



# Hazardous Gas Data

## How to Use This Gas Data

### *Where does the Hazardous Gas Data come from?*

It comes from the *NIOSH Pocket Guide To Chemical Hazards*, June 1997 Edition. It is for sale by the U.S. Government Printing Office, Superintendent of Documents, Washington, DC, 20402 (stock no. 017-033-00483-8); telephone 202-512-1800 and the National technical Information Service, Springfield, Va. 22161 (stock no. PB 97-177604; telephone 703-487-4650).

It is also available in electronic formats (CD ROM and diskette) through the commercial vendors listed below:

- Canadian Center for Occupational Safety and Health: 800-668-4284; Fax: 905-572-2206
- Industrial Hygiene Services, *nc.* 800-732-3015; Fax: 314-993-3193
- Praxis Environmental Systems, Inc. 203-458-7111; Fax; 203-458-7121
- Emergency Response Specialists, Inc.: 205-324-0100
- Micromedex, Inc.: 800-525-9083; Fax: 303-486-6464
- TECSA SpA, Italy (portion in Italian) 39 2 33 91 04 84; Fax 39 2 33 91 07 37

More information may be obtained

from NIOSH Publications, 800-356-4674; fax 513-533-8573 or visit the NIOSH Home Page on the World Wide Web at <http://www.cdc.gov/niosh/homepage.html>.

The *NIOSH Pocket Guide* presents key information and data in abbreviated tabular form for 677 chemicals that are found in the work environment. The hazardous gas data in this appendix are extracted from the *Pocket Guide*. Only part of the data which is considered useful for gas monitoring applications was extracted. The chemicals only include those which have a gas phase potential. OVERALL, THE APPENDIX PRESENTED IS FOR TECHNICAL INFORMATION ONLY. FOR PROFESSIONAL USAGE, READERS ARE ADVISED TO OBTAIN AN ORIGINAL COPY OF THE POCKET GUIDE FROM THE SOURCES LISTED ABOVE.

### Abbreviations and Codes

Following are the explanations for abbreviations and codes used in the data tabulations:

#### **Chemical Name and Formula—**

The chemical names are as they appear in the OSHA General Industrial Air Contaminants Standard (29 Code of Federal Regulations 1910.1000) and the chemical formula is provided. The common



synonyms and trade names are provided in Appendix III. Appendix II and Appendix III contain the same chemicals. For easy cross reference between the two appendices, a number is assigned to each chemical.

**Conversion Factors**— 1 ppm = x mg/m<sup>3</sup>. For the conversion of gas or vapor from parts per million by volume to milligrams of gas or vapor per cubic meter of air at 25 degrees centigrade and one atmosphere of pressure.

**Exposure Limits**— The data for both the NIOSH recommended exposure limits (RELs) and the OSHA permissible exposure limits (PELs) are listed. RELs are time-weighted average (TWA) concentrations for up to a 10-hour workday during a 40-hour work week. PELs are TWA concentrations that must not be exceeded during any 8-hour workshift of a 40-hour work week and are currently enforced by OSHA. A short-term exposure limit (STEL) is designated by “ST”.

**STEL**—The STEL is a 15-minute TWA exposure that should not be exceeded at any time during a workday. A ceiling REL is designated by “C”. The ceiling value should not be exceeded at any time. Any substance that NIOSH considers to be a potential occupational carcinogen is designated by the notation “Ca”.

**IDLH**— Immediately Dangerous to Life or Health. The maximum concentration for a person to escape without loss of life or irreversible health effects.

**Explosive Limits**—LEL and UEL in the air at room temperature or as otherwise noted.

**MW**—Molecular weight

**IP**— Ionization potential, in eV. It is useful data as a guideline for applications using photoionization detectors.

**Fl.P**—Flash point, the temperature at which the liquid phase gives off enough vapor to flash when exposed to an external ignition source.

**VP**—Vapor pressure at 68°F, 760 mm Hg.

**Sp.Gr**— Specific gravity at 68° F referenced to water at 39.2°F (4°C)

In Europe, the *Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area* publishes a “List of MAK and BAT Values” which is updated annually. The MAK value in German is “Maximale Arbeitsplatz-Konzentration” or maximum work-place concentration. The BAT value in German is “Biologischer Arbeitsstoff-Toleranzwert” or biological tolerance value for occupational exposures. The publication can be obtained from the following:

VCH Verlagsgesellschaft mbH  
Buchauslieferung  
P. O. Box 101161  
D-69851 Weinheim  
Federal Republic of Germany

or, in the United States,

John Wiley and Sons, Inc.  
605 Third Avenue  
New York, N. Y. 10158-0012



## Hazardous Gas Data

Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	Fl.P	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
ACETALDEHYDE CH <sub>3</sub> CHO <b>1</b>	1.80	Ca	200 ppm (360 mg/m <sup>3</sup> )	Ca [2000 ppm]	4.0	60	44.1	10.22	-36°F	740	0.79
ACETIC ACID CH <sub>3</sub> COOH <b>2</b>	2.46	10 ppm ST 15 ppm	10 ppm	50 ppm	4.0	(200°F); 19.9	60.1	10.66	103°F	11	1.05
ACETIC ANHYDRIDE (CH <sub>3</sub> CO) <sub>2</sub> O <b>3</b>	4.18	C 5 ppm (20 mg/m <sup>3</sup> )	5 ppm (20 mg/m <sup>3</sup> )	200 ppm	2.7	10.3	102.1	10.00	120°F	4	1.08
ACETONE (CH <sub>3</sub> ) <sub>2</sub> CO <b>4</b>	2.38	250 ppm	1000 ppm	2500 ppm [10% LEL]	2.5	12.8	58.1	9.69	0°F	180	0.79
ACETONE CYANOHYDRIN CH <sub>3</sub> C(OH)CNCH <sub>3</sub> <b>5</b>	3.48	C 1 ppm	NONE	N.D.	2.2	12.0	85.1	?	165°F	0.8	(77°F): 0.93
ACETONITRILE CH <sub>3</sub> CN <b>6</b>	1.68	20 ppm	40 ppm	500 ppm	3.0	16.0	41.1	12.20	(oc): 42°F	73	0.78
ACETYLENE HC≡CH <b>7</b>	1.06	C 2500 ppm	none	N.D.	2.5	100	26.0	11.40	NA (Gas)	44.2 atm	—
ACETYLENE TETRABROMIDE CHBr <sub>2</sub> CHBr <sub>2</sub> <b>8</b>	14.14	—	1 ppm	8 ppm	NA	NA	345.7	?	NA	0.02	2.97
ACROLEIN CH <sub>2</sub> =CHCHO <b>9</b>	2.29	0.1 ppm ST 0.3 ppm	0.1 ppm	2 ppm	2.8	31	56.1	10.13	-15°F	210	0.84
ACRYLIC ACID CH <sub>2</sub> =CHCOOH <b>10</b>	2.95	2 ppm	NONE	N.D.	2.4	8.02	72.1	?	121°F	3	1.05

**IDLH:** Immediately dangerous to life and health concentrations

**LEL:** Lower explosive (flammable) limit in air, % by volume

**UEL:** Upper explosive (flammable) limit in air, % by volume

**MW:** Molecular weight

**IP:** Ionization potential

**Fl.P:** Flash point (the temperature at which the liquid phase gives off enough vapor to flash when exposed to an external ignition source) **(oc):** open cup

**VP:** Vapor pressure

**Sp.Gr.:** Specific gravity at 68°F referenced to water at 39.2°F (4°C)

**ST:** Short-term exposure limit

**Ca:** Potential occupational carcinogens

**C:** A ceiling value should not be exceeded at any time

**N.D.:** IDLH not determined



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
ACRYLONITRILE CH <sub>2</sub> =CHCN <b>11</b>	2.17	Ca 1 ppm C 10 ppm	2 ppm C 10 ppm	Ca [85 ppm]	3.0	17	53.1	10.91	30°F	83	0.81
ADIPONITRILE NC(CH <sub>2</sub> ) <sub>4</sub> CN <b>12</b>	4.43	4 ppm	none	N.D.	1.7	5.0	108.2	?	(o.c.): 199°F	0.002	0.97
ALLYL ALCOHOL CH <sub>2</sub> =CHCH <sub>2</sub> OH <b>13</b>	2.38	2 ppm ST 4 ppm	2 ppm	20 ppm	2.5	18.0	58.1	9.63	70°F	17	0.85
ALLYL CHLORIDE CH <sub>2</sub> =CHCH <sub>2</sub> Cl <b>14</b>	3.13	1 ppm ST 2 ppm	1 ppm	250 ppm	2.9	11.1	76.5	10.05	-25°F	295	0.94
ALLYL GLYCIDYL ETHER C <sub>6</sub> H <sub>10</sub> O <sub>2</sub> <b>15</b>	4.67	5 ppm ST 10 ppm	C 10 ppm	50 ppm	?	?	114.2	?	135°F	2	0.97
ALLYL PROPYL DISULFIDE H <sub>2</sub> C=CHCH <sub>2</sub> S <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub> <b>16</b>	6.07	2 ppm ST 3 ppm	2 ppm	N.D.	?	?	148.3	?	?	?	0.93 (59°F):
2-AMINOPYRIDINE NH <sub>2</sub> C <sub>5</sub> H <sub>4</sub> N <b>17</b>	3.85	0.5 ppm	0.5 ppm	5 ppm	?	?	94.1	8.00	154°F	(77°F): 0.8	?
AMMONIA NH <sub>3</sub> <b>18</b>	0.70	25 ppm ST 35 ppm	50 ppm	300 ppm	15	28	17.0	10.18	NA (GAS)	8.5atm	—
n-AMYL ACETATE CH <sub>3</sub> COO[CH <sub>2</sub> ] <sub>4</sub> CH <sub>3</sub> <b>19</b>	5.33	100 ppm	100 ppm	1000 ppm	1.1	7.5	130.2	?	77°F	4	0.88
sec-AMYL ACETATE CH <sub>3</sub> COOCH(CH <sub>3</sub> )C <sub>3</sub> H <sub>7</sub> <b>20</b>	5.33	125 ppm	125 ppm	1000 ppm	1	7.5	130.2	?	89°F	7	0.87
ANILINE (AND HOMOLOGS) C <sub>6</sub> H <sub>5</sub> NH <sub>2</sub> <b>21</b>	3.81	Ca	5 ppm	Ca [100 ppm]	1.3	11	93.1	7.70	158°F	0.6	1.02
ARSINE AsH <sub>3</sub> <b>22</b>	3.19	Ca C 0.002 mg/m <sup>3</sup> [15 min]	.05 ppm	Ca [3ppm]	5.1	78	78.0	9.89	NA (GAS)	(70°F): 14.9 atm	—
BENZENE C <sub>6</sub> H <sub>6</sub> <b>23</b>	3.19	Ca 0.1 ppm ST 1 ppm	1 ppm ST 5 ppm	Ca [500 ppm]	1.2	7.8	78.1	9.24	12°F	75	0.88



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
BENZETHIOL C <sub>6</sub> H <sub>5</sub> SH <b>24</b>	4.51	C 0.1 ppm	NONE	N.D.	?	?	110.2	8.33	132°F	(65°F): 1	1.08
BENZYL CHLORIDE C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> Cl <b>25</b>	5.18	C 1 ppm	1 ppm	10 ppm	1.1	?	126.6	?	153°F	1	1.10
BORON TRIBROMIDE BBr <sub>3</sub> <b>26</b>	10.25	C 1 ppm	NONE	N.D.	NA	NA	250.5	9.70	NA	(57°F): 40	(65°F): 2.64
BORON TRIFLUORIDE BF <sub>3</sub> <b>27</b>	2.77	C 1 ppm (3 mg/m <sup>3</sup> )	C 1 ppm (3 mg/m <sup>3</sup> )	25 ppm	NA	NA	67.8	15.50	NA	>50 atm	—
BROMACIL C <sub>9</sub> H <sub>13</sub> BrN <sub>2</sub> O <sub>2</sub> <b>28</b>	10.68	1 ppm (10 mg/m <sup>3</sup> )	NONE	N.D.	NA	NA	261.2	?	NA	(212°F): 0.0008	1.55
BROMINE Br <sub>2</sub> <b>29</b>	6.54	0.1 ppm (7 mg/m <sup>3</sup> ) ST 0.3 ppm (2 mg/m <sup>3</sup> )	0.1 ppm (0.7 mg/m <sup>3</sup> )	3 ppm	NA	NA	159.8	10.55	NA	172	3.12
BROMINE PENTAFLUORIDE BrF <sub>5</sub> <b>30</b>	7.15	0.1 ppm	NONE	N.D.	NA	NA	174.9	?	NA	328	2.48
BROMOFORM CHBr <sub>3</sub> <b>31</b>	10.34	0.5 ppm (5 mg/m <sup>3</sup> ) [skin]	0.5 ppm (5 mg/m <sup>3</sup> ) [skin]	850 ppm	NA	NA	252.8	10.48	NA	5	2.89
1,3-BUTADIENE CH <sub>2</sub> =CHCH=CH <sub>2</sub> <b>32</b>	2.21	Ca	1 ppm ST 5 ppm	Ca [2000 ppm] [10%LEL]	2.0	12.0	54.1	9.07	NA (GAS)	2.4 atm	0.65 (liquid at 21°F)
n-BUTANE CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub> <b>33</b>	2.38	800 ppm (1900 mg/m <sup>3</sup> )	NONE	N.D.	1.6	8.4	58.1	10.63	NA (GAS)	2.05 atm	0.6 (liquid at 31°F)
2-BUTANONE CH <sub>3</sub> COCH <sub>2</sub> CH <sub>3</sub> <b>34</b>	2.95	200 ppm (590 mg/m <sup>3</sup> ) ST 300 ppm (885 mg/m <sup>3</sup> )	200 ppm (590 mg/m <sup>3</sup> )	3000 ppm (200°F): 1.4%	(200°F): 11.4		72.1	9.54	16°F	78	0.81



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
2-BUTOXYETHANOL C <sub>4</sub> H <sub>9</sub> OCH <sub>2</sub> CH <sub>2</sub> OH <b>35</b>	4.83	5 ppm	50 ppm	700 ppm	(200°F): 1.1	(275°F): 12.7	118.2	10.00	143°F	0.8	0.90
2-BUTOXYETHANOL ACETATE C <sub>4</sub> H <sub>9</sub> O(CH <sub>2</sub> ) <sub>2</sub> OCOCH <sub>3</sub> <b>36</b>	6.55	5 ppm	NONE	N.D.	(200°F): 8.54	(275°F): 0.88	160.2	?	71°F	0.3	0.94
n-BUTYL ACETATE CH <sub>3</sub> COO[CH <sub>2</sub> ] <sub>3</sub> CH <sub>3</sub> <b>37</b>	4.75	150 ppm ST 200 ppm	150 ppm	1700 ppm [10% LEL]	1.7	7.6	116.2	10.00	72°F	10	0.88
sec-BUTYL ACETATE CH <sub>3</sub> COOCH(CH <sub>3</sub> )CH <sub>2</sub> CH <sub>3</sub> <b>38</b>	4.75	200 ppm	200 ppm	1700 ppm [10% LEL]	1.7	9.8	116.2	9.91	62°F	10	0.86
tert-BUTYL ACETATE CH <sub>3</sub> COOC(CH <sub>3</sub> ) <sub>3</sub> <b>39</b>	4.75	200 ppm (950 mg/m <sup>3</sup> )	200 ppm (950 mg/m <sup>3</sup> )	1500 ppm [10% LEL]	1.5	?	116.2	?	72°F	?	0.87
BUTYL ACRYLATE CH <sub>2</sub> =CHCOOC <sub>4</sub> H <sub>9</sub> <b>40</b>	5.24	10 ppm (55 mg/m <sup>3</sup> )	NONE	N.D.	1.5	9.9	128.2	?	103°F	4	0.89
n-BUTYL ALCOHOL CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> OH <b>41</b>	3.03	C 50 ppm	100 ppm	1400 ppm [10%LEL]	1.4	11.2	74.1	10.04	84°F	6	0.81
sec-BUTYL ALCOHOL CH <sub>3</sub> CH(OH)CH <sub>2</sub> CH <sub>3</sub> <b>42</b>	3.03	100 ppm ST 150 ppm	150 ppm (450 mg/m <sup>3</sup> )	2000 ppm	(212°F): 1.7	(212°F): 9.8	74.1	10.10	75°F	12	0.81
tert-BUTYL ALCOHOL (CH <sub>3</sub> ) <sub>3</sub> COH <b>43</b>	3.03	100 ppm	100 ppm	1600 ppm	2.4	8.0	74.1	9.70	52°F	(77°F): 42	0.79 (solid)
n-BUTYLAMINE CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> NH <sub>2</sub> <b>44</b>	2.99	C 5 ppm	C 5 ppm	300 ppm	1.7	9.8	73.2	8.71	10°F	82	0.74
n-BUTYL GLYCIDYL ETHER C <sub>7</sub> H <sub>14</sub> O <sub>2</sub> <b>45</b>	5.33	C 5.6 ppm	50 ppm	250 ppm	?	?	130.2	?	130°F	(77°F): 3	0.91
n-BUTYL LACTATE CH <sub>3</sub> CH(OH)COOC <sub>4</sub> H <sub>9</sub> <b>46</b>	5.98	5 ppm	NONE	N.D.	1.15	?	146.2	?	160°F	0.4	0.98
n-BUTYL MERCAPTAN CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> SH <b>47</b>	3.69	C 0.5 ppm	10 ppm	500 ppm	?	?	90.2	9.15	35°F	35	0.83



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
o-sec-BUTYLPHENOL CH <sub>3</sub> CH <sub>2</sub> CH(CH <sub>3</sub> )C <sub>6</sub> H <sub>4</sub> OH <b>48</b>	6.14	5 ppm	NONE	N.D.	?	?	150.2	?	225°F	LOW	0.89
p-tert-BUTYL TOLUENE (CH <sub>3</sub> ) <sub>3</sub> CC <sub>6</sub> H <sub>4</sub> CH <sub>3</sub> <b>49</b>	6.07	10 ppm ST 20 ppm	10 ppm	100 ppm	?	?	148.3	8.28	155°F	(77°F) 0.7	0.86
n-BUTYRONITRILE CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CN <b>50</b>	2.83	8 ppm	NONE	N.D.	1.65	?	69.1	11.67	62°F	14	0.81
CAPROLACTAM C <sub>6</sub> H <sub>11</sub> NO <b>51</b>	4.63	VAPOR 0.22 ppm	NONE	N.D.	1.4	8.0	113.2	?	282°F	0.00000 008	1.01
CARBON DIOXIDE CO <sub>2</sub> <b>52</b>	1.80	5000 ppm ST 30,000 ppm	5000 ppm	40,000 ppm	NA	NA	44.0	13.77	NA	56.5 ATM	—
CARBON DISULFIDE CS <sub>2</sub> <b>53</b>	3.11	1 ppm ST 10 ppm	20 ppm C 30 ppm	500 ppm	1.3	50.0	76.1	10.08	-22°F	297	1.26
CARBON MONOXIDE CO <b>54</b>	1.15	35 ppm C 200 ppm	50 ppm	1200 ppm	12.5	74	28.0	14.01	NA (GAS)	>35 ATM	—
CARBON TETRABROMIDE CBr <sub>4</sub> <b>55</b>	13.57	0.1 ppm ST 0.3 ppm	NONE	N.D.	NA	NA	331.7	10.31	NA	(205°F): 40	3.42
CARBON TETRACHLORIDE CCl <sub>4</sub> <b>56</b>	6.29	Ca ST 2 ppm	10 ppm C 25 ppm	Ca [200 ppm]	NA	NA	153.8	11.47	NA	91	1.59
CARBONYL FLUORIDE COF <sub>2</sub> <b>57</b>	2.70	2 ppm ST 5 ppm	NONE	N.D.	NA	NA	66.0	13.02	NA	55.4 ATM	—
CATECHOL C <sub>6</sub> H <sub>4</sub> (OH) <sub>2</sub> <b>58</b>	4.50	5 ppm	NONE	N.D.	1.4	?	110.1	?	261°F	(244°F): 10	1.34
CHLORINE Cl <sub>2</sub> <b>59</b>	2.90	C 0.5 ppm	C 1 ppm	10 ppm	NA	NA	70.9	11.48	NA	6.8 ATM	—
CHLORINE DIOXIDE ClO <sub>2</sub> <b>60</b>	2.76	0.1 ppm ST 0.3 ppm	0.1 ppm	5 ppm	?	?	67.5	10.36	NA (GAS) ?(Liq)	>1 ATM	1.6



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
CHLORINE TRIFLUORIDE ClF <sub>3</sub> <b>61</b>	3.78	C .01	C .01	20ppm	NA	NA	92.5	13.00	NA	1.4 ATM	1.77
CHLOROACETALDEHYDE ClCH <sub>2</sub> CHO <b>62</b>	3.21	C 1 ppm	C 1 ppm	45 ppm	?	?	78.5	10.61	190°F	100	1.19
α-CHLOROACETOPHENONE C <sub>6</sub> H <sub>5</sub> COCH <sub>2</sub> Cl <b>63</b>	6.32	0.3 mg/m <sup>3</sup> (0.05 ppm)	0.3 mg/m <sup>3</sup> (0.05 ppm)	15 mg/m <sup>3</sup>	?	?	154.6	9.44	244°F	0.005	1.32
CHLOROACETYL CHLORIDE ClCH <sub>2</sub> COCl <b>64</b>	4.62	0.05 ppm	NONE	N.D.	NA	NA	112.9	10.30	NA	19	1.42
CHLOROBENZENE C <sub>6</sub> H <sub>5</sub> Cl <b>65</b>	4.61	—	75 ppm	1000 ppm	1.3	9.6	112.6	9.07	82°F	9	1.11
α-CHLOROBENZYLIDENE MALONONITRILE ClC <sub>6</sub> H <sub>4</sub> CH=C(CN) <sub>2</sub> <b>66</b>	7.71	C 0.05 ppm	0.05 ppm	2 mg/m <sup>3</sup>	?	?	188.6	?	?	0.00003	?
CHLOROBROMOMETHANE CH <sub>2</sub> BrCl <b>67</b>	5.29	200 ppm	200 ppm	2000 ppm	NA	NA	129.4	10.77	NA	115	1.93
CHLORODIFLUOROMETHANE CHClF <sub>2</sub> <b>68</b>	3.54	1000 ppm ST 1250 ppm	NONE	N.D.	NA	NA	86.5	12.45	NA	9.4 ATM	—
CHLOROFORM CHCl <sub>3</sub> <b>69</b>	4.88	Ca ST 2 ppm	C 50 ppm	Ca [500 ppm]	NA	NA	119.4	11.42	NA	160	1.48
1-CHLORO-1-NITROPROPANE CH <sub>3</sub> CH <sub>2</sub> CHClNO <sub>2</sub> <b>70</b>	5.06	2 ppm	20 ppm	100 ppm	?	?	123.6	9.90	(oc): 144°F	(77°F): 6	1.21
CHLOROPENTAFLUOROETHANE CClF <sub>2</sub> CF <sub>3</sub> <b>71</b>	6.32	1000 ppm	NONE	N.D.	NA	NA	154.5	12.96	NA	(70°F): 7.9 ATM	—
CHLOROPICRIN CCl <sub>3</sub> NO <sub>2</sub> <b>72</b>	6.72	0.1 ppm	0.1 ppm	2 ppm	NA	NA	164.4	?	NA	18	1.66





Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
$\beta$ -CHLOROPRENE CH <sub>2</sub> =CClCH=CH <sub>2</sub> <b>73</b>	3.62	Ca C 1 ppm	25 ppm	Ca [300 ppm]	4.0	20.0	88.5	8.79	-4°F	188	0.96
<i>o</i> -CHLOROSTYRENE ClC <sub>6</sub> H <sub>4</sub> CH=CH <sub>2</sub> <b>74</b>	5.67	50 ppm ST 75 ppm	NONE	N.D.	?	?	138.6	?	138°F	(77°F): 0.96	1.10
<i>o</i> -CHLOROTOLUENE ClC <sub>6</sub> H <sub>4</sub> CH <sub>3</sub> <b>75</b>	5.18	50 ppm ST 75 ppm	NONE	N.D.	?	?	126.6	8.83	96°F	(77°F): 4	1.08
<i>o</i> -CRESOL CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> OH <b>76</b>	4.43	2.3 ppm	5 ppm	250 ppm (300°F); 1.4	?	?	108.2	8.93	178°F	(77°F): 0.29	1.05
<i>m</i> -CRESOL CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> OH <b>77</b>	4.43	2.3 ppm	5 ppm	250 ppm (302°F); 1.1	?	?	108.2	8.98	187°F	(77°F): 0.14	1.03
<i>p</i> -CRESOL CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> OH <b>78</b>	4.43	2.3 ppm	5 ppm	250 ppm (302°F); 1.1	?	?	108.2	8.97	187°F	(77°F): 0.11	1.04
CROTONALDEHYDE CH <sub>3</sub> CH=CHCHO <b>79</b>	2.87	2 ppm	2 ppm	50 ppm	2.1	15.5	70.1	9.73	45°F	19	0.87
CUMENE C <sub>6</sub> H <sub>5</sub> CH(CH <sub>3</sub> ) <sub>2</sub> <b>80</b>	4.92	50 ppm	50 ppm	900 ppm	0.9	6.5	120.2	8.75	96°F	8	0.86
CYANOGEN NCCN <b>81</b>	2.13	10 ppm	NONE	N.D.	6.6	32	52.0	13.57	NA (GAS)	(70°F): 5.1 ATM	0.95 (Liquid at -6°F)
CYANOGEN CHLORIDE ClCN <b>82</b>	2.52	C 0.3 ppm	NONE	N.D.	NA	NA	61.5	12.49	NA	1010	1.22 (Liquid at 32°F)
CYCLOHEXANE C <sub>6</sub> H <sub>12</sub> <b>83</b>	3.44	300 ppm	300 ppm	1300 ppm [10% LEL]	1.3	8	84.2	9.88	0°F	78	0.78
CYCLOHEXANETHIOL C <sub>6</sub> H <sub>11</sub> SH <b>84</b>	4.75	C 0.5 ppm	NONE	N.D.	?	?	116.2	?	110°F	10	0.98
CYCLOHEXANOL C <sub>6</sub> H <sub>11</sub> OH <b>85</b>	4.10	50 ppm	50 ppm	400 ppm	?	?	100.2	10.00	154°F	1	0.96



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
CYCLOHEXANONE C <sub>6</sub> H <sub>10</sub> O <b>86</b>	4.02	25 ppm	50 ppm	700 ppm	(212°F): 1.1	9.4	98.2	9.14	146°F	5	0.95
CYCLOHEXENE C <sub>6</sub> H <sub>10</sub> <b>87</b>	3.36	300 ppm	300 ppm	2000 ppm	?	?	82.2	8.95	11°F	67	0.81
CYCLOHEXYLAMINE C <sub>6</sub> H <sub>11</sub> NH <sub>2</sub> <b>88</b>	4.06	10 ppm	NONE	N.D.	1.5	9.4	99.2	8.37	88°F	11	0.87
CYCLOPENTADIENE C <sub>5</sub> H <sub>6</sub> <b>89</b>	2.70	75 ppm	75 ppm	750 ppm	?	?	66.1	8.56	77°F	400	0.80
CYCLOPENTANE C <sub>5</sub> H <sub>10</sub> <b>90</b>	2.87	600 ppm	NONE	N.D.	1.1	8.7	70.2	10.52	-35°F (88°F): 400		0.75
1-DECANETHIOL CH <sub>3</sub> (CH <sub>2</sub> ) <sub>9</sub> SH <b>91</b>	7.13	C 0.5 ppm	NONE	N.D.	?	?	174.4	?	209°F	?	0.84
DECABORANE B <sub>10</sub> H <sub>14</sub> <b>92</b>	5.00	0.3 mg/m <sup>3</sup> ST 0.9 mg/m <sup>3</sup>	0.3 mg/m <sup>3</sup>	15 mg/m <sup>3</sup>	?	?	122.2	9.88	176°F	0.2	0.94
DIACETONE ALCOHOL CH <sub>3</sub> COCH <sub>2</sub> C(CH <sub>3</sub> ) <sub>2</sub> OH <b>93</b>	4.75	50 ppm	50 ppm	1800 ppm	1.8	6.9	116.2	?	125°F	1	0.94
DIAZOMETHANE CH <sub>2</sub> N <sub>2</sub> <b>94</b>	1.72	0.2 ppm	0.2 ppm	2 ppm	?	?	42.1	9.00	NA (GAS)	>1 ATM	—
DIBORANE B <sub>2</sub> H <sub>6</sub> <b>95</b>	1.13	0.1 ppm	0.1 ppm	15 ppm	0.8	88	27.7	11.38	NA (GAS)	(62°F): 39.5 ATM	—
1,2-DIBROMO-3- CHLOROPROPANE CH <sub>2</sub> BrCHBrCH <sub>2</sub> Cl <b>96</b>	9.67	Ca	0.001 ppm	Ca [N.D.]	?	?	236.4	?	(oc): 170°F	0.8	2.05
2-N-DIBUTYLAMINO- ETHANOL (C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub> NCH <sub>2</sub> CH <sub>2</sub> OH <b>97</b>	7.09	2 ppm	NONE	N.D.	?	?	173.3	?	195°F	0.1	0.86



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
DIBUTYL PHOSPHATE (C <sub>4</sub> H <sub>9</sub> O) <sub>2</sub> (OH)PO <b>98</b>	8.60	1 ppm ST 2 ppm	1 ppm	30 ppm	?	?	210.2	?	?	1	1.06
DICHLOROACETYLENE ClC≡CCl <b>99</b>	3.88	Ca C 0.1 ppm	NONE	Ca [N.D.]	?	?	94.9	?	?	?	1.26
o-DICHLOROBENZENE C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub> <b>100</b>	6.01	C 50 ppm	C 50 ppm	200 ppm	2.2	9.2	147.0	9.06	151°F	1	1.30
p-DICHLOROBENZENE C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub> <b>101</b>	6.01	Ca	75 ppm	Ca [150 ppm]	2.5	?	147.0	8.98	150°F	1.3	1.25
DICHLORODIFLUOROMETHANE CCl <sub>2</sub> F <sub>2</sub> <b>102</b>	4.95	1000 ppm	1000 ppm	15,000 ppm	NA	NA	120.9	11.75	NA	5.7 ATM	—
1,1-DICHLOROETHANE CHCl <sub>2</sub> CH <sub>3</sub> <b>103</b>	4.05	100 ppm	100 ppm	3000 ppm	5.4	11.4	99.0	11.06	2°F	182	1.18
1,2-DICHLOROETHYLENE ClCH=CHCl <b>104</b>	3.97	200 ppm	200 ppm	1000 ppm	5.6	12.8	97.0	9.65	36-39°F	180-265	(77°F): 1.27
DICHLOROETHYL ETHER (ClCH <sub>2</sub> CH <sub>2</sub> ) <sub>2</sub> O <b>105</b>	5.85	Ca 5 ppm ST 10 ppm	C 15 ppm	Ca [100 ppm]	2.7	?	143.0	?	131°F	0.7	1.22
DICHLOROMONOFUOROMETHANE CHCl <sub>2</sub> F <b>106</b>	4.21	10 ppm	1000 ppm	5000 ppm	NA	NA	102.9	12.39	NA	(70°F): 1.6 ATM	—
1,1-DICHLORO-1-NITROETHANE CH <sub>3</sub> CCl <sub>2</sub> NO <sub>2</sub> <b>107</b>	5.89	2 ppm	C 10 ppm	25 ppm	?	?	143.9	?	136°F	15	1.43
1,3-DICHLOROPROPENE ClHC=CHCH <sub>2</sub> Cl <b>108</b>	4.54	Ca 1 ppm	none	Ca [N.D.]	5.3	14.5	111.0	?	136°F	28	1.21
2,2-DICHLOROPROPIONIC ACID CH <sub>3</sub> CCl <sub>2</sub> COOH <b>109</b>	5.85	1 ppm	none	N.D.	NA	NA	143.0	?	NA	?	1.40



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
DICHLOROTETRAFLUOROETHANE CClF <sub>2</sub> CClF <sub>2</sub> <b>110</b>	6.99	1000 ppm	1000 ppm	15,000 ppm	NA	NA	170.9	12.20	NA	(70°F): 1.9 ATM	—
DICHLORVOS (CH <sub>3</sub> O) <sub>2</sub> P(O)OCH=CCl <sub>2</sub> <b>111</b>	9.04	1 mg/m <sup>3</sup> [skin]	1 mg/m <sup>3</sup> [skin]	100 mg/m <sup>3</sup>	?	?	221.0	?	>175°F	0.01	(77°F): 1.42
DICROTOPHOS C <sub>8</sub> H <sub>16</sub> NO <sub>5</sub> P <b>112</b>	9.70	0.25 mg/m <sup>3</sup> [skin]	NONE	N.D.	?	?	237.2	?	>200°F	0.0001	(59°F): 1.22
DICYCLOPENTADIENE C <sub>10</sub> H <sub>12</sub> <b>113</b>	5.41	5 ppm	NONE	N.D.	0.8	6.3	132.2	?	(oc): 90°F	1.4	0.98 (LIQ. AT 95°F)
DIETHANOLAMINE (HOCH <sub>2</sub> CH <sub>2</sub> ) <sub>2</sub> NH <b>114</b>	4.30	3 ppm	NONE	N.D.	1.6	9.8	105.2	?	279°F	<0.01	1.10
DIETHYLAMINE (C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> NH <b>115</b>	2.99	10 ppm ST 25 ppm	25 ppm	200 ppm	1.8	10.1	73.1	8.01	-15°F	192	0.71
2-DIETHYLAMINO-ETHANOL (C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> NCH <sub>2</sub> CH <sub>2</sub> OH <b>116</b>	4.79	10 ppm	10 ppm	100 ppm	?	?	117.2	?	126°F	1	0.89
DIETHYLENTRIAMINE (NH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> ) <sub>2</sub> NH <b>117</b>	4.22	1 ppm	NONE	N.D.	2	6.7	103.2	?	208°F	0.4	0.96
DIETHYL KETONE CH <sub>3</sub> CH <sub>2</sub> COCH <sub>2</sub> CH <sub>3</sub> <b>118</b>	3.53	200 ppm	NONE	N.D.	1.6	6.4	86.2	9.32	(oc): 55°F	(77°F): 35	0.81
DIFLUORODIBROMO-METHANE CBr <sub>2</sub> F <sub>2</sub> <b>119</b>	8.58	100 ppm	100 ppm	2000 ppm	NA	NA	209.8	11.07	NA	620	(59°F): 2.29
DIGLYCIDYL ETHER C <sub>6</sub> H <sub>10</sub> O <sub>3</sub> <b>120</b>	5.33	Ca 0.1 ppm	C 0.5 ppm	Ca 10 ppm	?	?	130.2	?	147°F	(77°F): 0.09	1.12
DIISOBUTYL KETONE [(CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> ] <sub>2</sub> CO <b>121</b>	5.82	25 ppm	50 ppm	500 ppm	(200°F): 0.8	(200°F): 7.1	142.3	9.04	120°F	2	0.81



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
DIISOPROPYLAMINE [(CH <sub>3</sub> ) <sub>2</sub> CH] <sub>2</sub> NH <b>122</b>	4.14	5 ppm	5 ppm	200 ppm	1.1	7.1	101.2	7.73	20°F	70	0.72
DIMETHYLACETAMIDE CH <sub>3</sub> CON(CH <sub>3</sub> ) <sub>2</sub> <b>123</b>	3.56	10 ppm	10 ppm	300 ppm	(212°F): 1.8	(320°F): 11.5	87.1	8.81	(oc): 158°F	2	0.94
DIMETHYLAMINE (CH <sub>3</sub> ) <sub>2</sub> NH <b>124</b>	1.85	10 ppm	10 ppm	500 ppm	2.8	14.4	45.1	8.24	NA (GAS) 20°F (LIQ.)	1.7 ATM	0.67 (LIQ. AT 44°F)
N, N-DIMETHYLANILINE C <sub>6</sub> H <sub>5</sub> N(CH <sub>3</sub> ) <sub>2</sub> <b>125</b>	4.96	5 ppm ST 10 ppm	5 ppm	100 ppm	?	?	121.2	7.14	142°F	1	0.96
DIMETHYLFORMAMIDE HCON(CH <sub>3</sub> ) <sub>2</sub> <b>126</b>	2.99	10 ppm	10 ppm	500 ppm	(212°F): 2.2	15.2	73.1	9.12	136°F	3	0.95
1,1-DIMETHYLHYDRAZINE (CH <sub>3</sub> ) <sub>2</sub> NNH <sub>2</sub> <b>127</b>	2.46	Ca C 0.06 ppm	0.5 ppm	Ca [15 ppm]	2	95	60.1	8.05	5°F	103	0.79
DIMETHYL SULFATE (CH <sub>3</sub> ) <sub>2</sub> SO <sub>4</sub> <b>128</b>	5.16	Ca 0.1 ppm	1 ppm	Ca [7 ppm]	?	?	126.1	?	182°F	0.1	1.33
DIOXANE C <sub>4</sub> H <sub>8</sub> O <sub>2</sub> <b>129</b>	3.60	Ca 1 ppm	100 ppm	Ca [500 ppm]	2.0	22	88.1	9.13	55°F	29	1.03
DIPHENYL C <sub>6</sub> H <sub>5</sub> C <sub>6</sub> H <sub>5</sub> <b>130</b>	6.31	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	100 mg/m <sup>3</sup>	(232°F): 0.6	(311°F): 5.8	154.2	7.95	235°F	0.005	1.04
DIPROPYLENE GLYCOL METHYL ETHER CH <sub>3</sub> OC <sub>3</sub> H <sub>6</sub> OC <sub>3</sub> H <sub>6</sub> OH <b>131</b>	6.06	100 ppm ST 150 ppm	100 ppm	600 ppm	(392°F): 1.1	3.0	148.2	?	180°F	0.5	0.95
DIPROPYL KETONE (CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> ) <sub>2</sub> CO <b>132</b>	4.67	50 ppm	NONE	N.D.	?	?	114.2	9.10	120°F	5	0.82
DIVINYL BENZENE C <sub>6</sub> H <sub>4</sub> (HC=CH <sub>2</sub> ) <sub>2</sub> <b>133</b>	5.33	10 ppm	NONE	N.D.	1.1	6.2	130.2	?	(oc): 169°F	0.7	0.93
1-DODECANETHIOL CH <sub>3</sub> (CH <sub>2</sub> ) <sub>11</sub> SH <b>134</b>	8.28	C 0.5 ppm	NONE	N.D.	?	?	202.4	?	(oc): 190°F	(77°F): 3	0.85



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
ENFLURANE CHF <sub>2</sub> OCF <sub>2</sub> CHCIF <b>135</b>	7.55	C 2 ppm	NONE	N.D.	NA	NA	184.5	?	NA	175	(77°F): 1.52
EPICHLOROHYDRIN C <sub>3</sub> H <sub>5</sub> OCl <b>136</b>	3.78	Ca	5 ppm	Ca [75 ppm]	3.8	21.0	92.5	10.60	93°F	13	1.18
ETHANOLAMINE NH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> OH <b>137</b>	2.50	3 ppm ST 6 ppm	3 ppm	30 ppm	(284°F): 3.0	23.5	61.1	8.96	186°F	0.4	1.02
2-ETHOXYETHANOL C <sub>2</sub> H <sub>5</sub> OCH <sub>2</sub> CH <sub>2</sub> OH <b>138</b>	3.69	0.5 ppm	200 ppm	500 ppm	(200°F): 1.7	(200°F): 15.6	90.1	?	110°F	4	0.93
2-ETHOXYETHYL ACETATE CH <sub>3</sub> COOCH <sub>2</sub> CH <sub>2</sub> OC <sub>2</sub> H <sub>5</sub> <b>139</b>	5.41	0.5 ppm	100 ppm	500 ppm	1.7	?	132.2	?	124°F	2	0.98
ETHYL ACETATE CH <sub>2</sub> COOC <sub>2</sub> H <sub>5</sub> <b>140</b>	3.60	400 ppm	400 ppm	2000 ppm [10% LEL]	2.0	11.5	88.1	10.01	24°F	73	0.90
ETHYL ACRYLATE CH <sub>2</sub> =CHCOOC <sub>2</sub> H <sub>5</sub> <b>141</b>	4.09	Ca	25 ppm	Ca [300 ppm]	1.4	14	100.1	10.30	48°F	29	0.92
ETHYL ALCOHOL CH <sub>3</sub> CH <sub>2</sub> OH <b>142</b>	1.89	1000 ppm	1000 ppm	3300 ppm	3.3	19	46.1	10.47	55°F	44	0.79
ETHYLAMINE CH <sub>3</sub> CH <sub>2</sub> NH <sub>2</sub> <b>143</b>	1.85	10 ppm	10 ppm	600 ppm	3.5	14.0	45.1	8.86	1°F	874	0.69 (LIQ.)
ETHYL BENZENE CH <sub>3</sub> CH <sub>2</sub> C <sub>6</sub> H <sub>5</sub> <b>144</b>	4.34	100 ppm ST 125 ppm	100 ppm	800 ppm [10% LEL]	0.8	6.7	106.2	8.76	55°F	7	0.87
ETHYL BROMIDE CH <sub>3</sub> CH <sub>2</sub> Br <b>145</b>	4.46	—	200 ppm	2000	6.8	8.0	109.0	10.29	<4°F	375	1.46
ETHYL BUTYL KETONE CH <sub>3</sub> CH <sub>2</sub> CO[CH <sub>2</sub> ] <sub>3</sub> CH <sub>3</sub> <b>146</b>	4.67	50 ppm	50 ppm	1000 ppm	?	?	114.2	9.02	(oc): 115°F	4	0.82
ETHYL CHLORIDE CH <sub>3</sub> CH <sub>2</sub> Cl <b>147</b>	2.64	—	1000 ppm	3800 ppm [10% LEL]	3.8	15.4	64.5	10.97	NA (GAS) -58°F (LIQ.)	1000	0.92 (LIQ. at 32°F)



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
ETHYLENE CHLOROHYDRIN CH <sub>2</sub> ClCH <sub>2</sub> OH <b>148</b>	3.29	C 1 ppm	5 ppm	7 ppm	4.9	15.9	80.5	10.90	140°F	5	1.20
ETHYLENEDIAMINE NH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> NH <sub>2</sub> <b>149</b>	2.46	10 ppm	10 ppm	1000 ppm (212°F):	2.5	(212°F): 12	60.1	8.60	93°F	11	0.91
ETHYLENE DIBROMIDE BrCH <sub>2</sub> CH <sub>2</sub> Br <b>150</b>	7.69	Ca C 0.13 ppm [15-min]	20 ppm C 30 ppm	Ca [100 ppm]	NA	NA	187.9	9.45	NA	12	2.17
ETHYLENE DICHLORIDE ClCH <sub>2</sub> CH <sub>2</sub> Cl <b>151</b>	4.05	Ca 1 ppm ST 2 ppm	50 ppm C 100 ppm	Ca [50 ppm]	6.2	16%	99.0	11.05	56°F	64	1.24
ETHYLENE GLYCOL DINITRATE O <sub>2</sub> NOCH <sub>2</sub> CH <sub>2</sub> ONO <sub>2</sub> <b>152</b>	6.22	ST 0.1 mg/m <sup>3</sup> [SKIN]	C 0.2 ppm	75 mg/m <sup>3</sup>	?	?	152.1	?	419°F	0.05	1.49
ETHYLENEIMINE C <sub>2</sub> H <sub>3</sub> N <b>153</b>	1.76	Ca	—	Ca [100 ppm]	3.3	54.8	43.1	9.20	12°F	160	0.83
ETHYLENE OXIDE C <sub>2</sub> H <sub>4</sub> O <b>154</b>	1.80	Ca 0.1 ppm C 5 ppm	1 ppm 5 ppm [15 min Excursion]	Ca [800 ppm]	3.0	100	44.1	10.56	NA (GAS) -20°F (LIQ.)	1.46 ATM	0.82 (LIQ. at 50°F)
ETHYL ETHER C <sub>2</sub> H <sub>5</sub> OC <sub>2</sub> H <sub>5</sub> <b>155</b>	3.03	—	400 ppm	1900 ppm [10% LEL]	1.9	36.0	74.1	9.53	-49°F	440	0.71
ETHYL FORMATE CH <sub>3</sub> CH <sub>2</sub> OCHO <b>156</b>	3.03	100 ppm	100 ppm	1500 ppm	2.8	16.0	74.1	10.61	-4°F	200	0.92
ETHYLIDENE NORBOMENE C <sub>9</sub> H <sub>12</sub> <b>157</b>	4.92	C 5 ppm	NONE	N.D.	?	?	120.2	?	(oc): 101°F	4	0.90
ETHYL MERCAPTAN CH <sub>3</sub> CH <sub>2</sub> SH <b>158</b>	2.54	C 0.5	C 10 ppm	500 ppm	2.8	18.0	62.1	9.29	-55°F	442	0.84
N-ETHYLMORPHOLINE C <sub>4</sub> H <sub>8</sub> ONCH <sub>2</sub> CH <sub>3</sub> <b>159</b>	4.71	5 ppm	20 ppm	100 ppm	?	?	115.2	?	(oc): 90°F	6	0.90
ETHYL SILICATE (C <sub>2</sub> H <sub>5</sub> ) <sub>4</sub> SiO <sub>4</sub> <b>160</b>	8.52	10 ppm	100 ppm	700 ppm	?	?	208.3	9.77	99°F	1	0.93



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
FLUORINE F <sub>2</sub> <b>161</b>	1.55	0.1	0.1	25	NA	NA	38.0	15.70	NA	>1 atm	—
FLUOROTRICHLOROMETHANE CCl <sub>3</sub> F <b>162</b>	5.62	C 1000 ppm	1000 ppm	2000 ppm	NA	NA	137.4	11.77	NA	690	1.47 (LIQ. at 75°F)
FLUOROXENE CF <sub>3</sub> CH <sub>2</sub> OCH=CH <sub>2</sub> <b>163</b>	5.16	C 2 ppm	NONE	N.D.	?	?	126.1	?	?	286	1.14
FONOFOS C <sub>10</sub> H <sub>15</sub> OPS <sub>2</sub> <b>164</b>	10.07	0.1 mg/m <sup>3</sup> [skin]	NONE	N.D.	?	?	246.3	?	>201°F (77°F): 0.0002		1.15
FORMALDEHYDE HCHO <b>165</b>	1.23	Ca 0.016 ppm C 0.1 ppm	0.75 ppm ST 2 ppm	Ca [20 ppm]	7.0	73	30.0	10.88	NA	>1 atm	—
FORMAMIDE HCONH <sub>2</sub> <b>166</b>	1.85	10 ppm	NONE	N.D.	?	?	45.1	10.20	(oc): 310°F	(86°F): 0.1	1.13
FORMIC ACID HCOOH <b>167</b>	1.88	5 ppm	5 ppm	30 ppm	18 (90% SOLN.)	57 (90% SOLN.)	46.0	11.05	(oc): 122°F (90% SOLN.)	35	1.22 (90° SOLN.)
FURFURAL C <sub>5</sub> H <sub>4</sub> O <sub>2</sub> <b>168</b>	3.93	—	5 ppm	100 ppm	2.1	19.3	96.1	9.21	140°F	2	1.16
FURFURYL ALCOHOL C <sub>5</sub> H <sub>6</sub> O <sub>2</sub> <b>169</b>	4.01	10 ppm ST 15 ppm	50 ppm	75 ppm	1.8	16.3	98.1	?	149°F (77°F): 0.6		1.13
GASOLINE <b>170</b>	2.95	Ca	NONE 50 ppm	Ca [N.D.]	1.4	7.6	72 (approx.)	?	-45°F	38-300	—
GERMANIUM TETRAHYDRIDE GeH <sub>4</sub> <b>171</b>	3.13	0.2 ppm	NONE	N.D.	?	?	76.6	11.34	NA (GAS)	>1 ATM	—
GLUTARALDEHYDE OCH(CH <sub>2</sub> ) <sub>3</sub> CHO <b>172</b>	4.09	C 0.2 ppm	NONE	N.D.	NA	NA	100.1	?	NA	17	1.10
GLYCIDOL C <sub>3</sub> H <sub>6</sub> O <sub>2</sub> <b>173</b>	3.03	25 ppm	50 ppm	150 ppm	?	?	74.1	?	162°F (77°F): 0.9		1.12





Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
GLYCOLONITRILE HOCH <sub>2</sub> CN <b>174</b>	2.34	C 2 ppm	NONE	N.D.	?	?	57.1	?	?	(145°F): 1	(66°F): 1.10
HALOTHANE CF <sub>3</sub> CHBrCl <b>175</b>	8.07	C 2 ppm	NONE	N.D.	NA	NA	197.4	?	NA	243	1.87
n-HEPTANE CH <sub>3</sub> [CH <sub>2</sub> ] <sub>5</sub> CH <sub>3</sub> <b>176</b>	4.10	85 ppm C 440 ppm	500 ppm	750 ppm	1.05	6.7	100.2	9.90	25°F	(72°F): 40	0.68
1-HEPTANETHIOL CH <sub>3</sub> [CH <sub>2</sub> ] <sub>6</sub> SH <b>177</b>	5.41	C 0.5 ppm	NONE	N.D.	?	?	132.3	?	115°F	?	0.84
HEXACHLOROBUTADIENE Cl <sub>2</sub> C=CClCl=CCl <sub>2</sub> <b>178</b>	10.66	Ca 0.02 ppm	NONE	Ca [N.D.]	?	?	260.7	?	?	0.2	1.55
HEXACHLOROCYCLO- PENTADIENE C <sub>5</sub> Cl <sub>6</sub> <b>179</b>	11.16	0.01 ppm	NONE	N.D.	NA	NA	272.8	?	NA	(77°F): 0.08	1.71
HEXACHLOROETHANE Cl <sub>3</sub> CCCl <sub>3</sub> <b>180</b>	9.68	Ca 1 ppm	1 ppm	Ca [300 ppm]	NA	NA	236.7	11.22	NA	0.2	2.09
1-HEXADECANETHIOL CH <sub>3</sub> [CH <sub>2</sub> ] <sub>15</sub> SH <b>181</b>	10.59	C 0.5 ppm	NONE	N.D.	?	?	258.5	?	215°F	0.1	0.85
HEXAFLUOROACETONE (CF <sub>3</sub> ) <sub>2</sub> CO <b>182</b>	6.79	0.1 ppm	NONE	N.D.	NA	NA	166.0	11.81	NA	5.8 ATM	—
HEXAMETHYLENE DIISOCYANATE OCN[CH <sub>2</sub> ] <sub>6</sub> NCO <b>183</b>	6.88	0.005 ppm C 0.020 ppm	NONE	N.D.	?	?	168.2	?	284°F	(77°F): 0.5	(77°F): 1.04
n-HEXANE CH <sub>3</sub> [CH <sub>2</sub> ] <sub>4</sub> CH <sub>3</sub> <b>184</b>	3.53	50 ppm	500 ppm	1100 ppm [10% LEL]	1.1	7.5	86.2	10.18	-7°F	124	0.66
HEXANE ISOMERS C <sub>6</sub> H <sub>14</sub> <b>185</b>	3.53	100 ppm C 510 ppm	NONE	N.D.	?	?	86.2	?	-54 to 19°F	?	0.65 – 0.66



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
n-HEXANTHIOL CH <sub>3</sub> [CH <sub>2</sub> ] <sub>5</sub> SH <b>186</b>	4.83	C 0.5 ppm	NONE	N.D.	?	?	118.2	?	68°F	?	0.84
2-HEXANONE CH <sub>3</sub> CO[CH <sub>2</sub> ] <sub>3</sub> CH <sub>3</sub> <b>187</b>	4.10	1 ppm	100 ppm	1600 ppm	?	8	100.2	9.34	77°F	11	0.81
HEXONE CH <sub>3</sub> COCH <sub>2</sub> CH(CH <sub>3</sub> ) <sub>2</sub> <b>188</b>	4.10	50 ppm ST 75 ppm	100 ppm	500	(200°F): 1.2	(200°F): 8.0	100.2	9.30	64°F	16	0.80
sec-HEXYLACETATE C <sub>8</sub> H <sub>16</sub> O <sub>2</sub> <b>189</b>	5.90	50 ppm	50 ppm	500 ppm	?	?	144.2	?	113°F	3	0.86
HEXYLENE GLYCOL (CH <sub>3</sub> ) <sub>2</sub> COHCH <sub>2</sub> CHOHCH <sub>3</sub> <b>190</b>	4.83	C 25 ppm	NONE	N.D.	(calc): 1.3	(est): 7.4	118.2	?	209°F	0.05	0.92
HYDRAZINE H <sub>2</sub> NNH <sub>2</sub> <b>191</b>	1.31	Ca C 0.03 ppm	1 ppm	Ca [50 ppm]	2.9	98	32.1	8.93	99°F	10	1.01
HYDROGENATED TERPHENYLS (C <sub>6</sub> Hn) <sub>3</sub> <b>192</b>	12.19 (40% hydro-genated)	0.5 ppm	NONE	N.D.	?	?	298 (40% hydro-genated)	?	315°F (40%)	(77°F): 0.1mm (40%)	(77°F): 1.003- 1.009 (40% hydro-genated)
HYDROGEN BROMIDE HBr <b>193</b>	3.31	C 3 ppm	3 ppm	30 ppm	NA	NA	80.9	11.62	NA	20 ATM	—
HYDROGEN CHLORIDE HCl <b>194</b>	1.49	C 5 ppm	C 5 ppm	50 ppm	NA	NA	36.5	12.74	NA	40.5 ATM	—
HYDROGEN CYANIDE HCN <b>195</b>	1.10	ST 4.7 ppm	10 ppm	50 ppm	5.6	40.0	27.0	13.60	0°F (96%)	630	0.69
HYDROGEN FLUORIDE HF <b>196</b>	0.82	3 ppm C 6 ppm	3 ppm	30 ppm	NA	NA	20.0	15.98	NA	783	1.00 (LIQ. at 67°F)
HYDROGEN PEROXIDE H <sub>2</sub> O <sub>2</sub> <b>197</b>	1.39	1 ppm	1 ppm	75 ppm	NA	NA	34.0	10.54	NA	(86°F): 5	1.39



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
HYDROGEN SELENIDE H <sub>2</sub> Se <b>198</b>	3.31	0.05 ppm	0.05 ppm	1 ppm	?	?	81.0	9.88	NA (GAS)	(70°F): 9.5 ATM	—
HYDROGEN SULFIDE H <sub>2</sub> S <b>199</b>	1.40	C 10 ppm	C 20 ppm	100 ppm	4.0	44.0	34.1	10.46	NA (GAS)	17.6 ATM	—
2-HYDROXYPROPYL ACRYLATE CH <sub>2</sub> =CHCOOCH <sub>2</sub> CHOHCH <sub>3</sub> <b>200</b>	5.33	0.5 ppm	NONE	N.D.	1.8	?	130.2	?	149°F	?	1.05
INDENE C <sub>9</sub> H <sub>8</sub> <b>201</b>	4.75	10 ppm	NONE	N.D.	?	?	116.2	8.81	173°F	?	0.997
IODINE I <sub>2</sub> <b>202</b>	10.38	C 0.1 ppm	C 0.1 ppm	2 ppm	NA	NA	253.8	9.31	NA	(77°F): 0.3	4.93
IODOFORM CHI <sub>3</sub> <b>203</b>	16.10	0.6	NONE	N.D.	NA	NA	393.7	?	NA	?	4.01
IRON PENTACARBONYL Fe(CO) <sub>5</sub> <b>204</b>	2.28	0.1 ppm ST 0.2 ppm	NONE	N.D.	?	?	195.9	?	5°F	(87°F): 40	1.46 - 1.52
ISOAMYL ACETATE CH <sub>3</sub> COOCH <sub>2</sub> CH <sub>2</sub> CH(CH <sub>3</sub> ) <sub>2</sub> <b>205</b>	5.33	100 ppm	100 ppm	1000 ppm	(212°F): 1.0	7.5	130.2	?	77°F	4	0.87
ISOAMYL ALCOHOL (CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> CH <sub>2</sub> OH (primary) <b>206</b>	3.61	100 ppm ST 125 ppm	100 ppm	500 ppm	1.2	(212°F): 9.0	88.2	?	109°F	28	(57°F): 0.81
ISOAMYL ALCOHOL (CH <sub>3</sub> ) <sub>2</sub> CHCH(OH)CH <sub>3</sub> (secondary) <b>207</b>	3.61	100 ppm ST 125 ppm	100 ppm	500 ppm	?	?	88.2	?	(oc): 95°F	1	0.82
ISOBUTANE CH <sub>3</sub> CH(CH <sub>3</sub> ) <sub>2</sub> <b>208</b>	2.38	800 ppm	NONE	N.D.	1.6	8.4	58.1	10.74	NA (GAS)	(70°F): 3.1 ATM	—
ISOBUTYL ACETATE CH <sub>3</sub> COOCH <sub>2</sub> CH(CH <sub>3</sub> ) <sub>2</sub> <b>209</b>	4.75	150 ppm	150 ppm	1300 ppm [10% LEL]	1.3	10.5	116.2	9.97	64°F	13	0.87



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
ISOBUTYL ALCOHOL (CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> OH <b>210</b>	3.03	50 ppm	100 ppm	1600 ppm	(123°F): 1.7	(202°F): 10.6	74.1	10.12	82°F	9	0.80
ISOBUTYRONITRILE (CH <sub>3</sub> ) <sub>2</sub> CHCN <b>211</b>	2.83	8 ppm	NONE	N.D.	?	?	69.1	?	47°F	(130°F): 100	0.76
ISOOCTYL ALCOHOL C <sub>7</sub> H <sub>15</sub> CH <sub>2</sub> OH <b>212</b>	5.33	50 ppm	NONE	N.D.	(calc.): 0.9	(est.): 5.7	130.3	?	(oc): 180°F	0.4	0.83
ISOPHORONE C <sub>9</sub> H <sub>14</sub> O <b>213</b>	5.65	4 ppm	25 ppm	200 ppm	0.8	3.8	138.2	9.07	184°F	0.3	0.92
ISOPHORONE DIISOCYANATE C <sub>12</sub> H <sub>18</sub> N <sub>2</sub> O <sub>2</sub> <b>214</b>	9.09	0.005 ppm ST 0.02 ppm	NONE	N.D.	?	?	222.3	?	311°F	0.0003	1.06
ISOPROPYL ACETATE CH <sub>3</sub> COOCH(CH <sub>3</sub> ) <sub>2</sub> <b>215</b>	4.18	—	250 ppm	1800 ppm	(100°F): 1.8	8	102.2	9.95	36°F	42	0.87
ISOPROPYL ALCOHOL (CH <sub>3</sub> ) <sub>2</sub> CHOH <b>216</b>	2.46	400 ppm ST 500 ppm	400 ppm	2000 ppm [10% LEL]	2.0	(200°F): 12.7	60.1	10.10	53°F	33	0.79
ISOPROPYLAMINE (CH <sub>3</sub> ) <sub>2</sub> CHNH <sub>2</sub> <b>217</b>	2.42	—	5 ppm	750 ppm	?	?	59.1	8.72	(oc): -35°F	460	0.69
N-ISOPROPYLANILINE C <sub>6</sub> H <sub>5</sub> NHCH(CH <sub>3</sub> ) <sub>2</sub> <b>218</b>	5.53	2 ppm	NONE	N.D.	?	?	135.2	?	(oc): 190°F	(77°F): 0.03	(60°F): 0.93
ISOPROPYL ETHER (CH <sub>3</sub> ) <sub>2</sub> CHOCH(CH <sub>3</sub> ) <sub>2</sub> <b>219</b>	4.18	500 ppm	500 ppm	1400 ppm [10% LEL]	1.4	7.9	102.2	9.20	-18°F	119	0.73
ISOPROPYL GLYCIDYL ETHER C <sub>6</sub> H <sub>12</sub> O <sub>2</sub> <b>220</b>	4.75	C 50 ppm	50 ppm	400 ppm	?	?	116.2	?	92°F	(77°F): 9	0.92
KETENE CH <sub>2</sub> =CO <b>221</b>	1.72	0.5 ppm ST 1.5 ppm	0.5 PM	5 ppm	?	?	42.0	9.61	NA (GAS)	>1 ATM	—
L.P.G. C <sub>3</sub> H <sub>8</sub> /C <sub>3</sub> H <sub>6</sub> /C <sub>4</sub> H <sub>10</sub> /C <sub>4</sub> H <sub>8</sub> <b>222</b>	1.72 -2.37	1000 ppm	1000 ppm	2000 ppm [10% LEL]	2.1 (Propane) 1.9 (Butane)	9.5 (Propane) 8.5 (Butane)	42 - 58	10.95	NA (GAS)	>1 ATM	—



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
MALEIC ANHYDRIDE C <sub>4</sub> H <sub>2</sub> O <sub>3</sub> <b>223</b>	4.01	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	1.4	7.1	98.1	9.90	218°F	0.2	1.48
MALONONITRILE NCCH <sub>2</sub> CN <b>224</b>	2.70	3 ppm	NONE	N.D.	?	?	66.1	12.88	(oc): 266°F	?	1.19
MESITYL OXIDE (CH <sub>3</sub> ) <sub>2</sub> C=CHCOCH <sub>3</sub> <b>225</b>	4.02	10 ppm	25 ppm	1400 ppm [10% LEL]	1.4	7.2	98.2	9.08	87°F	9	(59°F): 0.86
METHACRYLIC ACID CH <sub>2</sub> =C(CH <sub>3</sub> )COOH <b>226</b>	3.52	20 ppm	NONE	N.D.	?	?	86.1	?	(oc): 171°F	0.7	1.02 (LIQ)
METHOXYFLURANE CHCl <sub>2</sub> CF <sub>2</sub> OCH <sub>3</sub> <b>227</b>	6.75	C 2 ppm	NONE	N.D.	(176°F): 7	?	165.0	?	?	23	(77°F): 1.42
METHYL ACETATE CH <sub>3</sub> COOCH <sub>3</sub> <b>228</b>	3.03	200 ppm ST 250 ppm	200 ppm	3100 ppm [10% LEL]	3.1	16	74.1	10.27	14°F	173	0.93
METHYL ACETYLENE CH <sub>3</sub> C≡CH <b>229</b>	1.64	1000 ppm	1000 ppm	1700 ppm [10% LEL]	1.7	?	40.1	10.36	NA (GAS)	5.2 ATM	—
METHYL ACETYLENE- PROPADIENE MIXTURE CH <sub>3</sub> C≡CH/CH <sub>2</sub> =C=CH <sub>2</sub> <b>230</b>	1.64	1000 ppm ST 1250 ppm	1000 ppm	3400 ppm [10% LEL]	3.4	10.8	40.1	?	NA (GAS)	>1 ATM	—
METHYL ACRYLATE CH <sub>2</sub> =CHCOOCH <sub>3</sub> <b>231</b>	3.52	10 ppm	10 ppm	250 ppm	2.8	25	86.1	9.90	27°F	65	0.96
METHYLACRYLONITRILE CH <sub>2</sub> =C(CH <sub>3</sub> )CN <b>232</b>	2.74	1 ppm	NONE	N.D.	2	6.8	67.1	?	34°F	(77°F): 71	0.80
METHYLAL CH <sub>3</sub> OCH <sub>2</sub> OCH <sub>3</sub> <b>233</b>	3.11	1000 ppm	1000 ppm	2200 ppm [10% LEL]	2.2	13.8	76.1	10.00	(oc): -26°F	330	0.86
METHYL ALCOHOL CH <sub>3</sub> OH <b>234</b>	1.31	200 ppm ST 250 ppm	200 ppm	6000 ppm	6.0	36	32.1	10.84	52°F	96	0.79
METHYLAMINE CH <sub>3</sub> NH <sub>2</sub> <b>235</b>	1.27	10 ppm	10 ppm	100 ppm	4.9	20.7	31.1	8.97	NA (GAS) 14°F (LIQ)	3.0 ATM	0.70 (LIQ. at 13°F)



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
METHYL (n-AMYL) KETONE CH <sub>3</sub> CO[CH <sub>2</sub> ] <sub>4</sub> CH <sub>3</sub> <b>236</b>	4.67	100 ppm	100 ppm	800 ppm	(151°F): 1.1	(250°F): 7.9	114.2	9.33	102°F	3	0.81
METHYL BROMIDE CH <sub>3</sub> Br <b>237</b>	3.89	Ca	C 20 ppm	Ca [250 ppm]	10	16.0	95.0	10.54	NA (GAS)	1.9 ATM	1.73 (LIQ. at 32°F)
METHYL CELLOSOLVE® CH <sub>3</sub> OCH <sub>2</sub> CH <sub>2</sub> OH <b>238</b>	3.11	0.1 ppm	25 ppm	200 ppm	1.8	14	76.1	9.60	102°F	6	0.96
METHYL CELLOSOLVE® ACETATE CH <sub>3</sub> COOCH <sub>2</sub> CH <sub>2</sub> OCH <sub>3</sub> <b>239</b>	4.83	0.1 ppm	25 ppm	200 ppm	1.7	8.2	118.1	?	120°F	2	1.01
METHYL CHLORIDE CH <sub>3</sub> Cl <b>240</b>	2.07	Ca	100 ppm C 200 ppm	Ca [2000 ppm]	8.1	17.4	50.5	11.28	NA (GAS)	5.0 ATM	—
METHYL CHLOROFORM CH <sub>3</sub> CCl <sub>3</sub> <b>241</b>	5.46	C 350 ppm	350 ppm	700 ppm	7.5	12.5	133.4	11.00	?	100	1.34
METHYL-2-CYANOACRYLATE CH <sub>2</sub> =C(CN)COOCH <sub>3</sub> <b>242</b>	4.54	2 ppm ST 4 ppm	NONE	N.D.	?	?	111.1	?	174°F	(77°F): 0.2	(81°F): 1.10
METHYLCYCLOHEXANE CH <sub>3</sub> C <sub>6</sub> H <sub>11</sub> <b>243</b>	4.02	400 ppm	500 ppm	1200 ppm [10% LEL]	1.2	6.7	98.2	9.85	25°F	37	0.77
METHYLCYCLOHEXANOL CH <sub>3</sub> C <sub>6</sub> H <sub>10</sub> OH <b>244</b>	4.67	50 ppm	100 ppm	500 PM	?	?	114.2	9.80	149- 158°F	(86°F): 2	0.92
o-METHYLCYCLOHEXANONE CH <sub>3</sub> C <sub>6</sub> H <sub>9</sub> O <b>245</b>	4.59	50 ppm ST 75 ppm	100 ppm	600 ppm	?	?	112.2	?	118°F	1	0.93
METHYLENE BIS(4- CYCLOHEXYLIISOCYANATE CH <sub>2</sub> [(C <sub>6</sub> H <sub>10</sub> )NCO] <sub>2</sub> <b>246</b>	10.73	C 0.01 ppm	NONE	N.D.	?	?	262.4	?	>395°F	(77°F): 0.001	(77°F): 1.07
METHYLENE BISPHENYL ISOCYANATE CH <sub>2</sub> (C <sub>6</sub> H <sub>4</sub> NCO) <sub>2</sub> <b>247</b>	10.24	0.05 mg/m <sup>3</sup> C 0.2 mg/m <sup>3</sup>	C 0.2 mg/m <sup>3</sup>	75 mg/m <sup>3</sup>	?	?	250.3	?	390°F	(77°F): 0.000005	1.23 (SOLID at 77°F) 1.19 (LIQ. at 122°F)



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
METHYLENE CHLORIDE CH <sub>2</sub> Cl <sub>2</sub> <b>248</b>	3.47	Ca	25 ppm ST 125 ppm	Ca [2300 ppm]	13	23	84.9	11.32	?	350	1.33
METHYL ETHYL KETONE PEROXIDE C <sub>8</sub> H <sub>16</sub> O <sub>4</sub> <b>249</b>	7.21	C 0.2 ppm	NONE	N.D.	?	?	176.2	?	(oc): 125- 200°F (60%)	?	(59°F): 1.12
METHYL FORMATE HCOOCH <sub>3</sub> <b>250</b>	2.46	100 ppm ST 150 ppm	100 ppm	4500 ppm	4.5	23	60.1	10.82	-2°F	476	0.98
5-METHYL-3-HEPTANONE C <sub>2</sub> H <sub>5</sub> COCH <sub>2</sub> CH(CH <sub>3</sub> )CH <sub>2</sub> CH <sub>3</sub> <b>251</b>	5.24	25 ppm (130 mg/m <sup>3</sup> )	25 ppm (130 mg/m <sup>3</sup> )	100 ppm	?	?	128.2	?	138°F	2	0.82
METHYL HYDRAZINE CH <sub>3</sub> NHNH <sub>2</sub> <b>252</b>	1.89	Ca C 0.04 ppm	C 0.2 ppm	Ca [20 ppm]	2.5	92	46.1	8.00	17°F	38	(77°F): 0.87
METHYL IODIDE CH <sub>3</sub> I <b>253</b>	5.80	Ca 2 ppm	5 ppm	Ca [100 ppm]	NA	NA	141.9	9.54	NA	400	2.28
METHYL ISOAMYL KETONE CH <sub>3</sub> COCH <sub>2</sub> CH <sub>2</sub> CH(CH <sub>3</sub> ) <sub>2</sub> <b>254</b>	4.67	50 ppm	100 ppm	N.D.	(200°F): 1.0	(200°F): 8.2	114.2	9.284	97°F	5	0.81
METHYL ISOBUTYL CARBINOL (CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> CH(OH)CH <sub>3</sub> <b>255</b>	4.18	25 ppm ST 40 ppm	25 ppm	400 ppm	1.0	5.5	102.2	?	106°F	3	0.81
METHYL ISOCYANATE CH <sub>3</sub> NCO <b>256</b>	2.34	0.02 ppm	0.02 ppm	3.0 ppm	5.3	26	57.1	10.67	19°F	348	0.96
METHYL ISOPROPYL KETONE CH <sub>3</sub> COCH(CH <sub>3</sub> ) <sub>2</sub> <b>257</b>	3.53	200 ppm	NONE	N.D.	?	?	86.2	9.32	?	42	0.81
METHYL MERCAPTAN CH <sub>3</sub> SH <b>258</b>	1.97	C 0.5 ppm	C 10 ppm	150 ppm	3.9	21.8	48.1	9.44	NA (GAS) (oc): 0°F (LIQ.)	1.7 ATM	0.90 (LIQ. at 32°F)
METHYL METHACRYLATE CH <sub>2</sub> =C(CH <sub>3</sub> )COOCH <sub>3</sub> <b>259</b>	4.09	100 ppm	100 ppm	1000 ppm	1.7	8.2	100.1	9.70	(oc): 50°F	29	0.94



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
METHYL SILICATE (CH <sub>3</sub> O) <sub>4</sub> Si <b>260</b>	6.23	1 ppm	NONE	N.D.	?	?	152.3	?	205°F	(77°F): 12	1.02
α-METHYL STYRENE C <sub>6</sub> H <sub>5</sub> C(CH <sub>3</sub> )=CH <sub>2</sub> <b>261</b>	4.83	50 ppm ST 100 ppm	C 100 ppm	700 ppm	1.9	6.1	118.2	8.35	129°F	2	0.91
MONOMETHYL ANILINE C <sub>6</sub> H <sub>5</sub> NHCH <sub>3</sub> <b>262</b>	4.38	0.5 ppm	2 ppm	100 ppm	?	?	107.2	7.32	175°F	0.3	0.99
MORPHOLINE C <sub>4</sub> H <sub>9</sub> ON <b>263</b>	3.56	20 ppm ST 30 ppm	20 ppm	1400 ppm [10% LEL]	1.4	11.2	87.1	8.88	(oc): 98°F	6	1.007
NAPHTHA (COAL TAR) <b>264</b>	4.50	100 ppm	100 ppm	1000 ppm [10% LEL]	1	?	110 (approx.)	?	100- 109°F	<5	0.89- 0.97
NAPHTHALENE C <sub>10</sub> H <sub>8</sub> <b>265</b>	5.24	10 ppm ST 15 ppm	10 ppm	250 ppm	0.9	5.9	128.2	8.12	174°F	0.08	1.15
NAPHTHALENE DIISOCYANATE C <sub>10</sub> H <sub>6</sub> (NCO) <sub>2</sub> <b>266</b>	8.60	0.040 C 0.170 mg/m <sup>3</sup>	NONE	N.D.	?	?	210.2	?	(oc): 311°F	(75°F): 0.003	?
NICKEL CARBONYL Ni(CO) <sub>4</sub> <b>267</b>	6.98	Ca 0.001 ppm	0.001 ppm	Ca [2 ppm]	2	?	170.7	8.28	<-4°F	315	(63°F): 1.32
NITRIC ACID HNO <sub>3</sub> <b>268</b>	2.58	2 ppm (5 mg/m <sup>3</sup> ) ST 4 ppm (10 mg/m <sup>3</sup> )	2 ppm (5 mg/m <sup>3</sup> )	25 ppm	NA	NA	63.0	11.95	NA	48	(77°F): 1.50
NITRIC OXIDE NO <b>269</b>	1.23	25 ppm	25 ppm	100 ppm	NA	NA	30.0	9.27	NA	34.2 ATM	—
NITROBENZENE C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub> <b>270</b>	5.04	1 ppm	1 ppm	200 ppm	(200°F): 1.8	?	123.1	9.92	190°F	(77°F): 0.3	1.20
NITROETHANE CH <sub>3</sub> CH <sub>2</sub> NO <sub>2</sub> <b>271</b>	3.07	100 ppm	100 ppm	1000 ppm	3.4	?	75.1	10.88	82°F	(77°F): 21	1.05
NITROGEN DIOXIDE NO <sub>2</sub> <b>272</b>	1.88	ST 1 ppm	C 0.5 ppm	20 ppm	NA	NA	46.0	9.75	NA	720	1.44 (LIQ. at 68°F)





Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
NITROGEN TRIFLUORIDE NF <sub>3</sub> <b>273</b>	2.90	10 ppm	10 ppm	1000 ppm	NA	NA	71.0	12.97	NA	>1 ATM	—
NITROGLYCERINE CH <sub>2</sub> NO <sub>3</sub> CHNO <sub>3</sub> CH <sub>2</sub> NO <sub>3</sub> <b>274</b>	9.29	ST 0.1 mg/m <sup>3</sup>	C 0.2 ppm	75 mg/m <sup>3</sup>	?	?	227.1	?	EXPLODES	0.0003	1.60
NITROMETHANE CH <sub>3</sub> NO <sub>2</sub> <b>275</b>	2.50	—	100 ppm	750 ppm	7.3	?	61.0	11.08	95°F	28	1.14
1-NITROPROPANE CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> NO <sub>2</sub> <b>276</b>	3.64	25 ppm	25 ppm	1000 ppm	2.2	?	89.1	10.81	96°F	8	1.00
2-NITROPROPANE (CH <sub>3</sub> ) <sub>2</sub> CHNO <sub>2</sub> <b>277</b>	3.64	Ca	25 ppm	Ca [100 ppm]	2.6	11.0	89.1	10.71	75°F	13	0.99
O-NITROTOLUENE NO <sub>2</sub> C <sub>6</sub> H <sub>4</sub> CH <sub>3</sub> <b>278</b>	5.61	2 ppm	5 ppm	200 ppm	2.2	?	137.1	9.43	223°F	0.1	1.16
m-NITROTOLUENE NO <sub>2</sub> C <sub>6</sub> H <sub>4</sub> CH <sub>3</sub> <b>279</b>	5.61	2 ppm	5 ppm	200 ppm	1.6	?	137.1	9.48	223°F	0.1	1.16
p-NITROTOLUENE NO <sub>2</sub> C <sub>6</sub> H <sub>4</sub> CH <sub>3</sub> <b>280</b>	5.61	2 ppm	5 ppm	200 ppm	1.6	?	137.1	9.50	223°F	0.1	1.12
NITROUS OXIDE N <sub>2</sub> O <b>281</b>	1.80	25 ppm	NONE	N.D.	NA	NA	44.0	12.89	NA	51.3 ATM	—
NONANE CH <sub>3</sub> (CH <sub>2</sub> ) <sub>7</sub> CH <sub>3</sub> <b>282</b>	5.25	200 ppm	NONE	N.D.	0.8	2.9	128.3	10.21	88°F	3	0.72
1-NONANETHIOL CH <sub>3</sub> (CH <sub>2</sub> ) <sub>8</sub> SH <b>283</b>	6.56	C 0.5 ppm	NONE	N.D.	?	?	160.3	?	?	?	?
1-OCTADECANETHIOL CH <sub>3</sub> (CH <sub>2</sub> ) <sub>17</sub> SH <b>284</b>	11.72	C 0.5 ppm	NONE	N.D.	?	?	286.6	?	?	?	0.85
OCTANE CH <sub>3</sub> [CH <sub>2</sub> ] <sub>6</sub> CH <sub>3</sub> <b>285</b>	4.67	75 ppm C 385 ppm	500 ppm	1000 ppm [10% LEL]	1.0	6.5	114.2	9.82	56°F	10	0.70



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
1-OCTANETHIOL CH <sub>3</sub> (CH <sub>2</sub> ) <sub>7</sub> SH <b>286</b>	5.98	C 0.5 ppm	NONE	N.D.	?	?	146.3	?	(oc): 115°F	(212°F): 3	0.84
OSMIUM TETROXIDE OsO <sub>4</sub> <b>287</b>	10.40	0.002 mg/m <sup>3</sup> ST 0.006 mg/m <sup>3</sup>	0.002 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	NA	NA	254.2	12.60	NA	7	5.10
OXYGEN DIFLUORIDE OF <sub>2</sub> <b>288</b>	2.21	C 0.05 ppm	0.05 ppm	0.5 ppm	NA	NA	54.0	13.11	NA	>1 ATM	—
OZONE O <sub>3</sub> <b>289</b>	1.96	C 0.1 ppm	0.1 ppm	5 ppm	NA	NA	48.0	12.52	NA	>1 ATM	—
PENTABORANE B <sub>5</sub> H <sub>9</sub> <b>290</b>	2.58	0.005 ppm ST 0.015 ppm	0.005 ppm	1 ppm	0.42	?	63.1	9.90	86°F	171	0.62
n-PENTANE CH <sub>3</sub> [CH <sub>2</sub> ] <sub>3</sub> CH <sub>3</sub> <b>291</b>	2.95	120 ppm C 610 ppm	1000 ppm	1500 ppm [10% LEL]	1.5	7.8	72.2	10.34	-57°F	420	0.63
1-PENTANETHIOL CH <sub>3</sub> [CH <sub>2</sub> ] <sub>4</sub> SH <b>292</b>	4.26	C 0.5 ppm	NONE	N.D.	?	?	104.2	?	(oc): 65°F (77°F): 14		0.84
2-PENTANONE CH <sub>3</sub> COCH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub> <b>293</b>	3.52	150 ppm	200 ppm	1500 ppm	1.5	8.2	86.1	9.39	45°F	27	0.81
PERCHLOROMETHYL MERCAPTAN Cl <sub>3</sub> CSCI <b>294</b>	7.60	0.1 ppm	0.1 ppm	10 ppm	NA	NA	185.9	?	NA	3	1.69
PERCHLORYL FLUORIDE ClO <sub>3</sub> F <b>295</b>	4.19	3 ppm ST 6 ppm	3 ppm	100 ppm	NA	NA	102.5	13.60	NA	10.5 ATM	—
PETROLEUM DISTILLATES (naphtha) <b>296</b>	4.05 (approx.)	350 mg/m <sup>3</sup> C 1800 mg/m <sup>3</sup>	500 ppm	1100 ppm [10% LEL]	1.1	5.9	99 (approx.)	?	-40°F to -86°F	40 (approx.)	0.63-0.66
PHENOL C <sub>6</sub> H <sub>5</sub> OH <b>297</b>	3.85	5 ppm C 15.6 ppm	5 ppm	250 ppm	1.8	8.6	94.1	8.50	175°F	0.4	1.06



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	F.L.P	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
PHENYL ETHER (VAPOR) C <sub>6</sub> H <sub>5</sub> OC <sub>6</sub> H <sub>5</sub> <b>298</b>	6.96	1 ppm	1 ppm	100 ppm	0.7	6.0	170.2	8.09	239°F	(77°F): 0.02	1.08
PHENYL ETHER-BIPHENYL MIXTURE (VAPOR) C <sub>6</sub> H <sub>5</sub> OC <sub>6</sub> H <sub>5</sub> /C <sub>6</sub> H <sub>5</sub> C <sub>6</sub> H <sub>5</sub> <b>299</b>	6.79 (approx.)	1 ppm	1 ppm	10 ppm	?	?	166 (approx.)	?	239°F	(77°F): 0.08	(77°F): 1.06
PHENYL GLYCIDYL ETHER C <sub>9</sub> H <sub>10</sub> O <sub>2</sub> <b>300</b>	6.14	Ca C 1 ppm	10 ppm	Ca [100 ppm]	?	?	150.1	?	248°F	0.01	1.11
PHENYLHYDRAZINE C <sub>6</sub> H <sub>5</sub> NHNH <sub>2</sub> <b>301</b>	4.42	Ca C 0.14 ppm [skin] (0.6 mg/m <sup>3</sup> ) [2-hr]	5 ppm	Ca [15 ppm]	?	?	108.1	7.64	190°F	(77°F): 0.04	1.10
PHENYLPHOSPHINE C <sub>6</sub> H <sub>5</sub> PH <sub>2</sub> <b>302</b>	4.50	C 0.05 ppm	NONE	N.D.	?	?	110.1	?	?	?	(59°F): 1.001
PHOSDRIN® C <sub>7</sub> H <sub>13</sub> PO <sub>6</sub> <b>303</b>	9.17	0.01 ppm ST 0.03 ppm (0.3 mg/m <sup>3</sup> ) [skin]	0.1 ppm	4 ppm	?	?	224.2	?	(oc): 347°F	0.003	1.25
PHOSGENE COCl <sub>2</sub> <b>304</b>	4.05	0.1 ppm C 0.2 ppm	0.1 ppm	2 ppm	NA	NA	98.9	11.55	NA	1.6 ATM	1.43 (LIQ. at 32°F)
PHOSPHINE PH <sub>3</sub> <b>305</b>	1.39	0.3 ppm ST 1 ppm	0.3 ppm	50 ppm	1.79	?	34.0	9.96	NA (GAS)	41.3 ATM	—
PHOSPHORUS OXYCHLORIDE POCl <sub>3</sub> <b>306</b>	6.27	0.1 ppm ST 0.5 ppm	NONE	N.D.	NA	NA	153.3	?	NA	(81°F): 40	(77°F): 1.65
PHOSPHORUS TRICHLORIDE PCl <sub>3</sub> <b>307</b>	5.62	0.2 ppm ST 0.5 ppm	0.5 ppm	25 ppm	NA	NA	137.4	9.91	NA	100	1.58
PHTHATIC ANYDRIDE C <sub>6</sub> H <sub>4</sub> (CO) <sub>2</sub> O <b>308</b>	6.06	6 mg/m <sup>3</sup> (1 ppm)	12 mg/m <sup>3</sup> (2 ppm)	60 mg/m <sup>3</sup>	1.7	10.5	148.1	10.00	305°F	0.0015	1.53 (flake) 1.20 (Molten)



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
PICRIC ACID (NO <sub>2</sub> ) <sub>3</sub> C <sub>6</sub> H <sub>2</sub> OH <b>309</b>	9.37	0.1 mg/m <sup>3</sup> ST 0.3 mg/m <sup>3</sup> [skin]	0.1 mg/m <sup>3</sup>	75 mg/m <sup>3</sup>	?	?	229.1	?	302°F	(383°F): 1	1.76
PROPANE CH <sub>3</sub> CH <sub>2</sub> CH <sub>3</sub> <b>310</b>	1.80	1000 ppm	1000 ppm	2100 ppm [10% LEL]	2.1	9.5	44.1	11.07	NA (GAS)	(70°F): 8.4 ATM	—
1-PROPANETHIOL CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> SH <b>311</b>	3.12	C 0.5 ppm	NONE	N.D.	?	?	76.2	9.195	-5°F	(77°F): 155	0.84
PROPARGYL ALCOHOL HC≡CCH <sub>2</sub> OH <b>312</b>	2.29	1 ppm	NONE	N.D.	?	?	56.1	10.51	(oc): 97°F	12	0.97
PROPIONIC ACID CH <sub>3</sub> CH <sub>2</sub> COOH <b>313</b>	3.03	10 ppm ST 15 ppm	NONE	N.D.	2.9	12.1	74.1	10.24	126°F	3	0.99
PROPIONITRILE CH <sub>3</sub> CH <sub>2</sub> CN <b>314</b>	2.25	6 ppm	NONE	N.D.	3.1	?	55.1	11.84	36°F	35	0.78
n-PROPYL ACETATE CH <sub>3</sub> COOCH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub> <b>315</b>	4.18	200 ppm ST 250 ppm	200 ppm	1700 ppm (100°F): 1.7		8	102.2	10.04	55°F	25	0.84
n-PROPYL ALCOHOL CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> OH <b>316</b>	2.46	200 ppm (500 mg/m <sup>3</sup> ) ST 250 ppm (625 mg/m <sup>3</sup> ) [skin]	200 ppm	800 ppm	2.2	13.7	60.1	10.15	72°F	15	0.81
PROPYLENE DICHLORIDE CH <sub>3</sub> CHClCH <sub>2</sub> Cl <b>317</b>	4.62	Ca	75 ppm	Ca [400 ppm]	3.4	14.5	113.0	10.87	60°F	40	1.16
PROPYLENE GLYCOL DINITRATE CH <sub>3</sub> CNO <sub>2</sub> OHCHNO <sub>2</sub> OH <b>318</b>	6.79	0.05 ppm	NONE	N.D.	?	?	166.1	?	?	(72°F): 0.07	(77°F): 1.23
PROPYLENE GLYCOL MONOMETHYL ETHER CH <sub>3</sub> OCH <sub>2</sub> CHCH <sub>3</sub> <b>319</b>	3.69	100 ppm (360 mg/m <sup>3</sup> ) ST 150 ppm (540 mg/m <sup>3</sup> )	NONE	N.D.	(calc.): 1.6	(calc.): 13.8	90.1	?	97°F	(77°F): 12	0.96



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
PROPYLENE IMINE C <sub>3</sub> H <sub>7</sub> N <b>320</b>	2.34	Ca 2 ppm (5 mg/m <sup>3</sup> ) [skin]	2 ppm	Ca [100 PM]	?	?	57.1	9.00	25°F	112	0.80
PROPYLENE OXIDE C <sub>3</sub> H <sub>6</sub> O <b>321</b>	2.38	Ca	100 ppm	Ca [400 ppm]	2.3	36	58.1	9.81	-35°F	445	0.83
n-PROPYL NITRATE CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> ONO <sub>2</sub> <b>322</b>	4.30	25 ppm (105 mg/m <sup>3</sup> ) ST 40 ppm (170 mg/m <sup>3</sup> )	25 ppm	500 ppm	2	100	105.1	11.07	68°F	18	1.07
PYRIDINE C <sub>5</sub> H <sub>5</sub> N <b>323</b>	3.24	5 ppm	5 ppm	1000 ppm	1.8	12.4	79.1	9.27	68°F	16	0.98
QUINONE OC <sub>6</sub> H <sub>4</sub> O <b>324</b>	4.42	0.4 mg/m <sup>3</sup>	0.4 mg/m <sup>3</sup>	100 mg/m <sup>3</sup>	?	?	108.1	9.68	100- 200°F	(77°F): 0.1	1.32
RESORCINOL C <sub>6</sub> H <sub>4</sub> (OH) <sub>2</sub> <b>325</b>	4.50	10 ppm (45 mg/m <sup>3</sup> ) ST 20 ppm (90 mg/m <sup>3</sup> )	NONE	N.D.	(392°F): 1.4	?	110.1	8.63	261°F	(77°F): 0.0002	1.27
SELENIUM HEXAFLUORIDE SeF <sub>6</sub> <b>326</b>	7.89	0.05 ppm	0.05 ppm	2 ppm	NA	NA	193.0	?	NA	>1 ATM	—
SILICON TETRAHYDRIDE SiH <sub>4</sub> <b>327</b>	1.31	5 ppm	NONE	N.D.	?	?	32.1	?	NA (GAS)	>1 ATM	—
STIBINE SbH <sub>3</sub> <b>328</b>	5.10	0.1 ppm	0.1 ppm	5 ppm	?	?	124.8	9.51	NA (GAS)	>1 ATM	—
STYRENE C <sub>6</sub> H <sub>5</sub> CH=CH <sub>2</sub> <b>329</b>	4.26	50 ppm (215 mg/m <sup>3</sup> ) ST 100 ppm (425 mg/m <sup>3</sup> )	100 ppm C 200 ppm	700 ppm	0.9	6.8	104.2	8.40	88°F	5	0.91
SUCCINONITRILE NCCH <sub>2</sub> CH <sub>2</sub> CN <b>330</b>	3.28	6 ppm	NONE	N.D.	?	?	80.1	?	270°F	(212°F): 2	0.99
SULFUR DIOXIDE SO <sub>2</sub> <b>331</b>	2.62	2 ppm (5 mg/m <sup>3</sup> ) ST 5 ppm (13 mg/m <sup>3</sup> )	5 ppm	100 ppm	NA	NA	64.1	12.30	NA	3.2 ATM	—



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
SUFUR HEXAFLUORIDE SF <sub>6</sub> <b>332</b>	5.98	1000 ppm	1000 ppm	N.D.	NA	NA	146.1	19.30	NA	21.5 ATM	—
SULFUR MONOCHLORIDE S <sub>2</sub> Cl <sub>2</sub> <b>333</b>	5.52	C 1 ppm	1 ppm	5 ppm	?	?	135.0	9.40	245°F	7	1.68
SULFUR PENTAFLUORIDE S <sub>2</sub> F <sub>10</sub> <b>334</b>	10.39	C 0.01 ppm	0.025 ppm	1 ppm	NA	NA	254.1	?	NA	561	(32°F): 2.08
SULFUR TETRAFLUORIDE SF <sub>4</sub> <b>335</b>	4.42	C 0.1 ppm	NONE	N.D.	NA	NA	108.1	12.63	NA	(70°F): 10.5 ATM	—
SULFURYL FLUORIDE SO <sub>2</sub> F <sub>2</sub> <b>336</b>	4.18	5 ppm ST 10 ppm	5 ppm	200 ppm	NA	NA	102.1	13.04	NA	(70°F): 15.8 ATM	—
SULPROFOS C <sub>12</sub> H <sub>19</sub> O <sub>2</sub> PS <sub>3</sub> <b>337</b>	13.19	1 mg/m <sup>3</sup>	NONE	N.D.	?	?	322.5	?	?	<8	1.20
TEDP [(CH <sub>3</sub> CH <sub>2</sub> O) <sub>2</sub> PS] <sub>2</sub> O <b>338</b>	13.18	0.2 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	?	?	322.3	?	?	0.0002	(77°F): 1.20
TELLURIUM HEXAFLUORIDE TeF <sub>6</sub> <b>339</b>	9.88	0.02 ppm	0.02 ppm	1 ppm	NA	NA	241.6	?	NA	>1 ATM	—
TEPP [(CH <sub>3</sub> CH <sub>2</sub> O) <sub>2</sub> PO] <sub>2</sub> O <b>340</b>	11.87	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	NA	NA	290.2	?	NA	0.00015	1.19
o-TERPHENYL C <sub>6</sub> H <sub>5</sub> C <sub>6</sub> H <sub>4</sub> C <sub>6</sub> H <sub>5</sub> <b>341</b>	9.42	C 5 mg/m <sup>3</sup>	C 9 mg/m <sup>3</sup>	500 mg/m <sup>3</sup>	?	?	230.3	7.99	(oc): 325°F	VERY LOW	1.1
m-TERPHENYL C <sub>6</sub> H <sub>5</sub> C <sub>6</sub> H <sub>4</sub> C <sub>6</sub> H <sub>5</sub> <b>342</b>	9.42	C 5 mg/m <sup>3</sup>	C 9 mg/m <sup>3</sup>	500 mg/m <sup>3</sup>	?	?	230.3	8.01	(oc): 375°F	VERY LOW	1.23
p-TERPHENYL C <sub>6</sub> H <sub>5</sub> C <sub>6</sub> H <sub>4</sub> C <sub>6</sub> H <sub>5</sub> <b>343</b>	9.42	C 5 mg/m <sup>3</sup>	C 9 mg/m <sup>3</sup>	500 mg/m <sup>3</sup>	?	?	230.3	7.78	405°F	VERY LOW	1.23
1,1,1,2-TETRACHLORO-2,2-DIFLUOROETHANE CCl <sub>3</sub> CCF <sub>2</sub> <b>344</b>	8.34	500 ppm	500 ppm	2000 ppm	NA	NA	203.8	?	NA	40	1.65



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
1,1,2,2-TETRACHLORO-1,2-DIFLUOROETHANE CCl <sub>2</sub> FCCl <sub>2</sub> F <b>345</b>	8.34	500 ppm	500 ppm	2000 ppm	NA	NA	203.8	11.30	NA	40	1.65
1,1,2,2-TETRACHLOROETHANE CHCl <sub>2</sub> CHCl <sub>2</sub> <b>346</b>	6.87	Ca 1 ppm (7 mg/m <sup>3</sup> ) [skin]	5 ppm	Ca [100 ppm]	NA	NA	167.9	11.10	NA	5 ppm	(77°F): 1.59
TETRACHLOROETHYLENE Cl <sub>2</sub> C=CCl <sub>2</sub> <b>347</b>	6.78	Ca	100 ppm C 200 ppm	Ca [150 ppm]	NA	NA	165.8	9.32	NA	14	1.62
TETRAHYDROFURAN C <sub>4</sub> H <sub>8</sub> O <b>348</b>	2.95	200 ppm (590 mg/m <sup>3</sup> ) ST 250 ppm (735 mg/m <sup>3</sup> )	200 ppm	2000 ppm [10% LEL]	2	11.8	72.1	9.45	6°F	132	0.89
TETRAMETHYL SUCCINONITRILE (CH <sub>3</sub> ) <sub>2</sub> C(CN)C(CN)CH <sub>3</sub> ) <sub>2</sub> <b>349</b>	5.57	3 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	5 ppm	?	?	136.2	?	?	?	1.07
TETRANITROMETHANE C(NO <sub>2</sub> ) <sub>4</sub> <b>350</b>	8.02	1 ppm	1 ppm	4 ppm	?	?	196.0	?	?	8	1.62
THIOGLYCOLIC ACID HSCH <sub>2</sub> COOH <b>351</b>	3.77	1 ppm	NONE	N.D.	5.9	?	92.1	?	>230°F (64°F): 10		1.32
THIONYL CHLORIDE SOCl <sub>2</sub> <b>352</b>	4.87	C 1 ppm	NONE	N.D.	NA	NA	119.0	?	NA	(70°F): 100	1.64
TOLUENE C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub> <b>353</b>	3.77	100 ppm (375 mg/m <sup>3</sup> ) ST 150 ppm (560 mg/m <sup>3</sup> )	200 ppm C 300 ppm	500 ppm	1.1	7.1	92.1	8.82	40°F	21	0.87
TOLUENE-2,4-DISOCYANATE CH <sub>3</sub> C <sub>6</sub> H <sub>3</sub> (NCO) <sub>2</sub> <b>354</b>	7.13	Ca	C 0.02	Ca [2.5 ppm]	0.9	9.5	174.2	?	260°F (77°F): 0.05		1.22



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
o-TOLUIDINE CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> NH <sub>2</sub> <b>355</b>	4.38	Ca	5 ppm	Ca [50 ppm]	?	?	107.2	7.44	185°F	0.3	1.01
TRIBUTYL PHOSPHATE (CH <sub>3</sub> [CH <sub>2</sub> ] <sub>3</sub> O) <sub>3</sub> PO <b>356</b>	10.89	0.2 ppm	5 mg/m <sup>3</sup>	30 ppm	?	?	266.3	?	(oc): 295°F	(77°F): 0.004	0.98
TRICHLOROACETIC ACID CCl <sub>3</sub> COOH <b>357</b>	6.68	1 ppm	NONE	N.D.	NA	NA	163.4	?	NA	(124°F): 1	1.62
1,2,4-TRICHLOROBENZENE C <sub>6</sub> H <sub>3</sub> Cl <sub>3</sub> <b>358</b>	7.42	C 5 ppm	—	N.D.	(302°F): —	(302°F): 6.6	181.4	?	222°F	1	1.45
1,1,2-TRICHLOROETHANE CHCl <sub>2</sub> CH <sub>2</sub> Cl <b>359</b>	5.46	Ca 10 ppm	10 ppm (45 mg/m <sup>3</sup> )	Ca [100 ppm]	6	15.5	133.4	11.00	?	19	1.44
TRICHLOROETHYLENE ClCH=CCl <sub>2</sub> <b>360</b>	5.37	Ca	100 ppm C 200 ppm	Ca [1000 ppm]	(77°F): 8	(77°F): 10.5	131.4	9.45	?	58	1.46
1,2,3-TRICHLOROPROPANE CH <sub>2</sub> ClCHClCH <sub>2</sub> Cl <b>361</b>	6.03	Ca 10 ppm (60 mg/m <sup>3</sup> ) [skin]	50 ppm	Ca [100 ppm]	(248°F): 3.2	(302°F): 12.6	147.4	?	160°F	3	1.33
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE CCl <sub>2</sub> FCCLF <sub>2</sub> <b>362</b>	7.67	1000 ppm (7600 mg/m <sup>3</sup> ) ST 1250 ppm (9500 mg/m <sup>3</sup> )	1000 ppm	2000 ppm	?	?	187.4	11.99	?	285	(77°F): 1.56
TRIETHYLAMINE (C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> N <b>363</b>	4.14	—	25 ppm	200	1.2	8.0	101.2	7.50	20°F	54	0.73
TRIFLUOROBROMOMETHANE CBrF <sub>3</sub> <b>364</b>	6.09	1000 ppm	1000 ppm	40,000 ppm	NA	NA	148.9	11.78	NA	>1 ATM	—
TRIMELLITIC ANHYDRIDE C <sub>9</sub> H <sub>4</sub> O <sub>5</sub> <b>365</b>	7.86	0.005 ppm	NONE	N.D.	NA	NA	192.1	?	NA	4 x 10 <sup>6</sup>	?
TRIMETHYLAMINE (CH <sub>3</sub> ) <sub>3</sub> N <b>366</b>	2.42	10 ppm (24 mg/m <sup>3</sup> ) ST 15 ppm (36 mg/m <sup>3</sup> )	NONE	N.D.	2.0	11.6	59.1	7.82	NA (GAS) 20°F (LIQ)	(70°F): 1454	—





Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	F.L.P	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
1,2,3-TRIMETHYLBENZENE C <sub>6</sub> H <sub>3</sub> (CH <sub>3</sub> ) <sub>3</sub> <b>367</b>	4.92	25 ppm	NONE	N.D.	0.8	6.6	120.2	8.48	?	(62°F): 1	0.89
1,2,4-TRIMETHYLBENZENE C <sub>6</sub> H <sub>3</sub> (CH <sub>3</sub> ) <sub>3</sub> <b>368</b>	4.92	25 ppm	NONE	N.D.	0.9	6.4	120.2	8.27	112°F	(56°F): 1	0.88
1,3,5-TRIMETHYLBENZENE C <sub>6</sub> H <sub>3</sub> (CH <sub>3</sub> ) <sub>3</sub> <b>369</b>	4.92	25 ppm (125 mg/m <sup>3</sup> )	NONE	N.D.	?	?	120.2	8.39	122°F	2	0.86
TRIMETHYL PHOSPHITE (CH <sub>3</sub> O) <sub>3</sub> P <b>370</b>	5.08	2 ppm (10 mg/m <sup>3</sup> )	NONE	N.D.	?	?	124.1	?	82°F	(77°F): 24	1.05
TURPENTINE C <sub>10</sub> H <sub>16</sub> (approx.) <b>371</b>	5.56	100 ppm	100 ppm	800 ppm	0.8	?	136 (approx.)	?	95°F	4	0.86
1-UNDECANETHIOL CH <sub>3</sub> (CH <sub>2</sub> ) <sub>10</sub> SH <b>372</b>	7.71	C 0.5 ppm	NONE	N.D.	?	?	188.4	?	?	?	0.84
n-VALERALDEHYDE CH <sub>3</sub> (CH <sub>2</sub> ) <sub>3</sub> CHO <b>373</b>	3.53	50 ppm	NONE	N.D.	?	?	86.2	9.82	54°F	26	0.81
VINYL ACETATE CH <sub>2</sub> =CHOCCH <sub>3</sub> <b>374</b>	3.52	C 4 ppm	NONE	N.D.	2.6	13.4	86.1	9.19	18°F	83	0.93
VINYL BROMIDE CH <sub>2</sub> =CHBr <b>375</b>	4.38	Ca	NONE	Ca [N.D.]	9	15	107.0	9.80	NA (GAS)	1.4 ATM	1.49 (LIQ at 60°F)
VINYL CHLORIDE CH <sub>2</sub> =CHCl <b>376</b>	2.56	Ca	1 ppm C 5 ppm [15 min]	Ca [N.D.]	3.6	33.0	62.5	9.99	NA (GAS)	3.3 ATM	—
VINYL CYCLOHEXENE DIOXIDE C <sub>8</sub> H <sub>12</sub> O <sub>2</sub> <b>377</b>	5.73	Ca 10 ppm	NONE	Ca [N.D.]	?	?	140.2	?	(oc): 230°F	0.1	1.10
VINYL FLUORIDE CH <sub>2</sub> =CHF <b>378</b>	1.89	1 ppm C 5 ppm	NONE	N.D.	2.6	21.7	46.1	10.37	NA (GAS)	25.2 ATM	—
VINYLDENE FLUORIDE CH <sub>2</sub> =CF <sub>2</sub> <b>379</b>	2.62	1 ppm C 5 ppm	NONE	N.D.	5.5	21.3	64.0	10.29	NA (GAS)	35.2 ATM	—



Chemical Name and Formula	1 ppm = mg/m <sup>3</sup>	Exposure Limit		IDLH	Explosive Limit		MW	IP eV	FLP	VP mm	Sp.Gr.
		NIOSH	OSHA		LEL%	UEL%					
VINYL TOLUENE CH <sub>2</sub> =CHC <sub>6</sub> H <sub>4</sub> CH <sub>3</sub> <b>380</b>	4.83	100 ppm	100 ppm	400 ppm	0.8	11.0	118.2	8.20	127°F	1	0.89
o-XYLENE C <sub>6</sub> H <sub>4</sub> (CH <sub>3</sub> ) <sub>2</sub> <b>381</b>	4.34	100 ppm (435 mg/m <sup>3</sup> ) ST 150 ppm (655 mg/m <sup>3</sup> )	100 ppm	900 ppm	0.9	6.7	106.2	8.56	90°F	7	0.88
m-XYLENE C <sub>6</sub> H <sub>4</sub> (CH <sub>3</sub> ) <sub>2</sub> <b>382</b>	4.34	100 ppm (435 mg/m <sup>3</sup> ) ST 150 ppm (655 mg/m <sup>3</sup> )	100 ppm	900 ppm	1.1	7.0	106.2	8.56	82°F	9	0.86
p-XYLENE C <sub>6</sub> H <sub>4</sub> (CH <sub>3</sub> ) <sub>2</sub> <b>383</b>	4.34	100 ppm (435 mg/m <sup>3</sup> ) ST 150 ppm (655 mg/m <sup>3</sup> )	100 ppm	900 ppm	1.1	7.0	106.2	8.44	81°F	9	0.86
XYLIDINE (CH <sub>3</sub> ) <sub>2</sub> C <sub>6</sub> H <sub>3</sub> NH <sub>2</sub> <b>384</b>	4.96	2 ppm (10 mg/m <sup>3</sup> ) [skin]	5 ppm	50 ppm	1.0 (2,3-)	?	121.2	7.65 eV (2,4-) 7.30 eV (2,6-)	206°F (2.3-)	<1	0.98