

**Table 2: Protective Action Criteria (PAC) Rev. 28 based on applicable 60-minute AEGLs, ERPGs, or TEELs. The chemicals are listed in alphabetical order. February 2016**

**Table 2** is an alphabetical list of the chemical substances and their corresponding PAC values. For the most part, values are given in parts per million (ppm) for gases and volatile liquids and in milligrams per cubic meter (mg/m<sup>3</sup>) for solids, particulates (aerosols), and nonvolatile liquids.

The columns presented in Table 2 provide the following information:

Heading	Definition
No.	The ordered numbering of the chemicals as they appear in this alphabetical listing
Chemical Name	The name of the chemical substance submitted to the PAC development team
CASRN	The Chemical Abstracts Service Registry Number <sup>1</sup> for each chemical
PAC-1	Based on the applicable AEGL-1, ERPG-1, or TEEL-1 value
PAC-2	Based on the applicable AEGL-2, ERPG-2, or TEEL-2 value
PAC-3	Based on the applicable AEGL-3, ERPG-3, or TEEL-3 value
SoP	Source of PACs
Units	The units for the PAC values (ppm or mg/m <sup>3</sup> )

Chemicals for which **AEGLs** are available have their chemical name, CASRN, and the AEGL values displayed in a **bolded and larger** font. Chemicals for which **ERPGs** are available, but no AEGLs, have their chemical name, CASRN, and the ERPG values displayed in a **bolded** font. Chemicals for which only TEELs are available, have their chemical name, CASRN, and values displayed using a regular font.

Some values in Table 2 have the following text formatting:

- \* indicates the PAC value is between 10% and up to 50% of the LEL (10% LEL ≤ PAC < 50% LEL).
- \*\* indicates the PAC value is between 50% and up to 100% of the LEL (50% LEL ≤ PAC < 100% LEL).
- \*\*\* indicates the PAC value is at 100% or more of the LEL (PAC ≥ LEL).

Additional information on PAC values, TEEL values, and links to other sources of information is provided on the Subcommittee on Consequence Assessment and Protective Actions (SCAPA) webpage at <http://orise.orau.gov/emi/scapa/default.htm>.

<sup>1</sup> Information on the Chemical Abstracts Service and CASRNs is provided at <https://www.cas.org/cas-home>.

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**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1	Abrin	1393-62-0	6.60E-07	7.20E-06	4.30E-05	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2	Acenaphthene	83-32-9	3.6	40	240	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
3	Acenaphthylene	208-96-8	10	110	660	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
4	<b>Acetaldehyde</b>	<b>75-07-0</b>	<b>45</b>	<b>270</b>	<b>840</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
5	Acetamide	60-35-5	21	230	1,400	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
6	Acetanilide	103-84-4	0.77	8.4	160	TEEL-2/11, human oral TDLo, rat oral LD50	mg/m <sup>3</sup>
7	<b>Acetic acid</b>	<b>64-19-7</b>	<b>5</b>	<b>35</b>	<b>250</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
8	Acetic acid ethenyl ester, polymer with 1,1-bis(ethenoxy) butane and ethenol	27360-07-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
9	Acetic acid, 2-propenyl ester	591-87-7	0.42	4.6	28	TEEL-2/11, TEEL-3/6, rat 60-min LC50	ppm
10	Acetic acid, lithium salt	546-89-4	3.2	36	210	TEEL-2/11, TEEL-3/6, mouse oral LDLo	mg/m <sup>3</sup>
11	Acetic acid, manganese(2+) salt, tetrahydrate	6156-78-1	13	22	740	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, rat oral LD50	mg/m <sup>3</sup>
12	Acetic acid, manganese(II) salt (2:1)	638-38-0	9.4	16	96	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
13	<b>Acetic anhydride</b>	<b>108-24-7</b>	<b>0.5</b>	<b>15</b>	<b>100</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
14	<b>Acetone</b>	<b>67-64-1</b>	<b>200</b>	<b>3200*</b>	<b>5700*</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
15	Acetone thiosemicarbazide	1752-30-3	9.1	100	600	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
16	Acetone-d6	666-52-4	200	3200*	5700*	Used acetone (67-64-1) AEGL values	ppm
17	<b>Acetonitrile</b>	<b>75-05-8</b>	<b>13</b>	<b>50</b>	<b>150</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
18	Acetonitrile-d3	2206-26-0	13	50	150	Used acetonitrile (75-05-8) AEGL values	ppm
19	Acetophenone	98-86-2	30	87	520	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

Chemicals with AEGLs: large, bolded font. ERPGs (but no AEGLs): bolded font.

\* indicates 10% LEL ≤ PAC < 50% LEL; \*\* indicates 50% LEL ≤ PAC < 100% LEL; \*\*\* indicates PAC ≥ LEL.

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
20	Acetoxytriphenylstannane	900-95-8	0.69	20	28	MW-adjusted organic tin (7440-31-5) TLV-STEL, LOC, rat oral LD50	mg/m <sup>3</sup>
21	Acetyl bromide	506-96-7	0.16	1.8	11	TEEL-2/11, TEEL-3/6, mouse ip LD50	ppm
22	Acetyl carbinol; (Acetol (1); 1-Hydroxy-2-propanone)	116-09-6	6.6	73	440	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
23	Acetyl chloride	75-36-5	0.85	9.4	56	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
24	Acetyl triethyl citrate	77-89-4	5.2	57	1,400	TEEL-2/11, mouse ip TDLo, rat oral LD50	mg/m <sup>3</sup>
25	Acetylaminofluorene, 2-	53-96-3	1.2	14	88	TEEL-2/11, rat oral TDLo, mouse oral LD50	mg/m <sup>3</sup>
26	Acetylaminofluorenone, 2-	3096-50-2	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
27	Acetylene	74-86-2	65000***	230000***	400000***	Simple asphyxiant	ppm
28	<b>Acrolein</b>	<b>107-02-8</b>	<b>0.030</b>	<b>0.10</b>	<b>1.4</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
29	Acrylamide	79-06-1	0.09	44	100	TLV-TWA x 3, monkey ip TDLo, rat oral LD50	mg/m <sup>3</sup>
30	Acrylamide, N,N'-methylenebisacrylamide copolymer	25034-58-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
31	<b>Acrylic acid</b>	<b>79-10-7</b>	<b>1.5</b>	<b>46</b>	<b>180</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
32	<b>Acrylonitrile</b>	<b>107-13-1</b>	0.15	<b>1.7</b>	<b>28</b>	<b>AEGL-2/11, AEGL-2, AEGL-3</b>	ppm
33	Acrylyl chloride; (Acryloyl chloride)	814-68-6	0.022	0.24	0.87	TEEL-2/11, LOC, mouse 120-min LC50	ppm
34	<b>Adamsite; (Phenarsazine chloride)</b>	<b>578-94-9</b>	<b>0.016</b>	<b>2.6</b>	<b>6.4</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
35	Adipic acid, diethylene glycol, trimethylolpropane, phthalic anhydride, toluenediisocyanate polymer, isocyanate terminated	68609-57-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
36	Adiponitrile	111-69-3	0.35	3.8	8.1	TEEL-2/11, LOC, rat 240-min LCLo	ppm
37	Aerosol, A-102; (Poly(oxy-1,2-ethanediy), alpha-(3-carboxy-1-oxo-3-sulfopropyl)-omega-(dodecyloxy)-, disodium salt)	39354-45-5	92	1,000	6,100	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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			PAC-1	PAC-2	PAC-3		
38	Alamine 336	68814-95-9	17	180	1,100	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
39	Alcohols, C6-C12 (N.O.S.)	68603-15-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
40	Aldicarb; (Carbanolate; Methyl-2-(methylthio)propionaldehyde-O-(methylcarbamoyl)oxime, 2-)	116-06-3	0.027	0.3	9.5	TEEL-2/11, LOC, rat 300-min LC50	mg/m <sup>3</sup>
41	Aldrin; (1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4-endo,exo-5,8-dimethanonaphthalene)	309-00-2	0.91	10	100	TEEL-2/11, LOC, IDLH (1990)	mg/m <sup>3</sup>
42	Aldrithiol-2; (2,2'-Dithiodipyridine)	2127-03-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
43	Aliquat 336; (Adogen 464; Quaternary ammonium compounds, tri(C8-10)-alkylmethyl-, chlorides)	63393-96-4	2.3	25	150	TEEL-2/11, TEEL-3/6, rat 720-min LCLo	mg/m <sup>3</sup>
44	Alizarin; (1,2-Dihydroxyanthraquinone; Turkey red oil)	72-48-0	0.49	5.4	32	TEEL-2/11, rat oral TDLo, TEEL-2 x 6	mg/m <sup>3</sup>
45	Alizarine Red S, Monohydrate; (Sodium alizarin-3-sulfonate)	130-22-3	0.23	2.5	15	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
46	Alkanes, C4-C12	68333-81-3	230	385	5,000	Used octane (111-65-9) PAC values	ppm
47	Alkenyl dimethylethyl ammonium bromide; (Aliphatic hydrocarbon)	z-0108	1.5	17	99	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
48	Alkyl benzenes (C8-C9)	z-0109	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
49	Alkyl dimethylbenzyl ammonium chloride; (Benzalkonium chloride)	8001-54-5	0.91	10	60	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
50	Alkylamines	63231-48-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
51	Alkylbenzene (C10-C16)	68648-87-3	2.3	26	150	TEEL-2/11, TEEL-3/6, rabbit dermal LDLo	mg/m <sup>3</sup>
52	Alkylbenzyl dimethyl ammonium chloride, (C12-C18)	68391-01-5	0.61	6.8	60	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
53	Allene; (1,2-Propadiene)	463-49-0	230	2,500	15,000	Used methyl acetylene (74-99-7) PAC values	ppm
54	Allyl 2-chloroethyl sulfide	19155-35-2	0.034	0.38	2.3	TEEL-2/11, TEEL-3/6, mouse 10-min LCLo	mg/m <sup>3</sup>
55	<b>Allyl alcohol</b>	<b>107-18-6</b>	<b>0.09</b>	<b>1.7</b>	<b>13</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm

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			PAC-1	PAC-2	PAC-3		
56	Allyl bromide; (3-Bromopropene)	106-95-6	0.2	12	71	TLV-STEL, TEEL-3/6, rat 120-min LC50	ppm
57	<b>Allyl chloride</b>	<b>107-05-1</b>	<b>2.8</b>	<b>54</b>	<b>140</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
58	<b>Allyl chlorocarbonate</b>	<b>2937-50-0</b>	0.064	<b>0.70</b>	<b>2.1</b>	<b>AEGL-2/7, AEGL-2, AEGL-3</b>	ppm
59	Allyl isothiocyanate; (Mustard oil)	57-06-7	1	2.8	17	WEEL-STEL, TEEL-3/6, rat LD50	ppm
60	<b>Allylamine</b>	<b>107-11-9</b>	<b>0.42</b>	<b>3.3</b>	<b>18</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
61	Allylmagnesium bromide	1730-25-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
62	<b>Allyltrichlorosilane</b>	<b>107-37-9</b>	<b>0.60</b>	<b>7.3</b>	<b>33</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
63	Alpha,alpha,4-trimethyl-3-cyclohexene-1-methanol, (S)-; (alpha-Terpineol)	10482-56-1	59	650	1,000	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
64	Alpha-hydroxybenzeneacetic acid, (+-); (DL-mandelic acid)	611-72-3	25	270	1,600	Used hydroxyphenylacetic acid (90-64-2) PAC values	mg/m <sup>3</sup>
65	Aluminum acetate, basic	7360-44-3	27	290	1,800	MW-adjusted soluble aluminum (7429-90-5) REL-TWA x 3; TEEL-1 x 11; TEEL-2 x 6	mg/m <sup>3</sup>
66	Aluminum carbide	1299-86-1	4	43	260	MW-adjusted insoluble aluminum (7429-90-5) TLV-TWA x 3; TEEL-1 x 11; TEEL-2 x 6	mg/m <sup>3</sup>
67	Aluminum chloride	7446-70-0	30	60	360	MW-adjusted soluble aluminum (7429-90-5) REL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
68	Aluminum chloride hexahydrate	7784-13-6	54	110	650	MW-adjusted soluble aluminum (7429-90-5) REL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
69	Aluminum fluoride	7784-18-1	19	59	360	MW-adjusted soluble aluminum (7429-90-5) REL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
70	Aluminum grey LB; (Acid black 60)	12218-95-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
71	Aluminum hexafluorosilicate	17099-70-6	11	120	700	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>

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			PAC-1	PAC-2	PAC-3		
72	Aluminum hydroxide	21645-51-2	8.7	73	440	MW-adjusted insoluble aluminum (7429-90-5) TLV-TWA x 3, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
73	Aluminum oxide hydrate	1333-84-2	15	130	780	Used MW-adjusted aluminum hydroxide (21645-51-2) PAC values	mg/m <sup>3</sup>
74	Aluminum oxide; (Alumina)	1344-28-1	5.7	15	25	MW-adjusted insoluble aluminum (7429-90-5) TLV-TWA x 3, EEGL 60-min, EEGL 30-min	mg/m <sup>3</sup>
75	Aluminum phosphate; (Phosphoric acid, aluminum salt (1:1), solution)	7784-30-7	14	200	1,200	MW-adjusted insoluble aluminum (7429-90-5) TLV-TWA x 3, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
76	<b>Aluminum phosphide</b>	<b>20859-73-8</b>	1.3	<b>2.0</b>	<b>3.6</b>	TLV-TWA x 3, <b>AEGL-2, AEGL-3</b>	ppm
77	Aluminum potassium sulfate, dodecahydrate	7784-24-9	110	1,200	6,900	MW-adjusted soluble aluminum (7429-90-5) REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
78	Aluminum sulfate	10043-01-3	38	64	380	MW-adjusted soluble aluminum (7429-90-5) REL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
79	Aluminum tris(dihydrogen phosphate); (Phosphoric acid, aluminum salt (3:1))	13530-50-2	3	33	200	Insoluble aluminum (7429-90-5) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
80	Aluminum yellow 4A; (Acid yellow 99)	10343-58-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
81	Aluminum(III) isopropylate	555-31-7	23	370	2,200	MW-adjusted insoluble aluminum (7429-90-5) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
82	Aluminum(III) nitrate (1:3)	13473-90-0	47	68	410	MW-adjusted soluble aluminum (7429-90-5) REL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
83	Aluminum(III) nitrate nonahydrate (1:3:9)	7784-27-2	83	920	5,500	MW-adjusted soluble aluminum (7429-90-5) REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
84	Aluminum(III) silicate (2:1); (Kyanite; Oil-dri)	1302-76-7	3	33	200	MW-adjusted insoluble aluminum (7429-90-5) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
85	Amino-1,3-naphthalenedisulfonic acid, 7-	86-65-7	3	33	200	TEEL-2/11, mouse ip TDLo, TEEL-2 x 6	mg/m <sup>3</sup>

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86	Amino-1-propanol, 3-	156-87-6	8.3	91	550	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
87	Amino-2-(hydroxymethyl)-1,3-propanediol, 2-, acetate salt; (Trizma acetate)	6850-28-8	18	190	1,200	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
88	Amino-2-methyl-2-propanol, 1-	2854-16-2	4.3	47	280	TEEL-2/11, TEEL-3/6, mouse 1080-min LCLo	mg/m <sup>3</sup>
89	Amino-4,6-dinitrotoluene, 2-	35572-78-2	4.2	46	280	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
90	Aminoacetaldehyde diethyl acetal; (2,2-Diethoxyethylamine)	645-36-3	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
91	Aminoacetaldehyde dimethyl acetal; (2,2-Dimethoxyethylamine)	22483-09-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
92	Aminoanthraquinone, 2-	117-79-3	9	99	590	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
93	Aminobenzoic acid, p-	150-13-0	15	69	410	WEEL-TWA x 3, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>
94	Aminobutyl)diethoxymethylsilane, (4-	3037-72-7	4.1	45	1,300	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
95	Aminodiphenyl, p-	92-67-1	1.3	15	99	TEEL-2/11, mouse oral TDLo, rat oral LD50	mg/m <sup>3</sup>
96	Aminoethoxy)ethanol, 2-(2-	929-06-6	9	99	590	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
97	Aminoethyl)diphenylboronic acid, o-(2-; (Diphenylboronic acid, ethanolamine ester)	524-95-8	0.18	2	12	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
98	Aminoethylethanolamine	111-41-1	9	99	590	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
99	Aminoethylpiperazine, N-	140-31-8	6.4	71	420	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
100	Aminoheptane, 3-; (3-Heptylamine)	28292-42-4	0.049	0.54	3.2	TEEL-2/11, TEEL-3/6, mouse ip LD50	ppm
101	Aminoiminomethyl)urea sulfate(2:1), (	591-01-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
102	Aminophenol, 2-; (Aminophenol, o-)	95-55-6	12	130	260	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
103	Aminophenol, m-	591-27-5	15	160	200	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
104	Aminopropiophenone, 4-	70-69-9	0.51	5.6	35	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
105	Aminopropylmethyldiethoxysilane, 3-	3179-76-8	13	140	860	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
106	Aminopropyltriethoxysilane; (3-(Triethoxysilyl)-1-propanamine)	919-30-2	1.9	21	350	TEEL-2/11, rat 360-min TCLo, rat oral LD50	mg/m <sup>3</sup>
107	Aminopterin; (Aminopteridine)	54-62-6	2.3	25	150	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
108	Aminopyrazine, 2-	5049-61-6	1.5	1.7	10	Used 2-aminopyridine (504-29-0) PAC values	ppm
109	Aminopyridine, 2-	504-29-0	1.5	1.7	10	TLV-TWA x 3, TEEL-3/6, rat oral LD50	ppm
110	Aminopyridine, 4-; (4-Pyridinamine)	504-24-5	1.8	20	40	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
111	Amiton oxalate	3734-97-2	0.009	0.099	0.59	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
112	Amiton; (O,O-Diethyl-S-(2-diethylaminoethyl) thiophosphate)	78-53-5	0.0099	0.11	0.65	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
113	Amitrole	61-82-5	0.6	23	220	TLV-TWA x 3, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
114	<b>Ammonia</b>	<b>7664-41-7</b>	<b>30</b>	<b>160</b>	<b>1,100</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
115	Ammonia-d3	13550-49-7	30	160	1,100	Used ammonia (7664-41-7) AEGL values	ppm
116	Ammonium acetate	631-61-8	3.8	42	250	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
117	Ammonium aluminum fluoride; (Triammonium hexafluoroaluminate)	7784-19-2	13	140	860	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
118	Ammonium benzoate	1863-63-4	2.5	27	160	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
119	Ammonium bicarbonate	1066-33-7	4.7	52	310	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
120	Ammonium bisulfate; (Ammonium hydrogen sulfate)	7803-63-6	0.012	0.13	0.78	TEEL-2/11, rabbit 60-min TCLo, TEEL-2 x 6	mg/m <sup>3</sup>
121	Ammonium bisulfite; (Ammonium hydrogen sulfite)	10192-30-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
122	Ammonium bromide	12124-97-9	8.1	89	530	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
123	Ammonium carbamate; (Carbamic acid, ammonium salt)	1111-78-0	0.23	2.6	15	TEEL-2/11, TEEL-3/6, rat iv LD50	mg/m <sup>3</sup>
124	Ammonium carbonate	506-87-6	0.31	3.5	21	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
125	Ammonium chloride	12125-02-9	20	110	330	TLV-STEL, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
126	Ammonium chromate	7788-98-9	0.44	7.7	46	MW-adjusted soluble chromium (VI) (7440-47-3)TLV-TWA x 3, TEEL-3/6, MW-adjusted chromates (1333-82-0) IDLH (1990)	mg/m <sup>3</sup>
127	Ammonium citrate	7632-50-0	1.1	12	72	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
128	Ammonium citrate tribasic	3458-72-8	0.69	7.7	46	Used MW-adjusted ammonium citrate (7632-50-0) PAC values	mg/m <sup>3</sup>
129	Ammonium citrate, dibasic	3012-65-5	0.65	7.1	43	Used MW-adjusted ammonium citrate (7632-50-0) PAC values	mg/m <sup>3</sup>
130	Ammonium dichromate	7789-09-5	0.37	6.3	38	MW-adjusted soluble chromium (VI) (7440-47-3)TLV-TWA x 3, TEEL-3/6, MW-adjusted chromates (1333-82-0) IDLH (1990)	mg/m <sup>3</sup>
131	Ammonium dihydrogen phosphate; (Monoammonium phosphate)	7722-76-1	17	190	1,100	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
132	Ammonium ferrous sulfate hexahydrate	7783-85-9	9.6	110	640	MW-adjusted soluble iron (7439-89-6) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
133	Ammonium fluoborate	13826-83-0	10	120	690	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
134	Ammonium fluoride	12125-01-8	15	160	980	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
135	Ammonium formate	540-69-2	3.7	41	240	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
136	Ammonium hexachlorohydrate (III)	z-0001	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
137	Ammonium hexafluorosilicate; (Ammonium silicofluoride)	16919-19-0	12	130	780	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
138	Ammonium hydrogen fluoride; (Ammonium bifluoride)	1341-49-7	11	130	750	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
139	Ammonium hydrogen oxalate hemihydrate	37541-72-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
140	Ammonium hydroxide	1336-21-6	61	330	2,300	Used MW-adjusted ammonia (7664-41-7) AEGL values	ppm
141	Ammonium iodide	12027-06-4	5.3	58	350	TEEL-2/11, TEEL-3/6, human oral LDLo	mg/m <sup>3</sup>
142	Ammonium lactate	515-98-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
143	Ammonium lignin sulfonate	8061-53-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
144	Ammonium molybdate(VI) tetrahydrate	12054-85-2	2.8	30	180	MW-adjusted soluble molybdenum TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
145	Ammonium molybdate; (Diammonium molybdate)	13106-76-8	3.1	22	130	MW-adjusted soluble molybdenum TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
146	Ammonium molybdophosphate	12026-66-3	2.4	27	160	MW-adjusted soluble molybdenum TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
147	Ammonium nickel sulfate	15699-18-0	1.5	13	79	MW-adjusted soluble nickel (7440-02-0) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
148	Ammonium nitrate	6484-52-2	6.7	73	440	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
149	Ammonium oxalate monohydrate	5972-73-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
150	Ammonium oxalate; (Diammonium oxalate monohydrate)	6009-70-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
151	Ammonium pentaborate	12007-89-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
152	Ammonium perchlorate	7790-98-9	4.6	50	830	TEEL-2/11, rabbit oral TDLo, rat oral LD50	mg/m <sup>3</sup>
153	Ammonium permanganate	13446-10-1	7.5	12	72	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
154	Ammonium peroxydisulfate	7727-54-0	0.3	22	130	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
155	Ammonium phosphate dibasic; (Diammonium phosphate)	7783-28-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
156	Ammonium picrate	131-74-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
157	Ammonium polyacrylate	9003-03-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
158	Ammonium sulfamate	7773-06-0	30	98	5,000	TEEL-2/11, rat oral TDLo, IDLH (1990)	mg/m <sup>3</sup>
159	Ammonium sulfate	7783-20-2	13	140	840	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
160	Ammonium sulfite	10196-04-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
161	Ammonium sulfite monohydrate	7783-11-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
162	Ammonium tartrate; (Butanedioic acid, 2,3-dihydroxy-(2R,3R)-, ammonium salt)	14307-43-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
163	Ammonium tartrate; (Diammonium tartrate)	3164-29-2	0.8	8.8	53	TEEL-2/11, TEEL-3/6, rabbit iv LD50	mg/m <sup>3</sup>
164	Ammonium thiocyanate	1762-95-4	2.3	25	150	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
165	Ammonium thiosulfate; (Ammonium hyposulfite)	7783-18-8	1.5	16	97	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	mg/m <sup>3</sup>
166	Ammonium tungstate(VI)	11120-25-5	4.1	45	270	MW-adjusted tungsten (7440-33-7) TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
167	Ammonium vanadate; (Ammonium vanadium oxide; Ammonium metavanadate)	7803-55-6	0.01	0.11	80	TEEL-2/11, MW-adjusted vanadium (1314-62-1) REL-C, & IDLH (1994, See white paper)	mg/m <sup>3</sup>
168	Ammonium, hexadecyltrimethyl-, bromide; (Hexadecyltrimethylammonium bromide)	57-09-0	1.2	14	81	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
169	Ammonium, tetraethyl-, bromide; (Tetraethyl ammonium bromide)	71-91-0	1.1	12	43	TEEL-2/11, mouse ip TDLo, rat ip LD50	mg/m <sup>3</sup>
170	Ammonium, tetramethyl-, bromide; (Tetramethylammonium bromide)	64-20-0	0.15	1.7	9.9	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
171	Amyl acetate	628-63-7	100	670	4000*	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
172	Amyl methyl ether, tert-; (TAME)	994-05-8	60	120	170	TLV-TWA x 3, rat 360-min TCLo, mouse 360-min LCLo	ppm
173	Amylamine, n-; (1-Pentylamine)	110-58-7	0.3	3.3	20	TEEL-2/11, TEEL-3/6, rat ip LDLo	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
174	<b>Amyltrichlorosilane; (Pentyltrichlorosilane)</b>	<b>107-72-2</b>	<b>0.60</b>	<b>7.3</b>	<b>33</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
175	Anhydrone; (Magnesium perchlorate)	10034-81-8	4.9	54	320	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
176	<b>Aniline</b>	<b>62-53-3</b>	<b>8</b>	<b>12</b>	<b>20</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
177	Anisidine, o-	90-04-0	1.5	8.3	50	TLV-TWA x 3, TEEL-3/6, IDLH (1990 and 1994)	mg/m <sup>3</sup>
178	Anisidine, p-	104-94-9	1.5	8.3	50	TLV-TWA x 3, TEEL-3/6, IDLH (1990 and 1994)	mg/m <sup>3</sup>
179	Anisole; (Anisole anhydrous; Methoxybenzene)	100-66-3	1.6	18	110	TEEL-2/11, TEEL-3/6, mouse 120-min LC50	mg/m <sup>3</sup>
180	Anthracene	120-12-7	48	530	3,200	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
181	Anthracenedisulfonic acid, 4,8-diamino-9,10-dihydro-1,5-dihydroxy-9,10-dioxo, disodium salt, 2,6-; (Acid Blue 45; Alizarine Blue)	2861-02-1	4.8	52	310	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
182	Anthranilic acid	118-92-3	16	180	1,100	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
183	Anthraquinone	84-65-1	0.87	9.6	57	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
184	Antimony	7440-36-0	1.5	13	80	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
185	Antimony hydroxide	39349-74-1	2.1	18	110	MW-adjusted antimony (7440-36-0) TLV-TWA x 3, TEEL-3/6, antimony IDLH (1990)	mg/m <sup>3</sup>
186	Antimony oxide	1309-64-4	1.8	16	96	MW-adjusted antimony (7440-36-0) TLV-TWA x 3, TEEL-3/6, antimony IDLH (1990)	mg/m <sup>3</sup>
187	Antimony pentachloride	7647-18-9	3.7	33	200	MW-adjusted antimony (7440-36-0) TLV-TWA x 3, TEEL-3/6, antimony IDLH (1990)	mg/m <sup>3</sup>
188	Antimony pentafluoride	7783-70-2	2.7	23	140	MW-adjusted antimony (7440-36-0) TLV-TWA x 3, TEEL-3/6, antimony IDLH (1990)	mg/m <sup>3</sup>
189	Antimony pentasulfide	1315-04-4	2.5	22	130	MW-adjusted antimony (7440-36-0) TLV-TWA x 3, TEEL-3/6, antimony IDLH (1990)	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
190	Antimony potassium tartrate trihydrate	28300-74-5	4.1	37	220	MW-adjusted antimony (7440-36-0) TLV-TWA x 3, TEEL-3/6, antimony IDLH (1990)	mg/m <sup>3</sup>
191	Antimony trichloride; (Antimony(III) chloride)	10025-91-9	2.8	25	150	MW-adjusted antimony (7440-36-0) TLV-TWA x 3, TEEL-3/6, antimony IDLH (1990)	mg/m <sup>3</sup>
192	Antimony trifluoride	7783-56-4	2.2	20	120	MW-adjusted antimony (7440-36-0) TLV-TWA x 3, TEEL-3/6, antimony IDLH (1990)	mg/m <sup>3</sup>
193	Antimycin A	1397-94-0	0.16	1.8	5.5	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
194	Antioxidant G-16 (most toxic antioxidant)	61373-87-3	0.98	11	65	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
195	Aqua regia (75% hydrochloric + 25% nitric acid)	8007-56-5	1.8	22	100	Used hydrogen chloride (7647-01-0) AEGL values	ppm
196	Argon	7440-37-1	65,000	2.30E+05	4.00E+05	Simple asphyxiant	ppm
197	Aromatic isocyanate mixture "SWD 305A"	z-0111	0.15	3.6	22	Used polymethylene polyphenyl isocyanate (9016-87-9) PAC values	mg/m <sup>3</sup>
198	Arsenic	7440-38-2	1.5	17	100	TEEL-2/11, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
199	Arsenic acid; (o-Arsenic acid) Includes CASRN 1327-52-2	7778-39-4	2.9	32	190	TEEL-2/11, TEEL-3/6, MW-adjusted arsenic (7440-38-2) IDLH (1990)	mg/m <sup>3</sup>
200	Arsenic pentoxide	1303-28-2	0.73	8	150	TEEL-2/11, LOC, MW-adjusted arsenic (7440-38-2) IDLH (1990)	mg/m <sup>3</sup>
201	<b>Arsenic trioxide</b>	<b>1327-53-3</b>	0.27	<b>3.0</b>	<b>9.1</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
202	Arsenous acid	13464-58-9	2.6	28	170	TEEL-2/11, TEEL-3/6, MW-adjusted arsenic (7440-38-2) IDLH (1990)	mg/m <sup>3</sup>
203	Arsenous trichloride	7784-34-1	0.91	10	240	TEEL-2/11, LOC, MW-adjusted arsenic (7440-38-2) IDLH (1990)	mg/m <sup>3</sup>
204	<b>Arsine</b>	<b>7784-42-1</b>	0.015	<b>0.17</b>	<b>0.50</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
205	Asbestos, includes: (Amosite, 12172-73-5, Ascarite, 81133-20-2, Chrysotile, 1332-21-4)	1332-21-4	0.05	0.55	3.3	PEL-STEL, TEEL-1 x 11, TEEL-2 x 3	mg/m <sup>3</sup>
206	Ascaridole	512-85-6	0.6	6.6	40	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

Chemicals with AEGLs: large, bolded font. ERPGs (but no AEGLs): bolded font.

\* indicates 10% LEL ≤ PAC < 50% LEL; \*\* indicates 50% LEL ≤ PAC < 100% LEL; \*\*\* indicates PAC ≥ LEL.

**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
207	Auramine; (4,4'-(Imidocarbonyl)bis(N,N-dimethylamine) monohydrochloride)	2465-27-2	0.81	8.9	53	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
208	Azinphos ethyl; (Ethyl guthion)	2642-71-9	0.35	3.9	17	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
209	Azinphos methyl; (Guthion)	86-50-0	0.6	0.7	20	TLV-TWA x 3, LOC, IDLH (1990)	mg/m <sup>3</sup>
210	Aziridine homopolymer; (Ethylenimine homopolymer; Poly(ethyleneimine))	9002-98-6	4.1	45	270	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
211	Azobis(2-methylpropionitrile), 2,2'-	78-67-1	4.1	45	130	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
212	Azodicarbamide; (Azodicarbonamide)	123-77-3	2.6	29	170	TEEL-2/11, rat 360-min TCLo, rat ip LD50	mg/m <sup>3</sup>
213	Barium	7440-39-3	1.5	180	1,100	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
214	Barium acetate; (Barium acetate anhydrous)	543-80-6	2.8	330	2,000	MW-adjusted soluble barium (7440-39-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble barium IDLH (1990)	mg/m <sup>3</sup>
215	Barium carbonate	513-77-9	2.2	270	1,600	MW-adjusted soluble barium (7440-39-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble barium IDLH (1990)	mg/m <sup>3</sup>
216	Barium chloride	10361-37-2	2.3	280	1,700	MW-adjusted soluble barium (7440-39-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble barium IDLH (1990)	mg/m <sup>3</sup>
217	Barium chloride dihydrate	10326-27-9	2.7	330	2,000	Used MW-adjusted barium chloride (10361-37-2) PAC values	mg/m <sup>3</sup>
218	Barium chromate	10294-40-3	0.15	13	77	MW-adjusted insoluble chromium VI (7440-47-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted chromates (1333-82-0) IDLH (1990)	mg/m <sup>3</sup>
219	Barium cyanide	542-62-1	44	60	360	MW-adjusted cyanides MAK-TWA x 3, TEEL-3/6, MW-adjusted cyanides IDLH (1990)	mg/m <sup>3</sup>
220	Barium dioxide; (Barium peroxide)	1304-29-6	1.8	230	1,400	MW-adjusted soluble barium (7440-39-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble barium IDLH (1990)	mg/m <sup>3</sup>
221	Barium diphenylamine sulfonate	6211-24-1	6.9	850	5,100	MW-adjusted soluble barium (7440-39-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble barium IDLH (1990)	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
222	Barium fluoride	7787-32-8	1.9	230	1,400	MW-adjusted soluble barium (7440-39-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble barium IDLH (1990)	mg/m <sup>3</sup>
223	Barium hydrogen phosphate; (Barium phosphate dibasic)	10048-98-3	2.5	320	1,900	MW-adjusted soluble barium (7440-39-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble barium IDLH (1990)	mg/m <sup>3</sup>
224	Barium hydroxide	17194-00-2	1.9	230	1,400	MW-adjusted soluble barium (7440-39-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble barium IDLH (1990)	mg/m <sup>3</sup>
225	Barium hydroxide octahydrate	12230-71-6	3.4	420	2,500	MW-adjusted soluble barium (7440-39-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble barium IDLH (1990)	mg/m <sup>3</sup>
226	Barium metaborate	13701-59-2	2.4	300	1,800	MW-adjusted soluble barium (7440-39-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble barium IDLH (1990)	mg/m <sup>3</sup>
227	Barium nitrate	10022-31-8	2.9	350	2,100	MW-adjusted soluble barium (7440-39-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble barium IDLH (1990)	mg/m <sup>3</sup>
228	Barium nitrite	13465-94-6	2.5	300	1,800	MW-adjusted soluble barium (7440-39-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble barium IDLH (1990)	mg/m <sup>3</sup>
229	Barium oxide	1304-28-5	1.7	200	1,200	MW-adjusted soluble barium (7440-39-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble barium IDLH (1990)	mg/m <sup>3</sup>
230	Barium permanganate	7787-36-2	20	34	200	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
231	Barium phosphate	13466-20-1	3	30	150	Used phosphoric acid (7664-38-2) ERPG values	mg/m <sup>3</sup>
232	Barium stearate	6865-35-6	7.5	83	500	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
233	Barium sulfate	7727-43-7	15	170	990	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
234	Basic Green 4; (Aizen malachite green)	569-64-2	0.13	1.4	8.7	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
235	Bathophenanthroline	1662-01-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL- 2 x 6	mg/m <sup>3</sup>
236	Benz(e)acephenanthrylene; (Benzo(b)fluoroanthene)	205-99-2	0.12	1.3	7.9	(Norway) OEL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
237	Benzal chloride	98-87-3	0.21	2.3	14	TEEL-2/11, LOC, rat 120-min LC50	mg/m <sup>3</sup>
238	Benzaldehyde	100-52-7	4	9.9	59	WEEL-STEL, TEEL-3/6, rat oral LD50	ppm
239	Benzamide	55-21-0	4.7	52	310	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
240	Benzenamine, sulfate (2:1)	542-16-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
241	<b>Benzene</b>	<b>71-43-2</b>	<b>52</b>	<b>800</b>	<b>4000*</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
242	Benzene hexachloride; (Hexachlorocyclohexane, mixed isomers)	608-73-1	0.51	5.7	30	TEEL-2/11, rat oral TDLo, rat 240-min LC50	mg/m <sup>3</sup>
243	Benzene, 1-(chloromethyl)-4-nitro-; (p-Nitrobenzyl chloride)	100-14-1	2.5	28	360	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
244	Benzenearsonic acid; (Phenylarsonic acid)	98-05-5	0.025	0.27	13	TEEL-2/11, LOC, rat oral LDLo	mg/m <sup>3</sup>
245	Benzene-d6; (Deuterated benzene)	1076-43-3	52	800	4000*	Used benzene (71-43-2) AEGL values	ppm
246	Benzenesulfonic acid chloride; (Benzenesulfonyl chloride)	98-09-9	0.77	8.4	51	TEEL-2/11, TEEL-3/6, rat 60-min LCLo	mg/m <sup>3</sup>
247	Benzenesulfonic acid, 4-chloro	98-66-8	1.5	17	99	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
248	Benzenesulfonic acid, 5-chloro-2	z-0114	1.5	17	99	Used 4-chlorobenzenesulfonic acid (98-66-8) PAC values	mg/m <sup>3</sup>
249	Benzenetetracarboxylic dianhydride, 1,2,4,5-	89-32-7	6.8	74	450	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
251	Benzidine	92-87-5	0.93	10	61	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
252	Benzo(a)anthracene	56-55-3	1.2	13	79	TEEL-2/11, TEEL-3/6, rat iv LD50	mg/m <sup>3</sup>
253	Benzo(a)pyrene; (Coal tar pitch volatiles)	50-32-8	0.6	120	700	TEEL-2/11, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
254	Benzo(ghi)perylene	191-24-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
255	Benzo-4,7,13,16,21,24-hexaoxa-1,10-diazabicyclo(8.8.8)hexacosane, 5,6-	31250-18-7	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
256	Benzoic acid	65-85-0	15	170	830	TEEL-2/11, rat TCLo, dog oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
257	Benzoic acid, sodium salt	532-32-1	56	620	810	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
258	Benzoin oxime	441-38-3	0.49	5.4	32	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
259	<b>Benzonitrile</b>	<b>100-47-0</b>	0.56	<b>6.2</b>	<b>19</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
260	Benzophenone	119-61-9	1.5	90	310	WEEL-TWA x 3, rat oral TDLo, mouse oral LD50	mg/m <sup>3</sup>
261	Benzoquinone, p-; (Quinone)	106-51-4	0.3	11	68	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
262	Benzothiazole	95-16-9	2.8	30	75	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
263	Benzotriazole	95-14-7	1.2	13	77	TEEL-2/11, TEEL-3/6, rat 180-min LC50	mg/m <sup>3</sup>
264	Benzotrifluoride	98-08-8	19	220	1,300	MW-adjusted fluorides TLV-TWA x 3, rabbit 40-min TCLo, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
265	<b>Benzoyl chloride</b>	<b>98-88-4</b>	<b>0.3</b>	<b>5</b>	<b>20</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
266	Benzoyl peroxide	94-36-0	15	1,200	7,000	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
267	Benzyl acetate	140-11-4	30	330	2,000	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	ppm
268	Benzyl alcohol	100-51-6	30	52	740	WEEL-TWA x 3, rat ip TDLo, rat 240-min LC50	ppm
269	Benzyl aminopurine, 6-; (6-Benzyladenine)	1214-39-7	3.5	38	230	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
270	Benzyl benzoate	120-51-4	5.7	63	380	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
271	<b>Benzyl chloride</b>	<b>100-44-7</b>	<b>1</b>	<b>10</b>	<b>50</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
272	<b>Benzyl chloroformate; (Carbobenzoxy chloride)</b>	<b>501-53-1</b>	0.088	<b>0.97</b>	<b>2.9</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
273	Benzyl cyanide; (Phenylacetonitrile)	140-29-4	0.39	4.3	15	TEEL-2/11, LOC, rat 120-min LC50	mg/m <sup>3</sup>
274	Benzyl trichloride; (Trichloromethylbenzene)	98-07-7	0.064	0.7	5.3	TEEL-2/11, LOC, rat 120-min LC50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
275	Benzylamine	100-46-9	2	22	130	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
276	Benzylidimethylamine; (Dimethylbenzylamine, N,N;-BDMA)	103-83-3	0.62	6.8	41	TEEL-2/11, TEEL-3/6, rat 120-min LCLo	mg/m <sup>3</sup>
277	Benzylidimethyloctadecylammonium chloride; (Dimethyloctadecylbenzylammonium chloride)	122-19-0	3.8	41	250	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
278	Benzylmagnesium chloride	6921-34-2	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
279	Benzyltrimethylammonium hydroxide; (Triton b)	100-85-6	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
280	<b>Beryllium</b>	<b>7440-41-7</b>	0.0023	<b>0.025</b>	<b>0.1</b>	ERPG-2/11, <b>ERPG-2, ERPG-3</b>	mg/m <sup>3</sup>
281	Beryllium chloride	7787-47-5	0.02	0.22	0.89	TEEL-2/11, MW-adjusted beryllium (7440-41-7) ERPG-2 and ERPG-3 values	mg/m <sup>3</sup>
282	Beryllium fluoride	7787-49-7	0.012	0.13	0.52	TEEL-2/11, MW-adjusted beryllium (7440-41-7) ERPG-2 and ERPG-3 values	mg/m <sup>3</sup>
283	Beryllium hydroxide	13327-32-7	0.011	0.12	0.48	TEEL-2/11, MW-adjusted beryllium (7440-41-7) ERPG-2 and ERPG-3 values	mg/m <sup>3</sup>
284	Beryllium nitrate	13597-99-4	0.047	0.52	2.1	TEEL-2/11, MW-adjusted beryllium (7440-41-7) ERPG-2 and ERPG-3 values	mg/m <sup>3</sup>
285	Beryllium oxide	1304-56-9	0.0063	0.069	0.28	TEEL-2/11, MW-adjusted beryllium (7440-41-7) ERPG-2 and ERPG-3 values	mg/m <sup>3</sup>
286	Betaine, anhydrous; (Glycine betaine)	107-43-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
287	Bicyclo(2.2.1)heptane-2-carbonitrile, 5-chloro-6-(((methylamino)carbonyloxy)imino)-, (1S-(1-alpha,2-beta,4-alpha,5-alpha,6E))-; (Tranid)	15271-41-7	0.057	0.63	3.8	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
288	Bioxirane, 2,2'-; (1,2:3,4-Diepoxybutane)	1464-53-5	0.091	1	4	TEEL-2/11, LOC, rat 240-min LC50	ppm
289	Biphenylol, 4-	92-69-3	0.49	5.4	32	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
290	Biphenylol, sodium salt, 2-	132-27-4	5	54	330	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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			PAC-1	PAC-2	PAC-3		
291	Bis(1,1-dimethylethyl)-4-ethylphenol, 2,6-	4130-42-1	6.4	31	190	Used MW-adjusted BHT (128-37-0) PAC values	mg/m <sup>3</sup>
292	Bis(1,1-dimethylethyl)-4-methylphenol, 2,6-; (BHT (food grade); 2,6-Di-tert-butyl-p-cresol)	128-37-0	6	29	180	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
293	Bis(1-methylethyl)benzene, 1,4-; (p- or 1,4-Diisopropylbenzene)	100-18-5	2.7	30	180	TEEL-2/11, TEEL-3/6, mouse 120-min LCLo	mg/m <sup>3</sup>
294	Bis(1-methylethyl)benzene; (Diisopropylbenzene)	25321-09-9	3.4	38	230	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	mg/m <sup>3</sup>
295	Bis(2,3-epoxypropoxy) butane, 1,4-	2425-79-8	16	170	220	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
296	Bis(2-butoxyethyl) ether; (Dibutyl carbitol; Diethylene glycol dibutyl ether)	112-73-2	2.5	28	87	TEEL-2/11, mouse oral TDLo, rat oral LD50	ppm
297	Bis(2-chloroethylthioethyl) ether; (2,2'-Di(3-chloroethylthio)diethyl ether)	63918-89-8	0.16	1.8	11	TEEL-2/11, TEEL-3/6, human 60-min LCLo	mg/m <sup>3</sup>
298	Bis(2-chloroethoxy)ethane, 1,2-; (Triglycol dichloride)	112-26-5	0.75	8.3	50	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
299	<b>Bis(2-chloroethyl)sulfide; (HD; Sulfur mustard)</b>	<b>505-60-2</b>	<b>0.010</b>	<b>0.020</b>	<b>0.32</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
300	Bis(2-chloroethylthio)ethane, 1,2-; (Sesquimustard)	3563-36-8	0.09	0.18	2.9	Used MW-adjusted sulfur mustard (505-60-2) AEGL values converted to mg/m <sup>3</sup>	mg/m <sup>3</sup>
301	Bis(2-chloroethylthio)methane	63869-13-6	0.08	0.17	2.7	Used MW-adjusted sulfur mustard (505-60-2) AEGL values converted to mg/m <sup>3</sup>	mg/m <sup>3</sup>
302	Bis(2-chloroethylthio)-n-butane, 1,4-	142868-93-7	0.1	0.2	3.2	Used MW-adjusted sulfur mustard (505-60-2) AEGL values converted to mg/m <sup>3</sup>	mg/m <sup>3</sup>
303	Bis(2-chloroethylthio)-n-pentane, 1,5-	142868-94-8	0.11	0.21	3.4	Used MW-adjusted sulfur mustard (505-60-2) AEGL values converted to mg/m <sup>3</sup>	mg/m <sup>3</sup>
304	Bis(2-chloroethylthio)-n-propane, 1,3-	63905-10-2	0.1	0.19	3	Used MW-adjusted sulfur mustard (505-60-2) AEGL values converted to mg/m <sup>3</sup>	mg/m <sup>3</sup>
305	Bis(2-chloroethylthiomethyl)ether	63918-90-1	0.1	0.2	3.1	Used MW-adjusted sulfur mustard (505-60-2) AEGL values converted to mg/m <sup>3</sup>	mg/m <sup>3</sup>
306	Bis(2-ethoxyethyl) ether; (Diethyl carbitol)	112-36-7	15	160	980	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
307	Bis(2-ethylhexyl) hydrogen phosphate	298-07-7	15	160	980	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
308	Bis(2-ethylhexyl) phenyl phosphate	16368-97-1	0.27	2.9	17	TEEL-2/11, TEEL-3/6, mouse 120-min LC50	mg/m <sup>3</sup>

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**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
309	Bis(2-hydroxyethyl)dodecanamide, N,N-	120-40-1	0.12	1.4	46	TEEL-2/11, rat oral TDLo, rat oral LD50	ppm
310	Bis(2-methylstyryl)benzene, 4-; (1,4-Bis(2-(2-methylphenyl)ethenyl)benzene)	13280-61-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
311	Bis(3-tert-butyl-4-hydroxy-6-methylphenyl) sulfide; (4,4'-Thiobis(6-tert-butyl-m-cresol))	96-69-5	3	82	460	TLV-TWA x 3, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
312	Bis(chloromethyl)ketone; (1,3-Dichloroacetone)	534-07-6	0.025	0.27	1	TEEL-2/11, mouse dermal TDLo, rat 120-min LC50	mg/m <sup>3</sup>
313	Bis(chloromethyl)oxetane, 3,3-	78-71-7	0.18	2	12	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
314	Bis(dimethylamino)acridine, 3,6-; (Acridine orange)	494-38-2	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
315	Bis(trifluoromethyl)benzene, 1,3-	402-31-3	14	160	940	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
316	Bis(tris(hydroxymethyl)methylamino)propane, 1,3-; (Bis-tris propane)	64431-96-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
317	Bis[(benzo-15-crown-5)-15-ylmethyl] pimelate	69271-98-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
318	Bisbutylenetetrahydrofurfural; (2,3,4,5-Bis(2-butylene)tetrahydro-2-furaldehyde)	126-15-8	7.5	83	500	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
319	Bismuth	7440-69-9	15	170	990	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
320	Bismuth acetate	22306-37-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
321	Bismuth germanate	12233-73-7	21	240	1,400	Used MW-adjusted bismuth (7440-69-9) PAC values	mg/m <sup>3</sup>
322	Bismuth hydroxide	10361-43-0	19	210	1,200	Used MW-adjusted bismuth (7440-69-9) PAC values	mg/m <sup>3</sup>
323	Bismuth hydroxide nitrate oxide; (White paint)	1304-85-4	13	150	890	TEEL-2/11, mouse oral TDLo, TEEL-2 x 6	mg/m <sup>3</sup>
324	Bismuth iodide	7787-64-6	1.2	13	79	TEEL-2/11, TEEL-2/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
325	Bismuth nitrate	10361-44-1	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
326	Bismuth oxide	1304-76-3	15	170	990	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

Chemicals with AEGLs: large, bolded font. ERPGs (but no AEGLs): bolded font.

\* indicates 10% LEL ≤ PAC < 50% LEL; \*\* indicates 50% LEL ≤ PAC < 100% LEL; \*\*\* indicates PAC ≥ LEL.

**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
327	Bismuth oxychloride; (Bismuth chloride oxide)	7787-59-9	66	730	4,400	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
328	Bismuth(III) nitrate, pentahydrate	10035-06-0	12	130	800	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
329	Bisphenol A diglycidyl ether	1675-54-3	39	430	2,600	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
330	Bisphenol A; (4,4'-Isopropylidenediphenol)	80-05-7	15	110	650	MAK-TWA x 3, rat TDLo, rat oral LD50	mg/m <sup>3</sup>
331	Bitoscanate; (1,4-Phenylenediisothiocyanic acid)	4044-65-9	1.8	20	25	TEEL-2/11, LOC, mouse oral LD50	mg/m <sup>3</sup>
332	BoBCalix; (Calix[4]arene-bis(t-octylbenzo-crown-b))	z-0110	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
333	Borane methyl sulfide complex; (Methyl sulfide complex with borane (1:1))	13292-87-0	0.03	0.33	2	TEEL-2/11, TEEL-3/6, rabbit dermal LDLo	ppm
334	Borane-tetrahydrofuran	14044-65-6	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
335	Borate	14213-97-9	6	66	400	TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
336	Boric acid	10043-35-3	6	23	830	TLV-TWA x 3, rat oral TDLo, dog oral LD50	mg/m <sup>3</sup>
337	Boric acid, tributyl ester; (Tri-n-butyl borate)	688-74-4	0.37	4.1	25	TEEL-2/11, TEEL-3/6, mouse oral LD50	ppm
338	Boron	7440-42-8	1.9	21	130	TEEL-2/11, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>
339	Boron carbide	12069-32-8	2.4	27	170	Used MW-adjusted boron (7440-42-8) PAC values	mg/m <sup>3</sup>
340	Boron oxide	1303-86-2	30	100	620	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
341	<b>Boron tribromide</b>	<b>10294-33-4</b>	<b>0.33</b>	<b>13</b>	<b>40</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
342	Boron trichloride	10294-34-5	0.19	2.1	71	TEEL-2/11, LOC, rat 60-min LC50	ppm
343	<b>Boron trifluoride</b>	<b>7637-07-2</b>	<b>2.5</b>	<b>29</b>	<b>88</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
344	Boron trifluoride dihydrate	13319-75-0	3.8	44	140	Used MW-adjusted boron trifluoride (7637-07-2) AEGL values	mg/m <sup>3</sup>
345	Boron trifluoride etherate	109-63-7	2.5	29	88	Used boron trifluoride (7637-07-2) AEGL values	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
346	Boron trifluoride-dimethyl ether	353-42-4	2.5	29	88	Used MW-adjusted boron trifluoride (7637-07-2) AEGL values	mg/m <sup>3</sup>
347	Botulinum toxin-A; (includes Type B (93384-44-2) and Type F (107231-15-2))	93384-43-1	3.30E-09	3.60E-08	2.20E-07	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
348	Brij-35; (alpha-Dodecyl-omega-hydroxypoly(oxyethylene))	9002-92-0	2.9	31	200	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
349	Brilliant blue; (Acid blue 9)	2650-18-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
350	Bromadiolone	28772-56-7	0.091	1	3.4	TEEL-2/11, LOC, dog oral LD50	mg/m <sup>3</sup>
351	<b>Bromine</b>	<b>7726-95-6</b>	<b>0.033</b>	<b>0.24</b>	<b>8.5</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
352	<b>Bromine chloride</b>	<b>13863-41-7</b>	0.075	<b>0.83</b>	<b>2.5</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
353	<b>Bromine pentafluoride</b>	<b>7789-30-2</b>	0.015	<b>0.17</b>	<b>33</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
354	<b>Bromine trifluoride</b>	<b>7787-71-5</b>	<b>0.12</b>	<b>2.0</b>	<b>21</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
355	Bromo acetic acid, methyl ester	96-32-2	0.069	0.76	4.6	TEEL-2/11, TEEL-3/6, mouse iv LDLo	mg/m <sup>3</sup>
356	Bromo-1-chloro-5,5-dimethylhydantoin, 3-; (Bromo-1-chloro-5,5-dimethyl-2,4-imidazolidinedione, 3-)	126-06-7	1.3	14	83	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
357	Bromo-2-chloro-1,1,2-trifluoroethane, 1-; (1,1,2-Trifluoro-1-bromo-2-chloroethane)	354-06-3	7.7	85	510	TEEL-2/11, TEEL-3/6, mouse 120-min LC50	ppm
358	Bromo-3-chloro-5,5-dimethylhydantoin, 1-; (1-Bromo-3-chloro-5,5-dimethyl-2,4-imidazolidinedione)	16079-88-2	4.2	46	280	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
359	Bromo-3-methylbutane, 1-	107-82-4	6	66	390	TEEL-2/11, TEEL-3/6, rat ip LD50	ppm
360	Bromoacetaldehyde diethyl acetal	2032-35-1	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
361	Bromoacetic acid	79-08-3	0.023	0.26	1.5	TEEL-2/11, TEEL-3/6, rat 30-min LCLo	mg/m <sup>3</sup>
362	<b>Bromoacetone</b>	<b>598-31-2</b>	<b>0.011</b>	<b>0.33</b>	<b>0.98</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
363	Bromoanisole, 3-; (1-Bromo-3-methoxybenzene)	2398-37-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
364	Bromobenzene; (Phenyl bromide)	108-86-1	2.6	29	74	TEEL-2/11, mouse ip TDLo, rat oral LD50	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
365	Bromochlorobenzene, m-	108-37-2	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
366	Bromochlorobenzene, p-	106-39-8	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
367	Bromochloromethane	74-97-5	600	830	5,000	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
368	Bromocresol green; (Phenol, 4,4'-(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis[2,6-dibromo-3-methyl-])	76-60-8	13	140	840	TEEL-2/11, TEEL-3/6, rat ip LDLo	mg/m <sup>3</sup>
369	Bromocresol purple; (Phenol, 4,4'-(1,1-dioxido-3H-2,1-benzoxathiol-3-ylidene)bis[2-bromo-6-methyl-])	115-40-2	10	110	660	Used MW-adjusted bromocresol green (76-60-8) PAC values	mg/m <sup>3</sup>
370	Bromocyclohexanol, cis-2-	16536-57-5	0.037	0.27	9.6	Used MW-adjusted bromine (7726-95-6) AEGL values	ppm
371	Bromodecane, 1-	112-29-8	0.25	2.7	16	TEEL-2/11, TEEL-3/6, mouse 120-min LC50	ppm
372	Bromodichloromethane	75-27-4	1.3	14	85	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
373	Bromododecane, 1-	143-15-7	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
374	Bromoethane; (Ethyl bromide)	74-96-4	15	370	3,500	TLV-TWA x 3, mouse 15-min TCLo, IDLH (1990)	ppm
375	Bromoethanol, 2-; (Ethylene bromohydrin)	540-51-2	0.06	0.66	23	TEEL-2/11, mouse ip TDLo, mouse ip LDLo	mg/m <sup>3</sup>
376	Bromoethylmagnesium	925-90-6	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
377	Bromofluorobenzene, 4-; (p-Fluorobromobenzene)	460-00-4	12	130	790	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
378	Bromoform; (Tribromomethane)	75-25-2	1.5	6.8	41	TLV-TWA x 3, TEEL-3/6, mouse 120-min LC50	ppm
379	Bromohexane; (n-Hexyl bromide)	111-25-1	17	190	1,100	TEEL-2/11, TEEL-3/6, rat 30-min LC50	ppm
380	Bromomesitylene, 2-; (2-Bromo-1,3,5-trimethylbenzene)	576-83-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
381	Bromomethyl-1,3-dioxolane, 2-	4360-63-8	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
382	Bromonaphthalene	90-11-9	2.4	27	160	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
383	Bromonitromethane	563-70-2	0.4	4.4	26	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
384	Bromooctane , 1-; (Octyl bromide)	111-83-1	1.9	21	130	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
385	Bromophenol blue; (Phenol, 4,4'-(3H-2,1-benzoxathiol-3-ylidene)bis(2,6-dibromo-, S,S-dioxide))	115-39-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
386	Bromophenyl phenyl ether, 4-	101-55-3	0.33	3.6	21	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	mg/m <sup>3</sup>
387	Bromopropane, 1-	106-94-5	0.3	120	700	TLV-TWA x 3, TEEL-3/6, rat 30-min LC50	ppm
388	Bromopropane, 2-	75-26-3	120	1,300	1,400	TEEL-2/11, rat 30-min TCLo, mouse 240-min LC50	ppm
389	Bromopyrene, 3-	1714-29-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
390	Bromosuccinimide, N-	128-08-5	1.1	12	73	TEEL-2/11, TEEL-3/6, mouse ip LDLo	mg/m <sup>3</sup>
391	Bromothymol blue; (Dibromothymolsulfonphthalein)	76-59-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
392	Bromotoluene, A-; (Benzyl bromide)	100-39-0	0.41	4.5	27	TEEL-2/11, TEEL-3/6, rabbit 30-min LCLo	mg/m <sup>3</sup>
393	Bromotrichloromethane	75-62-7	0.088	0.97	5.8	TEEL-2/11, TEEL-3/6, rat ip LD50	ppm
394	Bromotrifluoroethylene	598-73-2	3.2	230	1,400	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	ppm
395	Bromotrifluoromethane; (Trifluorobromomethane)	75-63-8	3,000	25,000	40,000	TEEL-2/11, EEGL 60-min, EEGL 30-min	ppm
396	Bromotrimethylsilane; (Trimethylsilyl bromide)	2857-97-8	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
397	Brucine; (2,3-Dimethoxystrychnine)	357-57-3	0.29	3.2	36	TEEL-2/11, rat ip TDLo, rat ip LD50	mg/m <sup>3</sup>
398	<b>Butadiene, 1,3-</b>	<b>106-99-0</b>	<b>670</b>	<b>5300*</b>	<b>22000***</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
399	Butanaminium, N,N,N-tributyl-1-, bromide; (Tetrabutylammonium bromide)	1643-19-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
400	<b>Butane</b>	<b>106-97-8</b>	<b>5500*</b>	<b>17000**</b>	<b>53000***</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
401	Butanedioic acid, diethyl ester; (Succinic acid, diethyl ester)	123-25-1	3.6	40	240	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm

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			PAC-1	PAC-2	PAC-3		
402	Butanedioic acid, dimethyl ester; (Succinic acid, dimethyl ester)	106-65-0	2.5	28	170	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
403	Butanediol dinitrate, 1,4-	3457-91-8	0.016	0.2	80	Used ethanediol dinitrate (628-96-6) PAC values	ppm
404	Butanediol, 1,3-	107-88-0	120	1,300	4,500	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
405	Butanediol, 1,4-; (1,4-Tetramethylene glycol)	110-63-4	4.7	52	640	TEEL-2/11, mouse ip TDLo, rat 240-min LCLo	mg/m <sup>3</sup>
406	Butanedione, 2,3-; (Diacetyl)	431-03-8	0.02	120	310	TLV-STEL, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
407	Butanenitrile; (Butyronitrile)	109-74-0	0.76	8.3	50	TEEL-2/11, TEEL-3/6, rat 60-min LCLo	ppm
408	Butanephosphonic acid	3321-64-0	9.6	110	630	Used dibutyl phosphite (1809-19-4) PAC values	mg/m <sup>3</sup>
409	Butanethiol; (n-Butyl mercaptan)	109-79-5	4.5	50	2,500	TLV-TWA x 3, REL-C adjusted due to ratio to toxicity data, IDLH (1990)	ppm
410	Butanoic acid, butyl ester; (n-Butyl n-butanoate)	109-21-7	2.3	26	150	TEEL-2/11, TEEL-3/6, rat ip LD50	ppm
411	Butanol, aluminum salt, 2-	2269-22-9	55	590	3,600	MW-adjusted soluble aluminum (7429-90-5) REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
412	Butanol-d10, n-	34193-38-9	60	800	8000**	Used n-butyl alcohol (71-36-3) PAC values	ppm
413	Butanone oxime; (Ethyl methyl ketoxime)	96-29-7	30	56	250	WEEL-TWA x 3, rat 360-min TCLo, rat 240-min LC50	ppm
414	<b>Butanone, 2-; (Methyl ethyl ketone; MEK)</b>	<b>78-93-3</b>	<b>200</b>	<b>2700*</b>	<b>4000*</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
415	Butene, 1-; (Butylene)	106-98-9	750	2900*	17000***	TLV-TWA x 3, mouse 10-min TCLo, TEEL-2 x 6	ppm
416	Butene, 2-	107-01-7	750	1,100	6,600	TLV-TWA x 3, TEEL-3/6, rat 240-min LC50	ppm
417	Butene, cis-2-; (cis-1,2-Dimethylethylene)	590-18-1	750	2200*	13000**	TLV-TWA x 3, mouse 10-min TCLo, TEEL-2 x 6	ppm
418	Butene, trans-2-; (trans-1,2-Dimethylethylene)	624-64-6	750	2400*	14000**	TLV-TWA x 3, mouse 10-min TCLo, TEEL-2 x 6	ppm
419	Butoxyethanol acetate, 2-; (Ethylene glycol monobutyl ether acetate)	112-07-2	15	35	210	REL-TWA x 3, TEEL-3/6, rat oral LD50	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
420	Butoxyethanol phosphate, 2-	78-51-3	9	99	590	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
421	Butoxyethanol, 2-; (Glycol ether EB)	111-76-2	60	120	700	TLV-TWA x 3, TEEL-3/6, IDLH (1990 and 1994)	ppm
422	Butoxyethoxyethanol, 2-(2-; (Diethylene glycol monobutyl ether)	112-34-5	30	33	200	TLV-TWA x 3, TEEL-3/6, rat oral LD50	ppm
423	Butoxyethoxyethyl thiocyanate, 2-(2-	112-56-1	0.19	2.1	12	TEEL-2/11, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>
424	Butoxypolypropylene glycol	9003-13-8	27	300	1,800	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
425	<b>Butyl acetate, n-</b>	<b>123-86-4</b>	<b>5</b>	<b>200</b>	<b>3000*</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
426	Butyl acetate, sec-	105-46-4	600	1700*	10000**	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
427	Butyl acetate, tert-	540-88-5	600	1,700	10,000	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
428	Butyl acetoacetate, tert-	1694-31-1	15	170	990	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
429	<b>Butyl acrylate, n-</b>	<b>141-32-2</b>	<b>8.3</b>	<b>130</b>	<b>480</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
430	Butyl alcohol, n-; (n-Butanol)	71-36-3	60	800	8000**	TLV-TWA x 3, rat 240-min TClO, IDLH (1990)	ppm
431	Butyl alcohol, sec-; (2-Butanol)	78-92-2	150	220	10000**	REL-STEL, mouse 51-min TClO, IDLH (1990)	ppm
432	Butyl alcohol, tert; (tert-Butanol)	75-65-0	150	1,300	8000*	REL-STEL, TEEL-3/6, IDLH (1990)	ppm
433	Butyl bis(2-ethylhexyl)phosphate	z-0002	0.96	11	63	Used bis(ethylhexyl) phosphate (298-07-7) PAC values converted to ppm	ppm
434	Butyl bromide, n-; (1-Bromobutane)	109-65-9	4.4	49	290	TEEL-2/11, TEEL-3/6, rat 120-min LC50	ppm
435	<b>Butyl chloroformate, n-</b>	<b>592-34-7</b>	0.6	<b>2.2</b>	<b>6.7</b>	MAK-TWA x 3, <b>AEGL-2, AEGL-3</b>	ppm
436	<b>Butyl chloroformate, sec-</b>	<b>17462-58-7</b>	0.2	<b>2.2</b>	<b>6.7</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
437	Butyl ether, n-; (Dibutyl ether)	142-96-1	2.6	29	170	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
438	Butyl glycidyl ether, n-	2426-08-6	9	580	3,500	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
439	<b>Butyl isocyanate, n-</b>	<b>111-36-4</b>	<b>0.01</b>	<b>0.083</b>	<b>0.25</b>	<b>ERPG-1, AEGL-2, AEGL-3</b>	ppm
440	Butyl isocyanate, tert-	1609-86-5	0.0099	0.11	0.65	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
441	Butyl levulinate	2052-15-5	15	170	990	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
442	Butyl lithium	109-72-8	30	330	2,000	Used MW-adjusted lithium (7439-93-2) PAC values	mg/m <sup>3</sup>
443	Butyl methyl-d3 ether, tert-	29366-08-3	50	570	5300*	Used tert-butyl methyl ether (1634-04-4) AEGL values	ppm
444	Butyl perbenzoate, tert-	614-45-9	8.2	90	200	TEEL-2/11, rat ip TDLo, rat oral LD50	mg/m <sup>3</sup>
445	Butyl propanoate; (Propanoic acid, butyl ester)	590-01-2	34	370	990	TEEL-2/11, rat 360-min TCLo, rat oral LD50	mg/m <sup>3</sup>
446	Butyl-2-methylcyclopropane, T-1-	38851-70-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
447	Butyl-3-iodo-2-propynylcarbamate	55406-53-6	3.3	36	220	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
448	Butylamine, n-	109-73-9	6	50	300	MAK-TWA x 3, TEEL-3/6, IDLH (1994)	ppm
449	Butylamine, sec-; (includes 513-49-5)	13952-84-6	6	10	31	MAK-TWA x 3, MAK-C, dog oral LD50	ppm
450	Butylamine, tert-	75-64-9	0.85	9.3	56	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
451	Butylbenzene, n-; (1-Phenylbutane)	104-51-8	6.2	68	410	TEEL-2/11, TEEL-3/6, rat oral LDLo	ppm
452	Butylbenzene, sec-; (2-Phenylbutane)	135-98-8	1.1	12	69	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
453	Butylbenzene, tert-	98-06-6	1.7	18	110	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
454	Butylcyclohexane; (1-Cyclohexylbutane)	1678-93-9	21	230	1,400	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	ppm
455	Butylcyclohexanone, p-tert-	98-53-3	15	170	990	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
456	Butylene carbonate; (1,2-Butanediol, cyclic carbonate)	4437-85-8	15	170	990	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
457	Butyllithium, sec-	598-30-1	110	1,200	7,300	Used MW-adjusted lithium (7439-93-2) PAC values converted to ppm	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
458	Butylpyrocatechol, 4-tert-; (4-tert-Butylcatechol)	98-29-3	0.18	2	560	TEEL-2/11, WEEL-C, rat oral LD50	mg/m <sup>3</sup>
459	<b>Butyltrichlorosilane</b>	<b>7521-80-4</b>	<b>0.60</b>	<b>7.3</b>	<b>33</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
460	Butyne-1,4-diol, 2-; (1,4-Butynediol)	110-65-6	0.3	5.1	31	MAK-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
461	Butyraldehyde	123-72-8	75	430	830	WEEL-TWA x 3, dog 360-min TCLo, rat 30-min LC50	ppm
462	Butyric acid, sodium salt	156-54-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
463	Butyric acid; (n-Butyric acid)	107-92-6	1.4	16	110	TEEL-2/11, rat 360-min TCLo, rat oral LD50	ppm
464	<b>BZ; (3-Quinuclidinyl benzilate)</b>	<b>6581-06-2</b>	1.00E-03	<b>0.011</b>	<b>0.21</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
465	C.I. pigment red 53:1; (5-Chloro-2-((2-hydroxy-1-naphthyl)azo)-p-toluene sulfonic acid, barium salt)	5160-02-1	3	68	410	WEEL-TWA x 3, rat oral TDLo, TEEL-2 x 6	mg/m <sup>3</sup>
466	C-18 Unsaturated fatty acid, dimers, reaction products with polyethylenepolyamines; (Versamid 140 polyamide resin; Versamid 125)	68410-23-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
467	Cacodylic acid; (Arsenic acid, dimethyl-)	75-60-5	2.8	25	140	MW-adjusted organic arsenic (7440-38-2) PEL-TWA x 3, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
468	<b>Cadmium</b>	<b>7440-43-9</b>	<b>0.1</b>	<b>0.76</b>	<b>4.7</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
469	Cadmium bromide	7789-42-6	0.24	1.8	11	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
470	Cadmium carbonate	513-78-0	0.15	1.2	7.2	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
471	Cadmium chloride	10108-64-2	0.16	1.2	7.6	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
472	Cadmium chloride hemipentahydrate; (Cadmium chloride, 5/2-hydrate)	7790-78-5	0.1	0.77	9.5	Used MW-adjusted cadmium chloride (10108-64-2) PAC values	mg/m <sup>3</sup>
473	Cadmium fluoride	7790-79-6	0.13	1	6.3	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
474	Cadmium hydroxide	21041-95-2	0.13	0.99	6.1	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
475	Cadmium nitrate	10325-94-7	0.21	1.6	9.9	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
476	Cadmium nitrate tetrahydrate	10022-68-1	0.27	2.1	13	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
477	Cadmium nitrite	7790-83-2	0.18	1.4	8.6	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
478	Cadmium oxide	1306-19-0	0.11	0.87	5.4	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
479	Cadmium stearate; (Octadecanoic acid, cadmium salt)	2223-93-0	0.61	4.6	28	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
480	Cadmium sulfate	10124-36-4	0.19	1.4	8.7	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
481	Cadmium sulfate, hydrate	7790-84-3	0.1	0.76	11	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
482	Cadmium sulfide	1306-23-6	0.13	0.98	6	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
483	Cadmium tungstate	7790-85-4	0.32	2.4	15	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
484	Cadmium(II) acetate	543-90-8	0.21	1.6	9.6	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
485	Calcium acetate	62-54-4	13	140	850	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
486	Calcium arsenate	7778-44-1	0.91	10	270	TEEL-2/11, LOC, MW-adjusted arsenic IDLH (1990)	mg/m <sup>3</sup>
487	Calcium carbide	75-20-7	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HR = 1)	mg/m <sup>3</sup>
488	Calcium chloride	10043-52-4	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
489	Calcium chloride dihydrate	10035-04-8	16	170	1,100	Used MW-adjusted calcium chloride (10043-52-4) PAC values	mg/m <sup>3</sup>
490	Calcium chloride hexahydrate	7774-34-7	24	260	1,600	Used MW-adjusted calcium chloride (10043-52-4) PAC values	mg/m <sup>3</sup>
491	Calcium chloride hydrate	22691-02-7	13	140	850	Used MW-adjusted calcium chloride (10043-52-4) PAC values	mg/m <sup>3</sup>
492	Calcium chromate	13765-19-0	0.003	7.8	47	TLV-TWA x 3, TEEL-3/6, MW-adjusted chromates (1333-82-0) IDLH (1990)	mg/m <sup>3</sup>
493	Calcium cyanamide	156-62-7	1.5	5.6	50	TLV-TWA x 3, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
494	<b>Calcium cyanide</b>	<b>592-01-8</b>	<b>3.8</b>	<b>13</b>	<b>28</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
495	Calcium fluoride	7789-75-5	15	170	1,000	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
496	Calcium formate	544-17-2	8.5	71	710	Used MW-adjusted formic acid (64-18-6) ERPG values	mg/m <sup>3</sup>
497	Calcium hydride	7789-78-8	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
498	Calcium hydroxide	1305-62-0	1	240	1,500	MAK-STEL, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
499	Calcium hydroxide phosphate; (Calcium phosphate tribasic)	12167-74-7	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>
500	Calcium hypochlorite; (Calcium oxychloride)	7778-54-3	2.6	28	170	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
501	Calcium metasilicate	10101-39-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
502	Calcium monohydrogen phosphate dihydrate	7789-77-7	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
503	Calcium nitrite	13780-06-8	6.4	71	240	Used sodium nitrite (7632-00-0) PAC values	mg/m <sup>3</sup>
504	Calcium oxalate	563-72-4	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
505	Calcium oxalate, monohydrate	5794-28-5	14	150	900	Used MW-adjusted calcium oxalate (563-72-4) PAC values	mg/m <sup>3</sup>
506	Calcium oxide	1305-78-8	6	110	660	TLV-TWA x 3, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
507	Calcium phosphate; (Tricalcium phosphate)	10103-46-5	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>
508	<b>Calcium phosphide</b>	<b>1305-99-3</b>	0.091	<b>1.0</b>	<b>1.8</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
509	Calcium sulfate anhydrous; (Drierite; Gypsum; Plaster of Paris)	7778-18-9	30	330	2,000	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
510	Calcium sulfide	20548-54-3	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
511	Calcium trifluoromethanesulfonate	55120-75-7	22	250	1,500	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
512	Calcium(II) nitrate	10124-37-5	0.91	10	60	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
513	Calcium(II) nitrate tetrahydrate (1:2:4)	13477-34-4	12	130	770	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
514	Calcium(II) sulfate dihydrate (1:1:2)	10101-41-4	30	330	2,000	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
515	Camphorsulfonic acid, (1R)-(-)-10-	35963-20-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
516	Cantharidin	56-25-7	0.39	4.3	33	TEEL-2/11, LOC, dog oral LDLo	mg/m <sup>3</sup>
517	Caprolactam (dust)	105-60-2	3	40	240	REL-STEL, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
518	Caprolactone; (epsilon-Lactone hexanoic acid)	502-44-3	13	140	850	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
519	Caprylyl chloride; (Octanoyl chloride)	111-64-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
520	CAPSO	73463-39-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
521	Captan	133-06-2	15	81	750	TLV-TWA x 3, human oral TDLo, human oral LDLo	mg/m <sup>3</sup>
522	Carbachol chloride	51-83-2	1.4	15	90	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
523	Carbamic acid, methyl-, O-(((2,4-dimethyl-1,3-dithiolan-2-yl)methylene)amino)-; (Tirpate)	26419-73-8	0.003	0.033	0.2	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
524	Carbaryl	63-25-2	1.5	100	600	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
525	Carbazole	86-74-8	0.66	7.2	43	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
526	Carbazole violet	6358-30-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
527	Carbethoxyethylidine(triphenylphosphorane)	5717-37-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
528	Carbofuran	1563-66-2	0.3	0.43	3.7	TLV-TWA x 3, LOC, rat 240-min LC50	mg/m <sup>3</sup>
529	Carbon black	1333-86-4	9	99	590	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
530	Carbon dioxide	124-38-9	30,000	40,000	50,000	TLV-STEL, Review Panel selected value (See white paper), IDLH (1990)	ppm
531	<b>Carbon disulfide</b>	<b>75-15-0</b>	<b>13</b>	<b>160</b>	<b>480</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
532	<b>Carbon monoxide</b>	<b>630-08-0</b>	75	<b>83</b>	<b>330</b>	TLV-TWA x 3, <b>AEGL-2, AEGL-3</b>	ppm
533	<b>Carbon tetrachloride</b>	<b>56-23-5</b>	1.2	<b>13</b>	<b>340</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
534	Carbon tetrafluoride; (Tetrafluoromethane)	75-73-0	92	1,000	6,000	TEEL-2/11, TEEL-3/6, rat 15-min LCLo	ppm
535	Carbon trifluoride; (Trifluoromethane; Fluoroform)	75-46-7	350	3,800	23,000	TEEL-2/11, human 15-min TCLo, TEEL-2 x 6	ppm
536	Carbon; (Graphite, synthetic)	7440-44-0	6	16	95	TLV-TWA x 3, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
537	Carbonic acid, calcium salt	471-34-1	45	210	1,300	PEL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
538	<b>Carbonyl fluoride</b>	<b>353-50-4</b>	0.025	<b>0.28</b>	<b>0.83</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
539	<b>Carbonyl sulfide</b>	<b>463-58-1</b>	15	<b>55</b>	<b>150</b>	TLV-TWA x 3, <b>AEGL-2, AEGL-3</b>	ppm
540	Carbonyldiphthalic anhydride, 4,4'-	2421-28-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
541	Carbophenothion; (Trithion)	786-19-6	0.62	6.8	24	TEEL-2/11, LOC, mouse oral LD50	mg/m <sup>3</sup>
542	Catechol	120-80-9	15	96	570	TLV-TWA x 3, rat 480-min TCLo, TEEL-2 x 6	ppm
543	Ceric ammonium nitrate	16774-21-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
544	Ceric ammonium sulfate	7637-03-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
545	Ceric ammonium sulfate, dihydrate	10378-47-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
546	Ceric oxide	1306-38-3	3	33	200	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
547	Cerium	7440-45-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
548	Cerium acetate	537-00-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
549	Cerium chloride	7790-86-5	6.3	70	420	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
550	Cerium fluoride	7758-88-5	26	280	1,700	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
551	Cerium hydroxide	15785-09-8	21	180	1,100	Used MW-adjusted aluminum hydroxide (21645-51-2) PAC values	mg/m <sup>3</sup>
552	Cerium nitrate hexahydrate	10294-41-4	13	140	830	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
553	Cerium oxalate	139-42-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
554	Cerium sulfate	13590-82-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
555	Cerium trioxide	1345-13-7	1.6	17	100	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
556	Cerium(III) sulfate	13454-94-9	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
557	Cerium(IV) hydroxide	12014-56-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
558	Cerium(IV) nitrate	13093-17-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
559	Cerous nitrate; (Cerium(III) nitrate)	10108-73-3	9.5	100	620	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
560	Cerous nitrite	z-0004	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
561	Cesium	7440-46-2	5.6	61	370	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
562	Cesium carbonate	534-17-8	7	77	460	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
563	Cesium chloride	7647-17-8	21	230	400	TEEL-2/11, rat ip TDLo, rat oral LD50	mg/m <sup>3</sup>
564	Cesium fluoride	13400-13-0	60	670	4,000	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
565	Cesium hydroxide	21351-79-1	6	19	110	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
566	Cesium iodide	7789-17-5	7.2	79	470	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
567	Cesium metaborate	92141-86-1	6.8	77	460	Used sodium metaborate (7775-19-1) PAC values	mg/m <sup>3</sup>

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**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
568	Cesium nitrate	7789-18-6	7.2	79	470	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
569	Cesium nitrite	13454-83-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
570	Cesium oxide	20281-00-9	4.1	45	270	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
571	Chloramben; (Amiben; 3-Amino-2,5-dichlorobenzoic acid)	133-90-4	11	120	690	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
572	Chloramphenicol	56-75-7	1.5	10	500	WEEL-TWA x 3, rat TCLo, rat oral LD50	mg/m <sup>3</sup>
573	Chlordane	57-74-9	4.5	50	500	TEEL-2/11, LOC, IDLH (1990)	mg/m <sup>3</sup>
574	Chlorfenvinfos	470-90-6	0.91	10	500	TEEL-2/11, LOC, dog oral LD50	mg/m <sup>3</sup>
575	Chloric acid, sodium salt; (Sodium chlorate)	7775-09-9	3.6	40	240	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
576	Chloride; (Chloride(1-); Chloride ions)	16887-00-6	0.5	2	20	Used chlorine (7782-50-5) AEGL values	ppm
577	Chlorinated polyolefins	68410-99-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
578	<b>Chlorine</b>	<b>7782-50-5</b>	<b>0.50</b>	<b>2.0</b>	<b>20</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
579	<b>Chlorine dioxide</b>	<b>10049-04-4</b>	<b>0.15</b>	<b>1.1</b>	<b>2.4</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
580	Chlorine Hi dry granular (as Cl)	z-0006	0.5	2	20	Used chlorine (7782-50-5) AEGL values	ppm
581	<b>Chlorine pentafluoride</b>	<b>13637-63-3</b>	0.015	<b>0.17</b>	<b>8.0</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
582	<b>Chlorine trifluoride</b>	<b>7790-91-2</b>	<b>0.12</b>	<b>2.0</b>	<b>21</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
583	Chlormephos	24934-91-6	0.64	7	42	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
584	Chlormequat chloride; (Choline dichloride)	999-81-5	0.64	7	65	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
585	<b>Chloro-1,1,1,2-tetrafluoroethane, 2-</b>	<b>2837-89-0</b>	<b>1,000</b>	<b>5,000</b>	<b>10,000</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
586	<b>Chloro-1,1-difluoroethane, 1-; (HCFC-142b)</b>	<b>75-68-3</b>	<b>10000*</b>	<b>15000*</b>	<b>25000*</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
587	Chloro-1,2-propanediol, 3-; (Chlorohydrin)	96-24-2	0.011	0.12	5.4	TEEL-2/11, rat oral TDLo, rat 240-min LCLo	ppm
588	Chloro-1-butanol, 4-	928-51-8	1.5	16	110	TEEL-2/11, mouse ip TDLo, mouse oral LD50	mg/m <sup>3</sup>
589	Chloro-2,4-dinitrobenzene, 1-	97-00-7	1.6	18	150	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
590	Chloro-2-methyl-1-propene, 3-	563-47-3	1.2	13	99	TEEL-2/11, rat oral TDLo, human 10-min LCLo	ppm
591	Chloro-2-methyl-4-isothiazolin-3-one, 5-	26172-55-4	0.6	6.6	40	MAK-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
592	Chloro-2-methylpropane, 2-; (Tert-butyl chloride)	507-20-0	2.3	26	150	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
593	Chloro-2-nitrophenol, 4-	89-64-5	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
594	Chloro-4-nitrophenol, 2-	619-08-9	0.38	4.2	25	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
595	<b>Chloroacetaldehyde</b>	<b>107-20-0</b>	<b>1.3</b>	<b>2.2</b>	<b>9.9</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
596	Chloroacetaldehyde dimethyl acetal	97-97-2	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
597	Chloroacetic acid, sodium salt	3926-62-3	7.2	79	480	WEEL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
598	<b>Chloroacetic acid; (Monochloroacetic acid)</b>	<b>79-11-8</b>	1.5	<b>6.6</b>	15	AEGL-2/11, <b>AEGL-2</b> , rat oral LDLo	ppm
599	<b>Chloroacetone</b>	<b>78-95-5</b>	0.4	<b>4.4</b>	<b>13</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
600	<b>Chloroacetonitrile</b>	<b>107-14-2</b>	0.45	<b>5</b>	<b>15</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
601	<b>Chloroacetyl chloride</b>	<b>79-04-9</b>	<b>0.040</b>	<b>1.6</b>	<b>52</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
602	Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride, 1-(3-	4080-31-3	1.5	17	99	TEEL-2/11, rabbit dermal TDLo, rat oral LD50	mg/m <sup>3</sup>
603	Chloroaniline, p-	106-47-8	6.1	68	100	TEEL-2/11, rat oral TDLo, rat 240-min LC50	mg/m <sup>3</sup>
604	<b>Chlorobenzene; (Benzene chloride)</b>	<b>108-90-7</b>	<b>10</b>	<b>150</b>	<b>400</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
605	Chlorobenzotrifluoride, 2-	88-16-4	4.8	53	320	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
606	Chlorobenzylate; (4,4'-Dichlorobenzilic acid ethyl ester)	510-15-6	0.72	8	140	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
607	<b>Chlorobenzylidene malononitrile, o-; (Tear Gas)</b>	<b>2698-41-1</b>	<b>0.005</b>	<b>0.083</b>	<b>11</b>	<b>ERPG-1, AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
608	Chlorobutane, 1-; (Butyl chloride)	109-69-3	4.1	45	340	TEEL-2/11, rat oral TDLo, rat 240-min LCLo	ppm
609	Chlorobutane, 2-; (sec-Butyl chloride)	78-86-4	0.34	3.8	340	TEEL-2/11, mouse ip TDLo, rat 240-min LCLo	ppm
610	Chlorobutyryl chloride, 4-	4635-59-0	0.43	4.8	29	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
611	Chlorocyclohexanol, trans-2-	6628-80-4	2.7	30	180	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
612	Chlorocyclohexene; (4-Chlorocyclohexene)	930-65-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
613	Chlorodecane, 1-	1002-69-3	17	180	1,100	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	ppm
614	Chlorodiethylaluminum; (Diethylaluminum chloride)	96-10-6	27	290	1,800	MW-adjusted soluble aluminum (7429-90-5) REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
615	Chlorodifluoromethane; (Freon 22; CFC 22)	75-45-6	1,250	2,400	14,000	REL-STEL, TEEL-3/6, mouse 30-min LC50	ppm
616	Chloroethanesulfonyl chloride, 2-	1622-32-8	0.23	2.5	19	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
617	Chloroethyl chloroformate	627-11-2	1.8	20	120	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
618	Chloroethyl phenyl sulfide, 2-	5535-49-9	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
619	Chloroethyl vinyl ether, 2-; (Ethene, 2-chloroethoxy-)	110-75-8	0.16	1.8	11	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
620	Chloroethylchloromethylsulfide, 2-	2625-76-5	0.01	0.02	0.32	Used sulfur mustard (505-60-2) AEGL values	ppm
621	<b>Chloroform</b>	<b>67-66-3</b>	<b>2</b>	<b>64</b>	<b>3,200</b>	REL-STEL, <b>AEGL-2, AEGL-3</b>	ppm
622	Chloroform-d; (Deuterated chloroform)	865-49-6	2	64	3,200	Used chloroform (67-66-3) PAC values	ppm

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			PAC-1	PAC-2	PAC-3		
623	Chloro-m-cresol, 4-	59-50-7	5.5	60	360	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
624	<b>Chloromethyl methyl ether</b>	<b>107-30-2</b>	0.043	<b>0.47</b>	<b>2.0</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
625	<b>Chloromethyl(trichloro)silane</b>	<b>1558-25-4</b>	<b>0.60</b>	<b>7.3</b>	<b>33</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
626	Chloronaphthalene, 1-; (alpha-Chloronaphthalene)	90-13-1	4.6	51	310	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
627	Chloronaphthalene, 2-; (beta-Chloronaphthalene)	91-58-7	6.2	69	410	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
628	Chloronitrobenzene, p-; (p-Nitrochlorobenzene)	100-00-5	1.9	170	1,000	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
629	Chloroperoxybenzoic acid, 3-	937-14-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
630	Chlorophacinone	3691-35-8	0.0047	0.051	0.31	TEEL-2/11, TEEL-3/6, 240-min rat LC50	mg/m <sup>3</sup>
631	Chlorophenol, 4-; (p-Chlorophenol)	106-48-9	1.5	17	99	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
632	Chlorophenol, m-	108-43-0	2.1	23	140	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
633	Chlorophenol, o-	95-57-8	2.3	25	150	TEEL-2/11, TEEL-3/6, rat 360-min LCLo	mg/m <sup>3</sup>
634	Chlorophenyl phenyl ether, 4-	7005-72-3	1.5	35	210	Used monochlorophenyl ether (55398-86-2) PAC values	mg/m <sup>3</sup>
635	Chlorophenyl thiourea, 2-	5344-82-1	0.014	0.15	0.91	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
636	Chloropicrin/Methyl bromide mixture	8004-09-9	0.05	0.15	1.4	Used chloropicrin (76-06-2) AEGL values	mg/m <sup>3</sup>
637	Chloropicrin/Methyl chloride mixture	z-0007	0.05	0.15	1.4	Used chloropicrin (76-06-2) AEGL values	mg/m <sup>3</sup>
638	<b>Chloropicrin; (Trichloronitromethane)</b>	<b>76-06-2</b>	<b>0.050</b>	<b>0.15</b>	<b>1.4</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
639	Chloroprene; (beta-Chloroprene; Neoprene)	126-99-8	30	67	400	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
640	Chloropropanol, 3-; (1-Propanol, 3-chloro-)	627-30-5	6.9	76	460	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
641	Chloropropionitrile, 3-	542-76-7	0.23	2.5	5.4	TEEL-2/11, LOC, rat oral LD50	ppm

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
642	Chloropropyl)trimethoxysilane, 3-; (3-(Trimethoxysilyl)propyl chloride)	2530-87-2	0.64	7	160	TEEL-2/11, rat 360-min TCLo, rat oral LD50	ppm
643	Chloropropylene, 2-	557-98-2	210	2,300	3,000	TEEL-2/11, rat 30-min TCLo, mouse 120-min LC50	ppm
644	Chloropropyl-n-octylsulfoxide, 3-	3569-57-1	0.73	8	1,100	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
645	Chloro-p-toluenesulfonamide sodium salt, N-; (Chloramine T)	127-65-1	2.8	31	190	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
646	Chlorosarin; (o-Isopropyl methylphosphonochloridate)	1445-76-7	4.80E-04	0.006	0.022	Used sarin (107-44-8) AEGL values	ppm
647	Chlorosoman; (o-Pinacolyl methylphosphonochloridate)	7040-57-5	1.80E-04	0.0022	0.017	Used soman (96-64-0) AEGL values	ppm
648	<b>Chlorosulfonic acid; (Chlorosulfuric acid)</b>	<b>7790-94-5</b>	<b>0.10</b>	<b>4.4</b>	<b>25</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
649	Chlorothalonil; (Tetrachloroisophthalonitrile)	1897-45-6	0.13	1.4	8.6	TEEL-2/11, TEEL-3/6, rat 60-min LC50	mg/m <sup>3</sup>
650	Chlorotoluene, 2-; (o-Chlorotoluene)	95-49-8	75	310	1,800	REL-STEL, rat 360-min TCLo, TEEL-2 x 6	ppm
651	Chlorotoluene, 4-; (p-Tolyl chloride)	106-43-4	1.2	13	80	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
652	Chlorotrifluoroethene, homopolymer	9002-83-9	1.5	16	200	TEEL-2/11, monkey oral TDLo, rat 240-min LCLo	mg/m <sup>3</sup>
653	<b>Chlorotrifluoroethylene</b>	<b>79-38-9</b>	<b>16</b>	<b>86</b>	<b>420</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
654	Chlorotrifluoromethane; (CFC-13)	75-72-9	3,000	33,000	2.00E+05	MAK-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	ppm
655	<b>Chlorovinylarsine dichloride; (Lewisite 1)</b>	<b>541-25-3</b>	0.023	<b>0.25</b>	<b>0.74</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
656	Chloroxuron	1982-47-4	0.91	10	68	TEEL-2/11, LOC, rat 360-min LC50	mg/m <sup>3</sup>
657	Chlorpyrifos; (Dursban)	2921-88-2	0.6	15	44	REL-STEL, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
658	Chlorsulfuron	64902-72-3	3.9	43	260	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
659	Chlorthiophos	21923-23-9	0.71	7.8	9.9	TEEL-2/11, LOC, mouse oral LD50	mg/m <sup>3</sup>

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 \* indicates 10% LEL ≤ PAC < 50% LEL; \*\* indicates 50% LEL ≤ PAC < 100% LEL; \*\*\* indicates PAC ≥ LEL.

**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
660	Cholera toxin; (Enterotoxin, vibrio cholera)	9012-63-9	7.70E-05	8.50E-04	0.0051	TEEL-2/11, TEEL-3/6, monkey iv LDLo	mg/m <sup>3</sup>
661	Chromates	13907-45-4	0.33	5	30	MW-adjusted chromium (VI) (7440-47-3) TLV-TWA, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
662	Chromic acetate; (Chromium(III) acetate)	1066-30-4	6.6	78	470	MW-adjusted inorganic chromium (III) (7440-47-3) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
663	Chromic chloride; (Chromium(III) chloride)	10025-73-7	4.6	15	87	MW-adjusted inorganic chromium (III) (7440-47-3) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
664	Chromic oxide; (Chromium(III) oxide; Chromium sesquioxide)	1308-38-9	2.2	24	140	MW-adjusted inorganic chromium (III) (7440-47-3) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
665	Chromic sulfate; (Chromium(III) sulfate (2:3))	10101-53-8	5.7	63	380	MW-adjusted inorganic chromium (III) (7440-47-3) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
666	Chromic trioxide; (Chromium(VI) oxide (1:3))	1333-82-0	0.29	5	30	MW-adjusted soluble chromium (VI) (7440-47-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted chromates (1330-82-0) IDLH (1990)	mg/m <sup>3</sup>
667	Chromic(III) hydroxide; (Chromic acid (H3CrO3); Chromium trihydroxide)	1308-14-1	3	33	200	MW-adjusted inorganic chromium (III) (7440-47-3) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
668	Chromite; (Chromite (mineral))	1308-31-2	3.2	36	220	MW-adjusted chromium (II) (7440-47-3) PEL-TWA x 3, TEEL-3/6, TEEL-2 x 6	mg/m <sup>3</sup>
669	Chromium	7440-47-3	1.5	17	99	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
670	Chromium nitrate	10103-47-6	3.3	36	220	MW-adjusted inorganic chromium (III) (7440-47-3) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
671	Chromium perchlorate, hydrated	13537-21-8	10	110	670	MW-adjusted inorganic chromium (III) (7440-47-3) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
672	Chromium(III) acetate hydroxide	39430-51-8	8	89	530	MW-adjusted inorganic chromium (III) (7440-47-3) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
673	Chromium(III) chloride, hexahydrate	10060-12-5	7.7	43	260	MW-adjusted inorganic chromium (III) (7440-47-3) TLV-TWA x 3, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
674	Chromium(III) fluoride	7788-97-8	3.1	33	200	MW-adjusted inorganic chromium (III) (7440-47-3) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
675	Chromium(III) nitrate	13548-38-4	6.9	110	640	MW-adjusted inorganic chromium (III) (7440-47-3) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
676	Chromium(III) oxide hydroxide; (Chromium oxyhydroxide)	20770-05-2	2.5	27	160	MW-adjusted inorganic chromium (III) (7440-47-3) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
677	Chromium(III) potassium sulfate (1:1:2), dodecahydrate	7788-99-0	14	160	950	MW-adjusted inorganic chromium (III) (7440-47-3) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
678	Chromium(VI) hydroxide	12626-43-6	0.089	7.7	46	MW-adjusted soluble chromium (VI) (7440-47-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted chromates (1330-82-0) IDLH (1990)	mg/m <sup>3</sup>
679	Chromous chloride; (Chromium(II) chloride (1:2))	10049-05-5	3.5	62	370	MW-adjusted chromium (II) (7440-47-3) PEL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
680	Chrysene	218-01-9	0.6	12	69	PEL-TWA x 3, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
681	Coal tar pitch volatiles; (Particulate polycyclic aromatic hydrocarbons)	65996-93-2	0.6	120	700	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
682	Coal tar, aerosol	8007-45-2	2.8	31	190	TEEL-2/11, TEEL-3/6, rabbit dermal LD50	mg/m <sup>3</sup>
683	Cobalt	7440-48-4	0.18	2	20	TEEL-2/11, LOC, IDLH (1990 and 1994)	mg/m <sup>3</sup>
684	Cobalt acetate tetrahydrate; (Cobaltous acetate tetrahydrate)	6147-53-1	2.1	23	140	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
685	Cobalt carbonyl	10210-68-1	0.3	3.3	20	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
686	Cobalt chloride	7646-79-9	0.13	18	83	MW-adjusted inorganic cobalt (7440-48-4) TLV-TWA x 3, guinea pig ip TDLo, rat oral LD50	mg/m <sup>3</sup>
687	<b>Cobalt hydrocarbonyl</b>	<b>16842-03-8</b>	0.3	<b>0.9</b>	<b>3</b>	TLV-TWA x 3, <b>ERPG-2, ERPG-3</b>	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
688	Cobalt hydroxide	21041-93-0	0.095	1.1	6.3	MW-adjusted inorganic cobalt (7440-48-4) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
689	Cobalt nitrate hexahydrate; (Cobaltous nitrate hexahydrate)	10026-22-9	0.3	23	140	MW-adjusted inorganic cobalt (7440-48-4) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
690	Cobalt nitrate; (Cobalt(II) nitrate)	10141-05-6	0.19	14	86	MW-adjusted inorganic cobalt (7440-48-4) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
691	Cobalt nitrite	32486-57-0	0.15	1.7	10	MW-adjusted inorganic cobalt (7440-48-4) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
692	Cobalt oxide; (Cobaltic-cobaltous oxide)	1308-06-1	0.082	4.5	27	MW-adjusted inorganic cobalt (7440-48-4) TLV-TWA x 3, TEEL-3/6, MW-adjusted cobalt fume IDLH (1990)	mg/m <sup>3</sup>
693	Cobalt sulfate	10124-43-3	0.16	14	84	MW-adjusted inorganic cobalt (7440-48-4) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
694	Cobalt sulfate heptahydrate; (Cobalt(II) sulfate(1:1), heptahydrate)	10026-24-1	0.29	19	120	MW-adjusted inorganic cobalt TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
695	Cobalt tetraphenylporphine	14172-90-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
696	Cobalt(II) chloride hexahydrate	7791-13-1	0.24	25	150	MW-adjusted inorganic cobalt (7440-48-4) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
697	Cobalt(II) oxide	1307-96-6	0.076	4.2	25	MW-adjusted inorganic cobalt (7440-48-4) TLV-TWA x 3, TEEL-3/6, MW-adjusted cobalt fume IDLH (1990)	mg/m <sup>3</sup>
698	Cobalt(II) perchlorate, hexahydrate	13478-33-6	0.37	5.8	35	MW-adjusted inorganic cobalt (7440-48-4) TLV-TWA x 3, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
699	Cobalt(II) sulfate hydrate	60459-08-7	0.18	1.9	12	MW-adjusted inorganic cobalt (7440-48-4) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
700	Cobalt, ((2,2'-(1,2-ethanediylobis(nitrilomethylidene))bis(6-fluorophenolato))(2-)-N,N',O,O')-; (Fluomine)	62207-76-5	0.27	3	5.7	MW-adjusted inorganic cobalt (7440-48-4) TLV-TWA x 3, LOC, rat 360-min LC50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
701	Cobaltous bromide; (Cobalt(II) bromide)	7789-43-7	0.22	13	80	MW-adjusted inorganic cobalt (7440-48-4) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
702	Cobaltous carbonate	513-79-1	0.12	210	1,200	MW-adjusted inorganic cobalt (7440-48-4) TLV-TWA x 3, TEEL-3/6, rabbit ip LDLo	mg/m <sup>3</sup>
703	Colchicine	64-86-8	0.082	0.9	5.1	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
704	Conotoxins (α)	156467-85-5	0.2	2.2	13	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
705	Copper	7440-50-8	3	33	200	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
706	Copper cyanide; (Copper(I) cyanide; Cuprous cyanide)	544-92-3	21	29	170	Used MW-adjusted cyanide (57-12-5) PAC values	mg/m <sup>3</sup>
707	Copper hydroxide; (Copper(II) hydroxide, Cupric hydroxide)	20427-59-2	4.6	33	200	MW-adjusted copper (7440-50-8) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
708	Copper nitrate; (Cupric nitrate)	3251-23-8	8.9	31	190	MW-adjusted copper (7440-50-8) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
709	Copper oxide; (Copper(I) oxide)	1317-39-1	0.68	16	93	MW-adjusted copper fume (7440-50-8) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
710	Copper sulfate; (Copper(II) sulfate)	7758-98-7	7.5	10	59	MW-adjusted copper (7440-50-8) TLV-TWA x 3, human oral TDLo, rat oral LD50	mg/m <sup>3</sup>
711	Copper(I) chloride; (Cuprous chloride)	7758-89-6	4.7	53	320	MW-adjusted copper (7440-50-8) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
712	Copper(I) sulfide	22205-45-4	3.8	43	260	MW-adjusted copper (7440-50-8) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
713	Copper(II) acetate monohydrate	6046-93-1	9.4	23	140	MW-adjusted copper fume (7440-50-8) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
714	Copper(II) carbonate hydroxide (2:1:2)	12069-69-1	5.2	45	270	MW-adjusted copper (7440-50-8) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
715	Copper(II) chloride (1:2); (Cupric chloride)	7447-39-4	6.3	69	420	MW-adjusted copper (7440-50-8) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
716	Copper(II) chloride dihydrate; (Cupric chloride)	10125-13-0	8	89	530	MW-adjusted copper chloride (7447-39-4) PAC values	mg/m <sup>3</sup>
717	Copper(II) oxalate	814-91-5	7.3	79	480	MW-adjusted copper (7440-50-8) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
718	Copper(II) perchlorate, dihydrate	17031-32-2	14	160	930	MW-adjusted copper (7440-50-8) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
719	Copper(II) sulfate pentahydrate	7758-99-8	12	32	190	MW-adjusted copper (7440-50-8) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
720	Copper(II) sulfide	1317-40-4	4.5	50	300	MW-adjusted copper (7440-50-8) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
721	Coumaphos	56-72-4	0.27	3	13	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
722	Coumarin	91-64-5	0.88	9.7	58	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
723	Coumatetralyl; (Endrocide)	5836-29-3	0.0064	0.071	1.7	TEEL-2/11, dog oral TDLo, rat 240-min LC50	mg/m <sup>3</sup>
724	Creosote (coal tar)	8001-58-9	0.6	120	700	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
725	Cresols, all isomers; (includes 95-48-7, 108-39-4, 106-44-5)	1319-77-3	14	25	250	TLV-TWA x 3, LOC, IDLH (1990 and 1994)	ppm
726	Cresyl violet acetate	10510-54-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
727	Crimidine; (Castrix)	535-89-7	0.0063	0.069	0.41	TEEL-2/11, TEEL-3/6, dog ip LD50	mg/m <sup>3</sup>
728	Cristobalite	14464-46-1	0.075	33	200	TLV-TWA x 3, TEEL-3/6, rat iv LD50	mg/m <sup>3</sup>
729	Crocidolite	12001-28-4	0.05	1.9	160	PEL-STEL, mouse 360-min TCLo, rat ip LDLo	mg/m <sup>3</sup>
730	<b>Crotonaldehyde</b>	<b>4170-30-3</b>	<b>0.19</b>	<b>4.4</b>	<b>14</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
731	<b>Crotonaldehyde, trans-</b>	<b>123-73-9</b>	<b>0.19</b>	<b>4.4</b>	<b>14</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
732	Crotonic Acid	3724-65-0	3	33	200	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
733	Crystal violet; (Aniline violet)	548-62-9	0.082	0.9	83	TEEL-2/11, rat ip TDLo, rat oral LD50	mg/m <sup>3</sup>
734	Cs7SB; (1-(2,2,3,3-Tetrafluoropropoxy)-3-(4-sec-butylphenoxy)-2-propanol)	308362-88-1	33	370	2,200	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
735	Cube Resin other than Rotenone	z-0122	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
736	Cumene hydroperoxide; (Isopropylbenzene hydroperoxide)	80-15-9	0.15	1.6	9.7	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
737	<b>Cumene; (Isopropyl benzene)</b>	<b>98-82-8</b>	<b>50</b>	<b>300</b>	<b>730</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
738	Cumamol methylcarbamate, m-; (3-(1-Methylethyl)phenol methylcarbamate)	64-00-6	0.095	1	6.3	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
739	Cupferron; (Ammonium-N-nitrosophenylhydroxylamine)	135-20-6	0.6	6.6	39	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
740	Cupric acetate, anhydrous; (Copper acetate)	142-71-2	8.6	20	120	MW-adjusted copper dust (7440-50-8) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
741	Cupric nitrate hemipentahydrate	19004-19-4	42	150	240	Used MW-adjusted copper nitrate (3251-23-8) PAC values	mg/m <sup>3</sup>
742	Cupric nitrite	14984-71-5	7.3	79	480	MW-adjusted copper dust (7440-50-8) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
743	Cupric oxide	1317-38-0	0.75	11	93	MW-adjusted copper (7440-50-8) TLV-TWA x 3, mouse ip TDLo, rat oral LD50	mg/m <sup>3</sup>
744	Cyanamide	420-04-2	6	66	400	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
745	Cyanic acid; (Hydrogen cyanate)	420-05-3	5.5	7.7	46	MW-adjusted cyanides MAK-TWA (converted to ppm) x 3, TEEL-3/6, MW-adjusted cyanides IDLH (converted to ppm, 1990)	ppm
746	Cyanide	57-12-5	6	8.3	50	MAK-TWA x 3, TEEL-3/6, cyanides IDLH (1990)	mg/m <sup>3</sup>
747	Cyanoacetamide	107-91-5	2.8	30	180	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
748	<b>Cyanogen</b>	<b>460-19-5</b>	<b>2.0</b>	<b>8.3</b>	<b>25</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
749	Cyanogen bromide	506-68-3	24	44	200	MW-adjusted cyanides MAK-TWA x 3, LOC, MW-adjusted cyanides IDLH (1990)	mg/m <sup>3</sup>
750	<b>Cyanogen chloride</b>	<b>506-77-4</b>	0.0045	<b>0.05</b>	<b>4</b>	<b>ERPG-2/11, ERPG-2, ERPG-3</b>	ppm
751	Cyanogen iodide	506-78-5	35	180	290	MW-adjusted cyanides MAK-TWA x 3, LOC, MW-adjusted cyanides IDLH (1990)	mg/m <sup>3</sup>
752	Cyanoguanidene; (Guanidine, cyano-; Dicyandiamido)	461-58-5	61	680	4,000	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
753	Cyanophos	2636-26-2	2.3	25	130	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
754	Cyanuric acid; (1,3,5-Triazine-2,4,6-triol)	108-80-5	30	250	1,500	WEEL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
755	Cyanuric chloride	108-77-0	0.41	4.5	7.7	TEEL-2/11, rat oral TDLo, rat 240-min LC50	mg/m <sup>3</sup>
756	Cyanuric fluoride; (2,4,6-Trifluoro-s-triazine)	675-14-9	10	15	87	MW-adjusted cyanides MAK-TWA x 3, TEEL-3/6, MW-adjusted cyanides IDLH (1990)	mg/m <sup>3</sup>
757	Cyclohexane	110-82-7	300	1700*	10000**	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
758	Cyclohexane-1,2-dinitrilotetraacetic acid, trans-; (CyDTA)	13291-61-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
759	Cyclohexanediamine, 1,2-	694-83-7	2.1	23	140	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	mg/m <sup>3</sup>
760	Cyclohexanedimethanol, cis and trans, 1,4-	105-08-8	9.6	110	630	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
761	Cyclohexanol	108-93-0	150	580	3,500	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
762	Cyclohexanone; (Ketoexamethylene)	108-94-1	60	830	5000*	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
763	Cyclohexene	110-83-8	900	1,700	10,000	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
764	Cycloheximide	66-81-9	0.18	2	12	TEEL-2/11, LOC, monkey oral LD50	mg/m <sup>3</sup>
765	<b>Cyclohexyl isocyanate</b>	<b>3173-53-3</b>	0.0031	<b>0.034</b>	<b>0.10</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
766	Cyclohexyl methyl phosphonic acid	1932-60-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
767	<b>Cyclohexylamine</b>	<b>108-91-8</b>	<b>1.8</b>	<b>8.6</b>	<b>30</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
768	Cyclohexylamino)-1-propanesulfonic acid, 3-; (CAPS)	1135-40-6	6	66	400	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
769	Cyclohexylethanol, 2-	4442-79-9	2.8	31	190	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
770	Cyclooctadiene, 1,5-	111-78-4	1.8	19	120	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
771	Cyclooctane	292-64-8	26	290	1,700	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	ppm
772	Cyclooctatetraene, 1,3,5,7-	629-20-9	65,000	2.30E+05	4.00E+05	Simple asphyxiant	ppm
773	Cyclooctene, cis-	931-87-3	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>
774	Cyclopentane	287-92-3	1800*	3800*	23000***	TLV-TWA x 3, LOC, TEEL-2 x 6	ppm
775	Cyclopentanone	120-92-3	0.87	9.5	57	TEEL-2/11, TEEL-3/6, mouse oral LD50	ppm
776	Cyclopropane	75-19-4	70	770	5600*	TEEL-2/11, human 15-min TCLo, mouse 120-min LCLo	ppm
777	Cyclotetramethylene tetranitramine; (HMX)	2691-41-0	19	210	1,300	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
778	Cyclotol; (RDX-TNT mixture)	8065-53-0	3	33	200	Cyclonite (121-82-4) REL-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
779	Cyclotrimethylenetrinitramine; (RDX or Cyclonite)	121-82-4	3	26	160	REL-STEL, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
780	Cytidine monophosphate; (Cytidine 5-monophosphate free acid)	63-37-6	4.3	48	290	TEEL-2/11, TEEL-3/6, mouse ip LDLo	mg/m <sup>3</sup>
781	Dawsonite; (Crystalline dehydroxy sodium aluminum, carbonate)	12011-76-6	16	170	1,000	MW-adjusted insoluble aluminum (7429-90-5) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
782	DDD; (1,1-bis(4-Chlorophenyl)-2,2-dichloroethane)	72-54-8	2.1	24	3,000	TEEL-2/11, dog oral TDLo, human oral LDLo	mg/m <sup>3</sup>
783	DDE; (2,2-bis(p-Chlorophenyl)-1,1-dichloroethylene)	72-55-9	6.5	72	170	TEEL-2/11, rat ip TDLo, rat oral LD50	mg/m <sup>3</sup>
784	DDT; (Dichlorodiphenyltrichloroethane)	50-29-3	3	34	210	TLV-TWA x 3, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>
785	Decaborane	17702-41-9	0.75	10	100	TLV-STEL, LOC, IDLH (1990)	mg/m <sup>3</sup>
786	Decafluoropentane, 1,1,1,2,3,4,4,5,5,5-	138495-42-8	36	400	500	TEEL-2/11, DuPont AEL-C, rat 240-min LC50	ppm
787	Decahydronaphthalene, includes -cis (493-01-6) and -trans (493-02-7) isomers	91-17-8	2.4	27	31	TEEL-2/11, rat 1320-min TCLo, rat 240-min LC50	ppm
788	Decamethylcyclopentasiloxane	541-02-6	4.8	53	320	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm

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**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
789	Decanal	112-31-2	1.8	19	120	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
790	Decane	124-18-5	6.6	73	440	TEEL-2/11, TEEL-3/6, mouse 120-min LC50	ppm
791	Decene, 1-, homopolymer, hydrogenated	68037-01-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
792	Decyl alcohol; (1-Decanol)	112-30-1	1.8	19	140	TEEL-2/11, rabbit 120-min TCLo, mouse 120-min LC50	mg/m <sup>3</sup>
793	Demeton	8065-48-3	0.18	2	20	TEEL-2/11, LOC, IDLH (1990)	mg/m <sup>3</sup>
794	Demeton-S-methyl	919-86-8	0.45	5	22	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
795	Deuterium	7782-39-0	65000***	230000***	400000***	Used hydrogen (1333-74-0) PAC values	ppm
796	Deuteriochloric acid; (Deuterium chloride)	7698-05-7	1.8	22	100	Used hydrogen chloride (7647-01-0) AEGL values	ppm
797	Di(ethylene glycol) diacrylate	4074-88-8	0.75	8.3	50	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
798	Di-2-ethylhexyl adipate	103-23-1	2	23	1,500	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
799	Diacetoxydibutyl stannane	1067-33-0	0.59	6.5	39	MW-adjusted organic tin (7440-31-5) TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
800	Diacetoxyscirpenol; (Anguidin; mycotoxin)	2270-40-8	9.90E-04	0.011	0.34	TEEL-2/11, monkey iv TDLo, pig iv LD50	mg/m <sup>3</sup>
801	Diacetyl peroxide; (Acetyl peroxide)	110-22-5	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
802	Dialifor	10311-84-9	0.45	5	39	TEEL-2/11, LOC, dog oral LD50	mg/m <sup>3</sup>
803	Diallyl phthalate	131-17-9	15	24	140	United Kingdom OEL-TWA x 3, TEEL-3/6, rat 60-min LC50	mg/m <sup>3</sup>
804	Diallyldimethylammonium chloride	7398-69-8	7.6	83	500	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
805	Diallyldimethylammonium chloride polymer	26062-79-3	6	65	590	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
806	Diamino-6-(2'-methylimidazol-1-yl)ethyl-s-triazine, 2,4-; (1,3,5-Triazine-2,4-diamine, 6-(2-(2-methyl-1H-imidazol-1-yl)ethyl)-; Curezol 2MEA-PW)	38668-46-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
807	Diaminodiphenyl ether, 4,4'-; (4,4'-Oxydianiline)	101-80-4	2.2	24	140	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
808	Diaminodiphenylsulfone; (4,4'-Sulfonyldianiline)	80-08-0	2	22	200	TEEL-2/11, human oral TDLo, rat oral LD50	mg/m <sup>3</sup>
809	Diaminodipropylamine, 3,3-; (Aminobis(propylamine))	56-18-8	0.41	4.5	27	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
810	Diaminopyridine, 2,6-	141-86-6	0.33	3.6	22	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
811	Diammonium dimolybdate; (Ammonium molybdenum oxide)	27546-07-2	2.6	29	170	MW-adjusted soluble molybdenum (7439-98-7) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
812	Diammonium oxalate; (Ethanedioic acid, diammonium salt)	1113-38-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
813	Diammonium sulfide; (Ammonium sulfide)	12135-76-1	1	54	100	Used MW-adjusted hydrogen sulfide (7783-06-4) AEGL values	ppm
814	Diamond	7782-40-3	6.3	69	1,100	TEEL-2/11, mouse ip TDLo, mouse oral LD50	mg/m <sup>3</sup>
815	Dianisidine dihydrochloride, o-; (3,3'-Dimethoxybenzidine dihydrochloride)	20325-40-0	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
816	Diazabicyclo(2,2,2)octane, 1,4-	280-57-9	5.1	56	340	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
817	Diazabicyclo(5.4.0)undec-7-ene, 1,8-	6674-22-2	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
818	Diazoacetic acid, ethyl ester; (Ethyl diazoacetate)	623-73-4	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
819	Diazomethane	334-88-3	0.6	6.6	40	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	ppm
820	Dibenza(a,h)anthracene	53-70-3	0.093	1	2.9	TEEL-2/11, mouse oral TDLo, mouse iv LDLo	mg/m <sup>3</sup>
821	Dibenzo(a,e)pyrene; (Naphtho(1,2,3,4-def)chrysene)	192-65-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
822	Dibenzofuran	132-64-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
823	Dibenzo-p-dioxin	262-12-4	3.7	40	240	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
824	<b>Diborane</b>	<b>19287-45-7</b>	0.3	<b>1.0</b>	<b>3.7</b>	TLV-TWA x 3, <b>AEGL-2, AEGL-3</b>	ppm

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
825	Dibromo-3-chloropropane, 1,2-; (DBCP)	96-12-8	0.003	2.2	4.3	PEL-TWA x 3, rat 1440-min TCLo, rat 60-min LC50	ppm
826	Dibromo-4-nitrophenol, 2,6-	99-28-5	0.015	0.17	1	TEEL-2/11, TEEL-3/6, mouse iv LD50	ppm
827	Dibromochloromethane; (Chlorodibromomethane)	124-48-1	1.1	12	73	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
828	Dibromohexane, 1,6-	629-03-8	0.89	9.7	58	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
829	Dibromomethane; (Methylene dibromide)	74-95-3	3	33	200	TEEL-2/11, rat oral TDLo, rat 120-min LC50	ppm
830	Dibromophenol, 2,6-	608-33-3	14	150	900	Used MW-adjusted 2,6-dichlorophenol (87-65-0) PAC values	mg/m <sup>3</sup>
831	Dibromopropane, 1,3-	109-64-8	3.1	34	100	TEEL-2/11, rat oral TDLo, mouse ip LD50	mg/m <sup>3</sup>
832	Dibromotetrafluoroethane; (Halon 2402)	124-73-2	43	480	2,900	TEEL-2/11, TEEL-3/6, rat 120-min LC50	ppm
833	Dibutyl (2-ethylhexyl)phosphate	z-0011	21	230	1,400	Used tri(2-ethylhexyl) phosphate (78-42-2) PAC values	ppm
834	Dibutyl butylphosphonate	78-46-6	0.018	0.2	1.2	TEEL-2/11, TEEL-3/6, mouse iv LD50	ppm
835	Dibutyl peroxide, tert-	110-05-4	7.3	81	180	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
836	Dibutyl phosphate	107-66-4	2	21	125	REL-STEL, TEEL-3/6, IDLH (1990)	ppm
837	Dibutyl phosphite	1809-19-4	9.6	110	630	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
838	Dibutyl phthalate	84-74-2	15	84	9300*	TLV-TWA x 3, human oral TDLo, IDLH (1990)	mg/m <sup>3</sup>
839	Dibutylboron triflate; (Dibutylboryl trifluoromethanesulfonate)	60669-69-4	36	400	2,400	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
840	Dibutylhexamethylenediamine, N,N'-	4835-11-4	0.2	2.2	9.7	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
841	Dibutyltin dilaurate; (Dibutylbis(lauroyloxy)stannane)	77-58-7	1.1	8	48	MW-adjusted organic tin (7440-31-5) TLV-STEL, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
842	Dichloran; (2,6-Dichloro-4-nitroaniline; Resisan)	99-30-9	7.2	79	480	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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			PAC-1	PAC-2	PAC-3		
843	Dichloro(4,4-dimethylzinc - 5((((methylamino)carbonyl)oxy)imino)pentanenitrile), (trans-4)-; (Ethienocarb)	58270-08-9	0.82	9	54	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
846	Dichloro-2-butene, 1,4-	764-41-0	0.015	1.9	12	TLV-TWA x 3, TEEL-3/6, rat 240-min LC50	ppm
847	Dichloro-2-propanol, 1,3-	96-23-1	0.33	3.6	5.4	TEEL-2/11, mouse 180-min TCLo, rat 240-min LCLo	ppm
848	Dichloro-2-trifluoromethylbenzimidazole, 4,5-; (Chloroflurazole)	3615-21-2	1.2	13	78	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
849	Dichloroacetic acid	79-43-6	1.5	8.9	140	TLV-TWA x 3, dog oral TDLo, rat oral LD50	ppm
850	<b>Dichloroacetyl chloride</b>	<b>79-36-7</b>	<b>0.040</b>	<b>1.6</b>	<b>52</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
851	Dichloroacetylene	7572-29-4	0.0091	0.1	3.4	TEEL-2/11, TLV-C, mouse 60-min LC50	ppm
852	Dichloroamine; (Chlorimide)	3400-09-7	0.14	1.5	9.2	TEEL-2/11, rat oral TDLo, TEEL-2 x 6	ppm
853	Dichlorobenzene, m-	541-73-1	6	66	400	MAK-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	ppm
854	Dichlorobenzene, o-	95-50-1	50	170	1,000	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
855	Dichlorobenzene, p-	106-46-7	30	170	1,000	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
856	Dichlorobenzidene, 3,3'-	91-94-1	2.1	23	140	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
857	Dichlorocyclohexane, 1,1-	2108-92-1	52	180	1,000	Used MW-adjusted o-dichlorobenzene (95-50-1) PAC values	ppm
858	Dichlorocyclohexane, trans-1,2-	822-86-6	52	180	1,000	Used MW-adjusted o-dichlorobenzene (95-50-1) PAC values	ppm
859	Dichlorodifluoromethane; (Freon 12, CFC 12)	75-71-8	3,000	10,000	50,000	TLV-TWA x 3, EEGL 60-min, IDLH (1990)	ppm
860	Dichloroethanol acetate, 1,2-	10140-87-1	0.15	1.7	10	TEEL-2/11, LOC, TEEL-2 x 6	ppm
861	Dichloroethyl ether; (1,1'-Oxybis(2-chloro)ethane; Bis(2-chloroethyl)ether)	111-44-4	10	25	250	TLV-STEL, LOC, IDLH (1990)	ppm
862	Dichloroethylaluminum	563-43-9	28	310	1,800	MW-adjusted soluble aluminum salts (7429-90-5) REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

Chemicals with AEGLs: large, bolded font. ERPGs (but no AEGLs): bolded font.

\* indicates 10% LEL ≤ PAC < 50% LEL; \*\* indicates 50% LEL ≤ PAC < 100% LEL; \*\*\* indicates PAC ≥ LEL.

**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
863	Dichloroethylbenzene; (Ethylidichlorobenzene)	1331-29-9	17	180	1,100	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
864	Dichloroethylene, 1,2-	540-59-0	140	500	850	Used cis-1,2-dichloroethylene (156-59-2) AEGL values	ppm
865	<b>Dichloroethylene, cis-1,2-</b>	<b>156-59-2</b>	<b>140</b>	<b>500</b>	<b>850</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
866	<b>Dichloroethylene, trans-1,2-</b>	<b>156-60-5</b>	<b>280</b>	<b>1,000</b>	<b>1,700</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
867	Dichlorofluoromethane; (Freon 21, CFC 21)	75-43-4	30	8,300	50,000	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
868	Dichlorohexane, 1,2-	2162-92-7	1.9	21	120	Used 1,6-dichlorohexane (2163-00-0) PAC values	ppm
869	Dichlorohexane, 1,6-	2163-00-0	1.9	21	120	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	ppm
870	Dichloroisopropyl ether	108-60-1	0.15	1.6	22	TEEL-2/11, rat oral TDLo, rat 60-min LCLo	ppm
871	Dichloromethane-d2	1665-00-5	200	560	6,900	Used methylene chloride (75-09-2) AEGL values	ppm
872	Dichloromethoxy ethane; (bis(2-Chloroethoxy)methane)	111-91-1	0.04	0.44	2.7	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
873	<b>Dichloromethyl ether;</b> <b>(bis(Chloromethyl)ether)</b>	<b>542-88-1</b>	0.004	<b>0.044</b>	<b>0.18</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
874	Dichloromethylphenylsilane	149-74-6	0.9	11	50	Used MW-adjusted hydrogen chloride (7647-01-0) AEGL values	ppm
875	Dichloromethylphosphine; (Methylphosphonous dichloride)	676-83-5	0.25	2.8	17	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	ppm
876	Dichlorooctane, 1,8-	2162-99-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
877	Dichlorophene	97-23-4	4.5	50	300	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
878	<b>Dichlorophenol, 2,4-</b>	<b>120-83-2</b>	<b>0.2</b>	<b>2</b>	<b>20</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
879	Dichlorophenol, 2,6-	87-65-0	8.8	97	580	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
880	Dichlorophenoxyacetic acid, 2,4-; (2,4-D)	94-75-7	30	94	500	TLV-TWA x 3, dog oral TDLo, IDLH (1990)	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
881	Dichloropropane, 1,1-	78-99-9	2.6	29	170	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
882	Dichloropropane, 1,2-; (Propylene dichloride)	78-87-5	30	220	2,000	TLV-TWA x 3, mouse 120-min TCLo, IDLH (1990)	ppm
883	Dichloropropane, 1,3-	142-28-9	5.4	59	350	TEEL-2/11, TEEL-3/6, dog oral LDLo	ppm
884	Dichloropropane, 2,2-	594-20-7	2.6	29	170	TEEL-2/11, TEEL-3/6, rat 360-min LCLo	ppm
885	Dichloropropene, 1,1-	563-58-6	1.3	15	87	Used 1,2-dichloropropene (563-54-2) PAC values	ppm
886	Dichloropropene, 1,2-; (including cis- isomer, 6923-20-2)	563-54-2	1.3	15	87	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
887	Dichloropropene, 1,3-; (including cis- and trans-isomers)	542-75-6	3	19	120	TLV-TWA x 3, TEEL-3/6, mouse 120-min LC50	ppm
888	Dichloropropene, 2,3-	78-88-6	0.33	3.6	21	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
889	<b>Dichlorosilane</b>	<b>4109-96-0</b>	<b>0.90</b>	<b>11</b>	<b>50</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
890	Dichlorotetrafluoroethane	1320-37-2	140	1,600	9,500	TEEL-2/11, TEEL-3/6, mouse 30-min LCLo	ppm
891	Dichlorotetrafluoroethane, 1,2-; (Freon 114, CFC 114)	76-14-2	3,000	10,000	50,000	TLV-TWA x 3, EEGL 60-min, IDLH (1990)	ppm
892	Dichlorovos; (Dichlorvos)	62-73-7	1.8	20	200	TEEL-2/11, LOC, IDLH (1990)	mg/m <sup>3</sup>
893	Dicrotophos	141-66-2	0.15	0.9	17	TEEL-2/11, LOC, rat 60-min LC50	mg/m <sup>3</sup>
894	Dicyclohexano-18-crown-6	16069-36-6	0.41	4.5	35	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
895	Dicyclohexyl; (Cyclohexylcyclohexane)	92-51-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
896	Dicyclohexylcarbodiimide	538-75-0	0.12	1.3	8	TEEL-2/11, TEEL-3/6, rat 360-min LC50	mg/m <sup>3</sup>
897	<b>Dicyclopentadiene</b>	<b>77-73-6</b>	<b>0.01</b>	<b>5</b>	<b>75</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
898	Didecyltrimethylammonium chloride	7173-51-5	0.82	9	17	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
899	Dieldrin	60-57-1	0.3	6.8	450	TLV-TWA x 3, rat oral TDLo, IDLH (1990)	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
900	Diesel fuels; (includes diesel fuel No. 4 (68476-31-3), fuel oil No.2 (68476-30-2), fuel oil residual (68476-33-5))	68334-30-5	300	3,300	20,000	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
901	Diethanolamine	111-42-2	3	28	130	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
902	Diethenylbenzene, polymer with ethenylbenzene and ethenylethylbenzene, sulfonated; (Dowex 50-X8 resin)	69011-20-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
903	Diethoxydimethylsilane	78-62-6	2.8	31	180	TEEL-2/11, TEEL-3/6, rat 480-min LC50	ppm
904	Diethyl (methylthiomethyl) phosphonate	28460-01-7	1.8	20	120	Used methyl demeton methyl (2587-90-8) PAC values	ppm
905	Diethyl carbonate	105-58-8	12	140	810	TEEL-2/11, TEEL-3/6, rat oral LDLo	ppm
906	Diethyl chlorophosphate	814-49-3	0.73	8	11	TEEL-2/11, LOC, mouse oral LD50	mg/m <sup>3</sup>
907	Diethyl ethylphosphonate	78-38-6	1	11	460	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
908	Diethyl malonate; (Ethyl malonate)	105-53-3	6.9	76	450	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
909	Diethyl mercury	627-44-1	0.039	0.052	2.6	MW-adjusted alkyl mercury (7439-97-6) TLV-STEL, PEL-C, IDLH (1994, See white paper)	mg/m <sup>3</sup>
910	Diethyl methylphosphonate; (DEMP)	683-08-9	7.3	81	480	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
911	Diethyl oxalate	95-92-1	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
912	Diethyl phosphite	762-04-9	12	130	770	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
913	Diethyl phthalate; (Ethyl phthalate)	84-66-2	15	240	1,700	TLV-TWA x 3, human oral TDLo, rat oral LD50	mg/m <sup>3</sup>
914	Diethyl pyrocarbonate	1609-47-8	4.1	45	270	TEEL-2/11, TEEL-3/6, rat 60-min LCLo	mg/m <sup>3</sup>
915	Diethyl sulfate	64-67-5	0.16	1.8	11	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
916	Diethyl tartrate	87-91-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
917	Diethyl telluride	627-54-3	0.3	1.8	11	United Kingdom OEL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
918	Diethyl trichloromethylphosphonate	866-23-9	2.4	26	160	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
919	Diethylamine	109-89-7	15	330	2000*	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
920	Diethylaminoacetone	1620-14-0	0.12	1.3	7.8	Used novol ketone (105-14-6) PAC values converted to ppm	ppm
921	Diethylaminopropylamine	104-78-9	1.7	18	110	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
922	Diethylaniline, N,N-	91-66-7	1.3	14	85	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
923	<b>Diethylbenzene mixed isomers; (Dowtherm J); includes m- (141-93-5) and o- (135-01-3) isomers</b>	<b>25340-17-4</b>	<b>10</b>	<b>100</b>	<b>500</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
924	<b>Diethyldichlorosilane</b>	<b>1719-53-5</b>	<b>0.9</b>	<b>11</b>	<b>50</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
925	Diethylene glycol	111-46-6	6.9	140	860	WEEL-TWA x 3, TEEL-3/6, oral dog LD50	ppm
926	Diethylene glycol di(3-aminopropyl) ether; (Polyglycol diamine)	4246-51-9	13	140	850	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
927	Diethylene glycol diacetate; (2,2'-Oxybisethanol diacetate)	628-68-2	47	520	3,100	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
928	Diethylene glycol dimethyl ether; (Bis(2-methoxy ethyl)ether)	111-96-6	15	91	190	MAK-TWA x 3, rat 240-min TCLo, rat oral LD50	ppm
929	Diethylene glycol hexyl ether; (n-Hexyl carbitol)	112-59-4	3.7	41	480	TEEL-2/11, rabbit dermal TDLo, rat oral LD50	mg/m <sup>3</sup>
930	Diethylenetriamine	111-40-0	3	8.5	51	TLV-TWA x 3, TEEL-3/6, rat oral LD50	ppm
931	Diethylenetriaminepentaacetic acid	67-43-6	3.5	39	230	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
932	Diethylenylbenzene; (Vinylstyrene) (m-Divinylbenzene, 108-57-6)	1321-74-0	30	58	350	TLV-TWA x 3, TEEL-3/6, rat oral LD50	ppm
933	Diethylethanolamine, N,N-; (Diethylaminoethanol)	100-37-8	6	83	500	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
934	Diethylphosphatoethyltriethoxy silane	757-44-8	52	570	3,400	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
935	Diethylstilbestrol; ((E)-4,4'-(1,2-Diethyl-1,2-ethenediyl)bisphenol)	56-53-1	9	99	590	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
936	Diethylthiourea, N,N'-	105-55-5	0.95	10	63	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
937	Diethylurea, 1,3-	623-76-7	2.9	32	190	TEEL-2/11, TEEL-3/6, mouse ip LDLo	ppm
938	Diethylzinc	557-20-0	24	260	1,600	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	ppm
939	<b>Difluoroethane; (1,1-Difluoroethane; HFC 152a)</b>	<b>75-37-6</b>	<b>10,000</b>	<b>15,000</b>	<b>25,000</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
940	Digitoxin	71-63-6	0.016	0.18	15	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
941	Diglycidyl ether	2238-07-5	0.77	8.5	25	TEEL-2/11, LOC, IDLH (1990)	ppm
942	Diglycol monoethyl ether acetate; (Carbitol acetate)	112-15-2	6.1	67	2,200	TEEL-2/11, rat 360-min TCLo, rat oral LD50	mg/m <sup>3</sup>
943	Digoxin	20830-75-5	0.018	0.2	13	TEEL-2/11, LOC, rat ip LD50	mg/m <sup>3</sup>
944	Dihexyl((diethylcarbamoyl)methyl)phosphonate; (Dihexyl-N,N-diethylcarbamoylmethyl phosphonate)	7369-66-6	3	33	200	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
945	Dihydro-2(3H)-furanone; (4-Butanolide)	96-48-0	3.6	39	310	TEEL-2/11, monkey oral TDLo, rat oral LD50	mg/m <sup>3</sup>
946	Dihydro-2H-pyran, 3,4-	110-87-2	3.5	38	230	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	ppm
947	Dihydro-3-(nonenyl)-2,5-furandione	28928-97-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
948	Dihydro-4-methyl furan, 2,3-	34314-83-5	12	130	790	Used tetrahydromethylfuran (1320-94-1) PAC values.	mg/m <sup>3</sup>
949	Dihydrogen hexachloroplatinate; (Chloroplatinic acid)	16941-12-1	0.013	3.2	19	MW-adjusted soluble platinum salts (7440-06-4) TLV-TWA x 3, TEEL-3/6, rat iv LD50	mg/m <sup>3</sup>
950	Dihydroxy-1,3-indandione, 2,2-; (Ninhydrin monohydrate)	485-47-2	0.26	2.8	17	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
951	Dihydroxy-2-butene, 1,4-; (2-Butene-1,4-diol)	110-64-5	1	11	69	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
952	Dihydroxyanthraquinone, 1,8-; (Dantrolen)	117-10-2	6.7	73	440	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
953	Dihydroxybenzoic acid, 2,4-	89-86-1	2.6	29	170	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
954	Dihydroxynaphthalene-2,7-disulfonic acid, disodium salt dihydrate, 4,5-	5808-22-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
955	Diiodomethane; (Methylene iodide)	75-11-6	2.4	27	160	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
956	Diisoamylamine	544-00-3	0.041	0.45	2.7	Used di-n-amylamine (2050-92-2) PAC values	ppm
957	Diisobutyl ketone	108-83-8	75	330	2000*	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
958	Diisobutylaluminum hydride; (Diisobutylhydroaluminum)	1191-15-7	5.4	54	330	MW-adjusted soluble aluminum salts (7429-90-5) REL-TWA x 3, TEEL-3/6, guinea pig 60-min LCLo	ppm
959	Diisobutylamine	110-96-3	0.15	1.6	9.7	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
960	Diisooctyl acid phosphate	27215-10-7	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
961	Diisopropyl methylphosphonate	1445-75-6	2.5	27	160	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
962	Diisopropyl peroxydicarbonate	105-64-6	6.4	71	420	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
963	Diisopropylamine	108-18-9	15	170	1,000	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
964	Diisopropylamino)ethyl chloride hydrochloride, 2-(-	4261-68-1	0.008	0.088	0.53	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
965	Diisopropylaminoethanol, 2-; (N,N-Diisopropyl ethanolamine)	96-80-0	1.5	17	99	TEEL-2/11, TEEL-3/6, rat 360-min LC50	mg/m <sup>3</sup>
966	Diisopropylaniline, 2,6-	24544-04-5	16	180	630	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
967	Diisopropylbenzene, 1,3-	99-62-7	2	23	180	TEEL-2/11, rat oral TDLo, rat 120-min LCLo	mg/m <sup>3</sup>
968	Diisopropylethylamine, N,N-	7087-68-5	1.8	19	120	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
969	Diisopropylfluorophosphate; (Phosphorofluoric acid, bis(1-methylethyl) ester)	55-91-4	0.33	3.6	22	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
970	Diisopropyl naphthalene; (Bis(isopropyl)naphthalene)	38640-62-9	5.6	61	370	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
971	<b>Diketene; (Ketene dimer)</b>	<b>674-82-8</b>	0.091	<b>1.0</b>	<b>3.0</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm

Chemicals with AEGLs: large, bolded font. ERPGs (but no AEGLs): bolded font.

\* indicates 10% LEL ≤ PAC < 50% LEL; \*\* indicates 50% LEL ≤ PAC < 100% LEL; \*\*\* indicates PAC ≥ LEL.

**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
972	Dilauroyl peroxide	105-74-8	30	330	2,000	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
973	Dimefox; (bis(Dimethylamido)fluorophosphate)	115-26-4	0.091	1	4.1	TEEL-2/11, LOC, dog iv LD50	mg/m <sup>3</sup>
974	Dimethoate	60-51-5	2.7	30	170	TEEL-2/11, LOC, dog oral LD50	mg/m <sup>3</sup>
975	Dimethoxybenzene, 1,3-	151-10-0	3	32	190	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
976	Dimethoxybenzene, o-	91-16-7	2.7	29	180	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
977	Dimethoxybenzidine 3,3'-; (o-Dianisidine)	119-90-4	20	220	380	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
978	Dimethoxybutane, 1,3-	10143-66-5	5.2	57	340	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
979	Dimethoxybutane, 2,2-	3453-99-4	5.2	57	340	Used 1,3-dimethoxybutane (10143-66-5) PAC values	ppm
980	Dimethoxydiphenylsilane	6843-66-9	0.027	0.3	1.8	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	mg/m <sup>3</sup>
981	Dimethoxyethane, 1,2-	110-71-4	13	140	840	TEEL-2/11, TEEL-3/6, rat 360-min LCLo	ppm
982	Dimethoxypropane, 2,2-	77-76-9	0.067	0.73	4.4	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
983	Dimethyl butane, 2,2-	75-83-2	1,000	11000**	66000***	TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	ppm
984	Dimethyl carbamoyl chloride	79-44-7	0.015	1.5	9.1	TEEL-2/11, TEEL-3/6, rat 360-min LC50	ppm
985	Dimethyl carbonate	616-38-6	11	120	700	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
986	Dimethyl cyclopentanol, 1,3-	19550-46-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
987	<b>Dimethyl disulfide</b>	<b>624-92-0</b>	<b>0.01</b>	<b>50</b>	<b>250</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
988	Dimethyl mercury	593-74-8	0.034	0.046	2.3	MW-adjusted alkyl mercury (7439-97-6) TLV-STEL, PEL-C, IDLH (1994, See white paper)	mg/m <sup>3</sup>
989	Dimethyl methylphosphonate; (DMMP)	756-79-6	10	110	1,600	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
990	<b>Dimethyl phosphite</b>	<b>868-85-9</b>	8.6	<b>95</b>	<b>150</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
991	Dimethyl phosphorochloridothioate	2524-03-0	0.29	3.2	15	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
992	Dimethyl siloxane; (Dimethylpolysiloxane; Syltherm XLT; Syltherm 800; Silicone 360)	63148-62-9	65	720	4,300	TEEL-2/11, TEEL-3/6, mouse ip LDLo	mg/m <sup>3</sup>
993	<b>Dimethyl sulfate</b>	<b>77-78-1</b>	<b>0.024</b>	<b>0.12</b>	<b>1.6</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
994	<b>Dimethyl sulfide; (2-Thiopropene)</b>	<b>75-18-3</b>	<b>0.5</b>	<b>1,000</b>	<b>5000*</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
995	Dimethyl sulfone	67-71-0	15	170	990	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
996	Dimethyl sulfoxide; (DMSO)	67-68-5	150	290	1,800	MAK-TWA x 3, TEEL-3/6, rat oral LD50	ppm
997	Dimethyl(1-phenylethyl)benzene	40766-31-2	2	23	410	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
998	Dimethyl(polysiloxane); (Polydimethylsiloxane, silanol terminated; Dimethylsiloxane, poly, hydroxy end-blocked)	70131-67-8	190	2,100	13,000	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
999	Dimethyl-1,3-dioxolane-4-methanol, 2,2-	100-79-8	3.9	43	260	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
1000	Dimethyl-1,3-propanediamine, N,N-; (1-Amino-3-dimethylaminopropane)	109-55-7	1.2	13	89	TEEL-2/11, rat oral TDLo, rat oral LD50	ppm
1001	Dimethyl-1-butanamine, N,N-	927-62-8	130	1,400	8,600	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	mg/m <sup>3</sup>
1002	Dimethyl-2-pentene, (E)-3,4-	4914-92-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	ppm
1003	Dimethyl-3-nitrobenzene, 1,2-	83-41-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1004	Dimethyl-3-pentanone, 2,4-	565-80-0	0.99	11	100	TEEL-2/11, human 180-min TCLo, rat 240-min LC50	ppm
1005	Dimethyl-5-phenylphenazinium chloride, 3,7-diamino-2,8-; (Safranine; Gossypimine)	477-73-6	0.17	1.9	11	TEEL-2/11, TEEL-3/6, rat iv LD50	mg/m <sup>3</sup>
1006	Dimethylacetamide, N,N-	127-19-5	30	67	400	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
1007	Dimethylacrylamide, N,N-	2680-03-7	0.15	1.7	50	TEEL-2/11, rat dermal TDLo, mouse oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1008	<b>Dimethylamine</b>	<b>124-40-3</b>	<b>10</b>	<b>66</b>	<b>250</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1009	Dimethylamino)phenyl)azo)benzenesulfonic acid, sodium salt, p--(p-; (Methyl orange, sodium salt)	547-58-0	0.18	2	12	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1010	Dimethylaminoazobenzene, 4-	60-11-7	1.8	20	40	TEEL-2/11, mouse oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1011	Dimethylaminobenzaldehyde, p-	100-10-7	8.2	90	250	TEEL-2/11, rat ip TDLo, rat ip LD50	mg/m <sup>3</sup>
1012	Dimethylaminocyclohexane, N,N-	98-94-2	1	11	66	TEEL-2/11, TEEL-3/6, rat 120-min LC50	mg/m <sup>3</sup>
1013	Dimethylaminoethanol, 2-	108-01-0	3.7	40	72	TEEL-2/11, rat 360-min TCLo, rat 240-min LC50	ppm
1014	Dimethylaminoethyl chloride hydrochloride, 2-	4584-46-7	0.34	3.8	47	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1015	Dimethylammonium N,N-dimethylcarbamate	4137-10-4	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
1016	Dimethylaniline, N,N-	121-69-7	10	330	2,000	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1017	Dimethylbenzidine 3,3'-; (o-Tolidine)	119-93-7	0.0018	0.02	36	TEEL-2/11, REL-C, mouse ip LDLo	mg/m <sup>3</sup>
1018	Dimethylbutyric acid, 2,2-	595-37-9	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
1019	<b>Dimethylchlorosilane; (Chlorodimethylsilane)</b>	<b>1066-35-9</b>	<b>1.8</b>	<b>22</b>	<b>100</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1020	Dimethylcyclohexane, cis-1,4-	624-29-3	510	5,600	34,000	TWA (See ACGIH Appendix H, converted to ppm) x 3, TEEL-1 x 11, TEEL-2 x 6	ppm
1021	Dimethyldecane, 2,2-	17302-37-3	230	385	5,000	Used octane (111-65-9) PAC values	ppm
1022	<b>Dimethyldichlorosilane</b>	<b>75-78-5</b>	<b>0.90</b>	<b>11</b>	<b>50</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1023	Dimethyldicyclopentadiene	26472-00-4	2.2	24	140	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
1024	Dimethyldimethoxysilane	1112-39-6	14	150	920	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	mg/m <sup>3</sup>
1025	Dimethylethyl hydroperoxide, 1,1-; (tert-Butylhydroperoxide)	75-91-2	0.37	4.1	22	TEEL-2/11, guinea pig 360-min TCLo, rat oral LD50	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1026	<b>Dimethylformamide, N,N-</b>	<b>68-12-2</b>	<b>2</b>	<b>91</b>	<b>530</b>	<b>ERPG-1, AEGL-2, AEGL-3</b>	ppm
1027	Dimethylglyoxime; (Diacetyldioxime)	95-45-4	0.99	11	65	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
1028	Dimethylheptane, 2,2-	1071-26-7	230	385	5,000	Used octane (111-65-9) PAC values	ppm
1029	Dimethylhexane, 3,3-	563-16-6	230	385	5,000	Used octane (111-65-9) PAC values	ppm
1030	<b>Dimethylhydrazine, 1,1-</b>	<b>57-14-7</b>	0.27	<b>3.0</b>	<b>11</b>	<b>AEGL-2/11, AEGL-2, AEGL-3</b>	ppm
1031	<b>Dimethylhydrazine, 1,2-</b>	<b>540-73-8</b>	0.27	<b>3.0</b>	<b>11</b>	<b>AEGL-2/11, AEGL-2, AEGL-3</b>	ppm
1032	Dimethylimidazole, 1,2-	1739-84-0	2.2	24	140	TEEL-2/11, TEEL-3/6, mouse ip LDLo	mg/m <sup>3</sup>
1033	Dimethylisopropylamine, N,N-	996-35-0	11	120	710	MAK-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1034	Dimethylnonane, 4,5-	17302-23-7	230	385	5,000	Used octane (111-65-9) PAC Values	ppm
1035	Dimethyloctane, 3,5-	15869-93-9	230	385	5,000	Used octane (111-65-9) PAC Values	ppm
1036	Dimethylphenol, 2,4-; (2,4-Xylenol)	105-67-9	6.9	76	460	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1037	Dimethylphenol, 2,6-; (2,6-Xylenol)	576-26-1	2.4	26	160	TEEL-2/11, mouse 120-min TCLo, TEEL-2 x 6	mg/m <sup>3</sup>
1038	Dimethylphthalate	131-11-3	15	1,600	9300*	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
1039	Dimethylpolysilane; (Poly(dimethylsilane))	28883-63-8	0.5	0.83	2.5	Used trimethoxysilane (2487-90-3) PAC values	ppm
1040	Dimethyl-p-phenylenediamine, N,N-	99-98-9	0.012	0.13	9.9	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
1041	Dimethylpropane, 2,2-; (Neopentane)	463-82-1	3000*	33000***	200000***	TLV-TWA (pentane, all isomers) x 3, TEEL-1 x 11, TEEL-2 x 6 (See white paper)	ppm
1042	Dimethylpyridine, 2,4-; (2,4-Lutidine)	108-47-4	0.14	1.5	9	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
1043	Dimethyltetramethoxydisiloxane, 1,3-	18186-97-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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			PAC-1	PAC-2	PAC-3		
1044	Dimetilan	644-64-4	2.3	25	150	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
1045	Di-n-amylamine	2050-92-2	0.041	0.45	2.7	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
1046	Di-n-butylamine	111-92-2	0.45	5	21	TEEL-2/11, WEEL-C, rat 240-min LCLo	ppm
1047	Dinitraniline orange; (Hansa orange RN)	3468-63-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1048	Dinitroaniline, 2,4-	97-02-9	0.86	9.4	56	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1049	Dinitrobenzene, -m, -o, and -p isomers (528-29-0 and 100-25-4)	99-65-0	3	33	200	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
1050	Dinitro-o-cresol, 4,6-	534-52-1	0.6	0.83	5	TLV-TWA x 3, TEEL-3/6, IDLH (1990 and 1994)	mg/m <sup>3</sup>
1051	Dinitrophenol	25550-58-7	0.25	2.7	16	TEEL-2/11, TEEL-3/6, dog oral LDLo	mg/m <sup>3</sup>
1052	Dinitrophenol, 2,3-	66-56-8	1.1	13	75	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
1053	Dinitrophenol, 2,4-	51-28-5	0.61	6.8	16	TEEL-2/11, rat oral TDLo, dog oral LDLo	mg/m <sup>3</sup>
1054	Dinitrophenol, 2,6-	573-56-8	0.23	2.5	15	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
1055	Dinitro-p-toluidine, 2,6-; (4-Amino-3,5-dinitrotoluene)	6393-42-6	1	12	69	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
1056	Dinitrosopiperazine; (Piperazine, 1,4-dinitroso-)	140-79-4	0.48	5.3	32	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1057	Dinitrotoluene	25321-14-6	0.6	34	200	TLV-TWA x 3, rat oral TDLo, IDLH (1990)	mg/m <sup>3</sup>
1058	Dinitrotoluene, 2,4-	121-14-2	0.6	12	200	TLV-TWA (dinitrotoluene, 25321-14-6) x 3, dog oral TDLo, dinitrotoluene IDLH (1990)	mg/m <sup>3</sup>
1059	Dinitrotoluene, 2,6-	606-20-2	0.6	47	200	TLV-TWA (dinitrotoluene, 25321-14-6) x 3, dog oral TDLo, dinitrotoluene IDLH (1990)	mg/m <sup>3</sup>
1060	Dinitrotoluene, 3,4-	610-39-9	0.6	33	200	TLV-TWA (dinitrotoluene, 25321-14-6) x 3, TEEL-3/6, dinitrotoluene IDLH (1990)	mg/m <sup>3</sup>
1061	Dinoseb; (2-sec-Butyl-4,6-dinitrophenol)	88-85-7	0.41	4.5	5.4	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1062	Dinoterb; (2-(1,1-Dimethylethyl)-4,6-dinitrophenol)	1420-07-1	0.19	2	12	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1063	Diocetyl phthalate, n-	117-84-0	41	450	11000*	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1064	Diocetyl sebacate; (Bis(2-ethylhexyl) sebacate)	122-62-3	5.4	59	360	TEEL-2/11, TEEL-3/6, rat iv LD50	mg/m <sup>3</sup>
1065	Diocetyl sodium sulfosuccinate; (Di-(2-ethylhexyl) sodium sulfosuccinate)	577-11-7	5.7	63	380	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1066	<b>Dioxane, 1,4-; (1,4-Diethyleneoxide)</b>	<b>123-91-1</b>	<b>17</b>	<b>320</b>	<b>760</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1067	Dioxathion	78-34-2	0.31	3.4	39	TEEL-2/11, LOC, rat 60-min LC50	mg/m <sup>3</sup>
1068	Dioxolane, 1,3-	646-06-0	60	190	1,000	TLV-TWA x 3, rat oral TDLo, rat 240-min LC50	ppm
1069	Dipentaerythritol; (Dipentek)	126-58-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1070	Dipentyl pentylphosphonate	6418-56-0	13	140	830	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
1071	Diphacinone; (Diphenadione)	82-66-6	0.082	0.9	88	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
1072	Diphenyl chlorophosphate; (Diphenylphosphoryl chloride)	2524-64-3	1.2	13	79	TEEL-2/11, TEEL-3/6, LD50 (HHR = 3)	mg/m <sup>3</sup>
1073	Diphenyl cresol phosphate	26444-49-5	4.3	47	280	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1074	Diphenyl mercury	587-85-9	0.53	8.3	50	MW-adjusted aryl mercury (7439-97-6) TLV-TWA x 3, TEEL-3/6, MW-adjusted mercury IDLH (1990)	mg/m <sup>3</sup>
1075	<b>Diphenyl; (Biphenyl)</b>	<b>92-52-4</b>	0.87	<b>9.6</b>	300	AEGL-2/11, <b>AEGL-2</b> , IDLH (1990)	ppm
1076	Diphenylamine	122-39-4	30	180	220	TLV-TWA x 3, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1077	<b>Diphenylchloroarsine; (Chlorodiphenylarsine)</b>	<b>712-48-1</b>	0.035	<b>0.39</b>	<b>1.2</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
1078	<b>Diphenyldichlorosilane</b>	<b>80-10-4</b>	<b>0.90</b>	<b>11</b>	<b>50</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1079	Diphenylguanidine, 1,3-	102-06-7	0.97	11	64	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1080	Diphenylhydrazine, 1,2-	122-66-7	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>
1081	Diphenylmethane	101-81-5	6.8	74	450	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1082	Diphenylnitrosamine	86-30-6	5.5	60	360	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1083	Diphenyloxazole, 2,5-	92-71-7	2.5	27	160	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
1084	Dipicolinic acid; (2,6-Pyridinedicarboxylic acid)	499-83-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1085	Dipotassium cadmium oxide	z-0013	0.2	1.5	9.3	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
1086	Dipotassium dihydrogen silicate	z-0014	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1087	Dipotassium metasilicate	10006-28-7	3.9	43	260	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1088	Dipropyl ketone; (4-Heptanone)	123-19-3	150	1,700	9,900	TWA x 3, TEEL-1 x 11, TEEL-2 x 6	ppm
1089	Dipropylamine	142-84-7	2.8	31	180	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1090	Dipropylene glycol methyl ether	34590-94-8	150	1700*	9900**	TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	ppm
1091	Direct Black 38; (Apomine black GX)	1937-37-7	74	810	4,900	TEEL-2/11, TEEL-3/6, rat 60-min LCLo	mg/m <sup>3</sup>
1092	Di-sec-octylphthalate	117-81-7	10	86	5,900	REL-STEL, human oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1093	Disodium (2-ethylhexyl)phosphate	15505-13-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1094	Disodium 3,6-endoxohexahydrophthalate	129-67-9	0.15	1.7	10	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1095	Disodium butylphosphate	64114-42-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1096	Disodium cadmium oxide	z-0016	0.17	1.3	8	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
1097	Disodium dihydrogen silicate	z-0017	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1098	Disodium ethylenediaminediacetate (S and U isomers)	38011-25-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1099	Disodium hexafluorosilicate (2-)	16893-85-9	12	140	820	MW-adjusted fluorides TLV-TWA x 3, rat oral TDLo, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
1100	Disodium iminodiacetate	928-72-3	3.3	37	220	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
1101	Disodium monoxide; (Disodium oxide; Sodium oxide)	1313-59-3	0.5	5	50	Used sodium hydroxide (1310-73-2) ERPG values	mg/m <sup>3</sup>
1102	Distillates (petroleum) hydrotreated heavy naphthenic	64742-52-5	140	1,500	8,900	Used mineral oil, heavy or light (8020-83-5) PAC values	mg/m <sup>3</sup>
1103	Disulfiram	97-77-8	6	17	99	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1104	Disulfoton	298-04-4	0.18	2	8.8	TLV-TWA x 3, LOC, rat 240-min LC50	mg/m <sup>3</sup>
1105	Di-tert-butyl dicarbonate	24424-99-5	0.067	0.73	4.4	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
1106	Di-tert-butylhydroquinone, 2,5-	88-58-4	6.3	69	110	TEEL-2/11, rat oral TDLo, mouse oral LD50	mg/m <sup>3</sup>
1107	Dithiazanine iodide; (3,3'-Diethylpentamethinethiacyanine iodide)	514-73-8	1.8	20	33	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
1108	Dithiobiuret	541-53-7	0.45	5	11	TEEL-2/11, LOC, rat ip LD50	mg/m <sup>3</sup>
1109	Dithiodiethanol, 2,2-; (Dithiodiglycol)	1892-29-1	0.52	5.7	34	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1110	Dithioerythritol, 1,4-	6892-68-8	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
1111	Diurethane dimethacrylate	72869-86-4	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>
1112	Dodecamethylcyclohexasiloxane	540-97-6	150	1,700	9,900	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1113	Dodecane	112-40-3	1.7	18	110	TEEL-2/11, TEEL-3/6, rat 480-min LC50	ppm
1114	Dodecanethiol, 1-; (Dodecyl mercaptan; Lauryl mercaptan)	112-55-0	0.3	0.5	3	TLV-TWA x 3, REL-C, TEEL-2 x 6	ppm
1115	Dodecen-1-yl)succinic anhydride, (2-; (DDSA)	19780-11-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1116	Dodecenyl succine anhydride; (Tetrapropenylsuccinic anhydride)	26544-38-7	7.7	84	510	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1117	Dodecenylsuccinic anhydride	25377-73-5	0.79	8.7	52	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	mg/m <sup>3</sup>
1118	Dodecyl alcohol	112-53-8	12	140	820	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1119	Dodecyl methacrylate	142-90-5	6.9	76	460	TEEL-2/11, TEEL-3/6, rat ip LD50	ppm
1120	Dodecylbenzene sulfonic acid; (Laurylbenzenesulfonic acid)	27176-87-0	2	21	130	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1121	Dodecylphenol, 4- (mixture of isomers)	27193-86-8	4.1	45	420	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1122	Dodecylsarcosine sodium salt, N-; (N-Lauryl sarcosine sodium salt)	7631-98-3	0.59	6.5	39	TEEL-2/11, TEEL-3/6, mouse iv, LD50	mg/m <sup>3</sup>
1123	<b>Dodecyltrichlorosilane</b>	<b>4484-72-4</b>	<b>0.60</b>	<b>7.3</b>	<b>33</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1124	Dv methyl ester; (Methyl 3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate)	61898-95-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1125	Dysprosium	7429-91-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1126	Dysprosium nickelide	12175-27-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1127	Dysprosium nitrate	10143-38-1	7.2	79	470	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1128	Dysprosium oxide; (Dysprosium(III) oxide)	1308-87-8	15	170	990	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1129	Ecolite	z-0018	16	170	1,000	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1130	Emetine dihydrochloride, l-	316-42-7	9.10E-04	0.01	0.06	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
1131	Endosulfan	115-29-7	0.3	0.8	180	TLV-TWA x 3, LOC, human oral LDLo	mg/m <sup>3</sup>
1132	Endothion	2778-04-3	1.5	17	100	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
1133	Endrin	72-20-8	1.8	20	2,000	TEEL-2/11, LOC, IDLH (1990)	mg/m <sup>3</sup>
1134	Epibatidine	140111-52-0	1.00E-04	0.0011	0.0068	TEEL-2/11, mouse ip TDLo, TEEL-2 x 6	mg/m <sup>3</sup>
1135	Epibromohydrin	3132-64-7	0.98	11	65	TEEL-2/11, TEEL-3/6, mouse ip, LD50	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1136	<b>Epichlorohydrin</b>	<b>106-89-8</b>	<b>1.7</b>	<b>24</b>	<b>72</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1137	EPN; (O-Ethyl-O-(4-nitrophenyl) phenylthiophosphonate)	2104-64-5	0.45	5	50	TEEL-2/11, LOC, IDLH (1990)	mg/m <sup>3</sup>
1138	Epoxy resin includes EPON 1001, 1007, 820, ERL-2795	25068-38-6	90	990	5,900	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1139	Epoxy resin, cured; (4,4'-(1-Methylethylidene)biscyclohexanol, polymer with (chloromethyl)oxirane)	30583-72-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1140	Epoxy resin; (Bisphenol A-Bisphenol A diglycidyl ether polymer)	25036-25-3	6	66	400	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1141	Epoxy resin; (Epichlorhydrin, polymer with diethylene glycol)	25928-94-3	3.6	40	240	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
1142	<b>Epoxybutane, 1,2-; (1,2-Butylene oxide)</b>	<b>106-88-7</b>	<b>72</b>	<b>140</b>	<b>330</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1143	Epoxyethyl)-7-oxabicyclo(4.1.0)heptane, 3-; (Vinyl cyclohexene dioxide)	106-87-6	0.3	5.9	35	TLV-TWA x 3, TEEL-3/6, rat 240-min LC50	ppm
1144	Erbium nitrate pentahydrate	10031-51-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1145	Erbium(III) nitrate	10168-80-6	1.1	12	70	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
1146	Erbium(III) nitrate hexahydrate	13476-05-6	1.4	15	91	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
1147	Erbium(III) oxide	12061-16-4	15	170	990	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1148	Ergotamine tartrate	379-79-3	0.91	10	32	TEEL-2/11, LOC, rat iv LD50	mg/m <sup>3</sup>
1149	Estane; (Polyurethane resin; Urethane rubber)	61789-63-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1150	Ethanaminium, N,N,N-triethyl-, iodide (1:1); (Tetraethylammoniumiodide; Ammonium, tetraethyl-, iodide)	68-05-3	0.67	1.3	7.6	MW-adjusted iodine TLV-TWA x 3, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
1151	Ethane	74-84-0	65000***	230000***	400000***	Simple asphyxiant	ppm
1152	Ethanedioic acid, dimethyl ester	553-90-2	2	22	130	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
1153	Ethanedithiol, 1,2-	540-63-6	0.15	1.6	9.6	TEEL-2/11, TEEL-3/6, mouse oral LD50	ppm

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1154	Ethanediy(bis)benzene, 1,1'-(1,2;- (Bibenzyl)	103-29-7	14	150	890	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1155	Ethanediy(bis)(N-(carboxymethyl)glycine), N,N'-1,2-, dipotassium salt	2001-94-7	1.5	16	97	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
1156	Ethanediy(bis(oxy))bisbenzene, 1,1'-(1,2-	104-66-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1157	Ethanethiol, 2-[bis(1-methylethyl)amino]-; (Ethanethiol, 2-(Diisopropylamino)-	5842-07-9	0.016	0.18	1.1	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
1158	<b>Ethanethiol; (Ethyl mercaptan)</b>	<b>75-08-1</b>	<b>1.0</b>	<b>120</b>	<b>360</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1159	Ethanol, titanium(4+) salt	3087-36-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1160	Ethanolamine	141-43-5	6	170	1,000	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1161	Ethenylsilanetriol triacetate	4130-08-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1162	Ethidium bromide; (2,7-Diamino-10-ethyl-9-phenylphenanthridinium bromide)	1239-45-8	0.16	1.8	11	TEEL-2/11, TEEL-3/6, rat iv LD50	mg/m <sup>3</sup>
1163	Ethion	563-12-2	1.2	13	38	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
1164	Ethoxyethanol, 2-	110-80-5	15	1,000	6000*	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
1165	Ethoxyethoxy)ethanol, 2-(2-; (Carbitol cellosolve; Diethylene glycol monoethyl ether)	111-90-0	75	100	450	WEEL-TWA x 3, rat oral TDLo, dog iv LD50	ppm
1166	Ethoxyethyl methacrylate, 2-	2370-63-0	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>
1167	Ethoxyethylacetate, 2-	111-15-9	15	420	2500*	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
1168	Ethoxyimino)butyl)-5-(2-ethylthiopropyl)-3-hydroxycyclohex-2-en-1-one, 2-(1-(-; (Checkmate)	74051-80-2	9.6	110	630	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1169	Ethoxylated alcohols, C16-18; (Nonionic surfactant)	68439-49-6	3.8	42	250	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1170	Ethoxylated alcohols, C7-C21	68991-48-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1171	Ethoxylated nonylphenol; (Nonyl phenyl polyethylene glycol ether)	9016-45-9	1	11	260	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1172	Ethyl (or dimethyl) pyrrolidine	z-0020	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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			PAC-1	PAC-2	PAC-3		
1173	Ethyl acetate	141-78-6	1,200	1,700	10000**	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
1174	Ethyl acetoacetate	141-97-9	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1175	<b>Ethyl acrylate</b>	<b>140-88-5</b>	<b>8.3</b>	<b>36</b>	<b>240</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1176	<b>Ethyl alcohol; (Ethanol)</b>	<b>64-17-5</b>	<b>1,800</b>	<b>3300*</b>	15000*	<b>ERPG-1, ERPG-2</b> , IDLH (1990)	ppm
1177	Ethyl alcohol-d; (Ethanol-d)	925-93-9	1,800	3300*	15000*	Used ethyl alcohol (64-17-5) PAC values	ppm
1178	<b>Ethyl benzene</b>	<b>100-41-4</b>	<b>33</b>	<b>1100*</b>	<b>1800*</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1179	Ethyl benzoate	93-89-0	6.3	69	420	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1180	Ethyl bromoacetate	105-36-2	0.18	1.9	12	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
1181	Ethyl butyl ketone; (3-Heptanone)	106-35-4	75	500	3000*	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1182	Ethyl chloride; (Chloroethane)	75-00-3	300	5100*	20000**	TLV-TWA x 3, rat 120-min TCLo, IDLH (1990)	ppm
1183	Ethyl chloroacetate	105-39-5	0.11	1.2	7.1	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
1184	<b>Ethyl chloroformate</b>	<b>541-41-3</b>	0.15	<b>1.6</b>	<b>4.8</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1185	<b>Ethyl dimethylamido-cyanophosphate; (Tabun; GA)</b>	<b>77-81-6</b>	<b>4.20E-04</b>	<b>0.0053</b>	<b>0.039</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1186	Ethyl ether	60-29-7	500	3200*	19000***	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1187	Ethyl formate	109-94-4	100	1,300	8000*	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1188	Ethyl hexanoic acid, 2-; (Butyl ethyl acetic acid)	149-57-5	15	140	590	TLV-TWA x 3, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1189	<b>Ethyl isocyanate</b>	<b>109-90-0</b>	0.0031	<b>0.034</b>	<b>0.1</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1190	Ethyl lactate; (Ethyl (S)-(-)-lactate)	687-47-8	5.7	63	380	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1191	Ethyl mercury chloride; (Chloroethyl mercury)	107-27-7	0.04	0.53	2.6	MW-adjusted mercury, alkyl compounds (7439-97-6) TLV-STEL, PEL-C (also adjusted based on ratio to toxicity data), MW-adjusted mercury, alkyl compounds IDLH (1994, See white paper)	mg/m <sup>3</sup>
1192	Ethyl methacrylate; (2-Methyl-2-propenoic acid, ethyl ester)	97-63-2	5.5	61	370	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
1193	Ethyl methylphosphonic acid; (EMPA; VX acid; Ethyl methyl phosphonate; Ethyl methyl phosphonic acid)	1832-53-7	10	110	1,600	Used dimethyl methylphosphonate (756-79-6) PAC values	mg/m <sup>3</sup>
1194	Ethyl nitrite	109-95-5	0.11	1.2	7.1	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
1195	Ethyl O-2-diisopropylaminoethylmethylphosphonite, O-; (QL)	57856-11-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1196	Ethyl propionate	105-37-3	6.3	69	410	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
1197	Ethyl S,S-dipropylphosphorodithioate, O-; (Mocap PC-84; Ethoprophos)	13194-48-4	0.14	1.6	9.3	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1198	Ethyl sec-amyl ketone; (5-Methyl-3-heptanone)	541-85-5	30	500	3,000	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
1199	Ethyl silicate polymer; (Silicic acid, ethyl ester)	11099-06-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2957	<b>Ethyl trichlorosilane; (trichloroethylsilane)</b>	<b>115-21-9</b>	<b>0.60</b>	<b>7.3</b>	<b>33</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1200	Ethyl-1,3-hexanediol, 2-; (Ethyl hexylene glycol)	94-96-2	6.9	75	90	TEEL-2/11, rat oral TDLo, rat oral LD50	ppm
1201	<b>Ethyl-1-hexanol, 2-</b>	<b>104-76-7</b>	<b>0.1</b>	<b>100</b>	<b>200</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
1202	Ethyl-2-methylheptane, 3-	14676-29-0	230	385	5,000	Used octane (111-65-9) PAC values	ppm
1203	Ethyl-2-methyloctane, 6-	62016-19-7	230	385	5,000	Used octane (111-65-9) PAC values	ppm
1204	Ethyl-2-oxazoline, 2-	10431-98-8	30	330	2,000	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	ppm
1205	Ethyl-4-hydroxybenzoate; (p-Hydroxybenzoic acid ethyl ester); Ethylparaben	120-47-8	31	340	2,100	TEEL-2/11, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1206	Ethyl-5-methylheptane, 3-	52896-90-9	230	385	5,000	Used octane (111-65-9) PAC values	ppm
1207	Ethyl-6-methyl-4-phenyl-3-cyclohexene-1-carboxylic acid sodium salt, 5-; (Mebane sodium salt)	16550-39-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1208	<b>Ethylamine; (Monoethylamine; Ethylamine anhydrous)</b>	<b>75-04-7</b>	<b>7.5</b>	<b>49</b>	<b>270</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1209	Ethylbenzaldehyde, 2-	22927-13-5	22	240	1,400	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	ppm
1210	<b>Ethylbis(2-chloroethyl)amine; (Bis(2-chloroethyl)ethylamine; Nitrogen mustard-1)</b>	<b>538-07-8</b>	0.002	<b>0.022</b>	<b>0.37</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
1211	<b>Ethylchloroformate</b>	<b>2941-64-2</b>	0.024	<b>0.26</b>	<b>0.79</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1212	<b>Ethylchloroarsine; (Dichloroethylarsine)</b>	<b>598-14-1</b>	0.0026	<b>0.029</b>	<b>0.086</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
1213	Ethylene	74-85-1	600	6600*	40000***	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	ppm
1214	<b>Ethylene chlorohydrin; (2-Chloroethanol)</b>	<b>107-07-3</b>	0.11	<b>1.2</b>	<b>3.5</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1215	<b>Ethylene dibromide; (Dibromoethane)</b>	<b>106-93-4</b>	<b>17</b>	<b>24</b>	<b>46</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1216	<b>Ethylene dichloride; (1,2-Dichloroethane)</b>	<b>107-06-2</b>	<b>50</b>	<b>200</b>	<b>300</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
1217	Ethylene fluorohydrin; (2-Fluoroethanol)	371-62-0	0.0024	0.0267	0.35	TEEL-2/11, LOC, rat 10-min LC50	ppm
1218	Ethylene glycol	107-21-1	30	40	60	MAK-TWA x 3, EEGL 60-min, EEGL 30-min	ppm
1219	Ethylene glycol diacetate	111-55-7	21	230	1,400	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1220	Ethylene glycol dimethacrylate	97-90-5	9.9	110	650	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1221	Ethylene glycol dinitrate; ethanediol dinitrate, 1,2-	628-96-6	0.016	0.2	80	REL-STEL, PEL-C, IDLH (1994)	ppm
1222	Ethylene glycol monomethyl ether acetate; (EGMEA; 2-Methoxyethyl acetate)	110-49-6	0.3	670	4000*	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1223	Ethylene glycol monomethyl ether; (2-Methoxyethanol; EGME; Methyl Cellosolve(R))	109-86-4	0.3	14	2000*	TLV-TWA x 3, rat oral TDLo, IDLH (1990)	ppm
1224	Ethylene glycol monopropyl ether; (Propyl cellosolve; Ektasolve EP)	2807-30-9	2.2	24	140	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
1225	Ethylene glycol mono-sec-butyl ether	7795-91-7	2.4	26	160	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1226	<b>Ethylene oxide; (Oxirane)</b>	<b>75-21-8</b>	5	<b>45</b>	<b>200</b>	PEL-STEL, <b>AEGL-2, AEGL-3</b>	ppm
1227	Ethylene/vinyl acetate copolmer	24937-78-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1228	Ethylenediamine dihydrochloride	333-18-6	2.7	29	180	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
1229	<b>Ethylenediamine, 1,2-</b>	<b>107-15-3</b>	0.88	<b>9.7</b>	<b>20</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1230	Ethylenediaminetetraacetic acid, disodium salt	139-33-3	11	120	730	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1231	Ethylenediaminetetraacetic acid, disodium salt, dihydrate	6381-92-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1232	Ethylenediaminetetraacetic acid, ferric ammonium salt	21265-50-9	97	1,100	6,300	MW-adjusted iron dust (1309-37-1) REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1233	Ethylenediaminetetraacetic acid, tetrasodium salt, dihydrate	10378-23-1	82	900	5,500	Used MW-adjusted tetrasodium EDTA (64-02-8) PAC values	mg/m <sup>3</sup>
1234	Ethylenediaminetetraacetic acid, tetrasodium salt; (Tetrasodium EDTA)	64-02-8	75	830	5,000	TEEL-2/11, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>
1235	Ethylenediaminetetraacetic acid; (EDTA)	60-00-4	4.1	45	200	TEEL-2/11, rat oral TDLo, rat ip LD50	mg/m <sup>3</sup>
1236	Ethylenedinitrilo)tetra-2-propanol, 1,1',1'',1'''-(	102-60-3	34	370	2,200	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1237	<b>Ethyleneimine</b>	<b>151-56-4</b>	0.1	<b>4.6</b>	<b>9.9</b>	TLV-STEL, <b>AEGL-2, AEGL-3</b>	ppm
1238	Ethylenethiourea; (2-Imidazolidinethione)	96-45-7	0.085	0.94	110	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1239	Ethylheptane, 4-	2216-32-2	230	385	5,000	Used octane (111-65-9) PAC values	ppm
1240	Ethylhexyl acrylate, 2-; (Acrylic acid, 2-ethylhexyl ester)	103-11-7	15	120	150	MAK-TWA x 3, rat 360-min TCLo, rat oral LD50	ppm
1241	Ethylhexyl bromide, 2-	18908-66-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1242	<b>Ethylhexylchloroformate, 2-</b>	<b>24468-13-1</b>	0.088	<b>0.97</b>	<b>2.9</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1243	Ethylhexyloxy)ethanol, 2-(2-	1559-35-9	9.2	100	610	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1244	Ethylidene chloride, 1,1-; (1,1-Dichloroethane)	75-34-3	300	670	4,000	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
1245	<b>Ethylidene norbornene</b>	<b>16219-75-3</b>	<b>0.2</b>	<b>100</b>	<b>500</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
1246	Ethylmagnesium chloride; (Chloroethyl magnesium)	2386-64-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1247	<b>Ethylphosphorodichloridate</b>	<b>1498-51-7</b>	0.018	<b>0.20</b>	<b>0.6</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1248	<b>Ethyl-S-dimethylaminoethyl methylphosphonothiolate; (VX nerve agent)</b>	<b>50782-69-9</b>	<b>1.60E-05</b>	<b>2.70E-04</b>	<b>9.10E-04</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1249	Ethylthiocyanate	542-90-5	20	100	170	MW-adjusted cyanides MAK-TWA x 3, LOC, MW-adjusted cyanides IDLH (1990)	mg/m <sup>3</sup>
1250	Ethyltoluene, o-	611-14-3	20	220	1,300	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
1251	Ethyltoluene, p-	622-96-8	15	160	960	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1252	Europium	7440-53-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1253	Europium nitrate; (Europium trinitrate)	10138-01-9	11	130	760	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1254	Europium oxide	1308-96-9	15	170	990	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1255	Europium(II) iodide	22015-35-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1256	Farnesol	4602-84-0	18	200	1,200	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1257	Fatty acids, tall-oil, polymers with glycerol, pentaerythritol and phthalic anhydride	66070-62-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1258	Fenamiphos	22224-92-6	0.15	0.9	3.1	TLV-TWA x 3, LOC, rat 60-min LC50	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1259	Fensulfothion	115-90-2	0.18	2	3.1	TEEL-2/11, LOC, rat 60-min LC50	mg/m <sup>3</sup>
1260	Fenthion	55-38-9	0.15	5.9	35	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
1261	Ferric ammonium citrate	1185-57-5	5.4	59	360	MW-adjusted iron soluble salts (1309-37-1) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1262	Ferric ammonium sulfate dodecahydrate	7783-83-7	26	280	1,700	Used MW-adjusted ferric ammonium sulfate (10138-04-2) PAC values	mg/m <sup>3</sup>
1263	Ferric ammonium sulfate; (Sulfuric acid, ammonium iron(3e+) salt (2:1:1))	10138-04-2	14	160	950	MW-adjusted iron soluble salts (1309-37-1) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1264	Ferric chloride	7705-08-0	8.7	30	180	MW-adjusted iron soluble salts (1309-37-1) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1265	Ferric chloride hexahydrate	10025-77-1	15	39	240	MW-adjusted iron soluble salts (1309-37-1) TLV-TWA x 3, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
1266	Ferric fluoride	7783-50-8	6.1	22	130	MW-adjusted iron soluble salts (1309-37-1) TLV-TWA x 3, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
1267	Ferric hydroxide; (Iron(III) hydroxide)	1309-33-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1268	Ferric nitrate	10421-48-4	13	140	850	MW-adjusted iron soluble salts (1309-37-1) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1269	Ferric nitrate nonahydrate; (Iron(III) nitrate nonahydrate (1:3:9))	7782-61-8	22	110	640	MW-adjusted iron soluble salts (1309-37-1) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1270	Ferric phosphate	10045-86-0	8.1	89	530	MW-adjusted iron soluble salts (1309-37-1) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1271	Ferric sulfate; (Iron(III) sulfate)	10028-22-5	11	120	710	MW-adjusted iron soluble salts (1309-37-1) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1272	Ferrous ammonium sulfate	10045-89-3	15	170	1,000	MW-adjusted iron soluble salts (1309-37-1) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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			PAC-1	PAC-2	PAC-3		
1273	Ferrous carbonate	563-71-3	6.2	69	410	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
1274	Ferrous chloride	7758-94-3	6.8	76	460	MW-adjusted iron soluble salts (1309-37-1) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1275	Ferrous disulfide; (Iron disulfide)	12068-85-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1276	Ferrous hydroxide; (Iron(II) hydroxide)	18624-44-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1277	Ferrous Oxalate; (Iron(II) oxalate)	516-03-0	7.7	86	510	MW-adjusted iron soluble salts (1309-37-1) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1278	Ferrous sulfamate	14017-39-1	8.4	92	550	MW-adjusted iron soluble salts (1309-37-1) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1279	Ferrous sulfate	7720-78-7	8.2	41	250	MW-adjusted iron soluble salts (1309-37-1) TLV-TWA x 3, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>
1280	Ferrous sulfate heptahydrate	7782-63-0	15	170	990	MW-adjusted iron soluble salts (1309-37-1) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1281	Fibrous glass; (Fiber glass; Glass frit; Synthetic vitreous fibers)	65997-17-3	15	170	990	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1282	Fluometil	4301-50-2	0.55	6	9.1	TEEL-2/11, LOC, mouse ip LD50	mg/m <sup>3</sup>
1283	Fluoboric acid; (Tetrafluoroboric acid)	16872-11-0	8.7	97	580	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
1284	Fluoranthene	206-44-0	4.1	45	400	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1285	Fluorene, 9H-	86-73-7	6.6	72	430	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
1286	Fluorides (as F)	16984-48-8	7.5	83	500	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
1287	<b>Fluorine</b>	<b>7782-41-4</b>	<b>1.7</b>	<b>5.0</b>	<b>13</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1288	Fluoro-2-nitrobenzene, 1-; (o-Fluoronitrobenzene)	1493-27-2	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>

Chemicals with AEGLs: large, bolded font. ERPGs (but no AEGLs): bolded font.

\* indicates 10% LEL ≤ PAC < 50% LEL; \*\* indicates 50% LEL ≤ PAC < 100% LEL; \*\*\* indicates PAC ≥ LEL.

**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1289	Fluoro-4-nitrophenol, 2-	403-19-0	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
1290	Fluoro-6-nitrophenol, 2-	1526-17-6	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>
1291	Fluoroacetamide	640-19-7	0.53	5.8	19	TEEL-2/11, LOC, mouse 120-min LC50	mg/m <sup>3</sup>
1292	Fluoroacetic acid, sodium salt; (Sodium fluoroacetate)	62-74-8	0.15	0.5	5	TLV-TWA x 3, LOC, IDLH (1990)	mg/m <sup>3</sup>
1293	Fluoroacetic acid; (Fluoroethanoic acid)	144-49-0	0.043	0.47	0.93	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
1294	Fluoroacetyl chloride	359-06-8	0.91	10	60	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
1295	Fluoroaniline, p-	371-40-4	1.3	14	83	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1296	Fluorobenzene	462-06-6	30	330	1,200	TEEL-2/11, rat 1440-min TClO, rat 240-min LC50	mg/m <sup>3</sup>
1297	<b>Fluorosulfonic acid; (Fluorosulfuric acid)</b>	<b>7789-21-1</b>	<b>2</b>	<b>10</b>	<b>30</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	mg/m <sup>3</sup>
1298	Fluorotrimethylsilane	420-56-4	32	350	2,100	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	ppm
1299	Fluorouracil	51-21-8	1.7	19	46	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
1300	Fonofos	944-22-9	0.3	1.3	53	TLV-TWA x 3, LOC, rat 60-min LC50	mg/m <sup>3</sup>
1301	Forane	26675-46-7	21	230	610	TEEL-2/11, mouse 12-min TClO, rat 180-min LC50	ppm
1302	<b>Formaldehyde</b>	<b>50-00-0</b>	<b>0.90</b>	<b>14</b>	<b>56</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1303	Formaldehyde cyanohydrin; (Hydroxyacetonitrile; Glycolonitrile)	107-16-4	0.24	2.6	11	TEEL-2/11, LOC, rat 240-min LCLo	ppm
1304	Formamide	75-12-7	30	110	650	TLV-TWA x 3, TEEL-3/6, rat oral LD50	ppm
1305	Formetanate hydrochloride	23422-53-9	0.12	1.3	7.9	TEEL-2/11, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>
1306	<b>Formic acid</b>	<b>64-18-6</b>	<b>3</b>	<b>25</b>	<b>250</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
1307	Formic acid, 2-propenyl ester; (Allyl formate)	1838-59-1	0.65	7.2	43	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1308	Formic acid, butyl ester; (n-Butyl formate)	592-84-7	4.6	51	300	TEEL-2/11, TEEL-3/6, cat 70-min LC50	ppm
1309	Formothion	2540-82-1	2.1	24	140	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
1310	Formparanate	17702-57-7	0.65	7.2	43	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
1311	Formylpiperidine, 1-	2591-86-8	0.58	6.3	38	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
1312	Fosthietan	21548-32-3	0.43	4.7	28	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
1313	Fuberidazole	3878-19-1	0.3	3.3	15	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
1314	Fulminic acid; (Carbyloxime)	506-85-4	0.68	7.5	45	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	ppm
1315	<b>Furan</b>	<b>110-00-9</b>	0.62	<b>6.8</b>	<b>19</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1316	<b>Furancarboxaldehyde, 2-; (Furfural)</b>	<b>98-01-1</b>	<b>2</b>	<b>10</b>	<b>100</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
1317	Furancarboxylic acid, ethyl ester, 2-; (Ethyl furoate)	614-99-3	0.1	1.1	6.8	TEEL-2/11, TEEL-3/6, mouse iv LD50	ppm
1318	Furfuryl alcohol	98-00-0	15	42	250	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1319	Fusariotoxin T2; (T2-Trichothecene)	21259-20-1	0.0014	0.015	0.093	TEEL-2/11, TEEL-3/6, rat 10-min LC50	mg/m <sup>3</sup>
1320	Gadolinium	7440-54-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1321	Gadolinium chloride hexahydrate	13450-84-5	2.2	24	140	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
1322	Gadolinium hydroxide	16469-18-4	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
1323	Gadolinium nitrate, solid	10168-81-7	11	130	750	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1324	Gadolinium nitrite	z-0022	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1325	Gadolinium(III) oxide	12064-62-9	15	170	990	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1326	Gallic acid monohydrate	5995-86-8	18	190	1,200	TEEL-2/11, TEEL-3/6, rabbit oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1327	Gallium	7440-55-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1328	Gallium oxide	12024-21-4	16	180	1,100	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
1329	Gallium trichloride	13450-90-3	2.9	32	930	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
1330	Gallium trifluoride	7783-51-9	17	180	1,100	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
1331	<b>Gasoline</b>	<b>86290-81-5</b>	<b>200</b>	<b>1,000</b>	<b>4000*</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
1332	<b>Germane; (Germanium tetrahydride)</b>	<b>7782-65-2</b>	0.015	<b>0.17</b>	<b>0.50</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1333	Germanium	7440-56-4	3.2	35	170	TEEL-2/11, rat 360-min TCLo, rat 240-min LCLo	mg/m <sup>3</sup>
1334	Germanium oxide	1310-53-8	3.8	41	250	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1335	Germanium tetrafluoride	7783-58-6	15	160	980	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
1336	Germanous acid	z-0023	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1337	Giemsa's stain; (Blood stain)	51811-82-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1338	Gluconic acid, D-	526-95-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1339	Glutamic acid, L-; ((S)-(+)-Glutamic acid)	56-86-0	90	990	5,900	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1340	<b>Gluteraldehyde</b>	<b>111-30-8</b>	<b>0.2</b>	<b>1</b>	<b>5</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
1341	Glycerine (mist); (Glycerol; Glycerin)	56-81-5	45	860	2,500	PEL-TWA x 3, human oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1342	Glycerine carbonate; (4-Hydroxymethyl-1,3-dioxolan-2-one)	931-40-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1343	Glyceryl monostearate; (Octadecanoic acid, monoester with 1,2,3-propanetriol)	31566-31-1	0.66	7.2	43	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
1344	Glycidaldehyde	765-34-4	0.39	4.3	26	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1345	Glycidol; (Oxiranemethanol, 1-Propanol, 2,3-epoxy)	556-52-5	6	83	500	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
1346	Glycidoxypropyltrimethoxysilane; (3-(2,3-Epoxypropoxy) propyltrimethoxysilane)	2530-83-8	9.3	100	230	TEEL-2/11, rat 360-min TCLo, rat 240-min LCLo	mg/m <sup>3</sup>
1347	Glycidyl acrylate; (2,3-Epoxypropyl acrylate)	106-90-1	0.081	0.89	5.4	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
1348	Glycine; (Aminoacetic acid)	56-40-6	33	360	1,600	TEEL-2/11, rat ip TDLo, rat oral LD50	mg/m <sup>3</sup>
1349	Glycol carbonate; (Ethylene carbonate)	96-49-1	30	330	2,000	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1350	Glycolic acid; (Hydroxyacetic acid)	79-14-1	25	280	390	TEEL-2/11, rat 360-min TCLo, rat oral LD50	mg/m <sup>3</sup>
1351	Glycols, polyethylene, dimethyl ether	24991-55-7	37	400	2,000	TEEL-2/11, rat oral TDLo, rat oral LDLo	mg/m <sup>3</sup>
1352	Glycols, polyethylene, mono(p-nonylphenyl) ether	26027-38-3	4.5	49	300	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1353	Glycoluril; (Acetyleneurea)	496-46-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1354	Glyoxal; (Ethanedione, 1, 2-)	107-22-2	0.3	46	280	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1355	Goethite; (Iron hydroxide oxide)	1310-14-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1356	Gold	7440-57-5	0.46	5.1	30	TEEL-2/11, TEEL-3/6, rat iv LDLo	mg/m <sup>3</sup>
1357	Graphite; (Mineral carbon)	7782-42-5	6	16	95	TLV-TWA x 3, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
1358	Guanidine hydrochloride	50-01-1	1.4	16	94	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1359	Guanidine, N-methyl-N'-nitro-N-nitroso-	70-25-7	0.1	1.1	18	TEEL-2/11, mouse ip TDLo, rat oral LD50	mg/m <sup>3</sup>
1360	Hafnium	7440-58-6	1.5	17	99	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1361	Hafnium oxide	12055-23-1	1.8	19	120	MW-adjusted hafnium (7440-58-6) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1362	Halon 1211; (Bromochlorodifluoromethane)	353-59-3	13	140	1,400	TEEL-2/11, rat 360-min TCLo, rat 15-min LC50	ppm
1363	Hansa yellow	13515-40-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
844	<b>HCFC-123; (Dichloro-1,1,1-trifluoroethane, 2,2-)</b>	<b>306-83-2</b>	150	<b>1,000</b>	<b>10,000</b>	WEEL-TWA x 3, <b>ERPG-2, ERPG-3</b>	ppm
845	<b>HCFC-141b; (Dichloro-1-fluoroethane, 1,1-; Freon 141)</b>	<b>1717-00-6</b>	<b>1,000</b>	<b>1,700</b>	<b>3,000</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1364	Helium	7440-59-7	65,000	2.30E+05	4.00E+05	Simple asphyxiant	ppm
1365	Heptachlor	76-44-8	0.15	14	700	TLV-TWA x 3, rat oral TDLo, IDLH (1990)	mg/m <sup>3</sup>
1366	Heptachlor epoxide; (Epoxyheptachlor)	1024-57-3	0.15	0.5	3	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1367	Heptachlorodibenzofuran, 1,2,3,4,6,7,8-; (HeptaCDF, 1,2,3,4,6,7,8-)	67562-39-4	0.013	0.14	0.85	Used TCDD (1746-01-6) PACs divided by TEF = 0.01 (See white paper)	mg/m <sup>3</sup>
1368	Heptachlorodibenzofuran, 1,2,3,4,7,8,9-; (HeptaCDF, 1,2,3,4,7,8,9-)	55673-89-7	0.013	0.14	0.85	Used TCDD (1746-01-6) PACs divided by TEF = 0.01 (See white paper)	mg/m <sup>3</sup>
1369	Heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-; (HeptaCDD, 1,2,3,4,6,7,8-)	35822-46-9	0.013	0.14	0.85	Used TCDD (1746-01-6) PACs divided by TEF = 0.01 (See white paper)	mg/m <sup>3</sup>
1370	Heptadecane	629-78-7	4.3	48	290	TEEL-2/11, TEEL-3/6, mouse iv LDLo	ppm
1371	Heptafluorobutyric acid	375-22-4	0.5	5.5	33	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
1372	Heptafluorotetrahydro-5-(nonafluorobutyl)furan, 2,2,3,3,4,4,5-; (Perfluoro-2-butyltetrahydrofuran; Fluorinert FC-75)	335-36-4	10	110	680	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
1373	Heptane	142-82-5	500	830	5000*	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1374	Heptanoic acid	111-14-8	3.9	43	260	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
1375	Heptanol, 1-; (Heptyl alcohol)	111-70-6	10	120	640	TEEL-2/11, rat ip TDLo, rat oral LD50	mg/m <sup>3</sup>
1376	Heptene, 1-	592-76-7	130	1,400	8,700	TEEL-2/11, mouse 120-min TCLo, TEEL-2 x 6	ppm
1377	Hexacarbonylchromium; (Chromium hexacarbonyl)	13007-92-6	0.13	11	66	MW-adjusted chromium (VI) (7440-47-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted chromates (1333-82-0) IDLH (1990)	mg/m <sup>3</sup>
1378	Hexachloroacetone	116-16-5	0.22	2.4	29	TEEL-2/11, rat oral TDLo, rat 180-min LC50	mg/m <sup>3</sup>

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**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1379	Hexachlorobenzene	118-74-1	0.006	14	91	TLV-TWA x 3, monkey oral TDLo, rabbit 360-min LC50	mg/m <sup>3</sup>
1380	<b>Hexachlorobutadiene</b>	<b>87-68-3</b>	<b>1</b>	<b>3</b>	<b>10</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
1381	Hexachlorocyclohexane, alpha-; (Benzene hexachloride-alpha-isomer)	319-84-6	0.3	1.4	8.4	MAK-TWA x 3, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
1382	Hexachlorocyclohexane, beta-1,2,3,4,5,6-; (Benzene hexachloride, trans-alpha-)	319-85-7	0.3	27	160	MAK-TWA x 3, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
1383	Hexachlorocyclopentadiene	77-47-4	0.03	0.55	1	TLV-TWA x 3, rat oral TDLo, dog 30-min LCLo	ppm
1384	Hexachlorodibenzodioxin, 1,2,3,4,7,8-; (HexaCDD, 1,2,3,4,7,8-)	39227-28-6	0.0013	0.014	0.085	Used TCDD (1746-01-6) PACs divided by TEF = 0.1 (See white paper)	mg/m <sup>3</sup>
1385	Hexachlorodibenzofuran, 1,2,3,4,7,8-	70648-26-9	0.0013	0.014	0.085	Used TCDD (1746-01-6) PACs divided by TEF = 0.1 (See white paper)	mg/m <sup>3</sup>
1386	Hexachlorodibenzofuran, 1,2,3,6,7,8-	57117-44-9	0.0013	0.014	0.085	Used TCDD (1746-01-6) PACs divided by TEF = 0.1 (See white paper)	mg/m <sup>3</sup>
1387	Hexachlorodibenzofuran, 1,2,3,7,8,9-; (HexaCDF, 1,2,3,7,8,9-)	72918-21-9	0.0013	0.014	0.085	Used TCDD (1746-01-6) PACs divided by TEF = 0.1 (See white paper)	mg/m <sup>3</sup>
1388	Hexachlorodibenzofuran, 2,3,4,6,7,8-	60851-34-5	0.0013	0.014	0.085	Used TCDD (1746-01-6) PACs divided by TEF = 0.1 (See white paper)	mg/m <sup>3</sup>
1389	Hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-	57653-85-7	0.0013	0.014	0.085	Used TCDD (1746-01-6) PACs divided by TEF = 0.1 (See white paper)	mg/m <sup>3</sup>
1390	Hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-; (HexaCDD, 1,2,3,7,8,9-)	19408-74-3	0.0013	0.014	0.085	Used TCDD (1746-01-6) PACs divided by TEF = 0.1 (See white paper)	mg/m <sup>3</sup>
1391	Hexachloroethane	67-72-1	3	36	300	TLV-TWA x 3, rat 360-min TCLo, IDLH (1990 and 1994)	ppm
1392	Hexachloronaphthalene	1335-87-1	0.6	6.6	40	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1393	Hexachlorophene	70-30-4	0.17	1.8	11	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1394	Hexachloropropene	1888-71-7	0.089	0.98	5.9	TEEL-2/11, TEEL-3/6, rat 30-min LC50	ppm
1395	Hexadecanamine, 1-	143-27-1	0.66	7.2	43	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
1396	Hexadecane	544-76-3	35	380	2,800	TEEL-2/11, mouse ip TDLo, mouse iv LDLo	mg/m <sup>3</sup>
1397	Hexadecanoic acid; (Palmitic acid)	57-10-3	0.19	2.1	12	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1398	Hexadecanol, 1-	36653-82-4	1.6	18	110	TEEL-2/11, TEEL-3/6, rat 360-min LCLo	mg/m <sup>3</sup>
1399	Hexadecene, 1-	629-73-2	0.46	5.1	31	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
1400	Hexadecylpyridinium chloride, 1-; (Cepacol chloride)	123-03-5	0.06	0.66	4	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
1401	Hexadecyltrimethylammonium chloride	112-02-7	1.1	12	70	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
1402	Hexafluoro-2-propanol, 1,1,1,3,3,3-	920-66-1	1.3	15	87	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
1403	<b>Hexafluoroacetone</b>	<b>684-16-2</b>	0.018	<b>0.20</b>	<b>80</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1404	Hexafluorobenzene	392-56-3	6.6	73	440	TEEL-2/11, TEEL-3/6, rat 120-min LC50	ppm
1405	Hexafluorobutylene-2; (1,1,1,4,4,4-Hexafluoro-2-butyne)	692-50-2	0.054	0.6	3.6	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
1406	Hexafluoroethane; (Freon 116; Perfluoroethane)	76-16-4	100	1,100	6,800	TEEL-2/11, TEEL-3/6, rat 120-min LCLo	ppm
1407	<b>Hexafluoropropylene; (Hexafluoropropene)</b>	<b>116-15-4</b>	<b>40</b>	<b>91</b>	<b>480</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1408	Hexafluoropropylene-vinylidene fluoride polymer; (Viton)	9011-17-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1409	Hexamethylcyclotrisiloxane	541-05-9	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
1410	Hexamethyldisilazane	999-97-3	2.5	28	170	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1411	Hexamethyldisiloxane	107-46-0	13	140	150	TEEL-2/11, rat 360-min TCLo, mouse ip LD50	ppm
1412	Hexamethylene diisocyanate polymer	28182-81-2	7.8	86	510	TEEL-2/11, TEEL-3/6, rat 60-min LC50	mg/m <sup>3</sup>
1413	Hexamethylene diisocyanate; (1,6-Diisocyanatohexane)	822-06-0	0.018	0.2	3	TEEL-2/11, REL-C (adjusted based on the ratio to toxicity data), rat 240-min LC50	ppm
1414	Hexamethyleneimine	111-49-9	5.7	63	380	TEEL-2/11, TEEL-3/6, mouse 120-min LC50	mg/m <sup>3</sup>
1415	Hexamethylenetetraamine hydrochloride	58713-21-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1416	Hexamethylenetetraamine; (Methenamine)	100-97-0	55	610	3,600	TEEL-2/11, TEEL-3/6, rat iv LD50	mg/m <sup>3</sup>
1417	Hexamethylphosphoramide	680-31-9	0.34	3.7	17	TEEL-2/11, rat oral TDLo, rat 240-min LCLo	ppm
1418	Hexamethyltetracosane, 2,6,10,15,19,23-; (Squalane)	111-01-3	0.69	7.6	46	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	ppm
1419	Hexanal	66-25-1	6	66	86	TEEL-2/11, rat oral TDLo, rat 240-min LCLo	ppm
1420	<b>Hexane</b>	<b>110-54-3</b>	260	<b>2900*</b>	<b>8600**</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1421	Hexanediol diacrylate, 1,6-	13048-33-4	3	170	990	WEEL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1422	Hexanediol, 1,6-; (Hexamethylene glycol)	629-11-8	30	610	730	WEEL-TWA x 3, rat ip TDLo, rat oral LD50	mg/m <sup>3</sup>
1423	Hexanehexol, 1,2,3,4,5,6-; (Mannitol)	69-65-8	120	1,400	2,700	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1424	Hexanenitrile	628-73-9	0.19	2.1	13	TEEL-2/11, TEEL-3/6, mouse oral LD50	ppm
1425	Hexanethiol, 1-; (N-Hexylmercaptan)	111-31-9	0.045	0.5	48	TEEL-2/11, REL-C, rat 240-min LC50	ppm
1426	Hexanoic acid; (caproic acid)	142-62-1	2.2	24	140	TEEL-2/11, TEEL-3/6, mouse 120-min LC50	mg/m <sup>3</sup>
1427	Hexanol, 2-; (2-Hydroxyhexane)	626-93-7	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
1428	Hexanol, n-; (n-Hexyl alcohol)	111-27-3	10	110	580	TEEL-2/11, dog oral TDLo, rat 60-min LC50	ppm
1429	Hexanone, 2-; (Methyl n-butyl ketone)	591-78-6	10	830	5000*	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1430	Hexanone, 3-; (Ethyl propyl ketone)	589-38-8	2.6	29	170	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
1431	Hexanoyl chloride	142-61-0	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
1432	Hexaphenylcyclotrisiloxane	512-63-0	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
1433	<b>Hexene, 1-</b>	<b>592-41-6</b>	150	<b>500</b>	<b>5000*</b>	TLV-TWA x 3, <b>ERPG-2, ERPG-3</b>	ppm
1434	Hexylene glycol	107-41-5	2.3	25	150	TEEL-2/11, TLV-C, rat oral LD50	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1435	<b>Hexyltrichlorosilane</b>	<b>928-65-4</b>	<b>0.60</b>	<b>7.3</b>	<b>33</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2812	<b>HFC 134a; (Tetrafluoroethane, 1,1,1,2-)</b>	<b>811-97-2</b>	<b>8,000</b>	<b>13,000</b>	<b>27,000</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1436	<b>HFO-1234yf; 2,3,3,3-Tetrafluoropropene</b>	<b>754-12-1</b>	2,200	<b>24,000</b>	1.40E+05	ERPG-2/11, <b>ERPG-2</b> , ERPG-2 x 6	ppm
1437	<b>HFO-1234ze; 1,3,3,3-Tetrafluoropropylene</b>	<b>29118-24-9</b>	1,400	<b>15,000</b>	<b>69,000</b>	ERPG-2/11, <b>ERPG-2</b> , <b>ERPG-3</b>	ppm
1438	Holmium	7440-60-0	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
1439	Holmium trioxide	12055-62-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1440	Humic acid, sodium salt	68131-04-4	3	33	200	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
1441	<b>Hydrazine</b>	<b>302-01-2</b>	<b>0.10</b>	<b>13</b>	<b>35</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1442	Hydrazine hydrate; (Hydrazine monohydrate; aqueous solutions - 10217-52-4)	7803-57-8	0.16	20	55	Used MW-adjusted hydrazine (302-01-2) AEGL values	mg/m <sup>3</sup>
1443	Hydrazine hydrochloride; (Hydrazine monochloride)	2644-70-4	0.38	4.2	25	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1444	Hydrazine nitrate; (Hydrazinium nitrate)	13464-97-6	0.3	39	100	Used MW-adjusted hydrazine (302-01-2) AEGL values	mg/m <sup>3</sup>
1445	Hydrazine sulfate	10034-93-2	1.4	15	120	TEEL-2/11, human oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1446	Hydrazine, dihydrochloride	5341-61-7	1.8	20	120	TEEL-2/11, rat oral TDLo, TEEL-2 x 6	mg/m <sup>3</sup>
1447	<b>Hydriodic acid; (Hydrogen iodide)</b>	<b>10034-85-2</b>	<b>1.0</b>	<b>25</b>	<b>120</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1448	<b>Hydrobromic acid; (Hydrogen bromide)</b>	<b>10035-10-6</b>	<b>1.0</b>	<b>40</b>	<b>120</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1449	Hydrogen	1333-74-0	65000***	230000***	400000***	Simple asphyxiant	ppm
1450	<b>Hydrogen chloride; (Hydrochloric acid)</b>	<b>7647-01-0</b>	<b>1.8</b>	<b>22</b>	<b>100</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1451	<b>Hydrogen cyanide; (Hydrocyanic acid)</b>	<b>74-90-8</b>	<b>2.0</b>	<b>7.1</b>	<b>15</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1452	<b>Hydrogen fluoride; (Hydrofluoric acid)</b>	<b>7664-39-3</b>	<b>1.0</b>	<b>24</b>	<b>44</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1453	<b>Hydrogen peroxide</b>	<b>7722-84-1</b>	<b>10</b>	<b>50</b>	<b>100</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
1454	Hydrogen potassium phthalate; (Phthalic acid, monopotassium salt; Potassium acid phthalate; Potassium biphthalate)	877-24-7	9.6	110	630	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1455	<b>Hydrogen selenide</b>	<b>7783-07-5</b>	0.045	<b>0.11</b>	<b>0.33</b>	MAK-TWA x 3, <b>AEGL-2, AEGL-3</b>	ppm
1456	<b>Hydrogen sulfide</b>	<b>7783-06-4</b>	<b>0.51</b>	<b>27</b>	<b>50</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1457	Hydrogenated terphenyl	61788-32-7	1.5	47	280	TLV-TWA x 3, TEEL-3/6, rat oral LD50	ppm
1458	Hydroquinone	123-31-9	3	20	120	TLV-TWA x 3, LOC, dog oral LD50	mg/m <sup>3</sup>
1459	Hydroxy-2-methylpropanoic acid, 2-; (2-Methylactic acid)	594-61-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1460	Hydroxy-4'-hydroxyethoxy-2-methylpropiophenone, 2-	106797-53-9	12	130	810	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1461	Hydroxy-4-methyl-2-pentanone, 4-; (Diacetone alcohol)	123-42-2	150	350	2100*	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
1462	Hydroxyapatite; (Calcium hydroxyapatite)	1306-06-5	190	2,100	12,000	TEEL-2/11, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>
1463	Hydroxybenzenesulfonic acid, 4-; (4-Hydroxyphenylsulfonic acid)	98-67-9	10	120	690	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
1464	Hydroxybenzoic acid, 4-; (p-Salicylic acid)	99-96-7	15	110	240	WEEL-TWA x 3, rat oral TDLo, mouse oral LD50	mg/m <sup>3</sup>
1465	Hydroxybenzotriazole, 1-; (1-Hydroxybenzotriazole hydrate)	2592-95-2	20	220	1,300	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
1466	Hydroxyethyl acrylate, 2-; (Acrylic acid, 2-hydroxyethyl ester)	818-61-1	0.1	1.1	21	TEEL-2/11, rat 360-min TCLo, rat 240-min LCLo	ppm
1467	Hydroxyethyl methacrylate, 2-	868-77-9	1.9	21	1,000	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1468	Hydroxyethyl)-1-piperazineethanesulfonic acid, 4-(2-	7365-45-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1469	Hydroxyethylenediaminetriacetic acid, N-	150-39-0	2	22	130	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
1470	Hydroxyethylidene-1,1-diphosphonic acid, 1-; (Hydroxyethylidine bisphosphonic acid, 1-)	2809-21-4	7.2	79	480	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1471	Hydroxylamine	7803-49-8	0.35	3.9	23	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
1472	Hydroxylamine chloride; (Hydroxylamine hydrochloride)	5470-11-1	0.42	4.7	28	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1473	Hydroxylamine nitrate	13465-08-2	0.24	37	140	Used MW-adjusted nitric acid (7697-37-2) AEGL values	mg/m <sup>3</sup>
1474	Hydroxylamine sulfate; (Oxammonium sulfate)	10039-54-0	2.8	31	190	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1475	Hydroxymethanesulfinic acid, monosodium salt; (Formaldehyde hydrosulfite)	149-44-0	6.6	72	430	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
1476	Hydroxy-N-phenylbenzamide, N-; (Phenylbenzohydroxamic acid, N-)	304-88-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL- 2 x 6	mg/m <sup>3</sup>
1477	Hydroxyphenyl)benzothiazole, 2-(2-	3411-95-8	17	190	1,100	TEEL-2/11, TEEL-3/6, mouse ip LDLo	mg/m <sup>3</sup>
1478	Hydroxyphenylacetic acid, alpha-	90-64-2	25	270	1,600	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
1479	Hydroxyquinoline sulfate, 8-	134-31-6	3.6	40	240	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1480	Hypophosphorous acid-d3; (Hydrophosphorus acid-d3 solution, 50 wt.% in D2O)	57583-56-9	30	330	2,000	Used hypophosphorous acid (6303-21-5) PAC values	mg/m <sup>3</sup>
1481	Hypophosphorus acid; (Phosphonic acid)	6303-21-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL- 2 x 6	mg/m <sup>3</sup>
1482	Imidazole	288-32-4	0.66	7.3	44	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1483	Imidazole hydrochloride	1467-16-9	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
1484	Iminodiacetic acid	142-73-4	0.82	9	54	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
1485	Iminodiacetic acid, disodium salt hydrate	17593-73-6	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
1486	Indan	496-11-7	20	220	1,300	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
1487	Indene	95-13-6	15	22	130	TLV-TWA x 3, TEEL-3/6, rat 240-min LC50	ppm
1488	Indeno(1,2,3-cd)pyrene	193-39-5	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
1489	Indigo carmine; (FD&C blue No 2)	860-22-0	6	66	400	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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			PAC-1	PAC-2	PAC-3		
1490	Indium	7440-74-6	0.3	3.3	20	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1491	Indium oxide (vapor); (Diindium monoxide)	12030-22-7	0.33	3.6	22	MW-adjusted indium (7440-74-6) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1492	Indium sulfate	13464-82-9	0.68	7.6	46	MW-adjusted indium (7440-74-6) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1493	Indium trichloride	10025-82-8	0.58	6.3	38	MW-adjusted indium (7440-74-6) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1494	Indium(III) oxide	1312-43-2	0.36	4.8	29	MW-adjusted indium (7440-74-6) TLV-TWA x 3, rat 240-min TCLo, TEEL-2 x 6	mg/m <sup>3</sup>
1495	Indole-3-carboxaldehyde, 1H-; (3-Formylindole)	487-89-8	0.44	4.8	29	TEEL-2/11, TEEL-3/6, mouse ip LDLo	ppm
1496	Iodic acid	7782-68-5	0.15	1.7	10	TEEL-2/11, TEEL-3/6, iodine (7553-56-2) IDLH (1990)	mg/m <sup>3</sup>
1497	<b>Iodine</b>	<b>7553-56-2</b>	<b>0.1</b>	<b>0.5</b>	<b>5</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
1498	Iodine 125	17144-19-3	0.1	0.5	5	Used Iodine (7553-56-2) ERPG values	ppm
1499	Iodobenzene	591-50-4	5.4	59	360	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1500	Iodoethane; (Ethyl iodide)	75-03-6	2.1	24	140	TEEL-2/11, TEEL-3/6, rat 30-min LC50	ppm
1501	Iodoheptafluoropropane, 1-; (Heptafluoropropyl iodide)	754-34-7	18	190	1,200	TEEL-2/11, TEEL-3/6, mouse 120-min LC50	ppm
1502	Iodopentane, 1-	628-17-1	0.38	63	380	MW-adjusted iodides (7553-56-2) TLV-TWA x 3, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
1503	Iotalamic acid	2276-90-6	120	1,300	7,800	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
1504	Iridium	7439-88-5	4.7	51	310	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1505	Iron	7439-89-6	3.2	35	150	TEEL-2/11, rat 360-min TCLo, rat oral LD50	mg/m <sup>3</sup>
1506	Iron carbide	12011-67-5	16	180	1,100	MW-adjusted insoluble iron dust (1309-37-1) REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1507	Iron hydroxide oxide	20344-49-4	24	260	1,600	MW-adjusted insoluble iron fume (1309-37-1) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1508	Iron oxide; (Ferric oxide)	1309-37-1	15	360	2,200	TLV-TWA x 3, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
1509	<b>Iron pentacarbonyl</b>	<b>13463-40-6</b>	0.0055	<b>0.060</b>	<b>0.18</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1510	Iron sulfide	1317-37-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1511	Iron(II) chloride tetrahydrate	13478-10-9	11	120	710	MW-adjusted soluble iron (1309-37-1) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1512	Iron(II) oxide; (Ferrous oxide)	1345-25-1	45	500	3,000	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1513	Iron(II) perchlorate hexahydrate	13520-69-9	19	210	1,200	MW-adjusted soluble iron (1309-37-1) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1514	Iron(II,III) oxide; (Ferrosferric oxide)	1317-61-9	21	230	1,400	MW-adjusted soluble iron (1309-37-1) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1515	Iron(III) perchlorate	13537-24-1	19	210	1,200	MW-adjusted soluble iron (1309-37-1) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1516	Iron(III) sulfate heptahydrate	35139-28-7	28	310	1,900	MW-adjusted soluble iron (1309-37-1) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1517	Isoamyl acetate; (Isopentyl acetate)	123-92-2	100	500	3000*	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1518	Isoamyl alcohol (primary); (3-Methyl-1-butanol); includes Isoamyl alcohol (584-02-1), 2-pentanol (6032-29-7), amyl alcohol (71-41-0), and 2-methyl-2-butanol (75-85-4)	123-51-3	125	1700*	10000**	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1519	Isoamyl nitrite; (Isopentyl nitrite)	110-46-3	0.48	5.3	32	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
1520	Isobenzan	297-78-9	0.01	0.11	0.66	TEEL-2/11, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>
1521	Isobutanol-2-amine	124-68-5	17	190	570	TEEL-2/11, dog oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1522	Isobutyl acetate	110-19-0	450	1300*	7500**	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
1523	Isobutyl alcohol	78-83-1	150	1,300	8000*	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
1524	Isobutyl chloride; (1-Chloro-2-methylpropane)	513-36-0	32	350	2100*	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	ppm
1525	<b>Isobutyl chloroformate</b>	<b>543-27-1</b>	0.6	<b>2.2</b>	<b>6.7</b>	MAK-TWA x 3, <b>AEGL-2, AEGL-3</b>	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1526	Isobutyl isobutyrate	97-85-8	23	250	1,500	TEEL-2/11, TEEL-3/6, rat 360-min LD50	mg/m <sup>3</sup>
1527	Isobutylamine	78-81-9	6	10	15	MAK-TWA x 3, MAK-C, rat oral LD50	ppm
1528	Isobutyraldehyde	78-84-2	75	78	470	WEEL-TWA x 3, TEEL-3/6, mouse 120-min LC50	ppm
1529	Isobutyric acid	79-31-2	0.23	2.6	15	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
1530	Isobutyric anhydride; (2-Methylpropionic anhydride)	97-72-3	0.19	2	12	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	ppm
1531	<b>Isobutyronitrile</b>	<b>78-82-0</b>	0.18	<b>2</b>	<b>6.1</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1532	Isocyanate-bearing waste (as CNs N.O.S.)	z-0024	6	8.3	50	Used cyanide (57-12-5) PAC values	mg/m <sup>3</sup>
1533	<b>Isocyanatoethyl methacrylate, 2-</b>	<b>30674-80-7</b>	0.0091	<b>0.1</b>	<b>1</b>	ERPG-2/11, <b>ERPG-2, ERPG-3</b>	ppm
1534	Isocyanic acid	75-13-8	2	7.1	15	Used hydrogen cyanide (74-90-8) AEGL values	ppm
1535	Isocyanic acid, 3,4-dichlorophenyl ester; (3,4-Dichlorophenyl isocyanate)	102-36-3	1.3	14	120	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
1536	Isodrin	465-73-6	0.64	7	42	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
1537	Isonate 181 MDI prepolymer	z-0113	0.45	5.5	55	Used methylene diphenyl diisocyanate (101-68-8) ERPG values	mg/m <sup>3</sup>
1538	Isooctane; (2,2,4-Trimethylpentane)	540-84-1	230	830	5000*	REL-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
1539	Isopentane; (Ethylidimethylmethane; 2-Methylbutane)	78-78-4	3000*	33000***	200000***	TLV-TWA (pentane, all isomers) x 3, TEEL-1 x 11, TEEL-2 x 6 (See white paper)	ppm
1540	Isophorone	78-59-1	12	33	200	REL-TWA x 3, TEEL-3/6, IDLH (1994)	ppm
1541	Isophorone diisocyanate	4098-71-9	0.02	0.14	0.6	REL-STEL, LOC, rat 240-min LC50	ppm
1542	Isophthalic acid; (Phthalic acid, m isomer)	121-91-5	30	340	2,100	WEEL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1543	<b>Isoprene</b>	<b>78-79-5</b>	<b>5</b>	<b>1,000</b>	<b>4000*</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm

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**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1544	Isopropyl acetate	108-21-4	200	2700*	16000**	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1545	Isopropyl alcohol	67-63-0	400	2000*	12000**	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1546	Isopropyl chloride; (2-Chloropropane)	75-29-6	150	270	1,600	TLV-STEL, TEEL-3/6, rat 240-min LC50	ppm
1547	<b>Isopropyl chloroformate; (Isopropyl chlorocarbonate)</b>	<b>108-23-6</b>	0.3	<b>3.3</b>	<b>10</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1548	Isopropyl ether; (Diisopropyl ether)	108-20-3	310	1700*	10000**	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1549	<b>Isopropyl methanefluoro-phosphonate; (Sarin; GB)</b>	<b>107-44-8</b>	<b>4.80E-04</b>	<b>0.0060</b>	<b>0.022</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1550	Isopropyl nitrate	1712-64-7	15	50	300	Swedish OEL-STEL, TEEL-3/6, rat 240-min LC50	ppm
1551	Isopropyl titanate(IV); (Titanium(IV) isopropoxide)	546-68-9	22	250	1,500	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1552	Isopropylamine; (2-Propanamine)	75-31-0	10	670	4000*	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1553	Isopropylmagnesium chloride; (Chloro(1-methylethyl)magnesium)	1068-55-9	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
1554	Isopropylmethylpyrazolyl dimethylcarbamate; (Isolan)	119-38-0	0.51	5.6	34	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
1555	Isopropyltoluene, 4-; (p-Cymene)	99-87-6	120	1,300	1,900	TEEL-2/11, rat 300-min TCLo, rat 240-min LCLo	mg/m <sup>3</sup>
1556	Jeffamine M-600	77110-54-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1557	<b>Jet fuels, (JP-5 and JP-8) Kerosene (8008-20-6); (Fuel Oil No. 1)</b>	<b>70892-10-3</b>	<b>290</b>	<b>1,100</b>	4,100	<b>AEGL-1, AEGL-2</b> , rat oral LD50	mg/m <sup>3</sup>
1558	Kepone; (Chlordecone)	143-50-0	1.6	17	100	TEEL-2/11, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>
1559	<b>Ketene; (Carbomethene, Ethenone)</b>	<b>463-51-4</b>	0.0057	<b>0.063</b>	<b>0.2</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1560	Krypton	7439-90-9	65,000	2.30E+05	4.00E+05	Simple asphyxiant	ppm
1561	Lactic acid, sodium salt, DL-; (Propanoic acid, 2-hydroxy-, monosodium salt)	312-85-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1562	Lactonitrile	78-97-7	0.24	2.6	16	TEEL-2/11, TEEL-2/6, rat 240-min LCLo	mg/m <sup>3</sup>
1563	Lanthanum	7439-91-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1564	Lanthanum alizarin	z-0026	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1565	Lanthanum boride	12008-21-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1566	Lanthanum carbonate	6487-39-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1567	Lanthanum chloride	10099-58-8	7.1	78	470	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1568	Lanthanum fluoride	13709-38-1	26	280	1,700	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
1569	Lanthanum hydroxide	14507-19-8	1.2	13	79	TEEL-2/11, TEEL-2/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
1570	Lanthanum nitrate	10099-59-9	14	150	890	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1571	Lanthanum oxide	1312-81-8	4	44	270	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
1572	Lanthanum phosphate	14913-14-5	12	130	790	TEEL-2/11, TEEL-2/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
1573	Lanthanum(III) nitrate hexahydrate	10277-43-7	1.3	15	89	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
1574	Laromin C 260; (bis(4-Amino-3-methylcyclohexyl) methane; Dimethyldicyane)	6864-37-5	0.28	3.1	19	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
1575	Lauryl sulfate; (Dodecyl sulfate)	151-41-7	3.9	43	260	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1576	Lead	7439-92-1	0.15	120	700	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
1577	Lead acetate(II), trihydrate; (Bis(acetato)trihydroxytrilead)	6080-56-4	14	150	920	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1578	Lead acetate, basic; (Lead subacetate)	1335-32-6	5.4	59	360	TEEL-2/11, TEEL-3/6, guinea pig oral LD50	mg/m <sup>3</sup>
1579	Lead acetate; (Lead diacetate)	301-04-2	5	55	330	TEEL-2/11, TEEL-3/6, dog iv LDLo	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1580	Lead acid arsenate; (Dibasic lead arsenate)	7784-40-9	7	77	460	TEEL-2/11, TEEL-3/6, MW-adjusted arsenic (7440-38-2) IDLH (1990)	mg/m <sup>3</sup>
1581	Lead arsenate; (Trilead diarsenate)	3687-31-8	9.1	100	600	TEEL-2/11, TEEL-3/6, MW-adjusted arsenic (7440-38-2) IDLH (1990)	mg/m <sup>3</sup>
1582	Lead bromide	10031-22-8	0.27	200	1,200	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
1583	Lead carbonate	598-63-0	0.19	24	900	MW-adjusted lead (7439-92-1) TLV-TWA x 3, dog oral TDLo, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
1584	Lead chloride	7758-95-4	0.2	160	940	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
1585	Lead chromate	7758-97-6	0.036	16	97	TLV-TWA x 3, TEEL-3/6, MW-adjusted chromates (1333-82-0) IDLH (1990)	mg/m <sup>3</sup>
1586	Lead dioxide	1309-60-0	0.17	140	810	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
1587	Lead fluoborate	13814-96-5	0.28	220	1,300	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
1588	Lead fluoride	7783-46-2	0.18	140	830	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
1589	Lead hydroxide	19783-14-3	0.17	140	810	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
1590	Lead iodide	10101-63-0	0.33	270	1,600	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
1591	Lead nitrate	10099-74-8	0.24	180	1,100	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
1592	Lead nitrite	13826-65-8	0.22	170	1,000	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
1593	Lead oxalate	814-93-7	11	120	700	TEEL-2/11, TEEL-3/6, MW-adjusted lead (7439-92-1) IDLH (1990)	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1594	Lead oxide; (Lead monoxide)	1317-36-8	0.16	130	750	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
1595	Lead phosphate	7446-27-7	0.2	150	910	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
1596	Lead sulfate; (Sulfuric acid, lead(2+) salt (1:1))	7446-14-2	0.22	170	1,000	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
1597	Lead sulfide	1314-87-0	0.17	140	810	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
1598	Lead tetroxide	1314-41-6	0.17	130	770	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
1599	Lead(II) arsenite	10031-13-7	4.2	47	280	TEEL-2/11, TEEL-3/6, MW-adjusted arsenic (7440-38-2) IDLH (1990)	mg/m <sup>3</sup>
1600	Lead(II) perchlorate trihydrate	13453-62-8	0.33	270	1,600	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
1601	Leco set 7007 powder	z-0027	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1602	Leptophos; (Fosvel)	21609-90-5	2.7	30	53	TEEL-2/11, LOC, rat ip LD50	mg/m <sup>3</sup>
1603	<b>Lewisite 2; (Bis(2-chlorovinyl)chloroarsine)</b>	<b>40334-69-8</b>	0.023	<b>0.25</b>	<b>0.74</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
1604	<b>Lewisite 3; (Tris(2-chlorovinyl)arsine)</b>	<b>40334-70-1</b>	0.023	<b>0.25</b>	<b>0.74</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
1605	Lignosulfonate (aqueous)	8062-15-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1606	Limestone; (Calcium carbonate; Dolomite)	1317-65-3	45	500	3,000	PEL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1607	Limonene, d-	5989-27-5	15	67	170	MAK-TWA x 3, rat oral TDLo, rat oral LD50	ppm
1608	Lindane; (gamma-Benzenhexachloride)	58-89-9	9.1	100	1,000	TEEL-2/11, LOC, IDLH (1990)	mg/m <sup>3</sup>
1609	Liquified petroleum gas; (L.P.G.)	68476-85-7	65,000	2.30E+05	4.00E+05	Simple asphyxiant	ppm

Chemicals with AEGLs: large, bolded font. ERPGs (but no AEGLs): bolded font.

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1610	Lithium	7439-93-2	3.3	36	220	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
1611	Lithium acetate dihydrate	6108-17-4	3.2	36	210	TEEL-2/11, TEEL-3/6, mouse oral LDLo	mg/m <sup>3</sup>
1612	Lithium aluminate	12003-67-7	37	400	2,400	MW-adjusted aluminum pyro powder REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1613	Lithium aluminum oxide; (Lithium aluminate)	11089-89-7	28	310	1,800	MW-adjusted aluminum pyro powder REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1614	Lithium aluminum silicate; (Petalite)	1302-66-5	34	360	2,200	MW-adjusted aluminum (7429-90-5) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1615	Lithium azide	19597-69-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1616	Lithium borohydride; (Lithium tetrahydroborate)	16949-15-8	2.2	24	150	MW-adjusted borate, inorganic compounds TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1617	Lithium bromide	7550-35-8	3	15	360	TEEL-2/11, EEGL 60-min, rat oral LD50	mg/m <sup>3</sup>
1618	Lithium carbonate	554-13-2	0.44	4.8	100	TEEL-2/11, human oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1619	Lithium chloride	7447-41-8	1	11	47	TEEL-2/11, human oral TDLo, human oral LDLo	mg/m <sup>3</sup>
1620	Lithium chromate; (Lithium chromium oxide )	14307-35-8	0.37	6.5	39	MW-adjusted soluble chromium (VI) (7440-47-3) TLV-TWA x 3, TEEL-3/6, chromates (1333-82-0) IDLH (1990)	mg/m <sup>3</sup>
1621	Lithium deuteride	13587-16-1	0.025	0.1	0.5	Used lithium hydride (7580-67-8) ERPG values	mg/m <sup>3</sup>
1622	Lithium diisopropylamide; (LDA)	4111-54-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1623	Lithium fluoride	7789-24-4	10	110	680	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
1624	Lithium hexafluorophosphate	21324-40-3	7.5	83	500	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
1625	<b>Lithium hydride</b>	<b>7580-67-8</b>	<b>0.025</b>	<b>0.1</b>	<b>0.5</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	mg/m <sup>3</sup>
1626	Lithium hydroxide	1310-65-2	0.091	1	42	TEEL-2/11, WEEL-C, rat 240-min LC50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1627	Lithium hydroxide monohydrate	1310-66-3	0.16	1.8	74	Used MW-adjusted lithium hydroxide (1310-65-2) PAC values	mg/m <sup>3</sup>
1628	Lithium iodide	10377-51-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1629	Lithium metaborate, anhydrous	13453-69-5	6	77	460	Used sodium metaborate (7775-19-1) PAC values	mg/m <sup>3</sup>
1630	Lithium molybdate	13568-40-6	2.7	30	180	MW-adjusted soluble molybdenum (7439-98-7) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1631	Lithium niobium oxide; (Lithium niobate)	12031-63-9	32	350	2,100	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
1632	Lithium nitrate	7790-69-4	0.25	2.7	16	TEEL-2/11, rat oral TDLo, TEEL-2 x 6	mg/m <sup>3</sup>
1633	Lithium nitride	26134-62-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1634	Lithium nitrite	13568-33-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1635	Lithium oxide	12057-24-8	0.091	1	6	TEEL-2/11, WEEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
1636	Lithium perchlorate, anhydrous	7791-03-9	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
1637	Lithium silicon	68848-64-6	46	500	3,100	Used MW-adjusted lithium (7439-93-2) PAC values	mg/m <sup>3</sup>
1638	Lithium stearate	4485-12-5	45	500	3,000	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1639	Lithium sulfate	10377-48-7	0.29	3.2	130	TEEL-2/11, woman oral TDLo, mouse oral LD50	mg/m <sup>3</sup>
1640	Lithium tetraborate	12007-60-2	4.3	47	280	MW-adjusted borate, inorganic compounds TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1641	Lithium tetraborate pentahydrate	1303-94-2	6.6	72	430	Used MW-adjusted lithium tetraborate (12007-60-2) PAC values	mg/m <sup>3</sup>
1642	Lithium tetrahydroaluminate(1-); (Lithium aluminum hydride)	16853-85-3	8.4	92	550	MW-adjusted soluble aluminum (7429-90-5) REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1643	Lithium triethylborodeuteride; (Super-deuteride)	74540-86-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1644	Lithium triethylborohydride; (Super-hydride)	22560-16-3	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
1645	Lubricating oil, rerefined	68476-77-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1646	Lutetium	7439-94-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1647	Lutetium oxide	12032-20-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1648	Lutidine, 2,6-; (2,6-Dimethylpyridine)	108-48-5	31	340	2,000	TEEL-2/11, TEEL-3/6, rat 60-min LCLo	ppm
1649	Magnesium	7439-95-4	18	200	1,200	TLV-TWA (magnesium oxide, 1309-48-4) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1650	Magnesium acetate	142-72-3	26	280	1,700	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1651	Magnesium acetate tetrahydrate	16674-78-5	46	490	3,000	Used MW-adjusted magnesium acetate (142-72-3) PAC values	mg/m <sup>3</sup>
1652	<b>Magnesium aluminum phosphide</b>	<b>z-0116</b>	0.061	<b>0.67</b>	<b>1.2</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1653	Magnesium carbonate hydroxide	7760-50-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1654	Magnesium carbonate; (Magnesite)	546-93-0	45	260	1,600	PEL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1655	Magnesium carbonate-magnesium hydroxide, pentahydrate	39409-82-0	45	500	3,000	Magnesite (546-93-0) PEL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1656	Magnesium chloride	7786-30-3	11	120	550	TEEL-2/11, mouse ip TDLo, rat oral LD50	mg/m <sup>3</sup>
1657	Magnesium chloride hexahydrate	7791-18-6	34	370	1,600	TEEL-2/11, mouse oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1658	Magnesium ethoxide	2414-98-4	30	330	2,000	Magnesium oxide (1309-48-4) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1659	Magnesium fluoride	7783-40-6	12	140	820	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
1660	Magnesium formate	557-39-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1661	Magnesium hydroxide	1309-42-8	26	280	1,700	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1662	Magnesium iodate tetrahydrate	7790-32-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1663	Magnesium nitrate; (Magnesium(II) nitrate (1:2))	10377-60-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1664	Magnesium oxide	1309-48-4	30	120	730	TLV-TWA x 3, rat 240-min TLo, TEEL-2 x 6	mg/m <sup>3</sup>
1665	<b>Magnesium phosphide</b>	<b>12057-74-8</b>	0.091	<b>1.0</b>	<b>1.8</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1666	Magnesium silicate hydrate	1343-90-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1667	Magnesium silicate; (Florisol)	1343-88-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1668	Magnesium sulfate (1:1)	7487-88-9	20	220	1,300	TEEL-2/11, TEEL-3/6, dog ip LDLo	mg/m <sup>3</sup>
1669	Magnesium sulfate heptahydrate	10034-99-8	10	110	660	TEEL-2/11, human oral TDLo, TEEL-2 x 6	mg/m <sup>3</sup>
1670	Magnesium(II) nitrate (1:2), hexahydrate	13446-18-9	16	180	1,100	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1671	<b>Malathion</b>	<b>121-75-5</b>	<b>15</b>	<b>120</b>	<b>390</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
1672	Maleic acid	110-16-7	2.1	23	140	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1673	Maleic acid, disodium salt	371-47-1	13	150	880	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
1674	<b>Maleic anhydride</b>	<b>108-31-6</b>	<b>0.2</b>	<b>2</b>	<b>20</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
1675	Maleic hydrazide; (3,6-Pyridazinedione, 1,2-dihydro-)	123-33-1	11	130	750	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1676	Malic acid; (Malic acid, DL)	6915-15-7	4.8	53	320	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1677	Malonic acid; (Carboxyacetic acid)	141-82-2	20	230	590	TEEL-2/11, rat ip TDLo, rat ip LD50	mg/m <sup>3</sup>
1678	Mancozeb; (Dithane M-45)	8018-01-7	3	56	990	WEEL-TWA x 3, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1679	Manganese	7439-96-5	3	5	1,800	REL-STEL, PEL-C, rat oral LD50	mg/m <sup>3</sup>
1680	Manganese carbonate	598-62-9	6.3	10	60	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1681	Manganese dioxide	1313-13-9	4.7	7.9	690	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, rat oral LD50	mg/m <sup>3</sup>
1682	Manganese hydroxide	18933-05-6	4.9	8.1	49	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
1683	Manganese nitrite	18488-90-9	8	13	78	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
1684	Manganese oxalate	640-67-5	7.8	13	78	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
1685	Manganese oxide; (Manganese tetroxide)	1317-35-7	4.2	6.9	41	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
1686	Manganese phosphate	10124-54-6	6.5	11	66	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
1687	Manganese tricarbonyl methylcyclopentadienyl	12108-13-3	0.3	0.6	6.9	TLV-TWA x 3, LOC, rat 60-min LC50	mg/m <sup>3</sup>
1688	Manganese(II) chloride (1:2); (Manganous chloride)	7773-01-5	6.9	11	170	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
1689	Manganese(II) chloride tetrahydrate	13446-34-9	11	18	290	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
1690	Manganese(II) nitrate	10377-66-9	9.8	16	96	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
1691	Manganese(II) nitrate hydrate	15710-66-4	11	18	110	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
1692	Manganese(II) sulfate monohydrate	10034-96-5	9.2	15	90	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
1693	Manganese(III) oxide	1317-34-6	4.3	7.2	43	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
1694	Manganese(VII) oxide	12057-92-0	6.1	10	60	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
1695	Manganous oxide; (Manganese(II) oxide)	1344-43-0	3.9	6.5	39	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
1696	Manganous sulfate	7785-87-7	8.2	14	430	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
1697	Manganous sulfide; (Manganese(II) sulfide)	18820-29-6	4.8	7.9	47	MW-adjusted manganese (7439-96-5) REL-STEL, PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
1698	Mastic (resin)	61789-92-2	2.3	25	1,300	TEEL-2/11, rat oral TDLo, rat oral LDLo	mg/m <sup>3</sup>
1699	Melamine	108-78-1	30	340	630	WEEL-TWA x 3, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1700	Memtetrahydrophthalic anhydride; (Tetrahydrophthalic anhydride)	85-43-8	16	180	1,100	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1701	Mephosfolan	950-10-7	0.82	9	54	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
1702	Mercaptoacetic acid; (Thioglycolic acid)	68-11-1	3	33	200	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	ppm
1703	Mercaptobenzoic acid, o-	147-93-3	0.16	1.8	11	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
1704	Mercaptobenzothiazole, 2-; (2-Benzothiazolethiol)	149-30-4	15	27	56	WEEL-TWA x 3, mouse ip TDLo, rat 240-min LC50	mg/m <sup>3</sup>
1705	Mercaptoethanol, 2-	60-24-2	0.6	3.5	29	WEEL-TWA x 3, rat oral TDLo, mouse 15-min LC50	ppm
1706	Mercaptopropionic acid, 3-	107-96-0	0.29	3.2	19	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1707	Mercuric acetate	1600-27-7	0.048	0.064	3.2	MW-adjusted alkyl mercury (7439-97-6) TLV-STEL, PEL-C, IDLH (1994, See white paper)	mg/m <sup>3</sup>
1708	Mercuric cyanide	592-04-1	0.094	0.13	35	MW-adjusted inorganic mercury (7439-97-6) TLV-TWA x 3, PEL-C, MW-adjusted mercury IDLH (1990)	mg/m <sup>3</sup>
1709	Mercuric iodide; (Mercury(II) iodide)	7774-29-0	0.17	0.23	63	MW-adjusted inorganic mercury (7439-97-6) TLV-TWA x 3, PEL-C, MW-adjusted mercury IDLH (1990)	mg/m <sup>3</sup>
1710	Mercuric sulfate; (Mercury(II) sulfate)	7783-35-9	0.11	0.15	41	MW-adjusted inorganic mercury (7439-97-6) TLV-TWA x 3, PEL-C, MW-adjusted mercury IDLH (1990)	mg/m <sup>3</sup>
1711	Mercuric thiocyanate; (Mercuric sulfocyanate)	592-85-8	0.12	0.16	44	MW-adjusted inorganic mercury (7439-97-6) TLV-TWA x 3, PEL-C, MW-adjusted IDLH (1990)	mg/m <sup>3</sup>
1712	Mercuric trifluoroacetate	13257-51-7	0.064	0.085	4.3	MW-adjusted alkyl mercury (7439-97-6) TLV-STEL, PEL-C, MW-adjusted alkyl mercury IDLH (1994, See white paper)	mg/m <sup>3</sup>
1713	Mercuriol; (Mercury nucleate)	12002-19-6	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
1714	Mercurous chloride; (Mercury monochloride)	7546-30-7	0.088	0.12	33	MW-adjusted inorganic mercury (7439-97-6) TLV-TWA x 3, PEL-C, MW-adjusted IDLH (1990)	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1715	Mercurous nitrate monohydrate	7782-86-7	0.11	0.14	39	MW-adjusted inorganic mercury (7439-97-6) TLV-TWA x 3, PEL-C, MW-adjusted mercury IDLH (1990)	mg/m <sup>3</sup>
1716	Mercurous nitrate; (Mercury(I) nitrate(1:1))	10415-75-5	0.098	0.13	37	MW-adjusted inorganic mercury (7439-97-6) TLV-TWA x 3, PEL-C, MW-adjusted mercury IDLH (1990)	mg/m <sup>3</sup>
1717	Mercurous oxide; (Mercury(I) oxide)	15829-53-5	0.078	0.1	29	MW-adjusted inorganic mercury (7439-97-6) TLV-TWA x 3, PEL-C, MW-adjusted mercury IDLH (1990)	mg/m <sup>3</sup>
1718	Mercury hydroxide	12135-13-6	0.088	0.12	33	MW-adjusted inorganic mercury (7439-97-6) TLV-TWA x 3, PEL-C, MW-adjusted mercury IDLH (1990)	mg/m <sup>3</sup>
1719	Mercury nitrate; (Mercury(II) nitrate (1:2))	10045-94-0	0.12	0.16	45	MW-adjusted inorganic mercury (7439-97-6) TLV-TWA x 3, PEL-C, MW-adjusted mercury IDLH (1990)	mg/m <sup>3</sup>
1720	Mercury nitrite; (Mercury(II) nitrite)	18541-72-5	0.11	0.15	41	MW-adjusted inorganic mercury (7439-97-6) TLV-TWA x 3, PEL-C, MW-adjusted mercury IDLH (1990)	mg/m <sup>3</sup>
1721	<b>Mercury vapor</b>	<b>7439-97-6</b>	0.15	<b>1.7</b>	<b>8.9</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
1722	Mercury(I) chloride; (Dimercury dichloride)	10112-91-1	0.088	0.12	33	MW-adjusted inorganic mercury (7439-97-6) TLV-TWA x 3, PEL-C, MW-adjusted mercury IDLH (1990)	mg/m <sup>3</sup>
1723	Mercury(II) chloride; (Mercury bichloride)	7487-94-7	0.1	0.14	38	MW-adjusted inorganic mercury (7439-97-6) TLV-TWA x 3, PEL-C, MW-adjusted mercury IDLH (1990)	mg/m <sup>3</sup>
1724	Mercury(II) nitrate monohydrate	7783-34-8	0.13	0.17	48	MW-adjusted inorganic mercury (7439-97-6) TLV-TWA x 3, PEL-C, MW-adjusted mercury IDLH (1990)	mg/m <sup>3</sup>
1725	Mercury(II) oxide; (Mercuric oxide)	21908-53-2	1.5	16	30	TEEL-2/11, LOC, MW-adjusted inorganic mercury (7439-97-6) MW-adjusted mercury IDLH (1990)	mg/m <sup>3</sup>
1726	<b>Mesitylene; (1,3,5-Trimethylbenzene)</b>	<b>108-67-8</b>	<b>140</b>	<b>360</b>	480	<b>AEGL-1, AEGL-2</b> , used 1,2,3-trimethylbenzene (526-73-8) PAC-3	ppm
1727	Metaphosphoric acid	37267-86-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1728	Methacrolein diacetate; (Acetic acid, 2-methyl-2-propene-1,1-diol diester)	10476-95-6	0.18	2	12	TEEL-2/11, TEEL-3/6, rat 60-min LCLo	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1729	<b>Methacrylaldehyde</b>	<b>78-85-3</b>	<b>0.2</b>	<b>0.33</b>	<b>3.5</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1730	Methacrylamide	79-39-0	1.3	15	91	TEEL-2/11, mouse oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1731	<b>Methacrylic acid</b>	<b>79-41-4</b>	<b>6.7</b>	<b>61</b>	<b>220</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1732	Methacrylic acid, diester with triethylene glycol; (Polyester TGM3)	109-16-0	33	360	2,100	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1733	Methacrylic anhydride	760-93-0	0.41	4.5	16	TEEL-2/11, LOC, mouse 120-min LC50	mg/m <sup>3</sup>
1734	<b>Methacrylonitrile; (Methylacrylonitrile)</b>	<b>126-98-7</b>	0.091	<b>1.0</b>	<b>3.1</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1735	Methacryloyl chloride	920-46-7	0.013	0.14	0.62	TEEL-2/11, LOC, rat 240-min LC50	ppm
1736	Methamidophos	10265-92-6	0.11	1.2	7.1	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
1737	Methane	74-82-8	65000***	230000***	400000***	Simple asphyxiant	ppm
1738	Methane-d3	676-80-2	65000***	230000***	400000***	Used methane (74-82-8) PAC values	ppm
1739	Methanesulfonic acid	75-75-2	0.99	11	65	TEEL-2/11, TEEL-3/6, rat 360-min LC50	mg/m <sup>3</sup>
1740	Methanesulfonic acid, ethyl ester; (Ethyl methanesulfonate)	62-50-0	2.1	23	140	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
1741	<b>Methanesulfonyl chloride</b>	<b>124-63-0</b>	0.019	<b>0.21</b>	<b>0.62</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1742	Methanesulfonyl fluoride	558-25-8	0.018	0.19	1.2	TEEL-2/11, TEEL-3/6, dog iv LD50	ppm
1743	Methidathion; (O,O-Dimethyl-S-(5-methoxy-1,3,4-thiadiazolanyl-3-methyl)dithiophosphate)	950-37-8	1.8	20	160	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
1744	Methiocarb; (Mercaptodimethur)	2032-65-7	1.4	15	90	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
1745	Methomyl	16752-77-5	0.91	10	23	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
1746	Methoxybenzaldehyde; (p-Anisaldehyde)	123-11-5	21	230	300	TEEL-2/11, mouse oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1747	Methoxybenzyl alcohol, 4-	105-13-5	2.2	25	260	TEEL-2/11, rat dermal TDLo, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1748	Methoxychlor	72-43-5	30	150	4,500	TLV-TWA x 3, human dermal TDLo, human oral LDLo	mg/m <sup>3</sup>
1749	Methoxyethoxy)ethanol, 2-(2-; (Diethylene glycol monomethyl ether)	111-77-3	3.4	37	220	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
1750	Methoxyethylamine, 2-	109-85-3	0.43	4.7	28	TEEL-2/11, TEEL-3/6, mouse ip LD50	ppm
1751	Methoxyethylmercuric acetate	151-38-2	0.048	0.064	3.2	MW-adjusted alkyl mercury (7439-97-6) TLV-STEL, PEL-C, IDLH (1994, See white paper)	mg/m <sup>3</sup>
1752	Methoxyphenol, p-	150-76-5	15	49	320	TLV-TWA x 3, mouse ip TDLo, rat oral LD50	mg/m <sup>3</sup>
1753	Methoxypropylamine, 3-; (3-MPA)	5332-73-0	15	94	560	TLV-STEL, TEEL-2/6, rat 360-min LCLo	ppm
1754	Methoxytrimethylsilane	1825-61-2	12	130	800	Used MW-adjusted dimethydimethoxysilane (1112-39-6) PAC values	ppm
1755	Methyl 2-cyanoacrylate; (Permabond 910 adhesive)	137-05-3	0.6	0.85	5.1	TLV-TWA x 3, REL-STEL, rat 360-min LC50	ppm
1756	Methyl 2-pyrrolidinone, 1-; (N-Methylpyrrolidone)	872-50-4	30	32	190	WEEL-TWA x 3, TEEL-3/6, rat oral LD50	ppm
1757	Methyl acetate	79-20-9	250	1,700	10000*	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1758	Methyl acetylene	74-99-7	230	2500*	15000**	TEEL-2/11, TEEL-3/6, IDLH (1990)	ppm
1759	Methyl acetylene-propadiene mixture; (MAPP)	59355-75-8	1,250	2,500	15,000	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1760	Methyl acrylate	96-33-3	6	170	1,000	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
1761	<b>Methyl alcohol; (Methanol)</b>	<b>67-56-1</b>	<b>530</b>	<b>2,100</b>	<b>7200*</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1762	Methyl alcohol-d	1455-13-6	530	2,100	7200*	Used methyl alcohol (67-56-1) AEGL values	ppm
1763	Methyl alcohol-d4	811-98-3	530	2,100	7200*	Used methyl alcohol (67-56-1) AEGL values	ppm
1764	Methyl benzoate; (Benzoic acid, methyl ester)	93-58-3	1.1	12	42	TEEL-2/11, rat oral TDLo, rat oral LD50	ppm
1765	<b>Methyl bromide; (Bromomethane)</b>	<b>74-83-9</b>	19	<b>210</b>	<b>740</b>	<b>AEGL-2/11, AEGL-2, AEGL-3</b>	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1766	Methyl butylacrylate, 2-; (Butyl methacrylate)	97-88-1	19	210	1,300	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
1767	<b>Methyl chloride</b>	<b>74-87-3</b>	<b>150</b>	<b>910</b>	<b>3,000</b>	<b>ERPG-1, AEGL-2, AEGL-3</b>	ppm
1768	<b>Methyl chloroformate; (Methyl chlorocarbonate)</b>	<b>79-22-1</b>	0.6	<b>2.2</b>	<b>6.7</b>	MAK-TWA x 3, <b>AEGL-2, AEGL-3</b>	ppm
1769	<b>Methyl chlorosilane; (Chloromethylsilane)</b>	<b>993-00-0</b>	<b>1.8</b>	<b>22</b>	<b>100</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1770	<b>Methyl cyclohexylfluorophosphonate; (GF)</b>	<b>329-99-7</b>	<b>0.00020</b>	<b>0.0024</b>	<b>0.018</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1771	Methyl demeton methyl; (Phosphorothioic acid, O,O-dimethyl-S-(2-methylthio)ethyl ester)	2587-90-8	1.8	20	120	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
1772	<b>Methyl dichlorosilane; (Dichloromethylsilane)</b>	<b>75-54-7</b>	<b>0.90</b>	<b>11</b>	<b>50</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1773	Methyl difluorophosphite; (Methylphosphonic difluoride)	676-99-3	0.38	4.1	25	TEEL-2/11, TEEL-3/6, rat 30-min LCLo	mg/m <sup>3</sup>
1774	Methyl ether; (Dimethyl ether)	115-10-6	3,000	3800*	7200*	WEEL-TWA x 3, human 60-min TCLo, rat 240-min LC50	ppm
1775	Methyl ethyl ketone peroxide	1338-23-4	1.8	20	22	TEEL-2/11, TLV-C adjusted based on ratio to toxicity data, rat 240-min LC50	ppm
1776	Methyl fluoride; (Fluoromethane)	593-53-3	13	150	900	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
1777	Methyl fluoroacetate	453-18-9	0.036	0.39	1.4	TEEL-2/11, human oral TDLo, rat 10-min LC50	mg/m <sup>3</sup>
1778	Methyl fluorosulfate	421-20-5	0.0021	0.023	0.14	TEEL-2/11, TEEL-3/6, rat 60-min LC50	ppm
1779	Methyl formate; (Formic acid, methyl ester)	107-31-3	100	830	5000*	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1780	<b>Methyl iodide</b>	<b>74-88-4</b>	<b>25</b>	<b>50</b>	<b>125</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
1781	Methyl isobutyl ketone; (Hexone)	108-10-1	75	500	3000*	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1782	<b>Methyl isocyanate</b>	<b>624-83-9</b>	<b>0.025</b>	<b>0.067</b>	<b>0.20</b>	<b>ERPG-1, AEGL-2, AEGL-3</b>	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1783	Methyl isopropyl ketone; (3-Methyl-2-butanone)	563-80-4	60	660	4,000	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	ppm
1784	<b>Methyl isothiocyanate; (Isothiocyanatomethane)</b>	<b>556-61-6</b>	<b>0.27</b>	<b>17</b>	<b>50</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
1785	Methyl lithium	917-54-4	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
1786	<b>Methyl mercaptan</b>	<b>74-93-1</b>	<b>0.005</b>	<b>23</b>	<b>68</b>	<b>ERPG-1, AEGL-2, AEGL-3</b>	ppm
1787	Methyl mercury	22967-92-6	0.032	0.043	2.1	MW-adjusted alkyl mercury (7439-97-6) TLV-STEL, PEL-C, & IDLH (1994, See white paper)	mg/m <sup>3</sup>
1788	<b>Methyl methacrylate</b>	<b>80-62-6</b>	<b>17</b>	<b>120</b>	<b>570</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1789	Methyl n-amyl ketone	110-43-0	150	670	4000*	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
1790	Methyl nitrate; (Nitric acid, methyl ester)	598-58-3	0.85	9.4	56	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
1791	<b>Methyl nonafluorobutyl ether (40%) and Methyl nonafluoroisobutyl ether (60%) (ppm) (HFE-7100)</b>	<b>163702-07-6 163702-08-7</b>	<b>2500</b>	<b>8,200</b>	<b>15,000</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1792	<b>Methyl parathion</b>	<b>298-00-0</b>	0.11	<b>1.2</b>	<b>3.5</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
1793	Methyl phencapton	3735-23-7	1	11	44	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
1794	Methyl phosphonic dichloride	676-97-1	0.13	1.4	6.2	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
1795	Methyl phosphonothioic dichloride	676-98-2	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HR = 3)	mg/m <sup>3</sup>
1796	Methyl pyridine, 3-; (3-Picoline)	108-99-6	5	49	300	WEEL-STEL, TEEL-3/6, rat 120-min LCLo	ppm
1797	Methyl salicylate	119-36-8	2.3	25	150	TEEL-2/11, TEEL-3/6, human oral LDLo	ppm
1798	Methyl sulfoxide-d6; (Dimethyl-d6-sulfoxide)	2206-27-1	150	290	1,800	Used DMSO (67-68-5) PAC values	ppm
1799	<b>Methyl tert-butyl ether; (MTBE)</b>	<b>1634-04-4</b>	<b>50</b>	<b>570</b>	<b>5300*</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm

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**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1800	Methyl thiocyanate	556-64-9	17	28	140	MW-adjusted cyanides MAK-TWA x 3, LOC, MW-adjusted cyanides IDLH (1990)	ppm
1801	Methyl vinyl carbinol; (3-Buten-2-ol)	598-32-3	0.087	0.96	5.8	TEEL-2/11, human 15-min TClO, TEEL-2 x 6	ppm
1802	<b>Methyl vinyl ketone; (3-Buten-2-one)</b>	<b>78-94-4</b>	<b>0.17</b>	<b>1.2</b>	<b>2.4</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1803	Methyl-1-butene, 2-	563-46-2	42	460	2800*	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	ppm
1804	Methyl-1H-benzotriazole	29385-43-1	2	22	130	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1805	Methyl-1-phenyl-2-pyrazolin-5-one, 3-	89-25-8	11	120	690	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1806	Methyl-1-propanethiol, 1-; (sec-Butyl mercaptan; 2-Butanethiol)	513-53-1	4.2	46	280	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
1807	Methyl-1-propen-1-one, 2-; (Dimethylketene)	598-26-5	0.011	0.12	0.69	TEEL-2/11, TEEL-3/6, mouse 30-min LC50	ppm
1808	Methyl-2-(1-methylethyl)phenol, 5-; (Thymol)	89-83-8	2.9	32	190	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1809	Methyl-2-butene, 2-; (Amylene)	513-35-9	4.2	46	280	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	ppm
1810	Methyl-2-chloroacrylate	80-63-7	0.091	1	3.6	TEEL-2/11, LOC, rat 120-min LC50	ppm
1811	Methyl-2-heptanone, 6-	928-68-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1812	Methyl-2-hexanone, 5-; (Methyl isoamyl ketone)	110-12-3	50	69	190	TLV-STEL, rat oral TDLo, rat 360-min LC50	ppm
1813	Methyl-3-penten-2-one, 4-; (Mesityl oxide)	141-79-7	25	830	5000*	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1814	Methyl-4-penten-2-one, 4-	3744-02-3	25	830	5,000	Used mesityl oxide (141-79-7) PAC values	ppm
1815	Methyl-5-nitroaniline, 2-; (5-Nitro-o-toluidine; Benzenamine, 2-methyl-5-nitro-)	99-55-8	3	19	110	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1816	Methyl-5-vinylpyridine, 2-	140-76-1	0.17	1.9	6.6	TEEL-2/11, LOC, rat 120-min LC50	mg/m <sup>3</sup>
1817	Methyl-8-quinolinol, 2-	826-81-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

Chemicals with AEGLs: large, bolded font. ERPGs (but no AEGLs): bolded font.

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1818	Methylal; (Dimethoxymethane)	109-87-5	230	2500*	15000**	TEEL-2/11, TEEL-3/6, IDLH (1990)	ppm
1819	Methylamine hydrochloride	593-51-1	2.7	30	320	TEEL-2/11, mouse ip TDLo, rat oral LD50	mg/m <sup>3</sup>
1820	Methylamino)ethanol, 2-(	109-83-1	2.3	25	150	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
1821	Methylaniline, N-	100-61-8	1.5	17	100	TLV-TWA x 3, TEEL-3/6, IDLH (1990 and 1994)	ppm
1822	Methylaziridine, 1-	1072-44-2	0.058	0.64	3.9	TEEL-2/11, TEEL-3/6, mouse 10-min LCLo	ppm
1823	Methylbutanamide, 3-; (Isovaleramide)	541-46-8	1.7	19	110	TEEL-2/11, TEEL-3/6, mouse iv LDLo	mg/m <sup>3</sup>
1824	Methylbutylamine, N-	110-68-9	1.3	14	86	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
1825	Methylchlorodisilane; (Chloromethylidisilane)	68937-17-7	0.067	0.73	4.4	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
1826	Methylcholanthrene, 3-	56-49-5	0.2	2.3	29	TEEL-2/11, rat oral TDLo, mouse ip LDLo	mg/m <sup>3</sup>
1827	Methylcyclohexane	108-87-2	1200*	1700*	10000**	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
1828	Methylcyclohexanone	1331-22-2	15	170	1,000	TEEL-2/11, rabbit 60-min TCLo, TEEL-2 x 6	ppm
1829	Methylcyclohexanone, 2-; (o-Methylcyclohexanone)	583-60-8	75	420	2,500	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
1830	Methylcyclopentane	96-37-7	14	160	940	TEEL-2/11, TEEL-3/6, mouse 120-min LCLo	ppm
1831	Methyldecane, 4-	2847-72-5	6.6	73	440	Used decane (124-18-5) PAC values	ppm
1832	<b>Methyldichloroarsine; (Dichloromethylarsine)</b>	<b>593-89-5</b>	0.0048	<b>0.053</b>	<b>0.16</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
1833	Methylene bis(2-chloroaniline), 4,4'-; (MBOCA)	101-14-4	0.03	0.94	21	TLV-TWA x 3, mouse oral TDLo, rat oral LD50	ppm
1834	Methylene bis(4-isocyanatocyclohexane), 1,1'-	5124-30-1	0.015	0.29	1.7	TLV-TWA x 3, TEEL-3/6, rat 240-min LCLo	ppm
1835	<b>Methylene chloride; (Dichloromethane)</b>	<b>75-09-2</b>	<b>200</b>	<b>560</b>	<b>6,900</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1836	<b>Methylene diphenyl diisocyanate; (Diphenylmethane diisocyanate; MDI)</b>	<b>101-68-8</b>	0.45	<b>5</b>	<b>55</b>	ERPG-2/11, <b>ERPG-2, ERPG-3</b>	mg/m <sup>3</sup>
1837	Methylene fluoride; (Difluoromethane; HFC-32)	75-10-5	3,000	6,500	39,000	WEEL-TWA x 3, TEEL-3/6, rat 240-min LC50	ppm
1838	Methylenebis(isocyanato-benzene), 1,1'-; (Diphenyl methane diisocyanate)	26447-40-5	29	40	240	MW-adjusted cyanides MAK-TWA x 3, TEEL-3/6, MW-adjusted cyanides IDLH (1990)	mg/m <sup>3</sup>
1839	Methylenebisacrylamide, N,N'-	110-26-9	0.64	7.1	77	TEEL-2/11, mouse oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1840	Methylenedianiline, 4,4'-	101-77-9	0.1	3.4	20	PEL-STEL, human oral TDLo, rat oral LD50	ppm
1841	Methylethyl hydroperoxide, 1-; (Isopropyl hydroperoxide)	3031-75-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1842	Methylformamide, N-	123-39-7	5.1	56	220	TEEL-2/11, rat 360-min TCLo, rat oral LD50	ppm
1843	Methylfuran, 2-	534-22-5	0.33	3.7	22	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
1844	Methylheptane, 2-	592-27-8	230	385	5,000	Used octane (111-65-9) PAC values	ppm
1845	Methylheptane, 4-	589-53-7	230	385	5,000	Used octane (111-65-9) PAC values	ppm
1846	Methylhydrosiloxane (3-4%) + dimethylsiloxane (96-97%) copolymer	68037-59-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1847	Methylimidazole, 1-	616-47-7	2.3	25	150	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
1848	Methylimidazole, 4-	822-36-6	10	110	150	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1849	Methylactic acid ethyl ester, 2-; (Ethyl 2-hydroxyisobutyrate)	80-55-7	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
1850	<b>Methylactonitrile, 2-;</b> <b>(Acetone cyanohydrin)</b>	<b>75-86-5</b>	<b>2.0</b>	<b>7.1</b>	<b>15</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1851	Methylmagnesium bromide, 3.0 m in diethyl ether	75-16-1	0.25	2.7	16	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	ppm
1852	Methylmagnesium chloride	676-58-4	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1853	Methylmercuric dicyanamide	502-39-6	0.045	0.06	3	MW-adjusted alkyl mercury (7439-97-6) TLV-TWA x 3, PEL-C, MW-adjusted alkyl mercury IDLH (1994, See white paper)	mg/m <sup>3</sup>
1854	Methylmorpholine, 4-	109-02-4	1.3	14	86	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
1855	Methylnaphthalene, 1-	90-12-0	20	61	360	Russian OEL-STEL, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1856	Methylnaphthalene, 2-	91-57-6	9	54	320	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1857	Methylnitrosopiperidine, 3-; (Piperidine, 3-methyl-1-nitroso-)	13603-07-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL- 2 x 6	ppm
1858	Methylnonane, 4-	17301-94-9	230	385	5,000	Used octane (111-65-9) PAC values	ppm
1859	Methylpentane, 2-; (Isohexane)	107-83-5	1,000	11000**	66000***	TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	ppm
1860	Methylpentane, 3-	96-14-0	1,000	11000**	66000***	TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	ppm
1861	Methylpentanol-1, 2-; (Amyl methyl alcohol)	105-30-6	0.087	0.96	67	TEEL-2/11, human TCLo 15-min, rat oral LD50	ppm
1862	Methylphenylthiourea, 2-; (o-Tolyl thiourea)	614-78-8	4.5	50	300	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
1863	Methylphosphonate	993-13-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL- 2 x 6	mg/m <sup>3</sup>
1864	Methylphosphonothioic acid, O-(4-nitrophenyl) O-phenyl ester	2665-30-7	0.73	8	48	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
1865	Methylphosphonothioic acid-, O-ethyl O-(4-(methylthio)phenyl) ester	2703-13-1	0.91	10	60	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
1866	Methylphosphonothioic acid, S-(2-(dimethylamino)ethyl) O-ethyl ester	20820-80-8	0.0057	0.062	0.37	TEEL-2/11, TEEL-3/6, mouse iv LD50	ppm
1867	Methylpropane, 2-; (Isobutane)	75-28-5	5500*	17000**	53000***	Used butane (106-97-8) AEGL values	ppm
1868	Methylpropene, 2-; (Isobutene)	115-11-7	750	2500*	11000**	TLV-TWA x 3, mouse 10-min TCLo, rat 240-min LC50	ppm
1869	Methylpyridine, 2-; (2-Picoline)	109-06-8	5	7.7	46	WEEL-STEL, TEEL-3/6, rat 240-min LC50	ppm
1870	Methylpyrrole, N-	96-54-8	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1871	Methylpyrrolidine; (Methylpyrrolidine, 1-)	120-94-5	0.58	6.4	39	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
1872	Methylstyrene, alpha-	98-83-9	100	830	5000*	REL-STEL, TEEL-3/6, IDLH (1990)	ppm
1873	Methyltetrahydrofuran, 2-	96-47-9	4	44	260	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
1874	Methyltriacetoxysilane	4253-34-3	6.2	68	410	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1875	<b>Methyltrichlorosilane; (Trichloromethyl silane)</b>	<b>75-79-6</b>	<b>0.60</b>	<b>7.3</b>	<b>33</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1876	Methyltriethoxysilane	2031-67-6	3.3	36	220	TEEL-2/11, TEEL-3/6, rat 480-min LCLo	ppm
1877	Methyl-trifluoromethanesulfonate	333-27-7	22	230	1,400	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
1878	Methyltrimethoxysilane	1185-55-3	38	410	2,500	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1879	Methyltrioctylammonium chloride	5137-55-3	0.67	7.4	44	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1880	<b>Methylvinylidichlorosilane; (Dichloromethylvinylsilane)</b>	<b>124-70-9</b>	<b>0.90</b>	<b>11</b>	<b>50</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1881	Methylvinylsiloxane-dimethylsiloxane copolymer, vinyl terminated	68083-18-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1882	Metolcarb; (Methylcarbamic acid m-tolyl ester)	1129-41-5	0.44	4.8	21	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
1883	Mevinphos; (Phosdrin)	7786-34-7	0.3	4	40	REL-STEL, LOC, IDLH (1990 and 1994)	mg/m <sup>3</sup>
1884	Mexacarbate; (4-(Dimethylamine)-3,5-xylyl N-methylcarbamate)	315-18-4	1.3	14	84	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
1885	Mica; (mica silicates)	12001-26-2	9	99	590	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1886	Michler's ketone; (4,4'-Bis(dimethylamino)benzophenone)	90-94-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1887	Microcystins	101043-37-2	9.00E-04	0.0099	0.048	TEEL-2/11, mouse ip TDLo, rat ip LD50	mg/m <sup>3</sup>
1888	Mineral fibers, fine	z-0032	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1889	Mineral oil, heavy or light; (paraffin oil; Deobase, deodorized; heavy paraffinic; heavy naphthenic); distillates; includes 64741-53-3, 64741-88-4, 8042-47-5, 8012-95-1; 64742-54-7	8020-83-5	140	1,500	8,900	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1890	Mirex; (Perchloropentacyclodecane)	2385-85-5	6.3	69	410	TEEL-2/11, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>
1891	Modeccin toxin; (Adenia digitata toxin)	65988-88-7	5.40E-06	5.90E-05	3.60E-04	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
1892	Molecular sieve 13X	63231-69-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1893	Molybdate orange	12656-85-8	5.4	59	350	MW-adjusted soluble molybdenum (7439-98-7) TLV-TWA x 3, dog oral TDLo, TEEL-2 x 6	mg/m <sup>3</sup>
1894	Molybdenum	7439-98-7	30	330	2,000	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1895	Molybdenum carbide	12011-97-1	34	360	2,200	MW-adjusted insoluble molybdenum (7439-98-7) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1896	Molybdenum dioxide	18868-43-4	40	430	2,600	MW-adjusted insoluble molybdenum (7439-98-7) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1897	Molybdenum disilicide	12136-78-6	48	530	3,200	MW-adjusted insoluble molybdenum (7439-98-7) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1898	Molybdenum hexacarbonyl	13939-06-5	83	920	5,500	MW-adjusted insoluble molybdenum (7439-98-7) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1899	Molybdenum pentachloride	10241-05-1	4.3	410	2,400	MW-adjusted soluble molybdenum (7439-98-7) TLV-TWA x 3, rat oral TDLo, TEEL-2 x 6	mg/m <sup>3</sup>
1900	Molybdenum trioxide (Molybdenum(VI) oxide)	1313-27-5	2.3	43	260	MW-adjusted soluble molybdenum (7439-98-7) TLV-TWA x 3, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
1901	Molybdenum(IV) sulfide	1317-33-5	50	260	1,600	MW-adjusted insoluble molybdenum (7439-98-7) TLV-TWA x 3, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>

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**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1902	Molybdic acid	7782-91-4	2.5	28	170	MW-adjusted insoluble molybdenum (7439-98-7) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1903	Molybdic acid, ammonium salt; (Ammonium molybdate)	11098-84-3	3.5	290	1,700	MW-adjusted soluble molybdenum (7439-98-7) TLV-TWA x 3, TEEL-3/6, dog oral LDLo	mg/m <sup>3</sup>
1904	Molybdic acid, disodium salt; (Disodium molybdate)	7631-95-0	3.2	17	100	MW-adjusted soluble molybdenum (7439-98-7) TLV-TWA x 3, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>
1905	Molybdic acid, hexaammonium salt; (Ammonium heptamolybdate)	12027-67-7	2.6	230	1,400	MW-adjusted soluble molybdenum (7439-98-7) TLV-TWA x 3, rat oral TDLo, TEEL-2 x 6	mg/m <sup>3</sup>
1906	Molybdophosphoric acid	12026-57-2	2.4	26	160	MW-adjusted insoluble molybdenum (7439-98-7) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1907	Molybdophosphoric acid hydrate; (Phosphomolybdic acid hydrate)	51429-74-4	2.4	27	160	MW-adjusted insoluble molybdenum (7439-98-7) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1908	Monobutyl phosphite	16456-56-7	2.7	30	180	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
1909	Monochloroamine; (Chloramide)	10599-90-3	0.026	0.29	1.7	TEEL-2/11, rat oral TDLo, TEEL-2 x 6	ppm
1910	Monochloropentafluoroethane; (CFC-115)	76-15-3	3,000	5,700	34,000	TLV-TWA x 3, TEEL-3/6, rat 240-min LC50	ppm
1911	Monochlorophenyl ether	55398-86-2	1.5	35	210	Finland OEL-TWA x 3, TEEL-3/6, guinea pig oral LDLo	mg/m <sup>3</sup>
1912	Monocrotophos	6923-22-4	0.15	0.63	3.5	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
1913	<b>Monomethylamine; (Methylamine)</b>	<b>74-89-5</b>	<b>15</b>	<b>64</b>	<b>350</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1914	<b>Monomethylhydrazine; (Methyl hydrazine)</b>	<b>60-34-4</b>	0.082	<b>0.9</b>	<b>2.7</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1915	Monosodium titanate	60704-88-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1916	Montmorillonite	1318-93-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1917	Morpholine	110-91-8	30	1,300	8000**	REL-STEL, TEEL-3/6, IDLH (1990)	ppm

Chemicals with AEGLs: large, bolded font. ERPGs (but no AEGLs): bolded font.

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1918	Morpholinepropanesulfonic acid, 4-	1132-61-2	130	1,400	8,500	Used MW-adjusted 2-(N-morpholino)ethanesulfonic acid monohydrate (4432-31-9) PAC values	mg/m <sup>3</sup>
1919	Morpholinoethanesulfonic acid monohydrate, 2-(N-	4432-31-9	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>
1920	Muscimol; (5-Aminomethyl-3-isoxazole)	2763-96-4	1.5	17	100	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
1921	Mustard gas sulfoxide; (bis(2-Chloroethyl)sulfoxide)	5819-08-9	0.52	5.7	34	TEEL-2/11, TEEL-3/6, mouse iv LDLo	mg/m <sup>3</sup>
1922	Myristic acid, butyl ester; (Tetradecanoic acid, butyl ester)	110-36-1	2.1	23	140	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
1923	Myristic acid, isopropyl ester; (Tetradecanoic acid, isopropyl; Isopropyl myristate)	110-27-0	81	900	5,400	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
1924	Nabumetone; (Relafen; 4-(6-Methoxy-2-naphthyl)-2-butanone)	42924-53-8	1.6	17	770	TEEL-2/11, human oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1925	Nadic methyl anhydride	25134-21-8	0.49	5.4	32	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	mg/m <sup>3</sup>
1926	Naphtha (coal tar); includes solvent naphtha, petroleum (64742-88-7), naphtha (petroleum) light aliphatic, rubber solvent (64742-89-8), heavy catalytic cracked (64741-54-4), light straight run (64741-46-4), heavy aliphatic solvent (64742-96-7), high flash aromatic and aromatic solvent naphtha (64742-95-6)	8030-30-6	1,200	6,700	40,000	PEL-TWA x 3, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
1927	Naphtha (petroleum),hydrotreated light	64742-49-0	1,000	11,000	66,000	United Kingdom OEL-STEL, TEEL-1 x 2, TEEL-2 x 6	mg/m <sup>3</sup>
1928	Naphtha, hydrotreated heavy; (Isopar L-rev 2)	64742-48-9	350	1,800	40,000	Used petroleum distillates (8002-05-9) PAC values	mg/m <sup>3</sup>
1929	Naphthalenamine, 1-; (1-Naphthylamine)	134-32-7	2	22	130	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1930	Naphthalene	91-20-3	15	83	500	REL-STEL, PAC-3/6, IDLH (1990)	ppm
1931	Naphthaleneacetamide, 1-	86-86-2	5.1	56	330	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1932	Naphthalenetrisulfonic acid sodium salt, 1,3,6-	19437-42-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1933	Naphthenic acid, lead salt	61790-14-5	15	170	1,000	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1934	Naphthol, 1-	90-15-3	2.2	25	450	TEEL-2/11, mouse oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1935	Naphthol, 2-	135-19-3	5.9	65	390	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1936	Naphthol-6-sulfonic acid, 6-; (Schaeffer's acid)	93-01-6	0.54	6	36	TLV-TWA x 3, TEEL-3/6, mouse oral LDLo	mg/m <sup>3</sup>
1937	Naphthol-8-sulfonic acid, sodium salt, 2-	832-85-9	0.54	6	36	Used 2-naphthol-6-sulfonic acid (93-01-6) PAC values	mg/m <sup>3</sup>
1938	Naphthoquinone, 1,4-	130-15-4	0.57	6.3	38	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1939	Naphthylamine, beta-	91-59-8	2.2	24	140	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1940	Naphthylthiourea, alpha-; (ANTU)	86-88-4	0.91	10	100	TEEL-2/11, LOC, IDLH (1990 and 1994)	mg/m <sup>3</sup>
1941	Neatsfoot oil; (Fats and glyceridic oils)	8002-64-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1942	Neodecanoic acid	26896-20-8	6	66	400	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1943	Neodecanoic acid, calcium salt; (Calcium neodecanoate)	27253-33-4	6	66	400	Used neodecanoic acid (26896-20-8) PAC values	mg/m <sup>3</sup>
1944	Neodymium	7440-00-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1945	Neodymium bromide	13536-80-6	0.053	0.38	14	Used MW-adjusted bromine (7726-95-6) AEGL values	mg/m <sup>3</sup>
1946	Neodymium fluoride	13709-42-7	26	300	1,800	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
1947	Neodymium hydroxide	16469-17-3	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
1948	Neodymium nitrate	10045-95-1	6.2	68	410	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1949	Neodymium nitrate, pentahydrate	14517-29-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1950	Neodymium nitrite	z-0033	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1951	Neodymium(III) chloride	10024-93-8	0.9	9.9	59	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1952	Neodymium(III) oxide	1313-97-9	15	170	990	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1953	Neon	7440-01-9	65,000	2.30E+05	4.00E+05	Simple asphyxiant	ppm
1954	Nickel	7440-02-0	4.5	50	99	TEEL-2/11, LOC, rat ip LD50	mg/m <sup>3</sup>
1955	Nickel acetate tetrahydrate	6018-89-9	13	140	830	MW-adjusted organic nickel (7440-02-0) PEL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1956	Nickel aluminide	12003-78-0	0.81	8.9	53	MW-adjusted insoluble nickel (7440-02-0) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1957	Nickel carbonate hydroxide; (Basic nickel carbonate tetrahydrate)	39430-27-8	1.3	28	170	MW-adjusted insoluble nickel (7440-02-0) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1958	Nickel carbonate hydroxide; (Basic nickel(II) carbonate)	12607-70-4	1	12	69	MW-adjusted insoluble nickel (7440-02-0) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1959	<b>Nickel carbonyl</b>	<b>13463-39-3</b>	0.0033	<b>0.036</b>	<b>0.16</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
1960	Nickel chloride; (Nickelous chloride)	7718-54-9	0.66	22	130	MW-adjusted soluble nickel (7440-02-0) TLV-TWA x 3, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
1961	Nickel cyanide	557-19-7	1.1	13	75	MW-adjusted insoluble nickel (7440-02-0) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1962	Nickel fluoride, tetrahydrate	13940-83-5	1.7	19	110	MW-adjusted insoluble nickel (7440-02-0) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1963	Nickel formate	3349-06-2	7.6	83	500	MW-adjusted organic nickel (7440-02-0) PEL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1964	Nickel oxalate	547-67-1	0.75	8.3	50	MW-adjusted soluble nickel (7440-02-0) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1965	Nickel oxide; (Nickel(II) oxide)	1313-99-1	0.76	220	1,300	MW-adjusted insoluble nickel (7440-02-0) TLV-TWA x 3, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
1966	Nickel perchlorate	13637-71-3	1.9	20	120	MW-adjusted soluble nickel (7440-02-0) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1967	Nickel sulfamate; (Nickel(II) sulfamate)	13770-89-3	1.3	12	71	MW-adjusted soluble nickel (7440-02-0) TLV-TWA x 3, TEEL-3/6, mouse ip LDLo	mg/m <sup>3</sup>
1968	Nickel sulfate hexahydrate; (Nickel(II) sulfate hexahydrate)	10101-97-0	1.3	8.7	52	MW-adjusted soluble nickel (7440-02-0) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1969	Nickel sulfate; (Nickel(II) sulfate)	7786-81-4	0.79	8.6	51	MW-adjusted soluble nickel (7440-02-0) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1970	Nickel(2+) stearate	2223-95-2	32	360	2,200	MW-adjusted organic nickel (7440-02-0) PEL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1971	Nickel(II) bromide	13462-88-9	1.1	12	73	MW-adjusted soluble nickel (7440-02-0) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1972	Nickel(II) carbonate (1:1)	3333-67-3	0.61	6.6	40	MW-adjusted soluble nickel (7440-02-0) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1973	Nickel(II) chloride hexahydrate	7791-20-0	1.2	5.2	31	MW-adjusted soluble nickel (7440-02-0) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1974	Nickel(II) hydroxide; (Nickelous hydroxide)	12054-48-7	0.95	8.8	53	MW-adjusted insoluble nickel (7440-02-0) TWA-TWA x 3, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
1975	Nickel(II) nitrate hexahydrate	13478-00-7	1.5	53	320	MW-adjusted soluble nickel (7440-02-0) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1976	Nickel(II) nitrate; (Nickelous nitrate)	13138-45-9	0.93	10	61	MW-adjusted soluble nickel (7440-02-0) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1977	Nickel(II) nitrite	17861-62-0	0.77	8.6	51	MW-adjusted soluble nickel (7440-02-0) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1978	Nickel(II) phosphate	10381-36-9	1.2	14	83	MW-adjusted insoluble nickel (7440-02-0) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1979	Nickel(III) hydroxide; (Nickelic hydroxide)	12125-56-3	1.1	12	73	MW-adjusted insoluble nickel (7440-02-0) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1980	Nicotinamide	98-92-0	5.6	62	690	TEEL-2/11, mouse ip TDLo, rat oral LD50	mg/m <sup>3</sup>
1981	Nicotine sulfate	65-30-5	0.82	9	18	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
1982	Nicotine, dl-beta-; (DL-Nicotine)	22083-74-5	0.56	6.2	37	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1983	Nicotine; (Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-); (Includes DL-Nicotine, 22083-74-5)	54-11-5	1.5	3.5	35	TLV-TWA x 3, LOC, IDLH (1990)	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
1984	Nicotinic acid; (Niacin)	59-67-6	21	230	1,400	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1985	Niobium	7440-03-1	30	330	2,000	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1986	Niobium chloride	10026-12-7	4.2	46	280	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1987	Niobium pentoxide; (Niobium(V) oxide)	1313-96-8	6.6	72	430	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
1988	Niobium(IV) carbide	12069-94-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1989	Nitrapyrin; (2-Chloro-6-(trichloromethyl)pyridine)	1929-82-4	20	31	190	TLV-STEL, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1990	Nitrate(s)	14797-55-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
1991	<b>Nitric acid</b>	<b>7697-37-2</b>	<b>0.16</b>	<b>24</b>	<b>92</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
1992	Nitric acid, butyl ester; (Butyl nitrate)	928-45-0	40	330	2,000	Used propyl nitrate (627-13-4) PAC values	ppm
1993	Nitric acid, ethyl ester; (Ethyl nitrate)	625-58-1	0.59	6.5	39	TEEL-2/11, TEEL-3/6, cat ip LD50	ppm
1994	Nitric acid, pentyl ester; (Amyl nitrate)	1002-16-0	1.5	16	98	TEEL-2/11, TEEL-3/6, mouse 420-min LCLo	ppm
1995	Nitric oxide	10102-43-9	0.5	12	20	Used nitrogen dioxide (10102-44-0) AEGL values	ppm
1996	Nitrilotriacetic acid, disodium salt; (Disodium nitrilotriacetate)	15467-20-6	4.4	48	290	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1997	Nitrilotriacetic acid, trisodium salt, monohydrate	18662-53-8	1.6	18	110	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
1998	Nitrilotriacetic acid; (Aminotriacetic acid)	139-13-9	4.4	49	290	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
1999	Nitrilotris(methylene)trisphosphonic acid; (Amino, tris[methylene phosphonic acid])	6419-19-8	30	69	420	WEEL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2000	Nitroaniline, 2-; (o-Nitroaniline)	88-74-4	6.2	68	410	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2001	Nitroaniline, 3-; (m-Nitroaniline)	99-09-2	1.6	18	110	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2002	Nitroaniline, p-	100-01-6	9	71	300	TLV-TWA x 3, rat 360-min TClO, IDLH (1990 and 1994)	mg/m <sup>3</sup>

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			PAC-1	PAC-2	PAC-3		
2003	Nitrobenzene	98-95-3	3	20	200	TLV-TWA x 3, LOC, IDLH (1990 and 1994)	ppm
2004	Nitrobenzenesulfonic acid, sodium salt, 3-	127-68-4	33	360	2,200	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2005	Nitrobiphenyl, 4-; (p-Nitrobiphenyl)	92-93-3	6.7	74	440	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2006	Nitrochlorobenzene, m-; (1-Chloro-3-nitrobenzene; m-Chloronitrobenzene)	121-73-3	0.9	9.9	59	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2007	Nitrocyclohexane	1122-60-7	0.14	1.5	9	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2008	Nitrocyclohexene, 1-; (1-Nitrocyclohex-1-ene)	2562-37-0	2.3	25	150	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	ppm
2009	Nitrodiphenylamine, 2-	119-75-5	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
2010	Nitroethane	79-24-3	60	170	1,000	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
2011	Nitrogen	7727-37-9	7.96E+05	8.32E+05	8.69E+05	Simple asphyxiant – TEEL values are the total of atmospheric nitrogen and added nitrogen resulting in oxygen deficient atmosphere.	ppm
2012	<b>Nitrogen dioxide</b>	<b>10102-44-0</b>	<b>0.50</b>	<b>12</b>	<b>20</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2013	Nitrogen mustard hydrochloride	55-86-7	0.013	0.14	0.83	TEEL-2/11, TEEL-3/6, dog iv LD50	mg/m <sup>3</sup>
2014	<b>Nitrogen mustard; (Bis(b-chloroethyl)methylamine; Nitrogen mustard-2)</b>	<b>51-75-2</b>	0.002	<b>0.022</b>	<b>0.37</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
2015	<b>Nitrogen tetroxide</b>	<b>10544-72-6</b>	<b>0.25</b>	<b>6.2</b>	<b>10</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2016	<b>Nitrogen trifluoride</b>	<b>7783-54-2</b>	<b>200</b>	<b>530</b>	<b>860</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2017	Nitrogen trioxide; (Dinitrogen trioxide)	10544-73-7	1.7	19	120	TEEL-2/11, human 15-min TCLo, TEEL-2 x 6	ppm
2018	Nitroglycerin	55-63-0	0.1	2	75	REL-STEL, PEL-C, IDLH (1994, See white paper)	mg/m <sup>3</sup>
2019	Nitromethane	75-52-5	60	210	1,000	TLV-TWA x 3, rat 360-min TCLo, IDLH (1990)	ppm

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			PAC-1	PAC-2	PAC-3		
2020	Nitromethane-d3; (Trideuteronitromethane)	13031-32-8	60	210	1,000	Used nitromethane (75-52-5) PAC values	ppm
2021	Nitro-m-xylene, 2-; (1,3-Dimethyl-2-nitrobenzene)	81-20-9	7.9	86	520	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2022	Nitronium Tetrafluoroborate	13826-86-3	13	150	870	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
2023	Nitrophenol, 2-; (o-Nitrophenol)	88-75-5	2.1	23	140	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2024	Nitrophenol, 3-; (m-Nitrophenol)	554-84-7	2.8	31	180	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2025	Nitrophenol, 4-; (p-Nitrophenol); Includes 25154-55-6 (mixed isomers)	100-02-7	0.69	7.6	46	TEEL-2/11, TEEL-3/6, rat LD50	mg/m <sup>3</sup>
2026	Nitropropane, 1-	108-03-2	75	380	2300*	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
2027	Nitropropane, 2-	79-46-9	30	380	2,300	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
2028	Nitropyrene, 1-	5522-43-0	0.0064	0.07	0.42	TEEL-2/11, rat 360-min TCLo, TEEL-2 x 6	mg/m <sup>3</sup>
2029	Nitropyridine-N-oxide, 4-; (Pyridine, 4-nitro, 1-oxide)	1124-33-0	7.3	80	1,600	TEEL-2/11, LOC, dog oral LD50	mg/m <sup>3</sup>
2030	Nitrosodimethylamine	62-75-9	0.082	0.9	10	TEEL-2/11, rat oral TDLo, rat 240-min LC50	mg/m <sup>3</sup>
2031	Nitrosodiphenylamine, p-	156-10-5	0.58	6.4	39	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
2032	Nitrosodipropylamine; (DPNA)	621-64-7	5.6	62	95	TEEL-2/11, mouse ip TDLo, rat oral LD50	mg/m <sup>3</sup>
2033	Nitrosomorpholine	59-89-2	0.2	2.3	4.5	TEEL-2/11, rat oral TDLo, mouse 10-min LCLo	mg/m <sup>3</sup>
2034	Nitroso-N-methylurea, N-	684-93-5	0.33	3.6	22	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2035	Nitrosophenol, p-	104-91-6	1.1	12	71	TEEL-2/11, TEEL-3/6, mouse ip LDLo	mg/m <sup>3</sup>
2036	Nitrosotoluene, 2-; (o-Nitrosotoluene)	611-23-4	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
2037	Nitrosyl chloride	2696-92-6	0.014	0.15	0.9	TEEL-2/11, TEEL-3/6, cat 20-min LCLo	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2038	Nitrosylsulfuric acid	7782-78-7	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2039	Nitrotoluene, m-	99-08-1	6	14	200	TLV-TWA x 3, rat oral TDLo, IDLH (1990 and 1994)	ppm
2040	Nitrotoluene, o-	88-72-2	6	33	200	TLV-TWA x 3, TEEL-3/6, IDLH (1990 and 1994)	ppm
2041	Nitrotoluene, p-	99-99-0	6	33	200	TLV-TWA x 3, TEEL-3/6, IDLH (1990 and 1994)	ppm
2042	Nitrous acid	7782-77-6	0.41	62	240	Used nitric acid (7697-37-2) AEGL values converted to mg/m <sup>3</sup>	mg/m <sup>3</sup>
2043	Nitrous oxide	10024-97-2	910	10,000	20,000	TEEL-2/11, EEGL 60-min, EEGL 30-min	ppm
2044	Nonacosane	630-03-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2045	Nonanal	124-19-6	0.86	9.5	410	TEEL-2/11, rabbit dermal TDLo, rat 240-min LCLo	mg/m <sup>3</sup>
2046	Nonane; (Shellsol 140)	111-84-2	600	830	5,000	TLV-TWA x 3, TEEL-3/6, n-octane (111-65-3) IDLH (1990)	ppm
2047	Nonanenitrile; (1-Octyl cyanide)	2243-27-8	5.9	8	47	Used MW-adjusted cyanide (57-12-5) PAC values, converted to ppm	ppm
2048	Nonanoic acid	112-05-0	13	140	840	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
2049	Nonanone, 2-	821-55-6	0.51	5.6	34	TEEL-2/11, TEEL-3/6, rat 360-min LCLo	ppm
2050	Nonene, 1-	124-11-8	40	800	2,000	Used 1-octene (111-66-0) ERPG values	ppm
2051	Nonoxynol-4	7311-27-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2052	Nonyl alcohol	143-08-8	11	120	710	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2053	Nonyl phenol (mixed isomers)	25154-52-3	2.5	27	110	TEEL-2/11, rat ip TDLo, rat oral LD50	mg/m <sup>3</sup>
2054	Nonyl phenol, 4- (branched)	84852-15-3	0.2	2.3	260	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2055	Nonyl phenol, p-	104-40-5	4.1	45	320	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2056	Nonylphenol, 4-, branched, ethoxylated	127087-87-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2057	Nonylphenoxypolyethoxyethanol	68412-54-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2058	<b>Nonyltrichlorosilane</b>	<b>5283-67-0</b>	<b>0.60</b>	<b>7.3</b>	<b>33</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2059	Norbormide	991-42-4	0.35	3.8	190	TEEL-2/11, LOC, monkey oral LD50	mg/m <sup>3</sup>
2060	Norchlorofluoroepibatidine	z-0034	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2061	Novol ketone; (5-dithylamino-2-pentanone)	105-14-6	0.62	6.9	41	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
2062	n-Propanol (Propyl alcohol, n-)	71-23-8	250	670	4000*	REL-STEL, TEEL-3/6, IDLH (1990)	ppm
2063	Octachlorodibenzodioxin, 1,2,3,4,6,7,8,9-; (OCDD, Octachlorodibenzo-p-dioxin)	3268-87-9	0.43	4.7	28	Used TCDD (1746-01-6) PACs divided by TEF = 0.0003 (See white paper)	mg/m <sup>3</sup>
2064	Octachlorodibenzofuran, 1,2,3,4,6,7,8,9-	39001-02-0	0.43	4.7	28	Used TCDD (1746-01-6) PACs divided by TEF = 0.0003 (See white paper)	mg/m <sup>3</sup>
2065	Octachloronaphthalene	2234-13-1	0.3	3.3	20	TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2066	Octacosane	630-02-4	230	385	5,000	Used n-octane (111-65-9) PAC values	ppm
2067	Octadecane, n-	593-45-3	230	385	5,000	Used n-octane (111-65-9) PAC values	ppm
2068	Octadecanoic acid, n-; (Stearic acid)	57-11-4	14	150	910	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2069	Octadecanol, 1-	112-92-5	5.4	60	360	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
2070	Octadecenoic acid, 9-; (Oleic acid)	112-80-1	220	2,400	15,000	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2071	Octadecyl methacrylate	32360-05-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2072	<b>Octadecyltrichlorosilane</b>	<b>112-04-9</b>	<b>0.60</b>	<b>7.3</b>	<b>33</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2073	Octafluorocyclobutane; (Cyclooctafluorobutane; Freon C-318)	115-25-3	400	4,400	27,000	TEEL-2/11, TEEL-3/6, mouse 120-min LCLo	ppm
2074	Octamethylcyclotetrasiloxane	556-67-2	30	68	130	WEEL-TWA x 3, rat 360-min TCLo, rat 240-min LC50	ppm
2075	Octamethyldiphosphoramidate; (Octamethylpyrophosphoramidate, Schradan)	152-16-9	0.073	0.8	4.9	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2076	Octanal, 1-; (Octanal; Octanaldehyde)	124-13-0	17	190	1,100	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2077	Octanamine, 1-	111-86-4	0.2	2.2	13	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
2078	Octane, n-	111-65-9	230	385	5000**	REL-TWA x 3, REL-C, IDLH (1990)	ppm
2079	Octanedione, 2,5-	3214-41-3	10	110	670	Used MW-adjusted 2-octanone (111-13-7) PAC values	mg/m <sup>3</sup>
2080	Octanenitrile	124-12-9	0.57	6.2	37	TEEL-2/11, TEEL-3/6, mouse oral LD50	ppm
2081	Octanethiol, 1-	111-88-6	0.045	0.5	66	TEEL-2/11, REL-C, rat oral LD50	ppm
2082	Octanoic acid; (Caprylic acid)	124-07-2	30	330	2,000	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2083	Octanol, 2-	123-96-6	4.5	50	300	TEEL-2/11, TEEL-3/6, human oral LDLo	mg/m <sup>3</sup>
2084	Octanone, 2-	111-13-7	9.3	100	610	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2085	Octaphenylcyclotetrasiloxane	546-56-5	14	150	920	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2086	<b>Octene, 1-</b>	<b>111-66-0</b>	<b>40</b>	<b>800*</b>	<b>2000*</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
2087	<b>Octyl alcohol; (n-Octanol)</b>	<b>111-87-5</b>	<b>5</b>	<b>20</b>	<b>150</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
2088	<b>Octyl mercaptan, t-</b>	<b>141-59-3</b>	0.055	<b>0.60</b>	<b>1.8</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
2089	Octyl(phenyl)-N,N-diisobutylcarbamoylmethylphosphine oxide	83242-95-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2090	<b>Octyltrichlorosilane</b>	<b>5283-66-9</b>	<b>0.60</b>	<b>7.3</b>	<b>33</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2091	Oil gas; (Oil fog)	z-0035	13	140	860	TEEL-2/11, TEEL-3/6, rat 1440-min LC50	ppm
2092	<b>Oleum; (fuming Sulfuric acid)</b>	<b>8014-95-7</b>	<b>0.20</b>	<b>8.7</b>	<b>160</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
2093	Organorhodium complex	z-0036	0.087	0.8	4.8	MW-adjusted soluble rhodium (7440-16-6) TLV-TWA x 3, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2094	Orthoformic acid, trimethyl ester; (Trimethyl orthoformate)	149-73-5	0.28	3	18	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	ppm

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**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2095	Osmium	7440-04-2	0.28	3.1	19	TEEL-2/11, TEEL-3/6, dog iv LDLo	mg/m <sup>3</sup>
2096	<b>Osmium tetroxide</b>	<b>20816-12-0</b>	6.00E-04	<b>0.0084</b>	<b>4.0</b>	TLV-STEL, <b>AEGL-2, AEGL-3</b>	ppm
2097	<b>Otto Fuel (mainly Propylene glycol dinitrate 6423-43-4)</b>	<b>106602-80-6</b>	<b>0.17</b>	<b>1.0</b>	<b>13</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2098	Ouabain	630-60-4	0.75	8.3	50	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2099	Oxalic acid dihydrate	6153-56-6	2	83	500	TLV-STEL, TEEL-3/6, oxalic acid (144-62-7) IDLH (1990 and 1994)	mg/m <sup>3</sup>
2100	Oxalic acid, anhydrous; (Ethanedioic acid)	144-62-7	2	20	500	TLV-STEL, rat ip TDLo, IDLH (1990 and 1994)	mg/m <sup>3</sup>
2101	Oxalyl chlorine	79-37-8	0.77	8.5	51	TEEL-2/11, TEEL-3/6, rat 60-min LC50	ppm
2102	Oxamide	471-46-5	1.3	15	89	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2103	Oxamyl	23135-22-0	0.15	1.7	4.7	TEEL-2/11, LOC, rat 60-min LC50	mg/m <sup>3</sup>
2104	Oxathiane, 1,4-	15980-15-1	2.6	29	170	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
2105	Oxirane, ethenyl-; (3,4-Epoxy-1-butene)	930-22-3	0.35	3.9	23	TEEL-2/11, TEEL-3/6, rat ip LD50	ppm
2106	Oxone, monopersulfate compound	37222-66-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2107	Oxybis(N,N-dimethylethanamine), 2,2'-; (Bis(2-dimethylaminoethyl) ether; DMAEE)	3033-62-3	0.15	1.4	8.4	TEEL-2/11, TEEL-3/6, rat 360-min LC50	ppm
2108	Oxydiacetic acid; (Oxodiacetic acid)	110-99-6	1.5	17	99	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2109	Oxydiethylenedicarbonic acid, diallyl ester	142-22-3	4.7	51	100	TEEL-2/11, rat dermal TDLo, rat oral LD50	mg/m <sup>3</sup>
2110	Oxydiphenoxarsine, 10,10'-; (Phenoxarsine oxide)	58-36-6	5	14	84	MW-adjusted organic arsenic (7440-38-2) PEL-TWA x 3, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2111	Oxydisulfoton	2497-07-6	0.32	3.5	21	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2112	<b>Oxygen difluoride; (Fluorine monoxide)</b>	<b>7783-41-7</b>	0.0075	<b>0.083</b>	<b>0.25</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2113	Ozone	10028-15-6	0.24	1	10	TEEL-2/11, EEGL 60-min, IDLH (1990)	ppm
2114	Palladium	7440-05-3	6	66	400	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2115	Palladium chloride (Palladium(II) chloride)	7647-10-1	8.1	89	540	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2116	Palladium hydroxide	12135-22-7	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>
2117	Palladium nitrate	10102-05-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2118	Palladium oxide	1314-08-5	15	160	970	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2119	Paraffin waxes, petroleum, clay-treated, reaction products with petroleum white mineral oil, stearic acid and triethanolamine	71808-29-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2120	Paraffin, n-	8002-74-2	6	66	400	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2121	Paraformaldehyde	30525-89-4	2	23	47	TEEL-2/11, rat oral TDLo, rat 240-min LC50	mg/m <sup>3</sup>
2122	Paraldehyde	123-63-7	14	150	930	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	mg/m <sup>3</sup>
2123	Paraquat	4685-14-7	0.3	4.4	26	TLV-TWA x 3, TEEL-3/6, rat ip LDLo	mg/m <sup>3</sup>
2124	Paraquat dichloride	1910-42-5	0.15	1.6	9.6	TEEL-2/11, TEEL-3/6, monkey oral LD50	mg/m <sup>3</sup>
2125	Paraquat methosulfate; (Paraquat dimethyl sulphate)	2074-50-2	0.014	0.15	20	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
2126	<b>Parathion</b>	<b>56-38-2</b>	0.15	<b>1.5</b>	<b>2.0</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
2127	Paris Green; (Cupric acetoarsenite)	12002-03-8	3.4	22	130	MW-adjusted organic arsenic (7440-38-2) PEL-TWA x 3, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2128	PBX (mixture of HMX and nitrocellulose [CTN])	z-0038	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2129	<b>Pentaborane</b>	<b>19624-22-7</b>	0.015	<b>0.14</b>	<b>0.51</b>	TLV-STEL, <b>AEGL-2, AEGL-3</b>	ppm
2130	Pentachlorobenzene	608-93-5	4.4	49	220	TEEL-2/11, mouse oral TDLo, rat oral LD50	mg/m <sup>3</sup>

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			PAC-1	PAC-2	PAC-3		
2131	Pentachlorodibenzofuran, 1,2,3,7,8-	57117-41-6	0.0043	0.046	0.28	Used TCDD (1746-01-6) PACs divided by TEF = 0.03 (See white paper)	mg/m <sup>3</sup>
2132	Pentachlorodibenzofuran, 2,3,4,7,8-	57117-31-4	4.30E-04	0.0046	0.028	Used TCDD (1746-01-6) PACs divided by TEF = 0.3 (See white paper)	mg/m <sup>3</sup>
2133	Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	40321-76-4	1.30E-04	0.0014	0.0085	Used TCDD (1746-01-6) PACs divided by TEF = 1 (See white paper)	mg/m <sup>3</sup>
2134	Pentachloroethane	76-01-7	130	730	1,200	MAK-TWA x 3, mouse 120-min TCLo, rat 120-min LC50	mg/m <sup>3</sup>
2135	Pentachloronitrobenzene	82-68-8	1.5	28	62	TLV-TWA x 3, mouse oral TDLo, rat 240-min LC50	mg/m <sup>3</sup>
2136	Pentachlorophenol	87-86-5	1	15	150	TLV-STEL, LOC, IDLH (1990)	mg/m <sup>3</sup>
2137	Pentadecafluorooctanoic acid	335-67-1	1.1	12	75	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
2138	Pentadecane	629-62-9	1.3	15	87	TEEL-2/11, TEEL-3/6, mouse iv LD50	ppm
2139	Pentadecanoic acid	1002-84-2	0.018	0.2	1.2	TEEL-2/11, TEEL-3/6, mouse iv LD50	ppm
2140	Pentadecylamine	2570-26-5	0.18	2	40	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
2141	Pentaerythritol	115-77-5	30	90	540	TLV-TWA x 3, TEEL-3/6, rat 360-min LCLo	mg/m <sup>3</sup>
2142	Pentaerythritol tetra(3-mercaptopropionate), reaction products with 2-(hydroxymethyl)-2-((3-mercaptopropoxy)methyl)-1,3-propanediyl bis(3-mercaptopropionate) and 1-octene	95823-35-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2143	Pentaerythritol tetranitrate	78-11-5	1.2	13	330	TEEL-2/11, rabbit oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2144	Pentafluorobenzoic acid	602-94-8	0.58	6.4	39	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2145	Pentafluoropropane, 1,1,1,3,3-	460-73-1	900	25,000	1.50E+05	WEEL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	ppm
2146	Pentane, n-	109-66-0	3000*	33000***	200000***	TLV-TWA (pentane, all isomers) x 3, TEEL-1 x 11, TEEL-2 x 6 (See white paper)	ppm
2147	Pentanediol, 1,5-	111-29-5	6	66	400	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2148	Pentanedione, 2,4-; (Acetylacetone)	123-54-6	75	110	200	TLV-TWA x 3, rat 360-min TCLo, rat 55-min LC50	ppm
2149	Pentanenitrile; (Valeronitrile)	110-59-8	0.092	1	6.1	TEEL-2/11, TEEL-3/6, mouse LD50	ppm
2150	Pentanone, 2-; (Methyl propyl ketone)	107-87-9	150	830	5000*	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
2151	Pentanone, 3-; (Diethyl ketone)	96-22-0	300	830	5000*	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
2152	Pentatriacontane	630-07-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2153	Pentene, 1-	109-67-1	100	1,200	7700**	TEEL-2/11, human 15-min TCLo, rat 240-min LC50	ppm
2154	Pentobarbital sodium; (Nembutal sodium)	57-33-0	0.35	3.9	23	TEEL-2/11, human oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2155	Peptone; (Hydrolyzed protein, Tryptones)	73049-73-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2156	<b>Peracetic acid</b>	<b>79-21-0</b>	<b>0.52</b>	<b>1.6</b>	<b>15</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
2157	Perboric acid, sodium salt	7632-04-4	8	88	530	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2158	Perchloric acid	7601-90-3	0.61	6.7	40	TEEL-2/11, TEEL-3/6, dog oral LD50	ppm
2159	Perchloric acid, zinc salt, hexahydrate	10025-64-6	0.33	3.6	22	TEEL-2/11, TEEL-3/6, mouse ip LDLo	mg/m <sup>3</sup>
2160	<b>Perchloroethylene; (Tetrachloroethylene)</b>	<b>127-18-4</b>	<b>35</b>	<b>230</b>	<b>1,200</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2161	<b>Perchloromethyl mercaptan</b>	<b>594-42-3</b>	<b>0.013</b>	<b>0.30</b>	<b>0.90</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2162	<b>Perchloryl fluoride; (Chlorine oxyfluoride)</b>	<b>7616-94-6</b>	<b>1.5</b>	<b>4</b>	<b>12</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2163	Percoll	65455-52-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2164	Perfluoro compounds, C5-C18; (Fluorinert electronic liquid perfluoro compounds); includes 60164-51-4 and 69991-67-9	86508-42-1	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>
2165	<b>Perfluoroisobutylene; (Octafluoro-sec-butene)</b>	<b>382-21-8</b>	0.01	<b>0.11</b>	<b>0.33</b>	<b>AEGL-2/11, AEGL-2, AEGL-3</b>	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2166	Periodic acid	10450-60-9	0.18	2.1	12	Used MW-adjusted iodic acid (7782-68-5) PAC values	mg/m <sup>3</sup>
2167	Periodic acid, sodium salt	7790-28-5	0.19	2.1	13	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2168	Perlite; (Fused NaKAl silicate, < 1% quartz)	93763-70-3	45	230	1,400	PEL-TWA x 3, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2169	Permafluor E+	z-0039	140	360	2,200	1,2,4-trimethylbenzene (95-63-6) AEGL-1, AEGL-2, TEEL-2 x 6	mg/m <sup>3</sup>
2170	Permafluor-V (85+% toluene)	z-0040	67	560	3,700	Used toluene (108-88-3) AEGL values	ppm
2171	Peroxydicarbonic acid, disodium salt	3313-92-6	3.4	37	220	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2172	Petrolatum	8009-03-8	160	1,800	11,000	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2173	Petroleum asphalt; (Bitumen)	8052-42-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2174	Petroleum coke, calcined	64743-05-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2175	Petroleum distillates; petroleum ether; includes clay-treated light naphthenic [64742-45-6]; low boiling [68477-31-6]; petroleum extracts [64742-06-9]; petroleum base oil [64742-46-7]; petroleum 50 thinner, petroleum spirits [64475-85-0], Soltrol, VM&P naphtha [8032-32-4]; Ligroine, and paint solvent; petroleum paraffins C5-C20 [64771-72-8]; hydrotreated light naphthenic [64742-53-6]; solvent refined light naphthenic [64741-97-5]; and machine coolant 1	8002-05-9	1,100	1,800	40,000	REL-TWA x 3, REL-C, IDLH (1990)	mg/m <sup>3</sup>
2176	Phenacetin; (p-Acetophenetidide)	62-44-2	7.3	80	330	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2177	Phenaglycodol; (Ultran; 2-p-Chlorophenyl-3-methyl-2,3-butanediol)	79-93-6	2.5	27	160	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2178	Phenanthrene	85-01-8	2.1	23	360	TEEL-2/11, rat ip TDLo, rat oral LD50	mg/m <sup>3</sup>
2179	Phenanthroline ferrous sulfate, 1,10-	14634-91-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2180	Phenanthroline, 1,10-	66-71-7	0.25	2.7	16	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2181	<b>Phenol</b>	<b>108-95-2</b>	<b>15</b>	<b>23</b>	<b>200</b>	<b>AEGL-1, AEGL-2, ERPG-3</b>	ppm
2182	Phenol red, sodium salt	34487-61-1	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2183	Phenol, polymer with formaldehyde, oxiranylmethyl ether	28064-14-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2184	Phenolphthalein	77-09-8	1.6	18	200	TEEL-2/11, human oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2185	Phenoxyethanol, 2-; (Phenyl cellosolve)	122-99-6	1.5	16	97	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
2186	<b>Phenyl Chloroformate; (Carbonochloridic acid, phenyl ester)</b>	<b>1885-14-9</b>	0.017	<b>0.19</b>	<b>0.57</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
2187	<b>Phenyl dichloroarsine; (Dichlorophenylarsine)</b>	<b>696-28-6</b>	0.0055	<b>0.061</b>	<b>0.18</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
2188	Phenyl ether; (Diphenyl ether)	101-84-8	2	16	96	TLV-STEL, TEEL-3/6, rat oral LD50	ppm
2189	<b>Phenyl isocyanate</b>	<b>103-71-9</b>	8.70E-04	<b>0.0096</b>	<b>0.029</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
250	<b>Phenyl mercaptan; (benzenethiol, thiophenol)</b>	<b>108-98-5</b>	0.3	<b>0.53</b>	<b>1.6</b>	TLV-TWA x 3, <b>AEGL-2, AEGL-3</b>	ppm
2190	Phenyl-1,2-propanedione, 1-	579-07-7	0.4	4.5	27	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
2191	Phenyl-2-oxazoline, 2-	7127-19-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	ppm
2192	Phenyl-2-propanol, 2-; (Dimethylphenylmethanol)	617-94-7	0.7	7.7	46	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
2193	Phenylacetylene; (Ethyne/benzene)	536-74-3	28	310	1,900	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2194	Phenylazo)aniline, p-(	60-09-3	0.66	7.2	43	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2195	Phenylboric acid; (Benzeneboronic acid)	98-80-6	2.2	24	150	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2196	Phenylcyclohexane; (Cyclohexylbenzene)	827-52-1	20	220	1,300	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
2197	Phenylene diisocyanate, 1,4-	104-49-4	1	11	14	TEEL-2/11, rat 420-min TCLo, rat 240-min LCLo	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2198	Phenylenediamine dihydrochloride, 1,2-	615-28-1	1.7	19	110	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
2199	Phenylenediamine dihydrochloride, 1,4-	624-18-0	0.44	4.9	29	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2200	Phenylenediamine, 1,2-; (o-Phenylenediamine)	95-54-5	0.3	35	210	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2201	Phenylenediamine, 1,3-; (m-Phenylenediamine)	108-45-2	0.3	21	130	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2202	Phenylenediamine, 1,4-; (p-Phenylenediamine)	106-50-3	0.3	6.8	41	TLV-TWA x 3, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
2203	Phenylhydrazine	100-63-0	0.3	6.4	295	TLV-TWA x 3, rat oral TDLo, IDLH (1990)	ppm
2204	Phenylhydrazine hydrochloride	59-88-1	23	250	1,500	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2205	Phenylmagnesium bromide	100-58-3	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR =3)	mg/m <sup>3</sup>
2206	Phenylmercury acetate; (Acetoxyphenylmercury)	62-38-4	2	22	47	TEEL-2/11, LOC, MW-adjusted aryl mercury (7439-97-6) IDLH (1990)	mg/m <sup>3</sup>
2207	Phenylphenol, 2-	90-43-7	29	320	400	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2208	Phenylphosphine	638-21-1	0.0045	0.05	1.7	TEEL-2/11, TLV-C, rat 240-min LC50	ppm
2209	Phenylpropanolamine hydrochloride; (Propadrine hydrochloride)	154-41-6	4.5	49	300	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2210	Phenylsilatrane	2097-19-0	0.091	1	6	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2211	Phenylthiourea; (1-Phenyl-2-thiourea)	103-85-5	0.27	3	18	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2212	Phenyltriethoxysilane	780-69-8	8.5	93	560	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2213	Phenyltrimethoxysilane	2996-92-1	0.59	6.5	39	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
2214	Phenylxylylethane; (PXE)	6196-95-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2215	Phloroglucinol dihydrate	6099-90-7	2.2	24	140	TEEL-2/11, TEEL-3/6, mouse ip LDLo	mg/m <sup>3</sup>
2216	<b>Phorate</b>	<b>298-02-2</b>	0.0036	<b>0.040</b>	<b>0.12</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2217	Phosacetim	4104-14-7	0.34	3.7	11	TEEL-2/11, LOC, dog oral LD50	mg/m <sup>3</sup>
2218	Phosfolan	947-02-4	0.82	9	54	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2219	<b>Phosgene</b>	<b>75-44-5</b>	0.027	<b>0.30</b>	<b>0.75</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
2220	<b>Phosgene oxime</b>	<b>1794-86-1</b>	<b>0.028</b>	<b>0.083</b>	<b>13</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
2221	Phosmet	732-11-6	0.049	0.54	77	TEEL-2/11, LOC, rat 60-min LC50	mg/m <sup>3</sup>
2222	Phosphamidon; (Famfos)	13171-21-6	0.027	0.3	21	TEEL-2/11, LOC, dog oral LD50	mg/m <sup>3</sup>
2223	<b>Phosphine</b>	<b>7803-51-2</b>	1	<b>2.0</b>	<b>3.6</b>	TLV-STEL, <b>AEGL-2, AEGL-3</b>	ppm
2224	Phosphomolybdic acid	11104-88-4	2.5	27	160	MW-adjusted soluble molybdenum (7439-98-7) TLV-TWA x 3, TEEL-2 x 11, TEEL-3 x 6	mg/m <sup>3</sup>
2225	Phosphonic acid	13598-36-2	1.2	13	380	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2226	Phosphonic acid, dioctadecyl ester	19047-85-9	9.5	100	630	Used phosphonic acid, tridodecyl ester (3076-63-9) PAC values	mg/m <sup>3</sup>
2227	Phosphonic acid, methyl-, mono(1-methylethyl) ester; (Isopropyl methylphosphonic acid)	1832-54-8	21	230	1,400	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2228	Phosphonic acid, tridodecyl ester	3076-63-9	9.5	100	630	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2229	Phosphonoacetic acid	4408-78-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2230	<b>Phosphoric acid</b>	<b>7664-38-2</b>	<b>3</b>	<b>30</b>	<b>150</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	mg/m <sup>3</sup>
2231	Phosphoric acid, dimethyl-p-(methylthio)phenyl ester	3254-63-5	0.64	7	42	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2232	Phosphorodifluoridic acid, ethyl ester; (Ethyl phosphorodifluoridate)	460-52-6	26	280	1,700	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
2233	Phosphorodifluoridic acid, methyl ester	22382-13-4	23	250	1,500	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>

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			PAC-1	PAC-2	PAC-3		
2234	Phosphorous acid, o-; (Phosphonic acid)	10294-56-1	3	30	150	Used phosphoric acid (7664-38-2) ERPG values	mg/m <sup>3</sup>
2235	Phosphorous pentafluoride	7647-19-0	2	22	130	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990) converted to ppm	ppm
2236	Phosphorous trifluoride	7783-55-3	3.2	35	210	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990) converted to ppm	ppm
2237	Phosphorus (red)	7723-14-0	0.27	3	18	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2238	Phosphorus (yellow); (White phosphorus)	12185-10-3	0.3	0.91	5.5	TLV-TWA x 3, TEEL-3/6, dog oral LDLo	mg/m <sup>3</sup>
2239	<b>Phosphorus oxychloride</b>	<b>10025-87-3</b>	0.3	0.48	<b>0.85</b>	TLV-TWA x 3, LOC, <b>AEGL-3</b>	ppm
2240	Phosphorus pentachloride	10026-13-8	2.6	20	200	TEEL-2/11, LOC, IDLH (1990)	mg/m <sup>3</sup>
2241	Phosphorus pentasulfide	1314-80-3	3	130	750	TLV-STEL, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
2242	<b>Phosphorus pentoxide</b>	<b>1314-56-3</b>	<b>1</b>	<b>10</b>	<b>50</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	mg/m <sup>3</sup>
2243	<b>Phosphorus trichloride</b>	<b>7719-12-2</b>	<b>0.34</b>	<b>2.0</b>	<b>5.6</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2244	Phosphorus trioxide	1314-24-5	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2245	Phthalic acid	88-99-3	24	260	1,600	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2246	Phthalic acid, benzyl butyl ester; (Benzyl butyl phthalate)	85-68-7	15	77	460	United Kingdom OEL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2247	Phthalic anhydride	85-44-9	18	56	10,000	TLV-TWA x 3, rat oral TDLo, IDLH (1990)	mg/m <sup>3</sup>
2248	Phthaloyl dichloride; (Phthaloyl chloride)	88-95-9	0.14	1.6	9.5	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	ppm
2249	Phyllomedusin	26145-48-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2250	Physostigmine	57-47-6	0.41	4.5	27	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2251	Physostigmine salicylate (1:1)	57-64-7	0.23	2.5	15	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>

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\* indicates 10% LEL ≤ PAC < 50% LEL; \*\* indicates 50% LEL ≤ PAC < 100% LEL; \*\*\* indicates PAC ≥ LEL.

**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2252	Picolinic acid; (2-Pyridinecarboxylic acid)	98-98-6	1.2	13	78	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2253	Picric acid	88-89-1	0.3	17	100	REL-STEL, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
2254	Picrotoxin; (Cocculin; PTX)	124-87-8	0.024	0.27	1.6	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2255	Pigment green 36	14302-13-7	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2256	Pigment yellow 13; (Butanamide, 2,2'-((3,3'-dichloro(1,1'-biphenyl)-4,4'-diyl)bis(azo))bis(N-(2,4-dimethylphenyl)-3-oxo-))	5102-83-0	5.2	57	990	TEEL-2/11, rat 360-min TCLo, rat oral LD50	mg/m <sup>3</sup>
2257	Pigment yellow 14	5468-75-7	15	170	990	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2258	Pinacolone; (3,3-Dimethyl-2-butanone)	75-97-8	0.45	4.9	30	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
2259	Pinacolyl alcohol; (tert-Butyl methyl carbinol)	464-07-3	1.9	21	130	TEEL-2/11, TEEL-3/6, rat 138-min LCLo	ppm
2260	Piperazine	110-85-0	0.09	8.9	54	TLV-TWA x 3, TEEL-3/6, mouse 120-min LC50	ppm
2261	<b>Piperidine</b>	<b>110-89-4</b>	<b>6.6</b>	<b>33</b>	<b>110</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2262	Piperonyl butoxide	51-03-6	6.5	72	1,200	TEEL-2/11, rat 360-min TCLo, rat oral LD50	mg/m <sup>3</sup>
2263	Pirimifos-ethyl	23505-41-1	2.3	25	28	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
2264	Pivalic anhydride; (Trimethylacetic anhydride)	1538-75-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2265	Platinum	7440-06-4	3	33	200	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2266	Platinum cyanide	592-06-3	0.0076	0.083	0.5	MW-adjusted soluble platinum (7440-06-4) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2267	Poly alpha olefin; (Synthetic hydrocarbon mixture, PAO; Hydrogenated trimer and tetramer of decene)	68649-12-7	2	22	130	TEEL-2/11, TEEL-3/6, rat 60-min LC50	mg/m <sup>3</sup>
2268	Poly(1-(2-oxo-1-pyrrolidinyl)ethylene)iodine complex; (Iodine solutions)	25655-41-8	3.8	42	250	TEEL-2/11, TEEL-3/6, rat iv LD50	mg/m <sup>3</sup>
2269	Poly(1-vinyl-2-pyrrolidinone) homopolymer; (Polyvinylpyrrolidone; Plasdone)	9003-39-8	51	560	20,000	TEEL-2/11, rat iv TDLo, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2270	Poly(acrylamide-co-diallyldimethylammonium chloride)	26590-05-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2271	Poly(dimethylsiloxane), ethoxylated, dihydroxy terminated; (Silicon oil polymer)	68037-63-8	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>
2272	Poly(dimethylsiloxane), hydride terminated	70900-21-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2273	Poly(dimethylsiloxane), vinyl dimethylsiloxy terminated	68083-19-2	48	530	3,200	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2274	Poly(divinylbenzene); (Diethenylbenzene homopolymer)	9003-69-4	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
2275	Poly(ethylene glycol methyl ether)	9004-74-4	66	730	4,400	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2276	Poly(ethylene glycol)diacrylate	26570-48-9	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2277	Poly(melamine-co-formaldehyde), methylated	68002-20-0	44	490	2,900	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2278	Poly(oxy-1,2-ethanediyl), alpha-(4-octylphenyl)-omega-hydroxy-; (Polyethylene glycol mono(p-octylphenol)ether)	26636-32-8	1.2	14	81	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
2279	Poly(oxyethylene)(2) stearyl ether	9005-00-9	5.7	63	380	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2280	Poly(styrene-co-divinylbenzene); (Dowex Optipore V-502)	69011-14-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2281	Poly[oxy(methyl-1,2-ethanediyl)], alpha-hydro-omega-(2-aminomethylethoxy)-, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1); (Polyoxypropylene polyamine)	39423-51-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2282	Polyamide 6; (Capron; Poly(iminocarbonylpentamethylene))	25038-54-4	2.3	25	150	TEEL-2/11, TEEL-3/6, mouse 30-min LC50	mg/m <sup>3</sup>
2283	Polybutyl acrylate	9003-49-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2284	Polychlorinated biphenyl (Aroclor 1016); (Chlorodiphenyl (41% Cl))	12674-11-2	5.6	62	460	TEEL-2/11, mouse oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2285	Polychlorinated biphenyl (Aroclor 1016/1242); (Chlorodiphenyl (37% Cl))	z-0042	13	140	860	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2286	Polychlorinated biphenyl (Aroclor 1221); (Chlorodiphenyl (21% Cl))	11104-28-2	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2287	Polychlorinated biphenyl (Aroclor 1232); (Chlorodiphenyl (32% Cl))	11141-16-5	13	150	890	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2288	Polychlorinated biphenyl (Aroclor 1242); (Chlorodiphenyl (42% Cl))	53469-21-9	3	140	840	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2289	Polychlorinated biphenyl (Aroclor 1248); (Chlorodiphenyl (48% Cl))	12672-29-6	6.6	72	2,200	TEEL-2/11, rat ip TDLo, rat oral LD50	mg/m <sup>3</sup>
2290	Polychlorinated biphenyl (Aroclor 1254); (Chlorodiphenyl (54% Cl))	11097-69-1	1.5	68	200	TLV-TWA x 3, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2291	Polychlorinated biphenyl (Aroclor 1260); (Chlorodiphenyl (60% Cl))	11096-82-5	0.41	4.5	260	TEEL-2/11, rat ip TDLo, rat oral LD50	mg/m <sup>3</sup>
2292	Polychlorinated biphenyl (Aroclor 1260/1262); (Chlorodiphenyl (61% Cl))	z-0043	0.41	4.5	260	TEEL-2/11, rat ip TDLo, rat oral LD50	mg/m <sup>3</sup>
2293	Polychlorinated biphenyl (Aroclor 1262); (Chlorodiphenyl (62% Cl))	37324-23-5	34	370	2,200	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2294	Polychlorinated biphenyl (Aroclor 1268); (Chlorodiphenyl (68% Cl))	11100-14-4	33	360	2,200	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2295	Polychlorinated biphenyl; (Aroclor; PCBs)	1336-36-3	13	140	840	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2296	Polydimethyl siloxane; (Dimethylpolysiloxane)	9016-00-6	6.8	75	450	TEEL-2/11, TEEL-3/6, dog ip LDLo	mg/m <sup>3</sup>
2297	Polyether polyol ester	z-0112	7.9	87	520	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
2298	<b>Polyethylbenzene residue; (Dowtherm Q)</b>	<b>68987-42-8</b>	14	<b>150</b>	900	ERPG-2/11, <b>ERPG-2</b> , ERPG-2 x 6	ppm
2299	Polyethylene	9002-88-4	28	310	1,000	TEEL-2/11, mouse oral TDLo, rat 30-min LC50	mg/m <sup>3</sup>
2300	Polyethylene glycol	25322-68-3	30	1,300	7,700	WEEL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2301	Polyethylene glycol 20M	37225-26-6	30	1,300	7,700	Used polyethylene glycol (25322-68-3) PAC values	mg/m <sup>3</sup>
2302	Polyethylene glycol dimethacrylate	25852-47-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2303	Polyglycol 15-200; (Oxirane, 2-methyl-, polymer with oxirane, ether with 1,2,3-propanetriol (3:1); Calthane NF and ND "B")	9082-00-2	30	330	2,000	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2304	Polyisocyanate prepolymer	z-0115	0.45	5	55	Used methylene diphenyl diisocyanate (101-68-8) PAC values	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2305	Polymaleic acid; (2-Butenedioic acid (2Z)-, homopolymer)	26099-09-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2306	Polymethylene polyphenyl isocyanate; (Polymeric diphenylmethane diisocyanate)	9016-87-9	0.15	3.6	22	MAK-TWA x 3, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
2307	Polymethylhydrosiloxane; (Methyl hydrogen polysiloxane)	63148-57-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2308	Polymethylmethacrylate; (Lucite)	9011-14-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2309	Polyoxyalkyleneamine; (Poly(oxypropylene)diamine)	9046-10-0	0.73	8	48	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2310	Polyoxyethylene monoocetylphenyl ether	9036-19-5	13	140	830	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2311	Polyphosphoric acid	8017-16-1	3	30	150	Used phosphoric acid (7664-38-2) ERPG values	mg/m <sup>3</sup>
2312	Polypropylene	9003-07-0	5.2	58	350	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2313	Polypropylene glycol, (chloromethyl) oxirane polymer	9072-62-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2314	Polypropylene glycol, polytetramethylene glycol, 1,3-diisocyanatomethylbenzene polymer	65636-36-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2315	Polypropylene glycols	25322-69-4	30	330	2,000	WEEL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2316	Polypropylene-polyethylene glycol; (Pluronic L-81)	9003-11-6	6.9	76	460	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2317	Polysorbate 85; (Tween 85)	9005-70-3	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>
2318	Polystyrene resin; (Styrene polymer)	9003-53-6	0.59	6.4	790	TEEL-2/11, rat iv TDLo, rat 30-min LC50	mg/m <sup>3</sup>
2319	Polysulfone resin	25135-51-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2320	Polytetrafluoroethylene; (Teflon)	9002-84-0	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
2321	Polyurethane foam; (Urethane polymers)	9009-54-5	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
2322	Polyurethane prepolymer of MDI and PEP	68092-58-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2323	Polyvinyl alcohol	9002-89-5	24	270	1,600	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2324	Polyvinyl chloride	9002-86-2	3	33	200	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2325	Potassium	7440-09-7	2.3	25	150	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2326	Potassium acetate	127-08-2	9.8	110	640	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2327	Potassium acid fluoride	7789-29-9	15	170	1,000	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
2328	Potassium aluminate	12003-63-3	22	240	1,400	MW-adjusted soluble aluminum (7429-90-5) REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2329	Potassium aluminite	z-0044	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2330	Potassium aluminosilicate	1327-44-2	35	400	2,400	MW-adjusted soluble aluminum (7429-90-5) REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2331	Potassium antimonate; (Antimony potassium oxide)	29638-69-5	3.2	28	170	MW-adjusted antimony (7440-36-0) TLV-TWA x 3, TEEL-3/6, MW-adjusted antimony IDLH (1990)	mg/m <sup>3</sup>
2332	Potassium antimonate; (Potassium hexahydroxyantimonate)	12208-13-8	3.2	28	170	MW-adjusted antimony (7440-36-0) TLV-TWA x 3, TEEL-3/6, MW-adjusted antimony IDLH (1990)	mg/m <sup>3</sup>
2333	Potassium antimonite	z-0045	2.8	25	150	MW-adjusted antimony (7440-36-0) TLV-TWA x 3, TEEL-3/6, MW-adjusted antimony IDLH (1990)	mg/m <sup>3</sup>
2334	Potassium argentate	z-0046	0.05	0.56	3.4	MW-adjusted soluble silver (7440-38-2) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2335	Potassium arsenate; (Monopotassium arsenate)	7784-41-0	3.6	40	240	TEEL-2/11, TEEL-3/6, MW-adjusted arsenic (7440-38-2) IDLH (1990)	mg/m <sup>3</sup>
2336	Potassium arsenite; (Arsenous acid, potassium salt)	13464-35-2	2.9	32	190	TEEL-2/11, TEEL-3/6, MW-adjusted arsenic (7440-38-2) IDLH (1990)	mg/m <sup>3</sup>
2337	Potassium beryllium oxide	z-0047	0.018	0.2	0.8	Used MW-adjusted beryllium (7440-41-7) PAC values	mg/m <sup>3</sup>
2338	Potassium bicarbonate	298-14-6	140	1,600	9,500	TEEL-2/11, rat oral TDLo, TEEL-2 x 6	mg/m <sup>3</sup>
2339	Potassium bi-iodate	13455-24-8	1.1	13	76	TEEL-2/11, TEEL-3/6, mouse oral LDLo	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2340	Potassium bismuthate	12589-75-2	3.3	36	220	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2341	Potassium bisulfate	7646-93-7	7	77	460	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2342	Potassium bromate	7758-01-2	0.3	3.1	89	WEEL-TWA x 3, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2343	Potassium bromide	7758-02-3	9.2	100	610	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2344	Potassium cadminate	z-0048	0.23	1.7	11	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
2345	Potassium carbonate	584-08-7	0.55	6	370	TEEL-2/11, rat 360-min TCLo, rat oral LD50	mg/m <sup>3</sup>
2346	Potassium chlorate	3811-04-9	5.6	62	370	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2347	Potassium chloride	7447-40-7	7.8	86	510	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2348	Potassium chromate(VI)	7789-00-6	0.56	9.7	58	MW-adjusted chromium (VI) (7440-47-3) TLV-TWA x 3, MW-adjusted chromates (1333-82-0) IDLH (1990)	mg/m <sup>3</sup>
2349	Potassium citrate	866-84-2	2.1	23	140	TEEL-2/11, TEEL-3/6, dog iv LD50	mg/m <sup>3</sup>
2350	Potassium citrate, monohydrate	6100-05-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2351	Potassium columbate; (Potassium niobate)	12030-85-2	9	99	590	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2352	<b>Potassium cyanide</b>	<b>151-50-8</b>	<b>5.3</b>	<b>19</b>	<b>40</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
2353	Potassium dichromate	7778-50-9	0.42	8.8	44	MW-adjusted soluble chromium (VI) (7440-47-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted chromates (1333-82-0) IDLH (1990)	mg/m <sup>3</sup>
2354	Potassium dideuterium phosphate	13761-79-0	9.6	110	630	Used potassium phosphate (7778-77-0) PAC values	mg/m <sup>3</sup>
2355	Potassium ferricyanide	13746-66-2	13	18	110	MW-adjusted cyanides MAK-TWA x 3, TEEL-3/6, MW-adjusted cyanides IDLH (1990)	mg/m <sup>3</sup>

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 \* indicates 10% LEL ≤ PAC < 50% LEL; \*\* indicates 50% LEL ≤ PAC < 100% LEL; \*\*\* indicates PAC ≥ LEL.

**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2356	Potassium ferrocyanide; (Tetrapotassium hexacyanoferrate)	13943-58-3	14	20	120	MW-adjusted cyanides MAK-TWA x 3, TEEL-3/6, MW-adjusted cyanides IDLH (1990)	mg/m <sup>3</sup>
2357	Potassium fluoride	7789-23-3	23	250	1,500	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
2358	Potassium fluoride dihydrate	13455-21-5	37	420	2,500	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
2359	Potassium formate	590-29-4	9	99	600	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2360	Potassium glycolate	1932-50-9	6	65	410	Used MW-adjusted sodium glycolate (2836-32-0) PAC values	ppm
2361	Potassium gold cyanide	554-07-4	33	47	280	Used MW-adjusted cyanide (57-12-5) PAC values	mg/m <sup>3</sup>
2362	Potassium hexacyanoferrate(II) trihydrate; (Potassium ferricyanide trihydrate)	14459-95-1	16	23	140	Used MW-adjusted cyanide (57-12-5) PAC values	mg/m <sup>3</sup>
2363	Potassium hexafluorosilicate; (Silicate(2-), hexafluoro-, dipotassium)	16871-90-2	0.47	5.1	31	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2364	Potassium hydride	7693-26-7	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2365	Potassium hydrogen lead oxide	z-0049	0.2	160	940	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
2366	Potassium hydrogen metasilicate	z-0051	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2367	Potassium hydrogen pyrophosphate	z-0050	54	600	1,100	Used MW-adjusted potassium pyrophosphate (7320-34-5) PAC values	mg/m <sup>3</sup>
2368	Potassium hydroxide	1310-58-3	0.18	2	54	TEEL-2/11, TLV-C, rat oral LD50	mg/m <sup>3</sup>
2369	Potassium iminodiacetate; (Potassium IDA)	z-0052	3.9	44	260	Used MW-adjusted disodium iminodiacetate (928-72-3) PAC values	ppm
2370	Potassium iodate	7758-05-6	0.45	4.9	29	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2371	Potassium iodide	7681-11-0	1.3	15	87	TEEL-2/11, TEEL-3/6, rat iv LDLo	mg/m <sup>3</sup>
2372	Potassium lanthanate	z-0053	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2373	Potassium metaarsenite; (Potassium arsenite)	10124-50-2	1.3	14	530	TEEL-2/11, LOC, MW-adjusted arsenic (7440-38-2) IDLH (1990)	mg/m <sup>3</sup>
2374	Potassium metaborate	13709-94-9	6.8	77	460	Used sodium metaborate (7775-19-1) PAC values	mg/m <sup>3</sup>
2375	Potassium molybdate; (Molybdic acid, dipotassium salt)	13446-49-6	3.7	40	240	MW-adjusted molybdenum (7439-98-7) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2376	Potassium nickel oxide (liquids); (Nickel potassium oxide)	50811-97-7	0.86	9.6	57	MW-adjusted soluble nickel (7440-02-0) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2377	Potassium nickelate	z-0055	1	12	69	MW-adjusted soluble nickel (7440-02-0) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2378	Potassium nitrate	7757-79-1	9	100	600	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2379	Potassium nitrilotriacetate; (Potassium NTA)	2399-85-1	3.7	40	240	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2380	Potassium nitrite	7758-09-0	4.1	45	3,000	TEEL-2/11, rat oral TDLo, mouse 120-min LC50	mg/m <sup>3</sup>
2381	Potassium orthovanadate	14293-78-8	0.021	0.23	160	TEEL-2/11, MW-adjusted vanadium (1314-62-1) REL-C and IDLH (1994, See white paper)	mg/m <sup>3</sup>
2382	Potassium oxalate	583-52-8	2	22	130	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2383	Potassium oxalate monohydrate	6487-48-5	2	22	130	Used potassium oxalate (583-52-8) PAC values	mg/m <sup>3</sup>
2384	Potassium oxide	12136-45-7	0.18	2	54	Used potassium hydroxide (1310-58-3) PAC values	mg/m <sup>3</sup>
2385	Potassium perchlorate	7778-74-7	6.3	69	420	Used sodium perchlorate (7601-89-0) PAC values	mg/m <sup>3</sup>
2386	Potassium periodate	7790-21-8	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2387	Potassium permanganate	7722-64-7	8.6	14	150	MW-adjusted manganese (1317-35-7) REL-STEL and PEL-C, rat oral LD50	mg/m <sup>3</sup>
2388	Potassium peroxymonosulfate; (Peroxymonosulfuric acid, monopotassium salt)	10058-23-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2389	Potassium persulfate; (Dipotassium persulfate)	7727-21-1	0.3	26	160	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2390	Potassium phosphate, dibasic	7758-11-4	13	140	830	Used MW-adjusted potassium phosphate, monobasic (7778-77-0) PAC values	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2391	Potassium phosphate, dibasic trihydrate	16788-57-1	16	180	1,100	Used MW-adjusted potassium phosphate, monobasic (7778-77-0) PAC values	mg/m <sup>3</sup>
2392	Potassium phosphate, monobasic	7778-77-0	9.6	110	630	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2393	Potassium phosphate, tribasic	7778-53-2	15	170	980	Used MW-adjusted potassium phosphate, monobasic (7778-77-0) PAC values	mg/m <sup>3</sup>
2394	<b>Potassium phosphide</b>	<b>20770-41-6</b>	0.18	<b>2.0</b>	<b>3.6</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
2395	Potassium pyrophosphate; (Tetrapotassium diphosphate)	7320-34-5	61	680	1,200	TEEL-2/11, rat oral TDLo, rat oral LDLo	mg/m <sup>3</sup>
2396	Potassium pyrosulfate; (Disulfuric acid, dipotassium salt)	7790-62-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2397	Potassium pyrosulfite; (Potassium metabisulfite)	16731-55-8	5.4	59	360	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2398	Potassium selenate	7790-59-2	1.7	18	110	Used MW-adjusted selenium (7782-49-2) PAC values	mg/m <sup>3</sup>
2399	Potassium selenite	10431-47-7	1.6	17	100	Used MW-adjusted selenium (7782-49-2) PAC values	mg/m <sup>3</sup>
2400	Potassium silicate; (Silicic acid, potassium salt)	1312-76-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2401	Potassium silver cyanide	506-61-6	2.9	32	190	TEEL-2/11, TEEL-3/6, MW-adjusted cyanides IDLH (1990)	mg/m <sup>3</sup>
2402	Potassium stannate	12142-33-5	12	140	810	MW-adjusted tin (7440-31-5) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2403	Potassium strontium phosphate	53201-92-6	16	180	1,000	Used MW-adjusted potassium phosphate, monobasic (7778-77-0) PAC values	mg/m <sup>3</sup>
2404	Potassium sulfate (2:1); (Dipotassium sulfate)	7778-80-5	20	220	1,300	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2405	Potassium sulfite	10117-38-1	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>
2406	Potassium tellurate	15571-91-2	0.63	6.9	42	Used MW-adjusted tellurium (13494-80-9) PAC values	mg/m <sup>3</sup>
2407	Potassium tellurite	7790-58-1	0.6	6.6	40	Used MW-adjusted tellurium (13494-80-9) PAC values	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2408	Potassium tetrafluoroborate(1-)	14075-53-7	12	140	830	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
2409	Potassium tetraphenylborate	3244-41-5	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
2410	Potassium thiocyanate	333-20-0	2.6	28	170	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2411	Potassium trihydrogen silicate	z-0058	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2412	Potassium tungstate	7790-60-5	5.3	58	350	Used MW-adjusted soluble tungsten (7440-33-7) PAC values	mg/m <sup>3</sup>
2413	Potassium uranyl carbonate	17871-80-6	1.5	13	76	MW-adjusted insoluble uranium (7440-61-1) TLV-STEL, TEEL-3/6, MW-adjusted uranium IDLH (1990)	mg/m <sup>3</sup>
2414	Potassium zirconate; (Potassium zirconium oxide; Dipotassium zirconate)	12030-98-7	24	200	1,200	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
2415	Potassium-tert-butoxide; (tert-Butyl alcohol, potassium derivitave)	865-47-4	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2416	Praseodymium	7440-10-0	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2417	Praseodymium (III, IV) oxide	12037-29-5	15	170	990	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2418	Praseodymium nitrate	10361-80-5	5.6	61	370	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2419	Praseodymium oxide	12036-32-7	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
2420	Promecarb; (m-Cym-5-yl methylcarbamate)	2631-37-0	1.5	16	96	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2421	Propanamine, 1-; (Propylamine)	107-10-8	5.4	59	100	TEEL-2/11, rat 420-min TCLO, rat 240-min LC50	ppm
2422	<b>Propane</b>	<b>74-98-6</b>	<b>5500*</b>	<b>17000**</b>	<b>33000***</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2423	Propane sultone, 1,3-	1120-71-4	1.6	18	110	TEEL-2/11, TEEL-3/6, rat 360-min LCLo	mg/m <sup>3</sup>
2424	Propanediamine, 1,2-	78-90-0	6.7	74	440	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2425	Propanediamine, 1,3-	109-76-2	0.93	10	61	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2426	<b>Propanedinitrile; (Malononitrile)</b>	<b>109-77-3</b>	0.07	<b>0.77</b>	<b>2.3</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
2427	Propanediol, 1,3-	504-63-2	7.8	86	520	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2428	Propanediol, 2,2-dimethyl-1,3-	126-30-7	29	320	1,900	TEEL-2/11, TEEL-3/6, rat 360-min LCLo	ppm
2429	Propanethiol; (n-Propylmercaptan)	107-03-9	0.045	0.5	320	TEEL-2/11, REL-C, rat 240-min LC50	ppm
2430	Propanol, zirconium(4+) salt, 1-	23519-77-9	36	300	1,800	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
2431	<b>Propargyl alcohol</b>	<b>107-19-7</b>	<b>2.5</b>	<b>16</b>	<b>72</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2432	Propargyl bromide	106-96-7	1.4	63	380	WEEL-TWA x 3, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>
2433	Propiolactone, b-	57-57-8	1.5	5	30	TLV-TWA x 3, TEEL-3/6, mouse ip LD50	ppm
2434	<b>Propionaldehyde</b>	<b>123-38-6</b>	<b>45</b>	<b>260</b>	<b>840</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2435	Propionic acid	79-09-4	15	28	170	REL-STEL, TEEL-3/6, rat oral LD50	ppm
2436	Propionic acid, 3-ethoxy-, ethyl ester; (Ethyl-3-ethoxypropionate)	763-69-9	1.6	18	110	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
2437	Propionic acid, sodium salt	137-40-6	15	170	1,000	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2438	Propionic anhydride	123-62-6	7.1	78	470	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2439	<b>Propionitrile; (Propiononitrile)</b>	<b>107-12-0</b>	0.27	<b>3.0</b>	<b>9.1</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
2440	Propionyl chloride	79-03-8	0.05	0.55	3.3	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
2441	Propoxur (Baygon)	114-26-1	1.5	6.7	40	TLV-TWA x 3, TEEL-3/6, rat 60-min LC50	mg/m <sup>3</sup>
2442	Propoxypropanol, n-; (Propylene glycol monpropyl ether)	30136-13-1	0.93	10	61	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2443	Propyl acetate, n-	109-60-4	250	1,300	8000*	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
2444	<b>Propyl chloroformate; (Propyl chlorocarbonate)</b>	<b>109-61-5</b>	0.34	<b>3.7</b>	<b>11</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
2445	Propyl nitrate	627-13-4	40	330	2000*	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
2446	Propyl-1-butanamine, N-	20193-21-9	3.2	35	210	Used MW-adjusted dipropylamine (142-84-7) PAC values	mg/m <sup>3</sup>
2447	Propylbenzene, n-; (Isocumene)	103-65-1	3	33	2300*	TEEL-2/11, rat oral TDLo, rat 120-min LC50	ppm
2448	Propylene carbonate, 1,2-	108-32-7	3.3	37	220	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
2449	<b>Propylene glycol dinitrate</b>	<b>6423-43-4</b>	<b>0.17</b>	<b>1.0</b>	<b>13</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2450	<b>Propylene glycol monomethyl ether acetate, alpha-isomer; (1-Methoxypropyl-2-acetate)</b>	<b>108-65-6</b>	<b>50</b>	<b>1,000</b>	<b>5000*</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
2451	<b>Propylene glycol monomethyl ether acetate, beta-isomer; (2-Methoxypropyl-1-acetate)</b>	<b>70657-70-4</b>	<b>50</b>	<b>1,000</b>	<b>5,000</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
2452	Propylene glycol monomethyl ether; (Ucar Triol HG-170)	107-98-2	100	160	660	TLV-STEL, rat oral TDLo, rat 240-min LC50	ppm
2453	Propylene glycol mono-n-butyl ether; (3-Butoxy-1-propanol)	10215-33-5	4.3	47	220	TEEL-2/11, rat 420-min TCLo, rat oral LD50	ppm
2454	Propylene glycol; (1,2-Propanediol)	57-55-6	30	1,300	7,900	WEEL-TWA x 3, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>
2455	<b>Propylene oxide; (Methyl ethylene oxide)</b>	<b>75-56-9</b>	<b>73</b>	<b>290</b>	<b>870</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2456	Propylene; (1-Propene)	115-07-1	1,500	2800*	17000**	TLV-TWA x 3, TEEL-3/6, rat 240-minute LC50	ppm
2457	<b>Propyleneimine, 1,2-</b>	<b>75-55-8</b>	0.4	<b>12</b>	<b>23</b>	TLV-STEL, <b>AEGL-2, AEGL-3</b>	ppm
2458	<b>Propyltrichlorosilane</b>	<b>141-57-1</b>	<b>0.60</b>	<b>7.3</b>	<b>33</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2459	Prothoate; (Isopropyl diethyldithiophosphorylacetamide)	2275-18-5	0.15	1.7	10	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2460	Pump oil; (petroleum distillates, solvent de-waxed heavy paraffinic)	64742-65-0	140	1,500	8,900	Used mineral oil, heavy or light (8020-83-5) PAC values	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2461	Pyrene	129-00-0	0.15	1.7	7.5	TEEL-2/11, mouse oral TDLo, rat 240-min LC50	mg/m <sup>3</sup>
2462	Pyrethrin 1; (Cyclopropaneacrylic acid, 2,2-dimethyl-3-(2-methylpropenyl)-, ester with 4-hydroxy-3-methyl-2-(2,4-pentadienyl)-2-cyclopenten-1-one)	121-21-1	3	8.6	51	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2463	Pyridine	110-86-1	3	19	3600*	TLV-TWA x 3, mouse oral TDLo, IDLH (1990)	ppm
2464	Pyridinecarboxaldehyde, 4-; (Isonicotinaldehyde)	872-85-5	3.5	38	230	TEEL-2/11, TEEL-3/6, mouse oral LDLo	mg/m <sup>3</sup>
2465	Pyridine-d5	7291-22-7	3	19	3600*	Used pyridine (110-86-1) PAC values	ppm
2466	Pyriminil; (Pyriminyl)	53558-25-1	0.56	6.2	16	TEEL-2/11, LOC, human oral LDLo	mg/m <sup>3</sup>
2467	Pyrogalllic acid	87-66-1	0.41	4.5	20	TEEL-2/11, rat oral TDLo, human oral LDLo	mg/m <sup>3</sup>
2468	Pyromellitic acid	89-05-4	0.98	11	65	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2469	Pyrrole; (Imidole)	109-97-7	0.12	1.3	7.7	TEEL-2/11, TEEL-3/6, mouse ip LD50	ppm
2470	Pyrrolidine	123-75-1	0.69	7.6	45	TEEL-2/11, TEEL-3/6, mouse 120-min LC50	mg/m <sup>3</sup>
2471	Pyrrolidinone, 2-	616-45-5	6.9	76	460	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
2472	Quaternary ammonium compounds, benzyl-C12-C16-alkyldimethyl, chlorides	68424-85-1	1.3	14	84	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2473	Quaternary ammonium compounds, coco alkylbis(hydroxyethyl)methyl, chlorides; (Methyl bis(2-hydroxyethyl) cocoalkyl quaternary ammonium chlorides)	70750-47-9	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2474	Quaternary ammonium compounds, coco alkylbis(hydroxyethyl)methyl, nitrates (salts); (Methyl bis(2-hydroxyethyl) cocoalkyl quaternary ammonium nitrates)	71487-00-8	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2475	Quinhydrone	106-34-3	0.21	2.3	14	TEEL-2/11, TEEL-3/6, rat iv LD50	mg/m <sup>3</sup>
2476	Quinoline	91-22-5	0.003	2.9	17	WEEL-TWA x 3, TEEL-3/6, rat oral LD50	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2477	Quinolinol, 8-	148-24-3	3.6	40	240	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2478	Red Arrow Insect Spray	z-0117	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2479	Resorcinol	108-46-3	20	28	170	TLV-STEL, TEEL-3/6, dog iv LDLo	ppm
2480	Rexyn I-300; (Ethylene glycol dimethacrylate polymer with styrene, chloromethylated, trimethylamine-quaternized, hydroxide)	69011-49-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2481	Rhenium hexafluoride	10049-17-9	20	220	1,300	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
2482	Rhenium oxide; (Rhenium(VII) oxide)	1314-68-7	3	33	200	Used MW-adjusted soluble tungsten (7440-33-7) PAC values	mg/m <sup>3</sup>
2483	Rhodium	7440-16-6	3	33	200	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2484	Rhodium oxide; (Rhodium(IV) oxide)	12137-27-8	0.039	0.43	2.6	Used MW-adjusted soluble rhodium (7440-16-6) PAC values	mg/m <sup>3</sup>
2485	Rhodium(III) hydroxide	21656-02-0	0.045	0.5	3	Used MW-adjusted soluble rhodium (7440-16-6) PAC values	mg/m <sup>3</sup>
2486	Rhodium(III) oxide (solids)	12036-35-0	3.7	40	240	Used MW-adjusted soluble rhodium (7440-16-6) PAC values	mg/m <sup>3</sup>
2487	Ricin	9009-86-3	8.20E-06	9.00E-05	5.40E-04	TEEL-2/11, TEEL-3/6, rat 10-min LCLo	mg/m <sup>3</sup>
2488	Rosin core solder decomposition products; (Colophony Gum)	8050-09-7	72	790	1,500	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2489	Rotenone	83-79-4	15	420	2,500	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
2490	Rubidium	7440-17-7	3.9	43	260	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2491	Rubidium bromide	7789-39-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2492	Rubidium chloride	7791-11-9	13	150	880	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2493	Rubidium hydroxide	1310-82-3	1.8	19	120	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2494	Rubidium nitrate	13126-12-0	14	150	920	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2495	Ruthenium	7440-18-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2496	Ruthenium trichloride	10049-08-8	2.2	24	140	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
2497	Ruthenium(IV) oxide	12036-10-1	14	150	910	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2498	Safrol; (5-(2-Propenyl)-1,3-benzodioxole)	94-59-7	5.9	64	390	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2499	Salcomine; (bis(Salicylaldehyde)ethylenediimine cobalt(II))	14167-18-1	3.5	39	230	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2500	Salicylaldehyde	90-02-8	1.6	17	100	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2501	Samarium	7440-19-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2502	Samarium chloride	10361-82-7	1.2	13	79	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2503	Samarium nitrate	10361-83-8	6.5	71	430	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2504	Samarium(II) iodide solution	32248-43-4	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
2505	Samarium(III) chloride hexahydrate	13465-55-9	1.7	19	110	Used MW-adjusted samarium chloride (10361-82-7) PAC values	mg/m <sup>3</sup>
2506	Samarium(III) oxide	12060-58-1	15	170	990	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2507	Satratoxin H	53126-64-0	0.0046	0.051	0.3	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2508	Saxitoxin	35523-89-8	2.10E-05	2.30E-04	0.0014	TEEL-2/11, TEEL-3/6, mouse 10-min LC50	mg/m <sup>3</sup>
2509	Scandium	7440-20-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2510	Scandium oxide	12060-08-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2511	Selenious acid	7783-00-8	23	250	1,500	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2512	Selenium	7782-49-2	0.6	6.6	40	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2513	Selenium dioxide	7446-08-4	0.84	1.6	9.5	MW-adjusted selenium (7782-49-2) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2514	<b>Selenium hexafluoride</b>	<b>7783-79-1</b>	<b>0.053</b>	<b>0.087</b>	<b>0.26</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2515	Selenium monosulfide	7446-34-6	0.84	1.3	7.5	MW-adjusted selenium (7782-49-2) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2516	Selenium oxychloride	7791-23-3	1.3	10	60	MW-adjusted selenium (7782-49-2) TLV-TWA x 3, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2517	Selenium sulfide; (Selenium(IV) disulfide (1:2))	7488-56-4	1.1	4.6	27	MW-adjusted selenium (7782-49-2) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2518	Semicarbazide hydrochloride	563-41-7	9.1	100	600	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2519	Sephacryl s-200, superfine	65546-95-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2520	Sephacryl s-300	82785-74-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2521	Sephadex G-25	9041-35-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2522	Shigella, shigatoxin; (shiga-like toxins)	75757-64-1	1.50E-06	1.60E-05	9.70E-05	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
2523	<b>Silane; (Silicon tetrahydride)</b>	<b>7803-62-5</b>	<b>100</b>	<b>130</b>	<b>270</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2524	Silica amorphous hydrated	7631-86-9	18	220	1,300	REL-TWA x 3, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
2525	Silica gel	63231-67-4	18	200	1,200	REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2526	Silica gel dessicant	1343-98-2	18	95	570	REL-TWA x 3, rat 360-min TClO, TEEL-2 x 6	mg/m <sup>3</sup>
2527	Silica gel, amorphous synthetic	112926-00-8	18	200	1,200	REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2528	Silica, amorphous fume	69012-64-2	45	500	3,000	TEEL-2/11, TEEL-3/6, IDLH (1994)	mg/m <sup>3</sup>
2529	Silica, amorphous fumed	112945-52-5	18	100	630	REL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2530	Silica, crystalline-quartz; (Silicon dioxide)	14808-60-7	0.075	33	200	TLV-TWA x 3, TEEL-3/6, rat iv LD50	mg/m <sup>3</sup>
2531	Silicic acid	7699-41-4	0.9	11	67	Swiss OEL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2532	Silicic acid, aluminum calcium sodium salt	1344-01-0	30	330	2,000	MW-adjusted soluble aluminum (7429-90-5) REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2533	Silicic acid, sodium salt; (Sodium silicate)	1344-09-8	5.9	65	390	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2534	Silicofluoric acid; (Fluorosilicic acid)	16961-83-4	9.5	110	630	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
2535	Silicon	7440-21-3	45	100	630	PEL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2536	Silicon carbide	409-21-2	45	500	3,000	PEL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2537	Silicon nitride	12033-89-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2538	<b>Silicon tetrafluoride; (Tetrafluorosilane)</b>	<b>7783-61-1</b>	<b>0.050</b>	<b>3.3</b>	<b>10</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2539	Silicon(II) oxide; (Silicon oxide)	10097-28-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2540	Siloprene k 1000 (Polydimethylsiloxane rubber)	63394-02-5	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
2541	Siloxanes and silicones, dimethyl, reaction products with silica; (Hydrophobic silicon dioxide, amorphous)	67762-90-7	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>
2542	Siloxanes and silicones, methyl phenyl; (Silicon Y-6607; Silicone fluid, high temp)	67762-92-9	1.6	17	100	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
2543	Silver	7440-22-4	0.3	170	990	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2544	Silver carbonate; (Silver(I) carbonate)	534-16-7	11	120	740	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2545	Silver chloride	7783-90-6	22	240	1,400	TEEL-2/11, TEEL-3/6, mouse oral LDLo	mg/m <sup>3</sup>
2546	Silver cyanide	506-64-9	0.37	4.1	24	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2547	Silver hydroxide	12673-77-7	0.035	0.4	2.4	MW-adjusted soluble silver (7440-22-4) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2548	Silver nitrate	7761-88-8	0.047	0.9	5.4	MW-adjusted soluble silver (7440-22-4) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2549	Silver nitrite; (Silver(I) nitrite)	7783-99-5	0.043	0.46	2.8	MW-adjusted soluble silver (7440-22-4) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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			PAC-1	PAC-2	PAC-3		
2550	Silver oxide	20667-12-3	0.3	93	560	MW-adjusted silver dust and fume (7440-22-4) TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2551	Soda lime	8006-28-8	1	240	1,500	Used calcium hydroxide (1305-62-1) PAC values	mg/m <sup>3</sup>
2552	Sodium	7440-23-5	13	140	870	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2553	Sodium acetate	127-09-3	11	120	700	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2554	Sodium acetate trihydrate; (Acetic acid, sodium salt trihydrate)	6131-90-4	11	120	690	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2555	Sodium aluminate anhydrous; (Aluminum sodium dioxide anhydrous)	11138-49-1	18	200	1,200	MW-adjusted soluble aluminum salts (7429-90-5) REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2556	Sodium aluminate; (Aluminum sodium dioxide)	1302-42-7	18	200	1,200	MW-adjusted soluble aluminum salts (7429-90-5) REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2557	Sodium aluminum hydride	13770-96-2	1.2	13	80	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2558	Sodium aluminum silicate; sodium aluminosilicate (1344-00-9)	73987-94-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2559	Sodium antimonate; (Antimonic acid, sodium salt)	11112-10-0	3	27	160	MW-adjusted antimony (7440-36-0) TLV-TWA x 3, TEEL-3/6, MW-adjusted antimony IDLH (1990)	mg/m <sup>3</sup>
2560	Sodium antimonite	z-0061	2.6	23	140	MW-adjusted antimony (7440-36-0) TLV-TWA x 3, TEEL-3/6, MW-adjusted antimony IDLH (1990)	mg/m <sup>3</sup>
2561	Sodium argentate	z-0062	0.046	0.5	3	MW-adjusted soluble silver (7440-22-4) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2562	Sodium arsenate	7631-89-2	4.1	45	270	TEEL-2/11, TEEL-3/6, MW-adjusted arsenic (7440-38-2) IDLH (1990)	mg/m <sup>3</sup>
2563	Sodium arsenite	7784-46-5	0.91	10	170	TEEL-2/11, LOC, MW-adjusted arsenic (7440-38-2) IDLH (1990)	mg/m <sup>3</sup>
2564	Sodium azide	26628-22-8	0.026	0.29	5.3	TEEL-2/11, TLV-C, rat oral LD50	mg/m <sup>3</sup>
2565	Sodium beryllium oxide	z-0063	0.014	0.16	0.62	Used MW-adjusted beryllium (7440-41-7) PAC values	mg/m <sup>3</sup>

Chemicals with AEGLs: large, bolded font. ERPGs (but no AEGLs): bolded font.

\* indicates 10% LEL ≤ PAC < 50% LEL; \*\* indicates 50% LEL ≤ PAC < 100% LEL; \*\*\* indicates PAC ≥ LEL.

**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2566	Sodium bicarbonate	144-55-8	13	140	840	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2567	Sodium bifluoride; (Sodium hydrogen fluoride)	1333-83-1	12	140	820	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
2568	Sodium bis(2-methoxyethoxy) aluminum hydride	22722-98-1	45	500	3,000	MW-adjusted soluble aluminum (7429-90-5) REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2569	Sodium bismuthate	12232-99-4	1.3	14	83	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2570	Sodium bisulfate monohydrate	10034-88-5	0.63	7	42	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2571	Sodium bisulfate; (Sodium acid sulfate)	7681-38-1	0.82	9	54	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
2572	Sodium bisulfite	7631-90-5	15	47	400	TLV-TWA x 3, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2573	Sodium borate decahydrate (Borax)	1303-96-4	6	190	1,100	TLV-STEL, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2574	Sodium borate; (Disodium tetraborate)	1330-43-4	6	88	530	TLV-STEL, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2575	Sodium borohydride	16940-66-2	0.49	5.3	32	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2576	Sodium bromate	7789-38-0	0.46	5.1	30	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2577	Sodium bromide	7647-15-6	12	130	830	TEEL-2/11, monkey oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2578	Sodium butyl (2-ethylhexyl)phosphate	z-0064	13	140	860	Used MW-adjusted bis(2-ethylhexyl) hydrogen phosphate (298-07-7) PAC values	mg/m <sup>3</sup>
2579	Sodium butyl butylphosphonate	z-0065	0.017	0.19	1.1	Used MW-adjusted dibutyl butylphosphonate (78-46-6) PAC values	mg/m <sup>3</sup>
2580	Sodium cacodylate; (Sodium dimethylarsinate)	124-65-2	3.2	86	510	MW-adjusted organic arsenic (7440-38-2) PEL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2581	Sodium cadminate	z-0066	0.4	3	9.5	Used MW-adjusted cadmium (7440-43-9) AEGL values	mg/m <sup>3</sup>
2582	Sodium carbonate	497-19-8	7.6	83	500	TEEL-2/11, TEEL-3/6, human oral LDLo	mg/m <sup>3</sup>

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\* indicates 10% LEL ≤ PAC < 50% LEL; \*\* indicates 50% LEL ≤ PAC < 100% LEL; \*\*\* indicates PAC ≥ LEL.

**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2583	Sodium carbonate monohydrate	5968-11-6	14	150	910	Used MW-adjusted sodium carbonate (497-19-8) PAC values	mg/m <sup>3</sup>
2584	Sodium chlorite	7758-19-2	0.19	2.1	13	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
2585	Sodium chromate decahydrate	13517-17-4	0.99	17	100	MW-adjusted soluble chromium (VI) (7440-47-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted chromates (1333-82-0) IDLH (1990)	mg/m <sup>3</sup>
2586	Sodium chromate tetrahydrate	10034-82-9	0.87	15	91	MW-adjusted soluble chromium (VI) (7440-47-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted chromates (1333-82-0) IDLH (1990)	mg/m <sup>3</sup>
2587	Sodium chromate(VI); (Disodium chromate)	7775-11-3	0.47	8.2	49	MW-adjusted soluble chromium (VI) (7440-47-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted chromates (1333-82-0) IDLH (1990)	mg/m <sup>3</sup>
2588	Sodium citrate; (Monosodium citrate)	18996-35-5	4	44	270	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2589	Sodium cobaltinitrite	13600-98-1	0.41	4.6	28	Used MW-adjusted cobalt (7440-48-4) PAC values	mg/m <sup>3</sup>
2590	<b>Sodium cyanide</b>	<b>143-33-9</b>	<b>4.0</b>	<b>14</b>	<b>30</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
2591	Sodium cyclopentadienylide; (Cyclopentadienyl sodium)	4984-82-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2592	Sodium deuterioxide	14014-06-3	0.5	5	50	Used sodium hydroxide (1310-73-2) ERPG values	mg/m <sup>3</sup>
2593	Sodium dichromate dihydrate	7789-12-0	0.43	7.5	45	MW-adjusted soluble chromium (VI) (7440-47-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted chromates (1333-82-0) IDLH (1990)	mg/m <sup>3</sup>
2594	Sodium dichromate; (Disodium dichromate)	10588-01-9	0.38	6.5	39	MW-adjusted soluble chromium (VI) (7440-47-3) TLV-TWA x 3, TEEL-3/6, MW-adjusted chromates (1333-82-0) IDLH (1990)	mg/m <sup>3</sup>
2595	Sodium diethyldithiocarbamate trihydrate	20624-25-3	6	50	300	MAK-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2596	Sodium diethyldithiocarbamate; (Diethyldithiocarbamic acid, sodium salt)	148-18-5	6	27	300	MAK-TWA x 3, rat ip TDLo, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2597	Sodium dithionate dihydrate	7631-94-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2598	Sodium dodecylbenzenesulfonate; (Dodecyl benzene sodium sulfonate)	25155-30-0	2.1	23	87	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2599	Sodium ethoxide	141-52-6	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2600	Sodium ferrocyanide	13601-19-9	12	16	97	MW-adjusted cyanides MAK-TWA x 3, TEEL-3/6, MW-adjusted cyanides IDLH (1990)	mg/m <sup>3</sup>
2601	Sodium fluoride	7681-49-4	17	90	1,100	MW-adjusted fluorides TLV-TWA x 3, rat oral TDLo, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
2602	Sodium formate	141-53-7	18	200	1,200	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2603	Sodium gluconate	527-07-1	71	780	4,700	TEEL-2/11, TEEL-3/6, rabbit iv LDLo	mg/m <sup>3</sup>
2604	Sodium glycinate	6000-44-8	0.47	5.1	31	TEEL-2/11, TEEL-3/6, mouse iv LD50	ppm
2605	Sodium glycolate; (Sodium hydroxyacetate)	2836-32-0	5.1	56	350	TEEL-2/11, rat oral TDLo, rat oral LD50	ppm
2606	Sodium hexahydroxoantimonate; (Sodium antimonate)	33908-66-6	3	27	160	MW-adjusted antimony (7440-36-0) TLV-TWA x 3, TEEL-3/6, MW-adjusted antimony IDLH (1990)	mg/m <sup>3</sup>
2607	Sodium hexamethyldisilazane; (Sodium bis(trimethylsilyl)amide)	1070-89-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2608	Sodium hydride	7646-69-7	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2609	Sodium hydrogen lead oxide	z-0067	0.19	150	890	MW-adjusted lead (7439-92-1) TLV-TWA x 3, TEEL-3/6, MW-adjusted lead IDLH (1990)	mg/m <sup>3</sup>
2610	Sodium hydrogen metasilicate	z-0068	3.1	34	210	Used MW-adjusted sodium silicate (6834-92-0) PAC values	mg/m <sup>3</sup>
2611	Sodium hydrogen pyrophosphate	z-0069	4.7	52	320	Used MW-adjusted disodium pyrophosphate (7758-16-9) PAC values	mg/m <sup>3</sup>
2612	Sodium hydrosulfite	7775-14-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2613	<b>Sodium hydroxide</b>	<b>1310-73-2</b>	<b>0.5</b>	<b>5</b>	<b>50</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2614	Sodium hypobromite	13824-96-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2615	Sodium hypochlorite	7681-52-9	2	54	630	WEEL-STEL, human iv TDLo, mouse oral LD50	mg/m <sup>3</sup>
2616	Sodium hypochlorite pentahydrate	10022-70-5	13	140	290	TEEL-2/11, rat oral TDLo, rat 60-min LC50	mg/m <sup>3</sup>
2617	Sodium hypophosphite	7681-53-0	5.2	57	340	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2618	Sodium hypophosphite hydrate	123333-67-5	5.2	57	340	Used sodium hypophosphite (7681-53-0) PAC values	mg/m <sup>3</sup>
2619	Sodium iodate	7681-55-2	0.83	9.1	55	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2620	Sodium iodide	7681-82-5	13	140	860	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2621	Sodium isothiocyanate; (Thiocyanic acid, sodium salt)	540-72-7	0.7	7.7	46	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2622	Sodium lactate; (Lactic acid, monosodium salt)	72-17-3	7.6	84	790	TEEL-2/11, rat iv TDLo, rat ip LD50	mg/m <sup>3</sup>
2623	Sodium lanthanate	z-0070	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2624	Sodium lauryl sulfate	151-21-3	3.9	43	260	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2625	Sodium metabisulfite	7681-57-4	15	64	390	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2626	Sodium metaborate	7775-19-1	6.8	77	460	MW-adjusted borates, inorganic compounds TLV-STEL, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2627	Sodium metaphosphate	10361-03-2	2.7	30	180	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2628	Sodium metasilicate nonahydrate	13517-24-3	8.9	98	590	Used MW-adjusted sodium silicate (6834-92-0) PAC values	mg/m <sup>3</sup>
2629	Sodium metasilicate pentahydrate	10213-79-3	6.6	73	440	Used MW-adjusted sodium silicate (6834-92-0) PAC values	mg/m <sup>3</sup>
2630	Sodium metavanadate; (Sodium vanadate)	13718-26-8	0.011	0.12	84	TEEL-2/11, MW-adjusted vanadium (1314-62-1) REL-C & IDLH (1994, See white paper)	mg/m <sup>3</sup>
2631	Sodium methylate	124-41-4	6.1	67	400	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2632	Sodium molybdate dihydrate; (Disodium molybdate dihydrate)	10102-40-6	3.8	34	210	MW-adjusted molybdenum (7439-98-7) TLV-TWA x 3, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
2633	Sodium monoxide; (Sodium oxide)	12401-86-4	0.5	5	50	Used sodium hydroxide (1310-73-2) ERPG values	mg/m <sup>3</sup>
2634	Sodium nickel oxide (Liquid)	37367-09-2	0.7	7.6	46	MW-adjusted soluble nickel TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2635	Sodium nickelate	z-0073	0.88	9.6	57	MW-adjusted soluble nickel (7440-02-0) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2636	Sodium nitrate	7631-99-4	4.1	45	270	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2637	Sodium nitrite	7632-00-0	6.4	71	240	TEEL-2/11, dog oral TDLo, rat 240-min LC50	mg/m <sup>3</sup>
2638	Sodium nitroferricyanide	14402-89-2	0.21	2.3	14	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2639	Sodium o-benzyl-p-chlorophenate	3184-65-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2640	Sodium orthovanadate	13721-39-6	0.016	0.18	130	TEEL-2/11, MW-adjusted vanadium (1314-62-1) REL-C and IDLH (1994, See white paper)	mg/m <sup>3</sup>
2641	Sodium oxalate	62-76-0	0.36	4	24	TEEL-2/11, TEEL-3/6, human iv LDLo	mg/m <sup>3</sup>
2642	Sodium pentachlorophenate	131-52-2	0.22	2.4	8.4	TEEL-2/11, LOC, mouse 120-min LC50	mg/m <sup>3</sup>
2643	Sodium perchlorate	7601-89-0	6.3	69	420	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2644	Sodium perchlorate monohydrate	7791-07-3	3.8	41	250	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2645	Sodium permanganate	10101-50-5	7.8	13	78	MW-adjusted manganese REL-STEL and PEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
2646	Sodium peroxide	1313-60-6	0.5	5	50	Used sodium hydroxide (1310-73-2) ERPG values	mg/m <sup>3</sup>
2647	Sodium perrhenate; (Rhenium(VII) sodium oxide)	13472-33-8	8.3	92	550	TEEL-2/11, TEEL-3/6, rat ip LDLo	mg/m <sup>3</sup>
2648	Sodium persulfate	7775-27-1	0.3	8.2	49	TLV-TWA x 3, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2649	Sodium phosphate	7632-05-5	6.1	68	410	TEEL-2/11, rat ip TDLo, TEEL-2 x 6	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2650	Sodium phosphate monobasic monohydrate	10049-21-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2651	Sodium phosphate, dibasic, dodecahydrate	10039-32-4	1.4	16	93	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2652	Sodium phosphate, tribasic; (Sodium trimetaphosphate)	7785-84-4	22	240	1,400	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
2653	<b>Sodium phosphide</b>	<b>12058-85-4</b>	0.18	<b>2.0</b>	<b>3.6</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
2654	Sodium polyphosphate	68915-31-1	9.2	100	600	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2655	Sodium polytungstate	12141-67-2	14	150	920	MW-adjusted insoluble tungsten (7440-33-7) TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2656	Sodium potassium tartrate tetrahydrate	6381-59-5	9	99	590	TEEL-2/11, mouse iv TDLo, TEEL-2 x 6	mg/m <sup>3</sup>
2657	Sodium potassium tartrate; (Potassium sodium tartrate)	304-59-6	9	99	590	TEEL-2/11, mouse iv TDLo, TEEL-2 x 6	mg/m <sup>3</sup>
2658	Sodium p-tert-amylphenate; (4-(1,1-Dimethylpropyl)phenol, sodium salt)	31366-95-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2659	Sodium pyrophosphate decahydrate	13472-36-1	8.6	96	580	Used MW-adjusted sodium pyrophosphate (7758-16-9) PAC values	mg/m <sup>3</sup>
2660	Sodium pyrophosphate, di-	7758-16-9	4.3	48	290	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2661	Sodium pyruvate; (Pyruvic acid, sodium salt)	113-24-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2662	Sodium salicylate; (Salicylic acid, sodium salt)	54-21-7	7.1	78	470	TEEL-2/11, TEEL-3/6, dog iv LD50	mg/m <sup>3</sup>
2663	Sodium selenate; (Disodium selenate)	13410-01-0	1.4	1.6	2	MW-adjusted selenium (7782-49-2) TLV-TWA x 3, LOC, rat ip LDLo	mg/m <sup>3</sup>
2664	Sodium selenite	10102-18-8	1.3	2.3	3.1	MW-adjusted selenium (7782-49-2) TLV-TWA x 3, LOC, rat oral LD50	mg/m <sup>3</sup>
2665	Sodium silicate; (Sodium metasilicate)	6834-92-0	3.8	42	250	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2666	Sodium stannate	12058-66-1	11	120	720	MW-adjusted inorganic tin (7440-31-5) TLV-TWA x 3, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
2667	Sodium stearate	822-16-2	0.17	1.8	11	TEEL-2/11, TEEL-3/6, dog iv LDLo	mg/m <sup>3</sup>

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 \* indicates 10% LEL ≤ PAC < 50% LEL; \*\* indicates 50% LEL ≤ PAC < 100% LEL; \*\*\* indicates PAC ≥ LEL.

**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2668	Sodium strontium phosphate	19553-80-1	6.3	83	900	Used MW-adjusted trisodium phosphate (7601-54-9) PAC values	mg/m <sup>3</sup>
2669	Sodium succinate	150-90-3	2.2	25	150	TEEL-2/11, TEEL-3/6, mouse iv LD50	ppm
2670	Sodium succinate, hexahydrate	6106-21-4	25	270	1,600	Used MW-adjusted sodium succinate (150-90-3) PAC values, converted to mg/m <sup>3</sup>	mg/m <sup>3</sup>
2671	Sodium sulfamate	13845-18-6	36	120	6,000	Used MW-adjusted ammonium sulfamate (7773-06-0) PAC values	mg/m <sup>3</sup>
2672	Sodium sulfate, anhydrous	7757-82-6	9.8	110	650	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2673	Sodium sulfhydrate; (Sodium hydrosulfide)	16721-80-5	0.088	0.96	5.8	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
2674	Sodium sulfide	1313-82-2	0.62	6.9	41	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2675	Sodium sulfide nonahydrate	1313-84-4	0.17	1.9	11	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2676	Sodium sulfite	7757-83-7	11	120	710	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2677	Sodium tartrate dihydrate	6106-24-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2678	Sodium tellurate	10101-83-4	0.56	3.7	22	MW-adjusted tellurium (13494-80-9) TLV-TWA x 3, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
2679	Sodium tellurite	10102-20-2	1.8	20	120	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2680	Sodium tetrafluoroborate(1-)	13755-29-8	11	120	720	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
2681	Sodium Tetrahydroaluminate	12251-53-5	26	290	1,700	MW-adjusted soluble aluminum (7429-90-5) REL-TWA, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2682	Sodium tetraphenyl borate	143-66-8	0.86	9.5	57	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2683	Sodium thiosulfate	7772-98-7	38	410	2,500	TEEL-2/11, TEEL-3/6, dog iv LD50	mg/m <sup>3</sup>
2684	Sodium thiosulfate pentahydrate	10102-17-7	2.4	26	1,200	TEEL-2/11, human oral TDLo, mouse ip LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2685	Sodium titanate	12034-34-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2686	Sodium tolyltriazole; (1H-Benzotriazole, 4(or 5)-methyl-, sodium salt)	64665-57-2	1.9	21	130	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2687	Sodium tridecylbenzene sulfonate	26248-24-8	5.3	58	350	TEEL-2/11, TEEL-3/6, human oral LDLo	mg/m <sup>3</sup>
2688	Sodium triethylborohydride	17979-81-6	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2689	Sodium trihydrogen silicate	z-0076	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2690	Sodium tripolyphosphate	7758-29-4	0.61	6.8	620	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2691	Sodium tungstate	13472-45-2	4.8	53	320	MW-adjusted tungsten (7440-33-7) TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2692	Sodium tungstate dihydrate	10213-10-2	5.4	59	360	MW-adjusted tungsten (7440-33-7) TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2693	Sodium uranate; (Disodium uranate hexahydrate)	66018-57-3	0.94	7.8	47	MW-adjusted insoluble uranium (7440-61-1) TLV-STEL, TEEL-3/6, MW-adjusted uranium IDLH (1990)	mg/m <sup>3</sup>
2694	Sodium uranium oxide monohydrate; (Sodium uranate(VI) monohydrate)	10135-92-9	0.82	6.8	41	MW-adjusted insoluble uranium (7440-61-1) TLV-STEL, TEEL-3/6, MW-adjusted uranium IDLH (1990)	mg/m <sup>3</sup>
2695	Sodium uranyl carbonate	128578-60-9	2.5	20	120	MW-adjusted insoluble uranium (7440-61-1) TLV-STEL, TEEL-3/6, MW-adjusted uranium IDLH (1990)	mg/m <sup>3</sup>
2696	Sodium zirconate; (Disodium zirconium oxide)	12201-48-8	22	180	1,100	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
2697	Sodium-Potassium	11135-81-2	0.5	5	50	Used sodium hydroxide (1310-73-2) ERPG values	mg/m <sup>3</sup>
2698	Solvent Yellow 3; (2-Amino-5-azotoluene)	97-56-3	1.9	21	120	TEEL-2/11, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>
2699	<b>Soman; (3,3-Dimethyl-2-butyl methylphosphonofluoridate; GD)</b>	<b>96-64-0</b>	<b>1.80E-04</b>	<b>0.0022</b>	<b>0.017</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2700	Spiro(isobenzofuran-1(3H),9'-(9H)xanthen)-3-one, 3',6'-dihydroxy-; (Fluorescein)	2321-07-5	0.78	8.6	65	TEEL-2/11, human iv TDLo, mouse iv LD50	mg/m <sup>3</sup>
2701	Squalene; (2,6,10,15,19,23-Hexamethyl-2,6,10,14,18,22-tetracosahexene, (all-E)-)	111-02-4	8.2	90	540	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2702	Stannic chloride; (Tin(IV) chloride; Tin(IV) tetrachloride)	7646-78-8	13	150	880	MW-adjusted inorganic tin (7440-31-5) TLV-TWA x 3, TEEL-3/6, MW-adjusted inorganic tin IDLH (1990)	mg/m <sup>3</sup>
2703	Stannous chloride; (Tin(II) chloride (1:2))	7772-99-8	9.6	65	640	MW-adjusted inorganic tin (7440-31-5) TLV-TWA x 3, rat oral TDLo, MW-adjusted inorganic tin IDLH (1990)	mg/m <sup>3</sup>
2704	Stannous octoate	301-10-0	0.68	110	670	MW-adjusted organic tin (7440-31-5) TLV-STEL, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2705	Staphylococcal enterotoxin (SEB); including 37337-57-8 (SEA)	11100-45-1	1.90E-04	0.0021	0.013	TEEL-2/11, TEEL-3/6, monkey iv LDLo	mg/m <sup>3</sup>
2706	<b>Stibine; (Antimony hydride)</b>	<b>7803-52-3</b>	0.3	<b>1.5</b>	<b>9.6</b>	TLV-TWA x 3, <b>AEGL-2, AEGL-3</b>	ppm
2707	Stilbene	588-59-0	3.8	41	250	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2708	Stilbene 3; (Stilbene 420; Tinopal CBS; Disodium 4,4'-bis(2-sulfostyryl)biphenyl)	27344-41-8	8.1	89	530	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2709	Stoddard solvent; (Mineral spirits, 85% nonane and 15% trimethyl benzene)	8052-41-3	300	1,800	29500**	TLV-TWA x 3, REL-C, IDLH (1990)	mg/m <sup>3</sup>
2710	Strontium	7440-24-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2711	Strontium carbonate	1633-05-2	71	780	4,700	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2712	Strontium chloride	10476-85-4	8	88	360	TEEL-2/11, monkey oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2713	Strontium hydroxide	18480-07-4	0.75	7.6	76	Used MW-adjusted sodium hydroxide (1310-73-2) ERPG values adjusted for the 2 hydroxide ions.	mg/m <sup>3</sup>
2714	Strontium nitrate	10042-76-9	5.7	62	370	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2715	Strontium nitrite; (Nitrous acid, strontium salt)	13470-06-9	6.4	71	240	Used sodium nitrite (7632-00-0) PAC values	mg/m <sup>3</sup>
2716	Strontium oxalate	814-95-9	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HR = 1)	mg/m <sup>3</sup>
2717	Strontium phosphate; (Strontium orthophosphate)	14414-90-5	32	370	2,100	Used MW-adjusted potassium phosphate, monobasic (7778-77-0) PAC values	mg/m <sup>3</sup>
2718	<b>Strontium phosphide</b>	<b>12504-13-1</b>	0.091	<b>1.0</b>	<b>1.8</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2719	Strontium sulfate	7759-02-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2720	Strychnine	57-24-9	0.45	0.5	3	TLV-TWA x 3, TEEL-3/6, IDLH (1990 and 1994)	mg/m <sup>3</sup>
2721	Strychnine sulfate (2:1)	60-41-3	0.45	5	30	TEEL-2/11, LOC, TEEL-2 x 11	mg/m <sup>3</sup>
2722	<b>Styrene</b>	<b>100-42-5</b>	<b>20</b>	<b>130</b>	<b>1100*</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2723	Styrene oxide; (1,2-Epoxyethylbenzene)	96-09-3	0.33	3.6	21	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
2724	Styrene-allyl alcohol copolymer	25119-62-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2725	Styrene-divinylbenzene resin, chloromethylated, aminated with trimethylamine; (Bio-Rad AG1-X8 anion exchange resin, formate form)	60177-39-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2726	Styrenesulfonate), poly(sodium 4-	25704-18-1	48	530	3,200	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2727	Succinic acid	110-15-6	6.8	75	450	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2728	Succinic anhydride	108-30-5	4.5	50	300	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2729	Succinimidyl-6-(beta-maleimidopropionamido)hexanoate; (SMPH)	z-0120	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2730	Sulfamic acid	5329-14-6	9.5	100	630	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2731	Sulfanilamide	63-74-1	13	140	830	TEEL-2/11, TEEL-3/6, dog oral LD50	mg/m <sup>3</sup>
2732	Sulfanilic acid	121-57-3	37	410	2,400	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2733	Sulfonic acids, petroleum; (Petrolatum acid sulfonate)	61789-85-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2734	Sulfonylbis-ethanol, 2,2'-	2580-77-0	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2735	Sulfosalicylic acid	97-05-2	7.4	81	490	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2736	Sulfosalicylic acid, dihydrate, crystal	5965-83-3	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2737	Sulfotep; (TEDP)	3689-24-5	0.32	3.5	35	TEEL-2/11, LOC, IDLH (1990)	mg/m <sup>3</sup>
2738	Sulfur	7704-34-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2739	<b>Sulfur dioxide</b>	<b>7446-09-5</b>	<b>0.20</b>	<b>0.75</b>	<b>30</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2740	Sulfur hexafluoride	2551-62-4	3,000	33,000	2.00E+05	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	ppm
2741	<b>Sulfur monochloride</b>	<b>10025-67-9</b>	<b>0.53</b>	<b>6.4</b>	<b>15</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2742	Sulfur pentafluoride	5714-22-7	9.10E-04	0.01	1	TEEL-2/11, TLV-C, IDLH (1990 and 1994)	ppm
2743	Sulfur tetrafluoride	7783-60-0	0.0091	0.1	0.82	TEEL-2/11, TLV-C, rat 240-min LCLo	ppm
2744	<b>Sulfur trioxide</b>	<b>7446-11-9</b>	<b>0.20</b>	<b>8.7</b>	<b>160</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
2745	<b>Sulfuric acid</b>	<b>7664-93-9</b>	<b>0.20</b>	<b>8.7</b>	<b>160</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
2746	Sulfuric acid-d <sub>2</sub> ; (Deuteriosulfuric acid)	13813-19-9	0.2	8.7	160	Used sulfuric acid (7664-93-9) AEGL values	mg/m <sup>3</sup>
2747	Sulfurous acid	7782-99-2	0.027	0.3	1.8	TEEL-2/11, human oral TDLo, TEEL-2 x 6	mg/m <sup>3</sup>
2748	<b>Sulfuryl chloride</b>	<b>7791-25-5</b>	<b>0.3</b>	<b>3.7</b>	<b>11</b>	<b>ERPG-1, AEGL-2, AEGL-3</b>	ppm
2749	<b>Sulfuryl fluoride</b>	<b>2699-79-8</b>	10	<b>21</b>	<b>64</b>	TLV-STEL, <b>AEGL-2, AEGL-3</b>	ppm
2750	Talc	14807-96-6	6	66	400	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2751	Tall oil (alkyd resin)	68333-62-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2752	Tantalum	7440-25-7	10	11	64	REL-STEL, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2753	Tantalum carbide	12070-06-3	11	120	730	MW-adjusted tantalum (7440-25-7) REL-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2754	Tantalum(V) ethoxide	6074-84-6	22	240	1,500	MW-adjusted tantalum (7440-25-7) REL-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2755	Tantalum(V) fluoride	7783-71-3	22	250	1,500	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
2756	Tantalum(V) oxide	1314-61-0	12	260	1,600	MW-adjusted tantalum (7440-25-7) REL-STEL, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2757	Tartaric acid	87-69-4	1.6	17	100	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
2758	Tartaric acid, monopotassium salt	868-14-4	87	960	5,800	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
2759	Tartaric acid, monosodium salt	526-94-3	7.1	79	470	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2760	TCDD; (2,3,7,8-Tetrachlorodibenzo-p-dioxin; Dioxin)	1746-01-6	1.30E-04	0.0014	0.0085	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2761	Technetium(IV) oxide	12036-16-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2762	Tellurium	13494-80-9	1.8	20	110	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
2763	Tellurium chloride	10026-07-0	0.63	6.9	42	MW-adjusted tellurium (13494-80-9) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2764	<b>Tellurium hexafluoride</b>	<b>7783-80-4</b>	4.80E-04	<b>0.0053</b>	<b>0.016</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
2765	Tellurium oxide; (Tellurium dioxide)	7446-07-3	0.38	4.3	26	MW-adjusted tellurium (13494-80-9) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2766	Tellurous acid	10049-23-7	0.42	4.6	28	MW-adjusted tellurium (13494-80-9) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2767	Terbium	7440-27-9	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2768	Terbium oxide	12036-41-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2769	Terbium(III,IV) oxide	12037-01-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2770	Terbufos	13071-79-9	0.091	1	2.2	TEEL-2/11, LOC, dog oral LD50	mg/m <sup>3</sup>
2771	Terephthalic acid	100-21-0	30	140	840	TLV-TWA x 3, TEEL-3/6, dog iv LDLo	mg/m <sup>3</sup>
2772	Terephthaloyl chloride; (Benzenedicarbonyl dichloride, 1,4-)	100-20-9	7.5	83	500	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2773	Terphenyl, p-	92-94-4	0.45	5	150	TEEL-2/11, TLV-C, rabbit oral LDLo	mg/m <sup>3</sup>
2774	Terphenyls; (Diphenylbenzene)	26140-60-3	0.45	5	1,400	TEEL-2/11, TLV-C, mouse oral LD50	mg/m <sup>3</sup>
2775	Tert-butyl benzoic acid, p-	98-73-7	6	23	140	MAK-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2776	Tert-butyllithium	594-19-4	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2777	Tert-butylphenol, p-; (Tert-butylphenol, 4-)	98-54-4	1.5	40	240	MAK-TWA x 3, TEEL-3/6, rat 240-min LCLo	mg/m <sup>3</sup>
2778	Tert-butylpyridine, 4-	3978-81-2	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2779	Tetanus toxin	676570-37-9	6.60E-09	7.20E-08	4.30E-07	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2780	Tetraamminepalladium(II) nitrate	13601-08-6	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2781	Tetrabromoethane, 1,1,2,2-; (Acetylene tetrabromide)	79-27-6	0.3	4.3	10	TLV-TWA x 3, mouse 180-min TCLo, IDLH (1990)	ppm
2782	Tetrabutyl ammonium phosphate	5574-97-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2783	Tetrabutyl titanate; (Butyl titanate)	5593-70-4	0.67	7.4	44	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
2784	Tetrabutylammonium fluoride; (N,N,N-Tributyl-1-butanaminium, fluoride)	429-41-4	100	1,200	6,900	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
2785	Tetrabutylammonium hydroxide	2052-49-5	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2786	Tetrabutylammonium nitrate	1941-27-1	0.033	0.36	2.2	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
2787	Tetrachloro-1,2-difluoroethane, 1,1,2,2-	76-12-0	150	1,600	15,000	TLV-TWA x 3, rat 40-min TCLo, IDLH (1990)	ppm
2788	Tetrachlorobenzene, 1,2,3,4-	634-66-2	4.1	45	230	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2789	Tetrachlorobenzene, 1,2,4,5-	95-94-3	0.66	7.2	340	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2790	Tetrachlorodibenzofuran, 2,3,7,8-	51207-31-9	2.00E-04	0.0023	0.2	TEEL-2/11, rat ip TDLo, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2791	Tetrachlorodibenzo-p-dioxin, 1,2,3,8-	53555-02-5	0.003	0.033	0.2	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2792	Tetrachloroethane (mixed isomers)	25322-20-7	0.65	7.2	43	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
2793	Tetrachloroethane, 1,1,1,2-	630-20-6	0.2	2.2	13	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
2794	Tetrachloroethane, 1,1,2,2-	79-34-5	3	120	150	TLV-TWA x 3, mouse 120-min TCLo, IDLH (1990)	ppm
2795	Tetrachlorohexafluorobutane, 2,2,3,3-; (FLON; CFC316)	375-34-8	0.078	0.86	5.1	TEEL-2/11, TEEL-3/6, rat 60-min LCLo	ppm
2796	<b>Tetrachlorosilane; (Silicon chloride)</b>	<b>10026-04-7</b>	<b>0.45</b>	<b>5.5</b>	<b>25</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2797	Tetracosafuorotetradecahydro-phenanthrene; (Perfluorophenanthrene)	306-91-2	10	110	680	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
2798	Tetracyanoquinodimethane	1518-16-7	0.18	2	12	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
2799	Tetracycline hydrochloride	64-75-5	1.6	17	1,300	TEEL-2/11, human oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2800	Tetradecafluorohexane; (Perfluoro-n-hexane; Fluorinert FC72)	355-42-0	11	120	2,000	TEEL-2/11, rat 420-min TCLo, rat 360-min LCLo	ppm
2801	Tetradecane; (n-Tetradecane)	629-59-4	3.1	34	200	TEEL-2/11, TEEL-3/6, mouse iv LDLo	ppm
2802	Tetradecanoic acid; (Myristic acid)	544-63-8	0.14	1.6	9.3	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
2803	Tetradecyltrimethylammonium bromide	1119-97-7	12	130	770	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2804	Tetraethyl lead	78-00-2	0.3	4	40	TLV-TWA x 3, LOC, IDLH (1990 and 1994)	mg/m <sup>3</sup>
2805	<b>Tetraethyl orthosilicate; (Ethyl silicate; Tetraethoxysilane)</b>	<b>78-10-4</b>	<b>25</b>	<b>100</b>	<b>300</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
2806	Tetraethyl pyrophosphate; (TEPP)	107-49-3	0.091	1	10	TEEL-2/11, LOC, IDLH (1990)	mg/m <sup>3</sup>
2807	Tetraethylammonium chloride	56-34-8	0.45	5	30	TEEL-2/11, TEEL-3/6, dog iv LD50	mg/m <sup>3</sup>
2808	Tetraethylene glycol	112-60-7	87	960	5,700	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2809	Tetraethylene glycol diacrylate	17831-71-9	3	27	160	WEEL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2810	Tetraethylenepentamine	112-57-2	15	130	790	WEEL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2811	Tetraethyltin; (Tetraethylstannane)	597-64-8	0.4	7	42	MW-adjusted organic tin (7440-31-5) TLV-STEL, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2813	Tetrafluoroethane, 1,1,2,2-; (HFC 134)	359-35-3	8,000	13,000	27,000	Used HFC-134a (811-97-2) AEGL values	ppm
2814	<b>Tetrafluoroethylene</b>	<b>116-14-3</b>	<b>22</b>	<b>55</b>	<b>330</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2815	Tetrafluorohydrazine	10036-47-2	2.4	110	680	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	ppm
2816	Tetrahydro-2,5-dimethyl furan	1003-38-9	12	130	790	Used tetrahydrodimethylfuran (1320-94-1) PAC values.	mg/m <sup>3</sup>
2817	Tetrahydrodimethylfuran	1320-94-1	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2818	<b>Tetrahydrofuran</b>	<b>109-99-9</b>	<b>100</b>	<b>500</b>	<b>5000*</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
2819	Tetrahydrofuran-d8	1693-74-9	100	500	5000*	Used tetrahydrofuran (109-99-9) ERPG values	ppm
2820	Tetrahydromethyl-1,3-isobenzofurandione, 3A,4,7,7A-; (Methyltetrahydrophthalic anhydride)	26590-20-5	7.7	85	510	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2821	Tetrahydronaphthalene, 1,2,3,4-; (Tetralin)	119-64-2	1.6	17	100	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
2822	Tetrahydropyridine, 1,2,3,6-	694-05-3	8.7	96	570	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6 converted to ppm	ppm
2823	Tetramethoxypropane, 1,1,3,3-; (Malonaldehyde bis(dimethyl acetal))	102-52-3	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
2824	<b>Tetramethoxysilane; (Methyl silicate)</b>	<b>681-84-5</b>	0.083	<b>0.91</b>	<b>1.4</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
2825	Tetramethyl ammonium, tetrahydroborate(1-)	16883-45-7	0.23	2.5	15	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2826	Tetramethyl ethylene diamine	110-18-9	3.2	35	58	TEEL-2/11, rat 360-min TCLO, rat 240-min LC50	ppm
2827	Tetramethyl lead	75-74-1	0.45	4	40	TLV-TWA x 3, LOC, IDLH (1990 and 1994)	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2828	Tetramethyl-1,3-butanediamine, N,N,N',N'-; (Tetramethyl butanediamine)	97-84-7	1.4	16	94	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
2829	Tetramethyl-3,5-heptanedione, 2,2,6,6-; (Dipivaloylmethane)	1118-71-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2830	Tetramethyl-5-decyne-4,7-diol, 2,4,7,9-	126-86-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2831	Tetramethylammonium chloride	75-57-0	0.15	1.7	9.9	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2832	Tetramethylammonium hydroxide	75-59-2	0.0093	0.1	0.62	TEEL-2/11, TEEL-3/6, rabbit iv LDLo	mg/m <sup>3</sup>
2833	Tetramethylammonium hydroxide pentahydrate	10424-65-4	0.019	0.2	1.2	Used MW-adjusted tetramethylammonium hydroxide (75-59-2) PAC values	mg/m <sup>3</sup>
2834	Tetramethylammonium silicate	53116-81-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2835	Tetramethylbenzene, 1,2,3,5-	527-53-7	15	170	1,000	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2836	Tetramethylbenzene, 1,2,4,5-	95-93-2	20	220	1,300	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2837	Tetramethylbenzidine, 3,3',5,5'-	54827-17-7	0.44	4.9	29	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2838	Tetramethylene sulfone; (Sulfolane; Tetrahydrothiophene-1,1-dioxide)	126-33-0	4.1	45	400	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2839	Tetramethylsilane	75-76-3	280	360	740	Used MW-adjusted silane (7803-62-5) AEGL values	ppm
2840	<b>Tetranitromethane</b>	<b>509-14-8</b>	0.047	<b>0.52</b>	<b>1.7</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
2841	Tetraoxadodecane, 2,5,8,11-	112-49-2	1.6	18	110	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	ppm
2842	Tetraoxatetracosan-1-ol, 3,6,9,12-; ((Lauryl alcohol tri(oxyethylene) ethanol; BRIJ 30)	5274-68-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2843	Tetraphenylarsonium chloride; (Tetraphenylarsenium chloride)	507-28-8	8.4	92	550	MW-adjusted organic arsenic (7440-38-2) PEL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2844	Tetrapotassium ethylenediaminetetraacetate; (EDTA tetrapotassium salt)	5964-35-2	88	970	5,900	Used MW-adjusted tetrasodium EDTA (64-02-8) PAC values	mg/m <sup>3</sup>
2845	Tetrapropoxysilane	682-01-9	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2846	Tetrapropylammonium hydroxide	4499-86-9	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2847	Tetrapropylorthotitanate	3087-37-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2848	Tetrasodium pyrophosphate	7722-88-5	15	130	790	REL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2849	Tetrazole, 1H-	288-94-8	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2850	Tetrodotoxin; (fugu poison)	4368-28-9	6.30E-05	6.90E-04	0.0041	TEEL-2/11, TEEL-3/6, dog iv LD50	mg/m <sup>3</sup>
2851	Thallium	7440-28-0	0.06	13	20	TLV-TWA x 3, human oral TDLo, IDLH (1990)	mg/m <sup>3</sup>
2852	Thallium chloride; (Thallium(I) chloride)	7791-12-0	0.18	2	23	TEEL-2/11, LOC, MW-adjusted soluble thallium (7440-28-0) IDLH (1990)	mg/m <sup>3</sup>
2853	Thallium hydroxide	12026-06-1	0.065	3.7	22	MW-adjusted soluble thallium (7440-28-0) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble thallium IDLH (1990)	mg/m <sup>3</sup>
2854	Thallium nitrite	13826-63-6	0.074	4.2	25	MW-adjusted soluble thallium (7440-28-0) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble thallium IDLH (1990)	mg/m <sup>3</sup>
2855	Thallium oxide; (Thalious oxide)	1314-12-1	0.062	3.5	21	MW-adjusted soluble thallium (7440-28-0) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble thallium IDLH (1990)	mg/m <sup>3</sup>
2856	Thallium sulfate; (Sulfuric acid, dithallium(1+) salt)	10031-59-1	0.18	2	21	TEEL-2/11, LOC, MW-adjusted soluble thallium (7440-28-0) IDLH (1990)	mg/m <sup>3</sup>
2857	Thallium(I) acetate; (Acetic acid, thallium(1+) salt)	563-68-8	0.077	4.3	26	MW-adjusted soluble thallium (7440-28-0) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble thallium IDLH (1990)	mg/m <sup>3</sup>
2858	Thallium(I) carbonate (2:1)	6533-73-9	0.18	2	23	TEEL-2/11, LOC, MW-adjusted soluble thallium (7440-28-0) IDLH (1990)	mg/m <sup>3</sup>
2859	Thallium(I) sulfate; (Sulfuric acid, dithallium(1+) salt)	7446-18-6	0.18	2	25	TEEL-2/11, LOC, MW-adjusted soluble thallium (7440-28-0) IDLH (1990)	mg/m <sup>3</sup>
2860	Thallium(III) oxide; (Thallium sesquioxide; Thallic oxide)	1314-32-5	0.18	2	8.7	TEEL-2/11, LOC, rat oral LD50	mg/m <sup>3</sup>
2861	Thallium(III) perchlorate hexahydrate	15596-83-5	0.18	10	60	MW-adjusted soluble thallium (7440-28-0) TLV-TWA x 3, TEEL-3/6, MW-adjusted soluble thallium IDLH (1990)	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2862	Thallos malonate	2757-18-8	0.18	2	25	TEEL-2/11, LOC, MW-adjusted soluble thallium (7440-28-0) IDLH (1990)	mg/m <sup>3</sup>
2863	Thallos nitrate; (Thallium nitrate; Thallium(I) nitrate)	10102-45-1	0.078	4.3	26	MW-adjusted soluble thallium (7440-28-0) TLV-TWA x 3, TEEL-3/6, soluble thallium IDLH (1990)	mg/m <sup>3</sup>
2864	Thenoyltrifluoroacetone	326-91-0	0.9	9.9	59	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2865	Thioacetamide	62-55-5	0.92	10	60	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2866	Thioacetic acid	507-09-5	0.079	0.87	5.2	TEEL-2/11, TEEL-3/6, mouse ip LD50	ppm
2867	Thiobis(4-chloro-6-methyl)phenol, 2,2'-	4418-66-0	0.12	1.3	7.8	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2868	Thiocarbazide; (Thiocarbohydrazide)	2231-57-4	9.1	100	600	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2869	Thiocresol, p-; (p-Toluenethiol)	106-45-6	0.66	7.2	43	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2870	Thiocyanic acid, compound with guanidine (1:1); (Guanidine thiocyanate salt)	593-84-0	0.98	11	65	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2871	Thiodiglycol	111-48-8	20	220	1,300	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2872	Thiofanox; (Dacamox)	39196-18-4	0.77	8.5	51	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2873	Thionazin; (Ethyl pyrazinyl phosphorothioate)	297-97-2	0.32	3.5	21	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
2874	<b>Thionyl chloride</b>	<b>7719-09-7</b>	<b>0.2</b>	<b>2.4</b>	<b>14</b>	<b>ERPG-1, AEGL-2, AEGL-3</b>	ppm
2875	Thiophosphoryl chloride	3982-91-0	0.093	1	6.1	TEEL-2/11, TEEL-3/6, rat 240-min LC50	mg/m <sup>3</sup>
2876	Thiosemicarbazide; (1-Amino-2-thiourea)	79-19-6	1.1	12	13	TEEL-2/11, rat ip TDLo, mouse oral LDLo	mg/m <sup>3</sup>
2877	Thiourea	62-56-6	0.38	4.1	25	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2878	Thiram; (Tetramethylthioperoxydicarbonic diamide)	137-26-8	0.15	250	1,500	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
2879	Thorium	7440-29-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

Chemicals with AEGLs: large, bolded font. ERPGs (but no AEGLs): bolded font.

\* indicates 10% LEL ≤ PAC < 50% LEL; \*\* indicates 50% LEL ≤ PAC < 100% LEL; \*\*\* indicates PAC ≥ LEL.

**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2880	Thorium hydroxide	13825-36-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2881	Thorium nitrite	z-0079	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2882	Thorium oxalate	2040-52-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2883	Thorium oxide; (Thorium dioxide)	1314-20-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2884	Thorium perchlorate	16045-17-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2885	Thorium(IV) nitrate	13823-29-5	2.9	32	190	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2886	Thulium	7440-30-4	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2887	Thulium chloride	13537-18-3	7	77	460	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2888	Thulium oxide	12036-44-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2889	Thymol blue; (6,6'-(3H-2,1-benzoxathiol-3-ylidene)dithymol, S,S-dioxide)	76-61-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2890	Thyodene; (Amylodextrin)	9005-84-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2891	Tin	7440-31-5	6	67	400	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
2892	Tin fluoroborate	13814-97-6	15	170	990	MW-adjusted inorganic tin (7440-31-5) TLV-TWA x 3, TEEL-3/6, MW-adjusted inorganic tin IDLH (1990)	mg/m <sup>3</sup>
2893	Tin hydroxide	12026-24-3	7.7	85	510	MW-adjusted inorganic tin (7440-31-5) TLV-TWA x 3, TEEL-3/6, MW-adjusted inorganic tin IDLH (1990)	mg/m <sup>3</sup>
2894	Tin nitrate	41480-79-9	12	140	820	MW-adjusted inorganic tin (7440-31-5) TLV-TWA x 3, TEEL-3/6, MW-adjusted inorganic tin IDLH (1990)	mg/m <sup>3</sup>
2895	Tin nitrite	100737-27-7	11	120	710	MW-adjusted inorganic tin (7440-31-5) TLV-TWA x 3, TEEL-3/6, MW-adjusted inorganic tin IDLH (1990)	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2896	Tin(II) chloride dihydrate; (Stannous chloride dihydrate)	10025-69-1	11	20	760	MW-adjusted inorganic tin (7440-31-5) TLV-TWA x 3, rat ip TDLo, MW-adjusted inorganic tin IDLH (1990)	mg/m <sup>3</sup>
2897	Tin(II) oxide	1332-29-2	7.6	85	510	MW-adjusted inorganic tin (7440-31-5) TLV-TWA x 3, TEEL-3/6, MW-adjusted inorganic tin IDLH (1990)	mg/m <sup>3</sup>
2898	Tin(II) sulfate; (Stannous sulfate)	7488-55-3	11	120	720	MW-adjusted inorganic tin (7440-31-5) TLV-TWA x 3, TEEL-3/6, MW-adjusted inorganic tin IDLH (1990)	mg/m <sup>3</sup>
2899	Tin(IV) isopropoxide	1184-61-8	0.7	7.7	46	MW-adjusted inorganic tin (7440-31-5) TLV-TWA x 3, TEEL-3/6, MW-adjusted inorganic tin IDLH (1990)	mg/m <sup>3</sup>
2900	Tin(IV) oxide; (Stannic oxide)	18282-10-5	7.6	85	510	MW-adjusted inorganic tin (7440-31-5) TLV-TWA x 3, TEEL-3/6, MW-adjusted inorganic tin IDLH (1990)	mg/m <sup>3</sup>
2901	Titanium	7440-32-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2902	Titanium aluminide	39410-63-4	8.3	92	550	MW-adjusted insoluble aluminum (7429-90-5) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2903	Titanium boride	12045-63-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2904	Titanium carbide	12070-08-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2905	Titanium chloride	7705-07-9	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2906	Titanium hydride	7704-98-5	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2907	Titanium oxide; (Titanium dioxide)	13463-67-7	30	330	2,000	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2908	<b>Titanium tetrachloride</b>	<b>7550-45-0</b>	<b>0.65</b>	<b>1.0</b>	<b>5.7</b>	<b>ERPG-1, AEGL-2, AEGL-3</b>	ppm
2909	Titanium(II) oxide	12137-20-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2910	Titanium(III) fluoride	13470-08-1	14	150	920	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2911	Titanium-based alloy; (Titanium compounds)	z-0081	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2912	<b>Toluene</b>	<b>108-88-3</b>	<b>67</b>	<b>560</b>	<b>3700*</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2913	Toluene diisocyanate (mixed isomers)	26471-62-5	0.02	0.083	0.51	Used toluene-2,6-diisocyanate (584-84-9) AEGL values	ppm
2914	Toluene diisocyanate, trimethylolpropane, epsilon-caprolactone polymer, methylated	71342-93-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2915	<b>Toluene-2,4-diisocyanate; (TDI)</b>	<b>584-84-9</b>	<b>0.020</b>	<b>0.083</b>	<b>0.51</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2916	Toluene-2,6-diamine; (2-Methyl-1,3-benzenediamine)	823-40-5	3	33	200	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2917	<b>Toluene-2,6-diisocyanate</b>	<b>91-08-7</b>	<b>0.020</b>	<b>0.083</b>	<b>0.51</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2918	Toluene-d8; (Deuterated toluene)	2037-26-5	67	560	3,700	Used toluene (108-88-3) AEGL values	ppm
2919	Toluenediamine, 2,4-; (2,4-Diaminotoluene)	95-80-7	0.015	3.3	20	WEEL-TWA x 3, TEEL-3/6, rat oral LD50	ppm
2920	Toluenesulfonamide, p-; (Pasam)	70-55-3	7	77	460	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2921	Toluenesulfonic acid, methyl ester, p-	80-48-8	1	11	68	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2922	Toluenesulfonyl chloride, p-	98-59-9	0.45	5	30	TEEL-2/11, WEEL-C, TEEL-2 x 6	mg/m <sup>3</sup>
2923	Toluenesulphonic acid monohydrate, para-; (4-Methylbenzenesulphonic acid monohydrate)	6192-52-5	7.7	85	510	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2924	Toluenethiol, m-	108-40-7	0.16	1.8	11	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
2925	Toluidine, m-; (3-Methylaniline)	108-44-1	6	8.2	54	TLV-TWA x 3, rat oral TDLo, rat oral LD50	ppm
2926	Toluidine, o-	95-53-4	6	8.2	100	TLV-TWA x 3, rat oral TDLo, IDLH (1990)	ppm
2927	Toluidine, p-; (4-Methylbenzenamine)	106-49-0	6	8.2	30	TLV-TWA x 3, rat oral TDLo, rat oral LD50	ppm
2928	Toxaphene; (Chlorinated camphene)	8001-35-2	1	20	200	TLV-STEL, LOC, IDLH (1990 and 1994)	mg/m <sup>3</sup>
2929	Trans-1,4-dichlorobutene; (2-Butylene dichloride)	110-57-6	0.078	0.86	3.8	TEEL-2/11, LOC, rat 240-min LC50	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2930	Tri(2-ethylhexyl) phosphate; (Trioctyl phosphate)	78-42-2	21	230	1,400	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2931	Triacetin; (Triacetyl glycerin)	102-76-1	19	210	1,200	TEEL-2/11, TEEL-3/6, dog iv LD50	mg/m <sup>3</sup>
2932	Triamiphos	1031-47-6	0.06	0.66	4	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2933	Triaryl sulfonium chloride salts	109037-76-5	1.1	12	72	TEEL-2/11, TEEL-3/6, rabbit oral LD50	mg/m <sup>3</sup>
2934	Triazine-1,3,5(2H,4H,6H)-triethanol, s-; (Onyxide 200)	4719-04-4	2.3	25	150	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2935	Triazofos; (Triazophos)	24017-47-8	0.25	2.8	12	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
2936	Tribenzylamine	620-40-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2937	Tributyl citrate	77-94-1	0.88	9.7	43	TEEL-2/11, mouse ip TDLo, mouse ip LD50	ppm
2938	Tributyl phosphate	126-73-8	1.4	8.3	125	TLV-TWA x 3, rat oral TDLo, IDLH (1990)	ppm
2939	Tributyl(2,4-dichlorobenzyl) phosphonium chloride	115-78-6	0.53	5.9	35	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2940	Tributyl-1-butanaminium iodide, N,N,N-; (Tetrabutylammonium iodide)	311-28-4	6	66	390	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2941	Tributylphosphine	998-40-3	0.27	3	18	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
2942	Tributyltetradecylphosphonium chloride	81741-28-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2943	Trichloramine; (Nitrogen chloride)	10025-85-1	0.062	0.68	3.9	TEEL-2/11, rat oral TDLo, rat 120-min LC50	ppm
2944	<b>Trichloro(dichlorophenyl) silane; (Dichlorophenyltrichlorosilane)</b>	<b>27137-85-5</b>	<b>0.60</b>	<b>7.3</b>	<b>33</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2945	Trichloro-2,2,2-trifluoroethane, 1,1,1-	354-58-5	100	1,200	6,900	TEEL-2/11, TEEL-3/6, rat 15-min LC50	mg/m <sup>3</sup>
2946	Trichloro-2-nitrosobenzene, 1,3,5-	1196-13-0	2.3	25	150	Used 2,4,5-trichloronitrobenzene (89-69-0) PAC values	mg/m <sup>3</sup>
2947	Trichloroacetaldehyde hydrate; (Chloral hydrate)	302-17-0	2.5	27	95	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2948	Trichloroacetaldehyde; (Chloral)	75-87-6	0.89	9.8	19	TEEL-2/11, rat 240-min TCLo, rat 240-min LC50	mg/m <sup>3</sup>
2949	Trichloroacetic acid	76-03-9	1.5	16	99	TLV-TWA x 3, TEEL-3/6, dog oral LD50	ppm
2950	Trichloroacetyl chloride	76-02-8	0.055	0.61	2.8	TEEL-2/11, LOC, rat 240-min LC50	ppm
2951	Trichlorobenzene, 1,2,3-	87-61-6	15	60	360	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2952	Trichlorobenzene, 1,2,4-	120-82-1	0.45	5	20	TEEL-2/11, TLV-C, rat oral LD50	ppm
2953	<b>Trichloroethane, 1,1,1-; (Methyl chloroform)</b>	<b>71-55-6</b>	<b>230</b>	<b>600</b>	<b>4,200</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2954	Trichloroethane, 1,1,2-	79-00-5	30	180	500	TLV-TWA x 3, mouse 120-min TCLo, IDLH (1990)	ppm
2955	Trichloroethanol, 2,2,2-	115-20-8	6.1	68	120	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2956	<b>Trichloroethylene</b>	<b>79-01-6</b>	<b>130</b>	<b>450</b>	<b>3,800</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2958	Trichlorofluoromethane; (Fluorotrichloromethane; Freon 11)	75-69-4	140	1,500	10,000	TEEL-2/11, EEGL 60-min, IDLH (1990)	ppm
2959	Trichlorohydroxyethyl dimethylphosphonate; ((2,2,2-Trichloro-1-hydroxyethyl)dimethylphosphonate; Trichlorphon)	52-68-6	3	13	57	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
2960	Trichloroisocyanuric acid	87-90-1	38	420	2,500	TEEL-2/11, TEEL-3/6, human oral LDLo	mg/m <sup>3</sup>
2961	Trichloronaphthalene	1321-65-9	15	170	990	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2962	Trichloronate; (Ethyl trichlorophenylethylphosphonothioate)	327-98-0	0.91	10	30	TEEL-2/11, LOC, rat 240-min LCLo	mg/m <sup>3</sup>
2963	Trichloronitrobenzene, 2,4,5-	89-69-0	2.3	25	150	TEEL-2/11, TEEL-3/6, mouse oral LDLo	mg/m <sup>3</sup>
2964	Trichlorophenol, 2,3,6-	933-75-5	1.8	20	120	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
2965	Trichlorophenol, 2,4,5-	95-95-4	2.5	27	160	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2966	Trichlorophenol, 2,4,6-	88-06-2	2.5	27	160	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2967	Trichlorophenoxy)propionic acid, 2-(2,4,5-; (Silvex)	93-72-1	0.82	9	130	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
2968	Trichlorophenoxyacetic acid, 2,4,5-; (2,4,5-T)	93-76-5	30	42	250	TLV-TWA x 3, TEEL-3/6, IDLH (1994, See white paper)	mg/m <sup>3</sup>
2969	<b>Trichlorophenylsilane</b>	<b>98-13-5</b>	<b>0.60</b>	<b>7.3</b>	<b>33</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2970	Trichloropropane, 1,2,3-	96-18-4	0.015	170	1,000	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
2971	<b>Trichlorosilane</b>	<b>10025-78-2</b>	<b>0.60</b>	<b>7.3</b>	<b>33</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
2972	Trichlorotrifluoroethane; (Freon 113; CFC113)	76-13-1	1,250	1,500	4,500	TLV-STEL, EEGL 60-min, IDLH (1990)	ppm
2973	Tridecane	629-50-5	0.0073	0.08	2.3	TEEL-2/11, rabbit dermal TDLo, rat 480-min LC50	ppm
2974	Tridodecylamine; (Alamine 304; N,N-didodecyl-1-dodecanamine)	102-87-4	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
2975	Triethanolamine; (Trihydroxytriethylamine)	102-71-6	15	240	1,500	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2976	<b>Triethoxysilane</b>	<b>998-30-1</b>	<b>0.5</b>	<b>4</b>	<b>10</b>	<b>ERPG-1, ERPG-2, ERPG-3</b>	ppm
2977	Triethoxyvinylsilane	78-08-0	2.6	29	170	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
2978	Triethyl phosphate; (TEP)	78-40-0	23	250	320	TEEL-2/11, rat 360-min TCLo, rat oral LD50	mg/m <sup>3</sup>
2979	Triethyl phosphite	122-52-1	1.2	14	82	TEEL-2/11, TEEL-3/6, rat 360-min LC50	ppm
2980	Triethylaluminum	97-93-8	25	280	1,700	MW-adjusted alkyl aluminum (7429-90-5) REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2981	Triethylamine	121-44-8	1	170	1,000	TLV-STEL, TEEL-3/6, IDLH (1990)	ppm
2982	Triethylammonium bicarbonate buffer ph 8.5	15715-58-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
2983	Triethylbenzene (mixed isomers)	25340-18-5	3	33	200	TEEL-2/11, TEEL-3/6, rat oral LDLo	ppm
2984	Triethylene glycol	112-27-6	130	1,400	4,400	TEEL-2/11, mouse oral TDLo, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
2985	Triethylene glycol monomethyl ether	112-35-6	34	370	2,200	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2986	Triethylenetetramine	112-24-3	3	14	83	WEEL-TWA x 3, TEEL-3/6, rat oral LD50	ppm
2987	Triethylethanaminium hydroxide, N,N,N-; (Tetraethyl ammonium hydroxide)	77-98-5	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2988	Triethyloxonium tetrafluoroborate	368-39-8	19	220	1,300	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
2989	Triethylphosphorothioate; (Tepto)	126-68-1	0.027	0.3	1.8	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
2990	Trifluoro-1-(2-thienyl)-1,3-butanedione, 4,4,4-, boron difluoride	22502-27-8	0.33	3.6	22	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
2991	Trifluoro-4-nitro-m-cresol, alpha,alpha,alpha-; (4-Nitro-3-(trifluoromethyl)phenol)	88-30-2	0.42	4.7	28	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
2992	Trifluoroacetaldehyde hydrate; (2,2,2-Trifluoro-1,1-ethanediol)	421-53-4	0.98	11	65	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
2993	Trifluoroacetic acid anhydride	407-25-0	14	150	920	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
2994	Trifluoroacetic acid; (Trifluoroethanoic acid)	76-05-1	0.13	1.4	8.5	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
2995	Trifluoroacetyl chloride	354-32-5	3.2	35	210	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990) converted to ppm	ppm
2996	Trifluoroethanol, 2,2,2-; (Trifluoroethyl alcohol)	75-89-8	0.9	10	24	WEEL-TWA, rat 240-min TCLo, rat 360-min LC50	ppm
2997	Trifluoromethanesulfonic acid; (Triflic acid)	1493-13-6	2	22	130	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	ppm
2998	Trifluoromethanesulfonic anhydride	358-23-6	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
2999	Trifluoromethyl iodide; (Iodotrifluoromethane)	2314-97-8	6.5	72	430	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
3000	Trifluoromethyl)benzenamine, 3-; (m-Aminobenzal fluoride)	98-16-8	0.4	4.4	19	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
3001	Trifluralin; (2,6-Dinitro-N,N-dipropyl-4-(trifluoromethyl)benzenamine)	1582-09-8	1.2	13	78	TEEL-2/11, TEEL-3/6, rat 60-min LC50	mg/m <sup>3</sup>

Chemicals with AEGLs: large, bolded font. ERPGs (but no AEGLs): bolded font.

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
3002	Triisobutylaluminum	100-99-2	44	290	1,800	MW-adjusted aluminum soluble salts (7429-90-5) REL-TWA x 3, TEEL-3/6, rat 60-min LCLo	mg/m <sup>3</sup>
3003	Trimethoxy(3,3,3-trifluoropropyl)silane	429-60-7	29	320	1,900	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
3004	Trimethoxyboroxine	102-24-9	15	170	1,000	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3005	<b>Trimethoxysilane</b>	<b>2487-90-3</b>	<b>0.5</b>	<b>0.83</b>	<b>2.5</b>	<b>ERPG-1, AEGL-2, AEGL-3</b>	ppm
3006	Trimethoxysilyl-1-propanamine, 3-(	13822-56-5	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3007	Trimethoxysilyl-1-propanethiol, 3-; (3-Mercaptopropyltrimethoxysilane)	4420-74-0	2.2	24	150	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3008	Trimethoxysilylpropyl methacrylate, 3-; (Silane A-174)	2530-85-0	71	780	4,700	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3009	Trimethoxysilylpropyl ethylenediamine, N-(3-	1760-24-3	23	250	1,500	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3010	Trimethoxyvinylsilane; (Vinyltrimethoxysilane; Silane, trimethoxyvinyl-)	2768-02-7	9.5	100	120	TEEL-2/11, rat 360-min TCLo, rat 240-min LC50	ppm
3011	Trimethyl borate	121-43-7	4.3	48	290	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
3012	Trimethyl phosphate; (TMP)	512-56-1	0.44	4.8	29	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
3013	<b>Trimethyl phosphite</b>	<b>121-45-9</b>	<b>6.1</b>	<b>61</b>	<b>310</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
3014	Trimethyl-1,3-pentanediol monoisobutyrate, 2,2,4-; (Texanol)	25265-77-4	13	140	840	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>
3015	Trimethyl-1-pentene, 2,4,4-; (Diisobutylene)	107-39-1	230	2500*	15000***	WEEL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	ppm
3016	Trimethyl-2,5,8,11-tetraoxatetradecan-13-ol, 4,7,10-	20324-34-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3017	Trimethyl-2-hexene, 4,4,5-	55702-61-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3018	Trimethyl-2-oxepanone (mixed isomers); (Hexanoic acid, 6-hydroxytrimethyl, epsilon-lactone)	64047-30-9	22	250	1,500	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3019	Trimethylacetic acid; (Pivalic acid)	75-98-9	2.7	30	180	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
3020	<b>Trimethylacetyl chloride; (Pivaloyl chloride)</b>	<b>3282-30-2</b>	0.015	<b>0.16</b>	<b>0.47</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
3021	Trimethylaluminum	75-24-1	16	170	1,000	MW-adjusted aluminum soluble salts (7429-90-5) REL-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3022	<b>Trimethylamine</b>	<b>75-50-3</b>	<b>8.0</b>	<b>120</b>	<b>380</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
3023	Trimethylaniline, 2,4,6-	88-05-1	0.26	2.9	10	TEEL-2/11, LOC, mouse 120-min LC50	mg/m <sup>3</sup>
3024	<b>Trimethylbenzene, 1,2,3-</b>	<b>526-73-8</b>	<b>140</b>	<b>360</b>	480	<b>AEGL-1, AEGL-2</b> , rat oral LDLo	ppm
3025	<b>Trimethylbenzene, 1,2,4-; (Pseudocumene)</b>	<b>95-63-6</b>	<b>140</b>	<b>360</b>	480	<b>AEGL-1, AEGL-2</b> , used 1,2,3-trimethylbenzene (526-73-8) PAC-3	ppm
3026	<b>Trimethylchlorosilane</b>	<b>75-77-4</b>	<b>1.8</b>	<b>22</b>	<b>100</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
3027	Trimethyldecane, all isomers; (includes 62238-01-1, 62108-23-0)	62338-09-4	230	385	5,000	Used n-octane (111-65-9) PAC values	ppm
3028	Trimethylgallium	1445-79-0	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
3029	Trimethylhexane, 2,2,5-; (Neononane)	3522-94-9	600	6,600	40,000	Nonane (111-84-2) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	ppm
3030	Trimethyl-N'-(hydroxyethyl)-1,3-propanediamine, N,N,N'-; (2-((3-(Dimethylamino)propyl)methylamino)ethanol)	82136-26-3	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3031	Trimethyloctane, all isomers; (includes 62016-28-8, 62016-34-6, 62016-37-9, 54166-32-4)	98060-52-7	230	385	5,000	Used n-octane (111-65-9) PAC values	ppm
3032	Trimethylolpropane ethoxylate	50586-59-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3033	Trimethylolpropane phosphite	824-11-3	0.23	2.5	2.8	TEEL-2/11, LOC, rat 240-min LCLo	mg/m <sup>3</sup>
3034	Trimethylphosphine	594-09-2	0.39	4.2	25	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	ppm
3035	Trimethylpyridine, 2,4,6-	108-75-8	1.3	14	85	TEEL-2/11, TEEL-3/6, rat 120-min LCLo	ppm
3036	Trimethylsilanol	1066-40-6	2.3	25	150	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
3037	Trimethylsilylmethylithium	1822-00-0	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
3038	Trimethyltin chloride; (Chlorotrimethylstannane)	1066-45-1	0.34	20	120	MW-adjusted tin (7440-31-5) TLV-STEL, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
3039	Trimethyltriheptylamine, 6,6',6"-; (Triisooctylamine)	2757-28-0	4.3	48	290	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3040	Tri-n-butylamine	102-82-9	0.049	0.54	3.2	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
3041	Trinitrobenzene, 1,3,5-	99-35-4	1.5	16	54	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
3042	Trinitrochlorobenzene; (Picryl chloride)	28260-61-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3043	Trinitrophenylmethylnitramine, 2,4,6-; (Tetryl)	479-45-8	4.5	14	1,300	TLV-TWA x 3, rat oral TDLo, rat oral LDLo	mg/m <sup>3</sup>
3044	Trinitrotoluene, 2,4,6-	118-96-7	0.3	17	1,000	TLV-TWA x 3, rat oral TDLo, IDLH (1990)	mg/m <sup>3</sup>
3045	Tri-n-octylphosphine oxide; (Trioctylphosphine oxide)	78-50-2	1	11	68	TEEL-2/11, rat dermal TDLo, TEEL-2 x 6	mg/m <sup>3</sup>
3046	Trioctylamine; (N,N-Dioctyl-1-octanamine)	1116-76-3	6	66	400	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
3047	Trioctylphosphine; (Tri-n-octylphosphine)	4731-53-7	0.11	1.2	7.2	TEEL-2/11, TEEL-3/6, mouse 10-min LCLo	mg/m <sup>3</sup>
3048	Tri-o-tolyl phosphate; (Triorthocresyl phosphate)	78-30-8	0.3	13	40	TLV-TWA x 3, TEEL-3/6, IDLH (1990 and 1994)	ppm
3049	Tripentaerythritol	78-24-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3050	Triphenyl phosphate	115-86-6	9	360	2,100	TLV-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3051	Triphenyl phosphite	101-02-0	4.8	53	320	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3052	Triphenylborane	960-71-4	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3053	Triphenylethoxysilane	1516-80-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3054	Triphenylmethane triglycidyl ether	66072-38-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3055	Triphenylphosphine	603-35-0	2.9	32	540	TEEL-2/11, dog oral LD50, rat 240-min LC50	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
3056	Triphenyltin chloride; (Chlorotriphenylstannane)	639-58-7	0.65	20	38	MW-adjusted organic tin (7440-31-5) TLV-STEL, LOC, rat oral LD50	mg/m <sup>3</sup>
3057	Tripotassium (2-hydroxyethyl)ethylenediaminetriacetate; (Tripotassium HEDTA)	62029-50-9	30	330	2,000	Used trisodium HEDTA (139-89-9) PAC values	mg/m <sup>3</sup>
3058	Tripotassium arsenate	13464-36-3	5.2	57	340	TEEL-2/11, TEEL-3/6, MW-adjusted arsenic (7440-38-2) IDLH (1990)	mg/m <sup>3</sup>
3059	Tripropyl phosphate; (TPP)	513-08-6	13	76	1,100	Used MW-adjusted tributyl phosphate (126-73-8) PAC values converted to mg/m <sup>3</sup>	mg/m <sup>3</sup>
3060	Tripropylamine	102-69-2	0.58	6.4	38	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
3061	Tripropylene glycol methyl ether	25498-49-1	9.6	110	630	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3062	Tripropylene glycol monomethyl ether; (1-(2-(2-Methoxy-1-methylethoxy)-1-methylethoxy)-2-propanol)	20324-33-8	2	22	75	TEEL-2/11, rabbit dermal TDLo, rat oral LD50	ppm
3063	Tripropylene glycol; (((1-Methyl-1,2-ethanediy)bis(oxy))bispropanol)	24800-44-0	1.1	13	76	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
3064	Tris hydrochloride; (Trizma hydrochloride; Tris(hydroxymethyl) aminomethane hydrochloride)	1185-53-1	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
3065	Tris((hydroxymethyl)methylamino)propane-1-sulphonic acid, 3-	29915-38-6	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3066	Tris(2-aminoethyl)amine	4097-89-6	1	11	49	TEEL-2/11, rat oral TDLo, rat oral LD50	mg/m <sup>3</sup>
3067	Tris(2-chloroethyl) phosphate; (2-Chloroethanol phosphate)	115-96-8	3.7	41	240	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3068	<b>Tris(2-chloroethyl)amine; (Nitrogen mustard-3)</b>	<b>555-77-1</b>	0.002	<b>0.022</b>	<b>0.37</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
3069	Tris(dimethylaminomethyl)phenol, 2,4,6-	90-72-2	3.6	40	240	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3070	Tris-hydroxymethylaminomethane; (THAM)	77-86-1	18	190	1,200	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3071	Trisodium arsenate	13464-38-5	4.2	47	280	TEEL-2/11, TEEL-3/6, MW-adjusted arsenic (7440-38-2) IDLH (1990)	mg/m <sup>3</sup>
3072	Trisodium arsenate, heptahydrate; (Arsenic(V) acid, trisodium salt, heptahydrate (1:3:7))	64070-83-3	6.8	75	450	TEEL-2/11, TEEL-3/6, MW-adjusted arsenic (7440-38-2) IDLH (1990)	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
3073	Trisodium citrate	68-04-2	9.3	100	610	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
3074	Trisodium N-hydroxyethylethylenediaminetriacetate; (Trisodium N-(2-hydroxyethyl)ethylenediaminetriacetate)	139-89-9	30	330	2,000	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3075	Trisodium phosphate; (Sodium phosphate, tribasic)	7601-54-9	5	66	400	WEEL-STEL, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3076	Triton X-100; (Poly(oxyethylene)-p-tert-octylphenyl ether)	9002-93-1	11	130	750	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3077	Trypsin; (Parezyme; Chymotrypsin inhibitor)	9002-07-7	2.4	26	160	TEEL-2/11, TEEL-3/6, mouse oral LD50	mg/m <sup>3</sup>
3078	Tungsten	7440-33-7	10	330	2,000	TLV-STEL, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
3079	Tungsten boride	12007-09-9	11	120	730	MW-adjusted insoluble tungsten (7440-33-7) TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3080	Tungsten carbide	12070-12-1	11	120	730	MW-adjusted insoluble tungsten (7440-33-7) TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3081	Tungsten hexafluoride	7783-82-6	4.9	54	320	MW-adjusted insoluble tungsten (7440-33-7) TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3082	Tungsten trioxide; (Tungsten(VI) oxide)	1314-35-8	13	140	860	MW-adjusted insoluble tungsten (7440-33-7) TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3083	Tungsten(IV) chloride; (Tungsten tetrachloride)	13470-13-8	5.3	58	350	MW-adjusted insoluble tungsten (7440-33-7) TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3084	Tungsten(IV) oxide	12036-22-5	12	130	790	MW-adjusted insoluble tungsten (7440-33-7) TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3085	Tungstic acid	7783-03-1	14	150	920	MW-adjusted insoluble tungsten (7440-33-7) TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3086	Tungstosilicic acid	11130-20-4	13	140	860	MW-adjusted insoluble tungsten (7440-33-7) TLV-STEL, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
3087	Turpentine, (Alpha and beta pinene, 80-56-8)	8006-64-2	60	120	1,500	TLV-TWA x 3, dog 360-min TClO, IDLH (1990)	ppm
3088	Undecane	1120-21-4	2.3	26	150	TEEL-2/11, TEEL-3/6, rat oral LD50	ppm
3089	Undecanone, 2-; (Methyl nonyl ketone)	112-12-9	0.91	10	60	TEEL-2/11, TEEL-3/6, mouse oral LD50	ppm
3090	Uranine; (Fluorescein sodium)	518-47-8	20	220	1,300	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3091	Uranium	7440-61-1	0.6	5	30	TLV-STEL, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
3092	<b>Uranium dioxide; (Uranium(IV) oxide)</b>	<b>1344-57-6</b>	0.68	<b>10</b>	<b>30</b>	MW-adjusted soluble uranium (7440-61-1) TLV-STEL, <b>ERPG-2, ERPG-3</b>	mg/m <sup>3</sup>
3093	<b>Uranium hexafluoride; (Uranium fluoride)</b>	<b>7783-81-5</b>	<b>3.6</b>	<b>9.6</b>	<b>36</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	mg/m <sup>3</sup>
3094	Uranium hydride; (Uranium(III) hydride)	13598-56-6	0.61	5	30	MW-adjusted insoluble uranium (7440-61-1) TLV-STEL, TEEL-3/6, MW-adjusted uranium IDLH (1990)	mg/m <sup>3</sup>
3095	<b>Uranium oxide; (Triuranium octaoxide)</b>	<b>1344-59-8</b>	0.71	<b>10</b>	<b>50</b>	MW-adjusted as insoluble uranium (7440-61-1) TLV-STEL, <b>ERPG-2, ERPG-3</b>	mg/m <sup>3</sup>
3096	Uranium telluride	12138-37-3	1.2	10	62	MW-adjusted insoluble uranium (7440-61-1) TLV-STEL, TEEL-3/6, MW-adjusted uranium IDLH (1990)	mg/m <sup>3</sup>
3097	Uranium telluride (U <sub>3</sub> Te <sub>4</sub> )	12040-21-0	1	8.5	51	MW-adjusted insoluble uranium (7440-61-1) TLV-STEL, TEEL-3/6, MW-adjusted uranium IDLH (1990)	mg/m <sup>3</sup>
3098	<b>Uranium trioxide</b>	<b>1344-58-7</b>	0.045	<b>0.5</b>	<b>3</b>	ERPG-2/11, <b>ERPG-2, ERPG-3</b>	mg/m <sup>3</sup>
3099	Uranyl acetate; (Uranium oxyacetate)	541-09-3	0.98	5.5	33	MW-adjusted insoluble uranium (7440-61-1) TLV-STEL, TEEL-3/6, MW-adjusted uranium IDLH (1990)	mg/m <sup>3</sup>
3100	Uranyl fluoride; (Uranium oxyfluoride)	13536-84-0	0.78	4.3	26	MW-adjusted insoluble uranium (7440-61-1) TLV-STEL, TEEL-3/6, MW-adjusted uranium IDLH (1990)	mg/m <sup>3</sup>
3101	Uranyl hydroxide (includes liquids)	13470-18-3	0.77	4.3	26	MW-adjusted insoluble uranium (7440-61-1) TLV-STEL, TEEL-3/6, MW-adjusted uranium IDLH (1990)	mg/m <sup>3</sup>

Chemicals with AEGLs: large, bolded font. ERPGs (but no AEGLs): bolded font.  
 \* indicates 10% LEL ≤ PAC < 50% LEL; \*\* indicates 50% LEL ≤ PAC < 100% LEL; \*\*\* indicates PAC ≥ LEL.

**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
3102	Uranyl nitrate (solid); (Bis(nitrato-O,O')dioxouranium)	10102-06-4	0.99	5.5	33	MW-adjusted insoluble uranium (7440-61-1) TLV-STEL, TEEL-3/6, MW-adjusted uranium IDLH (1990)	mg/m <sup>3</sup>
3103	Uranyl nitrate (yellow salt)	36478-76-9	0.99	5.5	33	MW-adjusted insoluble uranium (7440-61-1) TLV-STEL, TEEL-3/6, MW-adjusted uranium IDLH (1990)	mg/m <sup>3</sup>
3104	Uranyl nitrate hexahydrate	13520-83-7	1.3	7	42	MW-adjusted insoluble uranium (7440-61-1) TLV-STEL, TEEL-3/6, MW-adjusted uranium IDLH (1990)	mg/m <sup>3</sup>
3105	Uranyl nitrite (liquids)	z-0087	0.91	5	30	MW-adjusted insoluble uranium (7440-61-1) TLV-STEL, TEEL-3/6, MW-adjusted uranium IDLH (1990)	mg/m <sup>3</sup>
3106	Urea	57-13-6	30	280	1,700	WEEL-TWA x 3, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3107	Urea peroxide; (Urea hydrogen peroxide)	124-43-6	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
3108	Urea), N,N"-(4-methyl-1,3-phenylene)bis(N',N'-dimethyl-	17526-94-2	12	130	790	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 2)	mg/m <sup>3</sup>
3109	Urethane; (Carbamic acid, ethyl ester; Ethyl carbamate)	51-79-6	5.4	60	360	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3110	Valeric acid; (n-Pentanoic acid)	109-52-4	2.2	24	140	TEEL-2/11, TEEL-3/6, mouse 120-min LC50	mg/m <sup>3</sup>
3111	Valinomycin	2001-95-8	0.23	2.5	15	TEEL-2/11, LOC, TEEL-2 x 6	mg/m <sup>3</sup>
3112	Vanadium	7440-62-2	3	5.8	35	REL-STEL (ferrovanadium, 12604-58-9), TEEL-3/6, IDLH (1994, See white paper)	mg/m <sup>3</sup>
3113	Vanadium pentoxide; (Vanadium(V) oxide)	1314-62-1	0.64	7	70	TEEL-2/11, LOC, IDLH (1990)	mg/m <sup>3</sup>
3114	Vanadium sulfate	13566-06-8	0.013	0.14	100	TEEL-2/11, MW-adjusted vanadium (1314-62-1) REL-C & IDLH (1994, See white paper)	mg/m <sup>3</sup>
3115	Vanadium tetrachloride	7632-51-1	0.017	0.19	130	TEEL-2/11, MW-adjusted vanadium (1314-62-1) REL-C & IDLH (1994, See white paper)	mg/m <sup>3</sup>
3116	Vanadium trioxide	1314-34-7	0.0067	0.074	51	TEEL-2/11, MW-adjusted vanadium (1314-62-1) REL-C & IDLH (1994, See white paper)	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
3117	Vanadium(II) sulfate heptahydrate	36907-42-3	0.025	0.27	190	TEEL-2/11, MW-adjusted vanadium (1314-62-1) REL-C & IDLH (1994, See white paper)	mg/m <sup>3</sup>
3118	Vanadium(III) sulfate	13701-70-7	0.017	0.19	130	TEEL-2/11, MW-adjusted vanadium (1314-62-1) REL-C & IDLH (1994, See white paper)	mg/m <sup>3</sup>
3119	Vanadium, trichlorooxo-	7727-18-6	0.015	0.17	120	TEEL-2/11, MW-adjusted vanadium (1314-62-1) REL-C & IDLH (1994, See white paper)	ppm
3120	Vanadyl sulfate pentahydrate; (Vanadium(IV) sulfate oxide hydrate)	12439-96-2	0.023	0.25	170	TEEL-2/11, MW-adjusted vanadium (1314-62-1) REL-C & IDLH (1994, See white paper)	mg/m <sup>3</sup>
3121	Vanadyl sulfate; (Oxysulfatovanadium)	27774-13-6	0.015	0.16	110	TEEL-2/11, MW-adjusted vanadium (1314-62-1) REL-C & IDLH (1994, See white paper)	mg/m <sup>3</sup>
3122	Veratraldehyde	120-14-9	6	66	400	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3123	Vermiculite, exfoliated	1318-00-9	32	360	2,200	MW-adjusted insoluble aluminum (7429-90-5) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3124	Vinyl 2-chloroethylsulfide; (2-Chloroethylthio ethene)	81142-02-1	0.034	0.38	2.3	Used allyl 2-chloroethyl (19155-35-2) PAC values	mg/m <sup>3</sup>
3125	<b>Vinyl acetate</b>	<b>108-05-4</b>	<b>6.7</b>	<b>36</b>	<b>180</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
3126	Vinyl acetate-vinyl chloride copolymer; (Acetic acid, vinyl ester, polymer with chloroethylene)	9003-22-9	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>
3127	Vinyl acrylic resin; (Vinyl acetate, polymer with n-butyl acrylate)	25067-01-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3128	Vinyl bromide; (Bromoethylene)	593-60-2	1.5	430	2,600	TLV-TWA x 3, TEEL-3/6, rat 420-min LCLo	ppm
3129	<b>Vinyl chloride</b>	<b>75-01-4</b>	<b>250</b>	<b>1,200</b>	<b>4800*</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
3130	Vinyl ethyl ether; (Ethoxy ethene)	109-92-2	10	110	690	TEEL-2/11, TEEL-3/6, rat 240-min LCLo	ppm
3131	Vinyl fluoride	75-02-5	570	6200*	37000***	TEEL-2/11, TEEL-3/6, rat 240-min LC50	ppm
3132	Vinyl sulfoxide	1115-15-7	0.4	4.4	26	TEEL-2/11, TEEL-3/6, rat oral LDLo	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
3133	Vinyl terminated dimethylsiloxane-diphenylsiloxane copolymer	68951-96-2	120	1,300	7,900	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 1)	mg/m <sup>3</sup>
3134	<b>Vinyl trichlorosilane</b>	<b>75-94-5</b>	<b>0.60</b>	<b>7.3</b>	<b>33</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
3135	Vinyl-2-pyrrolidinone, 1-	88-12-0	0.15	6.3	31	TLV-TWA x 3, rat 360-min TCLo, rat 240-min LC50	ppm
3136	Vinylbenzylchloride; (4-Vinylbenzyl chloride)	1592-20-7	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
3137	Vinylcyclohexene, 4-; (Cyclohexenylethylene)	100-40-3	0.3	210	340	TLV-TWA x 3, rat 360-min TCLo, rat 240-min LCLo	ppm
3138	Vinylformamide, N-	13162-05-5	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
3139	<b>Vinylidene chloride; (1,1-Dichloroethylene)</b>	<b>75-35-4</b>	45	<b>500</b>	<b>1,000</b>	ERPG-2/11, <b>ERPG-2, ERPG-3</b>	ppm
3140	Vinylidene fluoride; (1,1-Difluoroethene)	75-38-7	1,500	5600*	11000*	TLV-TWA x 3, mouse 360-min TCLo, rat 240-min LC50	ppm
3141	Vinylmagnesium bromide	1826-67-1	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
3142	Vinylpyrrolidone/vinyl acetate copolymer	25086-89-9	1.9	21	120	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3143	Viscummin; (Mistletoe lectin)	83590-17-4	7.70E-06	8.50E-05	5.10E-04	TEEL-2/11, TEEL-3/6, mouse iv LD50	mg/m <sup>3</sup>
3144	Volkensin	91933-11-8	3.70E-07	4.00E-06	2.40E-05	TEEL-2/11, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
3145	Warfarin	81-81-2	1.8	20	350	TEEL-2/11, LOC, IDLH (1990)	mg/m <sup>3</sup>
3146	Warfarin sodium	129-06-6	0.82	9	83	TEEL-2/11, LOC, dog oral LD50	mg/m <sup>3</sup>
3147	Xenon	7440-63-3	65,000	2.30E+05	4.00E+05	Simple asphyxiant	ppm
3148	Xylene, m- (includes o- (95-47-6) and p- (106-42-3) isomers)	108-38-3	150	200	1,000	TLV-STEL, EEGL-60 min, IDLH (1990)	ppm
3149	<b>Xylenes</b>	<b>1330-20-7</b>	<b>130</b>	<b>920*</b>	<b>2500*</b>	<b>AEGL-1, AEGL-2, AEGL-3</b>	ppm
3150	Xylenol orange tetrasodium salt	3618-43-7	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3151	Xylidine	1300-73-8	10	25	150	United Kingdom OEL-STEL, TEEL-3/6, IDLH (1990)	ppm

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
3152	Xylidine, 2,6-	87-62-7	1.5	25	150	TLV-TWA x 3, TEEL-3/6, IDLH (1990)	ppm
3153	Xylidine, o-; (2,3-Xylidine)	87-59-2	10	25	150	United Kingdom OEL-STEL, TEEL-3/6, IDLH (1990)	ppm
3154	Xylylene dichloride	28347-13-9	0.18	2	8.8	TEEL-2/11, LOC, rat 240-min LC50	mg/m <sup>3</sup>
3155	Ytterbium fluoride	13760-80-0	30	330	2,000	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
3156	Ytterbium oxide	1314-37-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3157	Yttrium	7440-65-5	3	33	200	TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3158	Yttrium chloride, hexahydrate	10025-94-2	10	110	670	MW-adjusted yttrium (7440-65-5) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3159	Yttrium oxide	11130-29-3	3.5	40	240	MW-adjusted yttrium (7440-65-5) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3160	Yttrium trioxide	1314-36-9	3.8	43	260	MW-adjusted yttrium (7440-65-5) TLV-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3161	Zeolites, CaA	68989-20-8	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3162	Zeolites, KA	68989-21-9	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3163	Zeolites, NaA	68989-22-0	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3164	Zeolites, NaX	68989-23-1	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3165	Zinc	7440-66-6	6	21	120	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3166	Zinc acetate	557-34-6	0.19	2.1	12	TEEL-2/11, TEEL-3/6, mouse ip LD50	mg/m <sup>3</sup>
3167	Zinc acetate dihydrate	5970-45-6	2.4	26	160	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3168	Zinc bromide	7699-45-8	6	66	400	MW-adjusted zinc (7440-66-6) MAK-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3169	Zinc carbonate	3486-35-9	12	130	750	MW-adjusted zinc (7440-66-6) MAK-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
3170	Zinc carbonate hydroxide	5263-02-5	13	150	870	MW-adjusted zinc (7440-66-6) MAK-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3171	Zinc chloride	7646-85-7	2	800	4,800	TLV-STEL, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
3172	Zinc chromate; (Pigment yellow)	13530-65-9	0.03	9	54	TLV-TWA x 3, TEEL-3/6, MW-adjusted chromates (1333-82-0) IDLH (1990)	mg/m <sup>3</sup>
3173	Zinc cyanide	557-21-1	14	18	110	MW-adjusted cyanides MAK-TWA x 3, TEEL-3/6, MW-adjusted cyanides IDLH (1990)	mg/m <sup>3</sup>
3174	Zinc fluoride	7783-49-5	20	230	1,400	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
3175	Zinc hydroxide	20427-58-1	6	66	400	MW-adjusted zinc (7440-66-6) MAK-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3176	Zinc nitrate	7779-88-6	17	190	1,100	MW-adjusted zinc (7440-66-6) MAK-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3177	Zinc nitrate hexahydrate	10196-18-6	27	300	1,800	MW-adjusted zinc (7440-66-6) MAK-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3178	Zinc nitrite	10102-02-0	14	160	950	MW-adjusted zinc (7440-66-6) MAK-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3179	Zinc oxide	1314-13-2	10	15	2,500	TLV-STEL, REL-C, IDLH (1990)	mg/m <sup>3</sup>
3180	Zinc perchlorate	13637-61-1	24	270	1,600	MW-adjusted zinc (7440-66-6) MAK-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3181	Zinc phenolsulfonate; (Zinc p-hydroxybenzenesulfonate)	127-82-2	5.4	59	360	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3182	Zinc phosphate (3:2)	7779-90-0	12	36	220	MW-adjusted zinc (7440-66-6) MAK-TWA x 3, TEEL-3/6, rat ip LD50	mg/m <sup>3</sup>
3183	<b>Zinc phosphide</b>	<b>1314-84-7</b>	0.091	<b>1.0</b>	<b>1.8</b>	AEGL-2/11, <b>AEGL-2, AEGL-3</b>	ppm
3184	Zinc stearate	557-05-1	30	330	2,000	TLV-TWA x 3, TEEL-1 x 1, TEEL-2 x 6	mg/m <sup>3</sup>
3185	Zinc sulfate	7733-02-0	15	97	580	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3186	Zinc sulfate heptahydrate (1:1:7)	7446-20-0	27	170	1,000	Used MW-adjusted zinc sulfate (7733-02-0) PAC values	mg/m <sup>3</sup>
3187	Zinc sulfide	1314-98-3	8.9	99	590	MW-adjusted zinc (7440-66-6) MAK-TWA x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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			PAC-1	PAC-2	PAC-3		
3188	Zirconium	7440-67-7	10	83	500	TLV-STEL, TEEL-3/6, IDLH (1990)	mg/m <sup>3</sup>
3189	Zirconium boride	12045-64-6	12	100	620	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
3190	Zirconium carbide	12070-14-3	13	110	630	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
3191	Zirconium chloride oxide octahydrate	13520-92-8	35	300	1,800	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
3192	Zirconium fluoride	7783-64-4	17	180	1,100	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
3193	Zirconium hydride	7704-99-6	10	85	510	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
3194	Zirconium hydroxide	14475-63-9	17	150	870	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
3195	Zirconium nitrate	13746-89-9	37	320	1,900	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
3196	Zirconium nitride	25658-42-8	12	97	580	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
3197	Zirconium nitrite	z-0088	30	250	1,500	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
3198	Zirconium oxide	1314-23-4	14	110	680	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
3199	Zirconium oxynitrate hydrate	14985-18-3	27	230	1,400	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
3200	Zirconium phosphide	12037-72-8	17	140	840	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>

Chemicals with AEGLs: large, bolded font. ERPGs (but no AEGLs): bolded font.  
 \* indicates 10% LEL ≤ PAC < 50% LEL; \*\* indicates 50% LEL ≤ PAC < 100% LEL; \*\*\* indicates PAC ≥ LEL.

**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
3201	Zirconium potassium fluoride; (Potassium fluorozirconate)	16923-95-8	19	200	1,200	MW-adjusted fluorides TLV-TWA x 3, TEEL-3/6, MW-adjusted fluorides IDLH (1990)	mg/m <sup>3</sup>
3202	Zirconium silane	z-0089	16	140	810	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
3203	Zirconium silicate; (Zirconium silicon oxide; Zircon)	10101-52-7	21	170	1,000	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
3204	Zirconium sulfate tetrahydrate	7446-31-3	39	320	1,900	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
3205	Zirconium tetrachloride; (zirconium chloride)	10026-11-6	26	220	1,300	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
3206	Zirconyl chloride; (Zirconium oxychloride)	7699-43-6	20	160	980	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
3207	Zirconyl nitrate; (Bis(nitrato-O)oxozirconium)	13826-66-9	25	220	1,300	MW-adjusted zirconium (7440-67-7) TLV-STEL, TEEL-3/6, MW-adjusted zirconium IDLH (1990)	mg/m <sup>3</sup>
3208	Zonyl fsn fluorosurfactant	65545-80-4	41	460	2,700	TEEL-2/11, TEEL-3/6, rat oral LD50	mg/m <sup>3</sup>
3209	zzAcrylic latex	z-0090	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3210	zzAlumination 301	z-0091	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3211	zzHydranal coulomat / AG	z-0092	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3212	zzHydrocarbon polymer	z-0093	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3213	zzHydrocount(R), LSC cocktail	z-0094	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3214	zzIconol(R)	z-0095	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3215	zzMonophase- S	z-0097	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

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**Table 2: Protective Action Criteria (PAC) Rev. 28**  
**Based on applicable 60-minute AEGLs, ERPGs, or TEELs (Chemicals listed in alphabetical order)**

No.	Chemical Name	CASRN	PACs based on AEGLs, ERPGs, or TEELs			Source of PACs PAC-1, PAC-2, PAC-3	Units
			PAC-1	PAC-2	PAC-3		
3216	zzMornar	z-0098	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3217	zzOpti-Fluor; (Alkyl benzene blend, 3% tributylphosphate)	z-0099	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
3218	zzPropanol (-2) aluminum derivative	z-0101	6	66	400	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3219	zzScintillation cocktail, Ultima Gold XR	z-0102	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
3220	zzSicapent	z-0103	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3221	zzSynthetic resins	z-0104	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3222	zzTotal sequestrant reagent #5	z-0105	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>
3223	zzTrifluoroacetyl)-N,O,O,O-tetrakis((TMS)norepinephrine, N-(	z-0106	1.2	13	79	TEEL-2/11, TEEL-3/6, rat oral LD50 (HHR = 3)	mg/m <sup>3</sup>
3224	zzWaste oil	z-0107	30	330	2,000	TLV-TWA (PNOS) x 3, TEEL-1 x 11, TEEL-2 x 6	mg/m <sup>3</sup>

Chemicals with AEGLs: large, bolded font. ERPGs (but no AEGLs): bolded font.

\* indicates 10% LEL ≤ PAC < 50% LEL; \*\* indicates 50% LEL ≤ PAC < 100% LEL; \*\*\* indicates PAC ≥ LEL.