



Agency for Toxic Substances & Disease Registry

The Priority List of Hazardous Substances That Will Be the Subject of Toxicological Profiles

What is the Substance Priority List (SPL)?



The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) section 104 (i), as amended by the Superfund Amendments and Reauthorization Act (SARA), requires ATSDR and the EPA to prepare a list, in order of priority, of substances that are most commonly found at facilities on the National Priorities List (NPL) and which are determined to pose the most significant potential threat to human health due to their known or suspected toxicity and potential for human exposure at these NPL sites. CERCLA also requires this list to be revised periodically to reflect additional information on hazardous substances.

This substance priority list is revised and published on a 2-year basis, with a yearly informal review and revision. (No list was published in 2009 while ATSDR transitioned to a new agency science database.) Each substance on the list is a candidate to become the subject of a toxicological profile prepared by ATSDR. The listing algorithm prioritizes substances based on frequency of occurrence at NPL sites, toxicity, and potential for human exposure to the substances found at NPL sites.

It should be noted that this priority list is not a list of "most toxic" substances, but rather a prioritization of substances based on a combination of their frequency, toxicity, and potential for human exposure at NPL sites.

Thus, it is possible for substances with low toxicity but high NPL frequency of occurrence and exposure to be on this priority list. The objective of this priority list is to rank substances across all NPL hazardous waste sites to provide guidance in selecting which substances will be the subject of toxicological profiles prepared by ATSDR.

Where can I find more information on the Substance Priority List?

There is a [Support Document](/SPL/resources/ATSDR_2011_SPL_Support_Document.pdf) ( [\(/SPL/resources/ATSDR_2011_SPL_Support_Document.pdf\)](/SPL/resources/ATSDR_2011_SPL_Support_Document.pdf)) to the Priority List of Hazardous Substances that describes in detail how the list is developed. There is also a [Detailed Data Table](/resources/ATSDR_2011_SPL_Detailed_Data_Table.pdf) ( [\(/resources/ATSDR_2011_SPL_Detailed_Data_Table.pdf\)](/resources/ATSDR_2011_SPL_Detailed_Data_Table.pdf)) showing the breakdown of the total scores for each substance on the priority list. These documents and other supporting information are available on the [Substance Priority List Resource Page](/resources/index.html) ([resources/index.html](/resources/index.html)).

The ATSDR 2011 Substance Priority List

2011 RANK	SUBSTANCE NAME	TOTAL POINTS	2007 RANK	CAS RN
1	ARSENIC	1665.5	1	007440-38-2
2	LEAD	1529.1	2	007439-92-1
3	MERCURY	1460.9	3	007439-97-6
4	VINYL CHLORIDE	1361.1	4	000075-01-4

5	POLYCHLORINATED BIPHENYLS	1344.1	5	001336-36-3
6	BENZENE	1332.0	6	000071-43-2
7	CADMIUM	1318.7	7	007440-43-9
8	BENZO(A)PYRENE	1305.7	9	000050-32-8
9	POLYCYCLIC AROMATIC HYDROCARBONS	1282.3	8	130498-29-2
10	BENZO(B)FLUORANTHENE	1252.4	10	000205-99-2
11	CHLOROFORM	1207.5	11	000067-66-3
12	AROCLOR 1260	1190.0	14	011096-82-5
13	DDT, P,P'-	1183.0	12	000050-29-3
14	AROCLOR 1254	1171.7	13	011097-69-1
15	DIBENZO(A,H)ANTHRACENE	1155.2	15	000053-70-3
16	TRICHLOROETHYLENE	1151.1	16	000079-01-6
17	CHROMIUM, HEXAVALENT	1146.6	18	018540-29-9
18	DIELDRIN	1143.1	17	000060-57-1
19	PHOSPHORUS, WHITE	1141.9	19	007723-14-0
20	HEXACHLOROBUTADIENE	1128.5	22	000087-68-3
21	DDE, P,P'-	1127.2	21	000072-55-9
22	CHLORDANE	1126.4	20	000057-74-9
23	COAL TAR CREOSOTE	1124.8	23	008001-58-9
24	AROCLOR 1242	1123.8	29	053469-21-9
25	ALDRIN	1115.8	24	000309-00-2
26	DDD, P,P'-	1114.2	25	000072-54-8
27	AROCLOR 1248	1103.9	27	012672-29-6
28	HEPTACHLOR	1101.1	34	000076-44-8
29	AROCLOR	1099.4	30	012767-79-2
30	BENZIDINE	1090.6	26	000092-87-5
31	ACROLEIN	1088.5	37	000107-02-8
32	TOXAPHENE	1087.7	31	008001-35-2
33	TETRACHLOROETHYLENE	1077.4	33	000127-18-4
34	HEXACHLOROCYCLOHEXANE, GAMMA-	1074.7	32	000058-89-9
35	CYANIDE	1071.9	28	000057-12-5
36	HEXACHLOROCYCLOHEXANE, BETA-	1053.5	36	000319-85-7
37	BENZO(A)ANTHRACENE	1047.6	39	000056-55-3
38	DICHLORODIBENZO(A,H)ANTHRACENE	1047.6	38	000056-55-3

30	DISULFOTON	1047.2	30	000290-04-4
39	1,2-DIBROMOETHANE	1041.9	35	000106-93-4
40	ENDRIN	1038.3	41	000072-20-8
41	DIAZINON	1036.7	56	000333-41-5
42	HEXACHLOROCYCLOHEXANE, DELTA-	1034.8	43	000319-86-8
43	BERYLLIUM	1032.7	42	007440-41-7
44	ENDOSULFAN	1028.0	54	000115-29-7
45	AROCLOR 1221	1027.1	48	011104-28-2
46	1,2-DIBROMO-3-CHLOROPROPANE	1025.8	44	000096-12-8
47	HEPTACHLOR EPOXIDE	1021.4	46	001024-57-3
48	ENDOSULFAN, ALPHA	1018.4	57	000959-98-8
49	CIS-CHLORDANE	1016.1	59	005103-71-9
50	CARBON TETRACHLORIDE	1015.5	47	000056-23-5
51	AROCLOR 1016	1011.9	51	012674-11-2
52	COBALT	1010.9	49	007440-48-4
53	PENTACHLOROPHENOL	1009.0	45	000087-86-5
54	DDT, O,P'-	1007.9	50	000789-02-6
55	METHOXYCHLOR	1006.3	61	000072-43-5
56	ENDOSULFAN SULFATE	1003.9	55	001031-07-8
57	NICKEL	998.7	53	007440-02-0
58	DI-N-BUTYL PHTHALATE	997.3	52	000084-74-2
59	ENDRIN KETONE	992.0	63	053494-70-5
60	DIBROMOCHLOROPROPANE	983.0	60	067708-83-2
61	BENZO(K)FLUORANTHENE	972.2	62	000207-08-9
62	XYLENES, TOTAL	969.2	58	001330-20-7
63	TRANS-CHLORDANE	968.3	64	005103-74-2
64	ENDOSULFAN, BETA	967.6	67	033213-65-9
65	CHLORPYRIFOS	963.9	127	002921-88-2
66	CHROMIUM(VI) TRIOXIDE	960.0	65	001333-82-0
67	AROCLOR 1232	958.2	68	011141-16-5
68	ENDRIN ALDEHYDE	957.7	69	007421-93-4
69	METHANE	953.4	66	000074-82-8
70	2-HEXANONE	941.4	72	000591-78-6
71	2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	940.9	73	001746-01-6

72	3,3'-DICHLOROBENZIDINE	940.6	40	000091-94-1
73	BENZOFUORANTHENE	935.7	70	056832-73-6
74	TOLUENE	924.1	71	000108-88-3
75	ZINC	919.1	74	007440-66-6
76	DI(2-ETHYLHEXYL)PHTHALATE	908.0	76	000117-81-7
77	PENTACHLOROBENZENE	906.8	155	000608-93-5
78	CHROMIUM	897.5	77	007440-47-3
79	AROCLOR 1240	888.3	81	071328-89-7
80	NAPHTHALENE	881.4	78	000091-20-3
81	1,1-DICHLOROETHENE	879.5	79	000075-35-4
82	2,4,6-TRINITROTOLUENE	877.5	82	000118-96-7
83	2,4,6-TRICHLOROPHENOL	866.4	86	000088-06-2
84	BIS(2-CHLOROETHYL) ETHER	866.3	88	000111-44-4
85	BROMODICHLOROETHANE	866.2	83	000683-53-4
86	METHYLENE CHLORIDE	865.6	80	000075-09-2
87	DDD, O,P'-	865.6	151	000053-19-0
88	HYDRAZINE	860.8	84	000302-01-2
89	2,4-DINITROPHENOL	858.4	87	000051-28-5
90	4,4'-METHYLENEBIS(2-CHLOROANILINE)	857.2	152	000101-14-4
91	1,2-DICHLOROETHANE	853.6	85	000107-06-2
92	THIOCYANATE	845.8	89	000302-04-5
93	HEXACHLOROBENZENE	844.3	93	000118-74-1
94	ASBESTOS	841.4	90	001332-21-4
95	RADIUM-226	833.3	95	013982-63-3
96	RDX (CYCLOTRIMETHYLENETRINITRAMINE)	831.8	92	000121-82-4
97	URANIUM	831.8	98	007440-61-1
98	2,4-DINITROTOLUENE	831.2	94	000121-14-2
99	ETHION	829.9	96	000563-12-2
100	RADIUM	827.7	100	007440-14-4
101	4,6-DINITRO-O-CRESOL	827.3	102	000534-52-1
102	THORIUM	823.4	101	007440-29-1
103	DIMETHYLARSINIC ACID	821.2	75	000075-60-5
104	CHLORINE	820.6	91	007782-50-5
105	RADON	818.6	105	010043-92-2

106	1,3,5-TRINITROBENZENE	818.6	103	000099-35-4
107	HEXACHLOROCYCLOHEXANE, ALPHA-	817.3	115	000319-84-6
108	RADIUM-228	815.3	106	015262-20-1
109	THORIUM-230	813.7	107	014269-63-7
110	1,1,1-TRICHLOROETHANE	812.4	97	000071-55-6
111	URANIUM-235	812.1	107	015117-96-1
112	URANIUM-234	809.6	111	013966-29-5
113	THORIUM-228	809.5	113	014274-82-9
114	RADON-222	809.3	114	014859-67-7
115	COAL TARS	808.2	118	008007-45-2
116	ETHYLBENZENE	807.7	99	000100-41-4
117	CHLOROBENZENE	807.0	104	000108-90-7
118	N-NITROSODI-N-PROPYLAMINE	806.9	112	000621-64-7
119	CHRYSOTILE ASBESTOS	806.2	119	012001-29-5
120	METHYLMERCURY	806.0	123	022967-92-6
120	PLUTONIUM-239	806.0	121	015117-48-3
122	POLONIUM-210	805.6	122	013981-52-7
123	PLUTONIUM-238	805.2	124	013981-16-3
124	LEAD-210	805.1	125	014255-04-0
125	COPPER	804.7	128	007440-50-8
126	BARIUM	804.7	109	007440-39-3
127	AMOSITE ASBESTOS	804.3	131	012172-73-5
127	PLUTONIUM	804.3	126	007440-07-5
127	STRONTIUM-90	804.3	119	010098-97-2
130	RADON-220	804.2	130	022481-48-7
131	AMERICIUM-241	803.8	129	086954-36-1
132	TRIBUTYLTIN	802.9	134	000688-73-3
133	FLUORANTHENE	802.6	110	000206-44-0
134	AZINPHOS-METHYL	802.6	135	000086-50-0
135	CHLORDECONE	802.1	138	000143-50-0
136	NEPTUNIUM-237	801.9	136	013994-20-2
137	HYDROGEN CYANIDE	801.5	133	000074-90-8
138	PLUTONIUM-240	801.4	138	014119-33-6

139	1,2,3-TRICHLOROBENZENE	800.3	116	000087-61-6
140	MANGANESE	799.4	117	007439-96-5
141	S,S,S-TRIBUTYL PHOSPHOROTRITHIOATE	797.6	141	000078-48-8
142	CHRYSENE	793.4	137	000218-01-9
143	2,4,5-TRICHLOROPHENOL	790.4	222	000095-95-4
144	POLYBROMINATED BIPHENYLS	784.3	143	067774-32-7
145	DICOFOL	783.8	144	000115-32-2
146	SELENIUM	778.3	147	007782-49-2
147	1,1,2,2-TETRACHLOROETHANE	777.5	146	000079-34-5
148	HEPTACHLORODIBENZO-P-DIOXIN	773.8	154	037871-00-4
149	PARATHION	773.5	145	000056-38-2
150	HEXACHLOROCYCLOHEXANE, TECHNICAL GRADE	773.2	148	000608-73-1
151	TRICHLOROFLUOROETHANE	772.4	149	027154-33-2
152	BROMINE	770.1	142	007726-95-6
153	HEPTACHLORODIBENZOFURAN	755.5	166	038998-75-3
154	TRIFLURALIN	754.3	150	001582-09-8
155	1,3-BUTADIENE	750.4	156	000106-99-0
156	1,2,3,4,6,7,8,9-OCTACHLORODIBENZOFURAN	742.9	162	039001-02-0
157	AMMONIA	741.8	157	007664-41-7
158	2-METHYLNAPHTHALENE	728.9	158	000091-57-6
159	1,4-DICHLOROBENZENE	725.5	159	000106-46-7
160	1,1-DICHLOROETHANE	725.0	160	000075-34-3
161	2,3,4,7,8-PENTACHLORODIBENZOFURAN	723.6	168	057117-31-4
162	NALED	720.6	235	000300-76-5
163	HEXACHLOROCYCLOPENTADIENE	718.1	165	000077-47-4
164	1,2-DIPHENYLHYDRAZINE	717.9	167	000122-66-7
165	1,1,2-TRICHLOROETHANE	717.0	163	000079-00-5
166	PHORATE	715.2	225	000298-02-2
167	TRICHLOROETHANE	713.8	164	025323-89-1
168	ACENAPHTHENE	711.8	161	000083-32-9
169	TETRACHLOROBIPHENYL	709.2	169	026914-33-0
170	OXYCHLORDANE	705.5	171	027304-13-8
171	PALLADIUM	705.4	180	007440-05-3

172	CRESOL, PARA-	704.8	170	000106-44-5
173	INDENO(1,2,3-CD)PYRENE	702.6	174	000193-39-5
174	GAMMA-CHLORDENE	701.9	175	056641-38-4
175	1,2-DICHLOROBENZENE	698.0	172	000095-50-1
176	TETRACHLOROPHENOL	697.0	177	025167-83-3
177	1,2-DICHLOROETHENE, TRANS-	695.5	173	000156-60-5
178	CHLOROETHANE	688.9	183	000075-00-3
179	PHENOL	688.4	182	000108-95-2
180	P-XYLENE	686.6	185	000106-42-3
181	ALUMINUM	684.7	187	007429-90-5
182	CARBON DISULFIDE	683.0	176	000075-15-0
183	CARBON MONOXIDE	682.2	189	000630-08-0
184	2,4-DIMETHYLPHENOL	680.5	188	000105-67-9
185	DIBENZOFURAN	677.3	186	000132-64-9
186	ACETONE	676.5	184	000067-64-1
187	HEXACHLOROETHANE	669.4	197	000067-72-1
188	BUTYL METHYL PHTHALATE	667.4	194	034006-76-3
189	CHLOROMETHANE	666.3	193	000074-87-3
190	HEXACHLORODIBENZOFURAN	660.1	181	055684-94-1
191	BUTYL BENZYL PHTHALATE	659.1	195	000085-68-7
192	HYDROGEN SULFIDE	656.3	191	007783-06-4
193	DICHLORVOS	655.5	240	000062-73-7
194	CRESOL, ORTHO-	653.4	196	000095-48-7
195	DIBENZOFURANS, CHLORINATED	653.0	236	042934-53-2
196	HEXACHLORODIBENZO-P-DIOXIN	651.7	153	034465-46-8
197	VANADIUM	649.9	198	007440-62-2
198	N-NITROSODIMETHYLAMINE	648.3	199	000062-75-9
199	1,2,4-TRICHLOROBENZENE	647.4	200	000120-82-1
200	ETHOPROP	643.7	236	013194-48-4
201	TETRACHLORODIBENZO-P-DIOXIN	641.5	202	041903-57-5
202	BROMOFORM	635.1	201	000075-25-2
203	PENTACHLORODIBENZOFURAN	631.7	192	030402-15-4
204	1,3-DICHLOROBENZENE	628.6	203	000541-73-1
205	PENTACHLORODIBENZO-P-DIOXIN	625.9	204	036088-22-9

206	N-NITROSODIPHENYLAMINE	625.8	205	000086-30-6
207	2,3,7,8-TETRACHLORODIBENZOFURAN	618.9	207	051207-31-9
208	2,4-DICHLOROPHENOL	618.5	209	000120-83-2
209	2,3-DIMETHYLNAPHTHALENE	617.5	New	000581-40-8
210	1,4-DIOXANE	613.5	210	000123-91-1
211	FLUORINE	613.3	211	007782-41-4
212	2-BUTANONE	611.1	208	000078-93-3
213	1,2-DICHLOROETHYLENE	610.4	206	000540-59-0
214	CESIUM-137	610.0	213	010045-97-3
214	CHROMIC ACID	610.0	215	007738-94-5
216	NITRITE	609.0	212	014797-65-0
217	SILVER	608.1	214	007440-22-4
218	POTASSIUM-40	607.6	217	013966-00-2
219	DINITROTOLUENE	607.3	218	025321-14-6
220	NITRATE	606.0	216	014797-55-8
221	COAL TAR PITCH	605.2	220	065996-93-2
222	THORIUM-227	605.0	221	015623-47-9
223	ARSENIC ACID	604.3	223	007778-39-4
224	ARSENIC TRIOXIDE	603.8	224	001327-53-3
225	BENZOPYRENE	602.9	226	073467-76-2
226	CHLORDANE, TECHNICAL	602.5	228	012789-03-6
227	STROBANE	602.5	230	008001-50-1
228	4-AMINOBIIPHENYL	602.4	232	000092-67-1
228	PYRETHRUM	602.4	232	008003-34-7
230	ARSINE	602.4	234	007784-42-1
230	DIMETHOATE	602.4	229	000060-51-5
232	ANTIMONY	602.2	219	007440-36-0
233	CARBOPHENOTHION	601.9	238	000786-19-6
234	ALPHA-CHLORDENE	601.4	238	056534-02-2
234	IODINE-131	601.4	132	010043-66-0
234	MERCURIC CHLORIDE	601.4	241	007487-94-7
234	SODIUM ARSENITE	601.4	241	007784-46-5
234	URANIUM-233	601.4	178	013968-55-3
236	DIBROMOCHLOROMETHANE	600.5	240	000124-48-1

239	DIBROMOCHLOROMETHANE	500.5	249	000124-40-1
240	CRESOLS	597.1	227	001319-77-3
241	FORMALDEHYDE	596.0	244	000050-00-0
242	DICHLOROBENZENE	595.4	254	025321-22-6
243	2,4-D ACID	594.5	248	000094-75-7
244	2-CHLOROPHENOL	591.1	245	000095-57-8
245	BUTYLATE	589.9	251	002008-41-5
246	PHENANTHRENE	588.3	246	000085-01-8
247	DIMETHYL FORMAMIDE	585.3	252	000068-12-2
248	4-NITROPHENOL	580.0	257	000100-02-7
249	DIURON	578.7	250	000330-54-1
250	TETRACHLOROETHANE	576.7	190	025322-20-7
251	DICHLOROETHANE	567.8	256	001300-21-6
252	ETHYL ETHER	565.2	255	000060-29-7
253	PYRENE	564.1	253	000129-00-0
254	DIMETHYLANILINE	561.8	New	000121-69-7
255	1,3-DICHLOROPROPENE, CIS-	561.0	258	010061-01-5
256	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN	558.9	263	035822-46-9
257	PHOSPHINE	555.2	259	007803-51-2
258	TRICHLOROBENZENE	555.1	260	012002-48-1
259	2,6-DINITROTOLUENE	554.4	261	000606-20-2
260	FLUORIDE ION	549.9	262	016984-48-8
261	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	548.8	273	067562-39-4
262	PENTAERYTHRITOL TETRANITRATE	548.2	265	000078-11-5
263	1,3-DICHLOROPROPENE, TRANS-	548.0	266	010061-02-6
264	ACRYLONITRILE	543.2	274	000107-13-1
265	BIS(2-ETHYLHEXYL)ADIPATE	542.4	267	000103-23-1
266	CARBAZOLE	538.6	268	000086-74-8
267	METOLACHLOR	538.2	New	051218-45-2
268	2-CHLOROANILINE	537.9	New	000095-51-2
269	1,2,3-TRICHLOROPROPANE	536.1	New	000096-18-4
270	CARBARYL	535.5	272	000063-25-2
271	1,2-DICHLOROETHENE, CIS-	533.8	270	000156-59-2
272	METHYL ISOBUTYL KETONE	529.6	269	000108-10-1

273	STYRENE	529.4	271	000100-42-5
274	THALLIUM	525.3	New	007440-28-0
275	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	524.3	New	072918-21-9

Substances were assigned the same rank when two (or more) substances received equivalent total point scores.

CAS RN = Chemical Abstracts Service Registry Number

Hide List

Contact Information

Further information can be obtained by contacting the ATSDR Information Center at:

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