as CaCO3.
248. Value = 0.997*EXP(0.8460*LN(hardness)+0.0584), where EXP = e =2.71828, LN = natural log base e, and hardness is expressed as mg/L as CaCO3.
249. Value = EXP(1.005*pH−4.869), where EXP = e =2.71828, LN = natural log base e, and hardness is expressed as mg/L as CaCO3.

250. Value = EXP(1.005*pH−5.134), where EXP = e =2.71828, LN = natural log base e, and hardness is expressed as mg/L as CaCO3.
251. Value = 0.85*EXP(1.72*LN(hardness)−6.59), where EXP = e =2.71828, LN = natural log base e, and hardness is expressed as mg/L as CaCO3.