26/3/2014

DX-4040 DETECTION LIMITS IN NITROGEN

#	Compound name	Formula	CAS number	*Detection limit in N2 (ppm)
	Typical components			
1	Water	H_2O	7732-18-5	
2	Carbon dioxide	CO_2	124-38-9	
3	Carbon monoxide	CO	630-08-0	0.246
4	Nitrous oxide	N_2O	10024-97-2	0.016
5	Nitrogen monoxide (Nitric oxide)	NO	10102-43-9	0.285
6	Nitrogen dioxide	NO_2	10102-44-0	0.365
7	Sulfur dioxide	SO_2	7446-09-5	0.029
8	Ammonia	NH_3	7664-41-7	0.130
9	Hydrogen chloride	HCl	7647-01-0	0.300
10	Hydrogen fluoride	HF	7664-39-3	0.200
11	Methane	CH_4	74-82-8	0.105
12	Ethane	C_2H_6	74-84-0	0.126
13	Ethylene (Ethene)	C_2H_4	74-85-1	0.176
14	*n*-Propane	C_3H_8	74-98-6	0.054
15	*n*-Hexane	C_6H_{14}	110-54-3	0.031
16	Formaldehyde	HCOH	50-00-0	0.086
	Hydrocarbons			
17	*n*-Butane	C_4H_{10}	106-97-8	0.043
18	Isobutane (2-Methyl propane)	$CH_3CH(CH_3)CH_3$	75-28-5	0.035
19	*n*-Pentane	C_5H_{12}	109-66-0	0.037
20	Isopentane (2-Methyl butane)	$(CH_3)_2CHC_2H_5$	78-78-4	0.027
21	Isohexane (2-Methyl pentane)	$(CH_3)_2CHC_3H_7$	107-83-5	0.029
22	*n*-Heptane	C_7H_{16}	142-82-5	0.026
23	*n*-Octane	C_8H_{18}	111-65-9	0.021
24	Isooctane (2,2,4-Trimethyl pentane)	$(CH_3)_3CCH_2CH(CH_3)_2$	540-84-1	0.019
25	*n*-Nonane	C_9H_{20}	111-84-2	0.017
26	*n*-Decane	$C_{10}H_{22}$	124-18-5	0.027
27	*n*-Undecane	$C_{11}H_{24}$	1120-21-4	0.013
28	*n*-Dodecane	$C_{12}H_{26}$	112-40-3	0.011
29	*n*-Tridecane	$C_{13}H_{28}$	629-50-5	0.011
30	*n*-Tetradecane	$C_{14}H_{30}$	629-59-4	0.007
31	Cetane (*n*-Hexadecane)	$C_{16}H_{34}$	544-76-3	0.008
32	Acetylene (Ethyne)	$CH{\equiv}CH$	74-86-2	0.267
33	*n*-Propene	C_3H_6	115-07-1	0.245
34	1-Butene	C_4H_8	106-98-9	0.103
35	Isobutene (2-Methyl-1-propene)	$CH_2{=}C(CH_3)_2$	115-11-7	0.110
36	*cis*-2-Butene	$CH_3CH{=}CHCH_3$	590-18-1	0.138
37	*trans*-2-Butene	$CH_3CH{=}CHCH_3$	624-64-6	0.104
38	1,3-Butadiene	$CH_2{=}CHCH{=}CH_2$	106-99-0	0.205
39	cis-2-Pentene	C2H5CH=CHCH3	627-20-3	0.343
40	trans-2-Pentene	C2H5CH=CHCH3	646-04-8	0.184

41	1-Hexene	$CH_2=CHC_4H_9$	592-41-6	0.054
42	1-Heptene	C_7H_{14}	25339-56-4	0.039
43	1-Octene	C_8H_{16}	111-16-0	0.028
44	1-Nonene	C_9H_{18}	27215-95-8	0.022
	Aromatic or cyclic hydrocarbons			
45	Cyclopentane	C_5H_{10}	287-92-3	0.029
46	Cyclopentene	C_5H_8	142-29-0	0.075
47	Methylcyclopentane	$C_5H_9CH_3$	96-37-7	0.027
48	Cyclohexane	C_6H_{12}	110-82-7	0.015
49	Methylcyclohexane	$C_6H_{11}CH_3$	108-87-2	0.018
50	Ethylcyclohexane	$C_6H_{11}C_2H_5$	1678-91-7	0.016
51	Benzene	C_6H_6	71-43-2	0.134
52	Toluene	$C_6H_5CH_3$	108-88-3	0.129
53	Styrene	$C_6H_5CH=CH_2$	100-42-5	0.155
54	Ethyl benzene	$C_6H_5C_2H_5$	100-41-4	0.082
55	*m*-Xylene	$1,3\text{-}(CH_3)_2C_6H_4$	108-38-3	0.117
56	*o*-Xylene	$1,2\text{-}(CH_3)_2C_6H_4$	95-47-6	0.131
57	*p*-Xylene	$1,4\text{-}(CH_3)_2C_6H_4$	106-42-3	0.103
58	1,2,3-Trimethylbenzene	$1,2,3\text{-}(CH_3)_3C_6H_3$	526-73-8	0.104
59	1,2,4-Trimethylbenzene	$1,2,4\text{-}(CH_3)_3C_6H_3$	95-63-6	0.074
60	1,3,5-Trimethylbenzene	$1,3,5\text{-}(CH_3)_3C_6H_3$	108-67-8	0.065
61	Propylbenzene	$C_6H_5C_3H_7$	103-65-1	0.078
62	α-Methylstyrene	$C_6H_5C(CH_3)=CH_2$	98-83-9	0.131
63	2-Ethyltoluene	$2\text{-}CH_3CH_2\text{-}C_6H_5CH_3$	611-14-3	0.066
64	3-Ethyltoluene	$3\text{-}CH_3CH_2\text{-}C_6H_5CH_3$	620-14-4	0.079
65	4-Ethyltoluene	$4\text{-}CH_3CH_2\text{-}C_6H_5CH_3$	622-96-8	0.083
66	Naphthalene	$C_{10}H_8$	91-20-3	0.076
67	1-Methylnaphthalene	$C_{10}H_7CH_3$	90-12-0	0.099
68	Acenaphthene	$C_{12}H_{10}$	83-32-9	0.153
69	2-Methylnaphthalene	$C_{10}H_7CH_3$	91-57-6	0.080
70	1-Ethylnaphthalene	$C_{10}H_7C_2H_5$	1127-76-0	0.065
71	Cumene	$C_6H_5CH(CH_3)_2$	98-82-8	0.045
72	Phenyl acetylene (1-Phenylethyne)	$C_6H_5C\equiv CH$	536-74-3	0.120
73	Methoxybenzene (Anisol)	$C_6H_5OCH_3$	100-66-3	0.015
74	Limonene	$C_{10}H_{16}$	138-86-3	0.047
75	α-Pinene	$C_{10}H_{16}$	80-56-8	0.022
76	β-Pinene	$C_{10}H_{16}$	127-91-3	0.026
77	Delta3-Carene	$C_{10}H_{16}$	13466-78-9	0.041
78	Isosafrole	$C_{10}H_{10}O_2$	120-58-1	0.013
	Acids and derivatives			
79	Formic acid	CH_2O_2	64-18-6	0.030
80	Acetic acid	CH_3COOH	64-19-7	0.041
81	Propionic acid	CH_3CH_2COOH	79-09-4	0.054
82	Acrylic acid	$CH_2=CHCOOH$	79-10-7	0.041
83	Methyl formate	$HCOOCH_3$	107-31-3	0.029
84	Methyl acetate	CH_3COOCH_3	79-20-9	0.013
85	Ethyl acetate	$CH_3COOC_2H_5$	141-78-6	0.013

86	Vinyl acetate	$CH_3COOCH=CH_2$	108-05-4	0.006
87	Propyl acetate	$CH_3COOC_3H_7$	109-60-4	0.011
88	Isopropyl acetate	$CH_3COOCH(CH_3)_2$	108-21-4	0.011
89	Butyl acetate	$CH_3COO(CH_2)_3CH_3$	123-86-4	0.017
90	*tert*-Butyl acetate	$C_6H_{12}O_2$	540-88-5	0.012
91	2-Methoxyethyl acetate (Methyl cellosolve acetate)	$C_5H_{10}O_3$	110-49-6	0.010
92	2-Ethoxyethyl acetate (Cellosolve acetate)	$C_6H_{12}O_3$	111-15-9	0.011
93	1-Methoxy-2-propyl acetate	$C_6H_{12}O_3$	108-65-6	0.006
94	2-Butoxyethyl acetate	$C_8H_{16}O_3$	112-07-2	0.012
95	n-Pentylacetate (Banana oil)	$CH_3COOC_5H_{11}$	628-63-7	0.010
96	Methyl acrylate	$C_4H_6O_2$	96-33-3	0.016
97	Ethyl lactate (Ethyl α-hydroxypropionate)	$C_5H_{10}O_3$	97-64-3	0.014
98	Methyl methacrylate	$C_5H_8O_2$	80-62-6	0.017
99	Ethyl acrylate	$C_5H_8O_2$	140-88-5	0.009
100	Acetic acid anhydride	$C_4H_6O_3$	108-24-7	0.007
101	Methacrylic acid	$C_4H_6O_2$	79-41-4	0.014
102	Ethyl-3-ethoxypropionate	$C_7H_{15}O_3$	763-69-9	0.015
103	Butyric acid (butanoic acid)	$C_4H_8O_2$	107-92-6	0.026
104	Hexanoic acid (caproic acid)	$C_6H_{12}O_2$	142-62-1	0.041
105	Dimethyl carbonate (DCM; Methyl carbonate)	$CH_3OCOOCH_3$	616-38-6	0.004
	Aldehydes			
106	Acetaldehyde	CH_3CHO	75-07-0	0.133
107	Propionaldehyde (Propanal)	C_2H_5CHO	123-38-6	0.098
108	Acrolein (Acrylic aldehyde)	$CH_2=CHCHO$	107-02-8	0.253
109	Butyl aldehyde (Butanal)	$CH_3(CH_2)_2CHO$	123-72-8	0.065
110	Isobutyraldehyde (2-Methylpropanal)	$(CH_3)_2CHCHO$	78-84-2	0.064
111	Methacrylaldehyde (2-Methyl-2-propenal)	C_4H_6O	78-85-3	0.167
112	2-Ethylhexylaldehyde (2-Ethylhexanal)	$C_8H_{16}O$	123-05-7	0.024
113	Furfural (2-Furaldehyde)	$C_5H_4O_2$	98-01-1	0.149
114	5-Methylfurfural (5-Methyl-2-furaldehyde)	$C_6H_6O_2$	620-02-0	0.137
115	*o*-Tolualdehyde	$2\text{-}CH_3C_6H_4CHO$	529-20-4	0.020
116	5-Hydroxymethylfurfural (5-Hydroxymethyl-2-furaldehyde)	$C_6H_6O_3$	67-47-0	0.019
117	Glutaraldehyde	$C_5H_8O_2$	111-30-8	0.041
118	Crotonaldehyde	C_4H_6O	4170-30-3	0.133
119	Isovaleraldehyde	(CH3)2CHCH2CHO	590-86-3	0.047
120	Hexanal (Hexanaldehyde)	$C_6H_{12}O$	66-25-1	0.047
121	Benzaldehyde	C_7H_6O	100-52-7	0.095
122	o-Phthaldehyde (OPA)	$C_8H_6O_2$	643-79-8	0.061
123	Pentanal (Pentanaldehyde; Valeraldehyde; Valeric aldehyde)	C5H10O	110-62-3	0.073
	Ketones			
124	Acetone	CH_3COCH_3	67-64-1	0.070
125	Methyl ethyl ketone (MEK)	$CH_3COC_2H_5$	78-93-3	0.136
126	Methyl propyl ketone (2-Pentanone)	$CH_3COC_3H_7$	107-87-9	0.069
127	Diethyl ketone (DEK; 3-Pentanone)	$C_2H_5COC_2H_5$	96-22-0	0.104
128	Methyl isobutyl ketone (MIBK; 4-Methyl-2-pentanone)	$CH_3COCH_2CH(CH_3)_2$	108-10-1	0.044
129	Cyclohexanone (Cyclohexyl ketone)	$C_6H_{10}O$	108-94-1	0.037
130	2-Acetylfuran (2-Furyl methyl ketone)	$C_6H_6O_2$	1192-62-7	0.032

131	4-Hydroxy-4-methyl-2-pentanone	$CH_3COCH_2C(OH)(CH_3)_2$	123-42-2	0.062
132	Acetophenone (Phenyl methyl ketone)	$CH_3COC_6H_5$	98-86-2	0.024
133	Diketene (4-methylideneoxetan-2-one , γ-methylenebutyrolactone)	$C_4H_4O_2$	674-82-8	0.075
134	2,3-butanedione	$C_4H_6O_2$	431-03-8	0.057
135	Benzyl Methyl Ketone	$C_9H_{10}O$	103-79-7	0.134
136	(+)-Menthone	$C_{10}H_{18}O$	3391-87-5	0.020
137	(+)-Carvone	$C_{10}H_{14}O$	2244-16-8	0.075
	Alcohols			
138	Methanol	CH_3OH	67-56-1	0.135
139	Ethanol	C_2H_5OH	64-17-5	0.203
140	1-Propanol	C_3H_7OH	71-23-8	0.081
141	Isopropanol (2-Propanol; Isopropyl alcohol)	$CH_3CHOHCH_3$	67-63-0	0.062
142	1-Butanol	C_4H_9OH	71-36-3	0.061
143	2-Butanol (*sec*-Butyl alcohol)	$CH_3CHOHCH_2CH_3$	78-92-2	0.057
144	Isobutanol (2-Methyl-1-propanol)	$(CH_3)_2CHCH_2OH$	78-83-1	0.051
145	*tert*-Butanol (1,1-Dimethyl ethanol)	$(CH_3)_3COH$	75-65-0	0.049
146	1-Pentanol (Amyl alcohol)	$C_5H_{11}OH$	71-41-0	0.036
147	Isopentanol (3-Methyl-1-butanol)	$(CH_3)_2CHCH_2CH_2OH$	123-51-3	0.043
148	Pinacolyl alcohol (3,3-Dimethyl-2-butanol)	$(CH_3)_3CCH(CH_3)OH$	464-07-3	0.052
149	Ethylene glycol (1,2-Ethanediol)	$OHCH_2CH_2OH$	107-21-1	0.122
150	1,2-Propanediol (propylene glycol)	$CH_3CH(OH)CH_2OH$	57-55-6	0.122
151	1,3-Butanediol	$OHCH(CH_3)CH_2CH_2OH$	107-88-0	0.104
152	Diethylene glycol monoethyl ether acetate	$C_8H_{16}O_4$	112-15-2	0.010
153	1-Butoxy-2-propanol (1,2-Propylene glycol 1-monobutyl ether)	$C_7H_{16}O_2$	5131-66-8	0.030
154	2-Methoxy ethanol (methyl cellosolve)	CH_3-O-CH_2CH_2OH	109-86-4	0.048
155	1-Propoxy-2-propanol (Propylene glycol *n*-propyl ether)	$OHCH(CH_3)CH_2OC_3H_7$	1569-01-3	0.034
156	Benzylalcohol	$C_6H_5CH_2OH$	100-51-6	0.144
157	2-Ethoxyethanol (Cellosolve)	CH_3CH_2-O-CH_2CH_2OH	110-80-5	0.041
158	Cyclohexanol	$C_6H_{11}OH$	108-93-0	0.022
159	Phenol	C_6H_5OH	108-95-2	0.053
160	o-Cresol (2-Methyl phenol)	$2\text{-}CH_3C_6H_4OH$	95-48-7	0.053
161	*m*-Cresol (3-Methyl phenol)	$3\text{-}CH_3C_6H_4OH$	108-39-4	0.057
162	*p*-Cresol (4-Methyl phenol)	$4\text{-}CH_3C_6H_4OH$	106-44-5	0.024
163	Glycerol (1,2,3-Propanetriol)	$OHCH_2CH(OH)CH_2OH$	56-81-5	0.091
164	Furfuryl alcohol (2-Furan methanol)	$C_5H_6O_2$	98-00-0	0.094
165	Terpinen-4-ol [4-Methyl-1-(1-methylethyl)-3-cyclohexen-1-ol]	$C_{10}H_{18}O$	562-74-3	0.041
166	Terpineol	$C_{10}H_{18}O$	8000-41-7	0.047
167	(±)-Menthol (2-Isopropyl-5-methylcyclohexanol, Hexahydrothymol)	$C_{10}H_{20}O$	1490-04-6	0.017
	Ethers			
168	Methyl ether	CH_3OCH_3	115-10-6	0.060
169	Diethyl ether (Ethoxy ethane)	$C_2H_5OC_2H_5$	60-29-7	0.023
170	Ethyl vinyl ether	$CH_2{=}CHOC_2H_5$	109-92-2	0.030
171	*tert*-Butyl methyl ether (MTBE; 2-Methoxy-2-methyl propane)	$CH_3OC(CH_3)_3$	1634-04-4	0.031
172	Diisopropyl ether	$(CH_3)_2CHOCH(CH_3)_2$	108-20-3	0.021
173	Methylene dimethyl ether (Methylal; Dimethoxy methane)	$CH_3OCH_2OCH_3$	109-87-5	0.028
174	2-Hydroxybenzoic acid methyl ester (Methyl salicylate)	$C_8H_8O_3$	119-36-8	0.015
175	1,3-Dioxolane (1,3-Dioxacyclopentane)	$C_3H_6O_2$	646-06-0	0.063

176	1,3-Dioxane (trimethylene glycol methylene ether)	$C_4H_8O_2$	505-22-6	0.046
177	*p*-Dioxane (Glycol ethylene ether; 1,4-Dioxane)	$C_4H_8O_2$	123-91-1	0.029
178	Ethylene dimethyl ether (1,2-Dimethoxyethane)	$CH_3OC_2H_4OCH_3$	110-71-4	0.026
179	Diethylene glycol butyl ether [2-(2-Butoxyethoxy)ethanol]	$C_8H_{18}O_3$	112-34-5	0.023
180	α-Propylene glycol monomethyl ether (1-Methoxy-2-propanol)	$CH_3OCH_3C(CH_3)OH$	107-98-2	0.045
181	1,3-Dimethoxy-2-hydroxybenzene (Syringol)	C8H10O3	91-10-1	0.014
182	2-methoxyphenol (Guaiacol)	C6H4(OCH3)OH	90-05-1	0.017
183	Ethylene glycol monobutyl ether (2-Butoxyethanol)	$C_4H_9OCH_2CH_2OH$	111-76-2	0.038
184	Ethyl tert-bytyl ether (ETBE; 2-Ethoxy-2-methyl-propane)	$C_6H_{14}O$	637-92-3	0.029
185	Tert-amyl methyl ether (TAME; 2-methoxy-2-methylbutane)	$C_6H_{14}O$	994-05-8	0.034
	Epoxy compounds			
186	Ethylene oxide (Oxirane; Epoxyethane)	C_2H_4O	75-21-8	0.175
187	Propylene oxide (Methyl oxirane; Epoxypropane)	C_3H_6O	75-56-9	0.119
188	Furan (Furfuran)	C_4H_4O	110-00-9	0.279
189	Tetrahydrofuran (THF; 1,4-Epoxybutane)	C_4H_8O	109-99-9	0.067
190	2,5-dimethylfuran	C_6H_8O	625-86-5	0.119
191	Maleic anhydride	$C_4H_2O_3$	108-31-6	0.063
	Sulfur compounds			
192	Carbon disulfide	CS_2	75-15-0	0.171
193	Methylmercaptan (Methanethiol)	CH_3SH	74-93-1	0.413
194	Ethylmercaptan (Ethanethiol)	C_2H_5SH	75-08-1	0.149
195	Dimethyl sulfide (DMS)	$(CH_3)_2S$	75-18-3	0.162
196	Dimethyl disulfide (DMDS)	$(CH_3)_2S_2$	624-92-0	0.141
197	Tetrahydrothiophene (Tetramethylene sulfide)	C_4H_8S	110-01-0	0.048
198	Carbonyl sulfide	COS	463-58-1	0.004
199	Thiophene (Thiacyclopentadiene)	C_4H_4S	110-02-1	0.318
200	Benzenethiol (Phenylthiol; Thiophenol)	C_6H_6S	108-98-5	0.166
201	Dimethyl sulfoxide	$(CH_3)SO$	67-68-5	0.008
202	Dimethyl sulfate (DMS; Sulfuric acid dimethyl ester)	$(CH_3)_2SO_4$	77-78-1	0.033
203	1,2-Ethanethiol (1,2-Dimercaptoethane Dithioglycol Ethylene mercaptan)	C2H6S2	540-63-6	0.292
	Nitrogen compounds			
204	Hydrogen cyanide	HCN	74-90-8	0.353
205	Methylamine	CH_3NH_2	74-89-5	0.219
206	Dimethylamine	$(CH_3)_2NH$	124-40-3	0.094
207	Trimethylamine	$(CH_3)_3N$	75-50-3	0.041
208	Ethylamine	$C_2H_5NH_2$	75-04-7	0.143
209	Diethylamine	$(C_2H_5)_2NH$	109-89-7	0.060
210	Triethylamine	$(C_2H_5)_3N$	121-44-8	0.025
211	Isopropylamine (2-Propanamine)	$CH(CH_3)_2NH_2$	75-31-0	0.052
212	1-Butylamine (1-Butanamine)	$C_4H_9NH_2$	109-73-9	0.081
213	*tert*-Butylamine (2-Methyl-2-propanamine)	$(CH_3)_3CNH_2$	75-64-9	0.023
214	Acetonitrile	CH_3CN	75-05-8	2.677
215	Acrylonitrile	CH_2=CHCN	107-13-1	0.352
216	Piperazine (Diethylenediamine; Hexahydropyrazine)	$C_4H_{10}N_2$	110-85-0	0.037
217	Pyridine	C_5H_5N	110-86-1	0.356
218	Pyrrolidine (Azacyclopentane)	C_4H_9N	123-75-1	0.048
219	Piperidine	$C_5H_{10}NH$	110-89-4	0.026

220	Aniline (Benzenamine)	$C_6H_5NH_2$	62-53-3	0.063
221	*o*-Toluidine (2-Aminotoluene; 2-Methylbenzenamine)	$2\text{-}CH_3C_6H_4NH_2$	95-53-4	0.228
222	Isocyanic acid (Hydrogen isocyanate)	HNCO	75-13-8	0.009
223	1,6-Hexamethylene diisocyanate	$C_8H_{12}N_2O_2$	822-06-0	0.004
224	Methyl isocyanate (Isocyanatomethane)	CH_3NCO	624-83-9	0.245
225	Ethanolamine (2-Aminoethanol; MEA)	$OHCH_2CH_2NH_2$	141-43-5	0.144
226	2-Amino-1-butanol	$C_2H_5CH(NH_2)CH_2OH$	96-20-8	0.069
227	N,N-Dimethylformamide (DMF)	$HCON(CH_3)_2$	68-12-2	0.103
228	Morpholine	C_4H_9NO	110-91-8	0.045
229	*n*-Methylmorpholine (4-Methylmorpholine)	$C_5H_{11}NO$	109-02-4	0.039
230	Nitromethane	CH_3NO_2	75-52-5	0.903
231	Nitrobenzene	$C_6H_5NO_2$	98-95-3	0.248
232	*o*-Nitrotoluene	$C_7H_7NO_2$	88-72-2	0.026
233	1-Methyl-2-pyrrolidone	C_5H_9NO	872-50-4	0.098
234	Cyanogen	C_2N_2	460-19-5	0.894
235	Allylcyanide (3-Butenenitrile)	C_4H_5N	109-75-1	0.308
236	Butyl isocyanate (1-Isocyanatobutane)	C_5H_9NO	111-36-4	0.004
237	Hexylamine	$C_6H_{15}N$	111-26-2	0.029
238	Dihexylamine	$C_{12}H_{27}N$	143-16-8	0.014
239	Cyclohexylamine	$C_6H_{11}NH_2$	108-91-8	0.021
240	Ethylmorpholine	$C_6H_{13}NO$	100-74-3	0.035
241	Phenyl isocyanate (Carbanil; Phenylcarbimide)	C_7H_5NO	103-71-9	0.003
242	Propanenitrile	C_3H_5N	107-12-0	0.240
243	2,4-Toluene diisocyanate	$C_9H_6N_2O_2$	584-84-9	0.0013
244	2-Amino-2-methylpropanol (β-Aminoisobutyl alcohol, AMP)	$C_4H_{11}NO$	124-68-5	0.0749
245	2-Methylaminoethanol (N-Methylethanolamine)	C_3H_9NO	109-83-1	0.0866
246	N,N-Dimethylethylamine (N-Ethyldimethylamine, DMEA)	$(CH_3)_2NC_2H_5$	598-56-1	0.0485
247	N,N-Diethylmethylamine (N-Methyldiethylamine)	$CH_3N(C_2H_5)_2$	616-39-7	0.0435
248	Methyl diethanolamine (MDEA)	$CH_3N(C_2H_4OH)_2$	105-59-9	0.0552
249	2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine)	$C_2H_5NHCH_2CH_2OH$	110-73-6	0.0737
250	N-Methyl-1,3-diaminopropane (MAPA; 3-(Methylamino)propylamine; N-Methyl-1,3-propanediamine; 3-amino-1-methylaminopropane)	$CH_3NH(CH_2)_3NH_2$	6291-84-5	0.0589
251	Diethanolamine (DEA; 2,2′-Iminodiethanol, Bis(2-hydroxyethyl)amine)	$HN(CH_2CH_2OH)_2$	111-42-2	0.0582
252	2-Dimethylaminoethanol (N,N-Dimethyl-2-hydroxyethylamine, N,N-Dimethylethanolamine)	$(CH_3)_2NCH_2CH_2OH$	108-01-0	0.0526
253	3-Amino-1-propanol	HO(CH2)3NH2	156-87-6	0.0726
254	1,1-Dimethylhydrazine	C2H8N2	57-14-7	0.1940
255	(-)-Nicotine	C10H14N2	54-11-5	0.0320
	Chloro compounds (see also freons)			
256	Methyl chloride (Freon 40)	CH_3Cl	74-87-3	0.366
257	Dichloromethane (Methylene chloride; Freon 30)	CH_2Cl_2	75-09-2	0.098
258	Chloroform (Trichloromethane; Freon 20)	$CHCl_3$	67-66-3	0.042
259	Carbon tetrachloride (Freon 10)	CCl_4	56-23-5	2.637
260	Ethyl chloride	C_2H_5Cl	75-00-3	0.205
261	1,1-Dichloroethane	$CHCl_2CH_3$	75-34-3	0.304
262	1,2-Dichloroethane (Freon 150)	CH_2ClCH_2Cl	107-06-2	0.126
263	1,1,1-Trichloroethane	CCl_3CH_3	71-55-6	0.066
264	1,1,2-Trichloroethane	$CHCl_2CH_2Cl$	79-00-5	0.392
265	Pentachloroethane	CCl_3CHCl_3	76-01-7	0.242

266	Hexachloroethane	CCl_3CCl_3	67-72-1	3.032
267	Chloroethene (Vinyl chloride)	$CHCl=CH_2$	75-01-4	0.311
268	1,1-Dichloroethene (Vinylidene chloride)	$CCl_2=CH_2$	75-35-4	0.117
269	*cis*-1,2-Dichloroethene	CHCl=CHCl	156-59-2	0.143
270	*trans*-1,2-Dichloroethene	CHCl=CHCl	156-60-5	0.135
271	Trichloroethylene (Trichlorethene)	$CHCl=CCl_2$	79-01-6	0.072
272	Tetrachloroethylene	$CCl_2=CCl_2$	127-18-4	0.109
273	1,2-Dichloropropane (Propylene dichloride)	$CH_2ClCHCl(CH_3)$	78-87-5	0.216
274	1,2,3-Trichloropropane	$CH_2ClCHClCH_2Cl$	96-18-4	0.293
275	Allylchloride (3-chloro-1-propene)	C_3H_5Cl	107-05-1	0.281
276	Chlorobenzene (Phenyl chloride)	C_6H_5Cl	108-90-7	0.158
277	1,2-Dichlorobenzene (*o*-Dichlorobenzene)	$1,2\text{-}Cl_2C_6H_4$	95-50-1	0.202
278	1,3-Dichlorobenzene	$C_6H_4Cl_2$	541-73-1	0.185
279	1,4-Dichlorobenzene (*p*-Dichlorobenzene)	$1,4\text{-}Cl_2C_6H_4$	106-46-7	0.680
280	Benzyl chloride (*α*-Chlorotoluene)	$C_6H_5CH_2Cl$	100-44-7	0.112
281	Phosgene	$COCl_2$	75-44-5	0.018
282	Acetyl chloride (Acetic chloride)	CH_3COCl	75-36-5	0.055
283	Dichloroacetyl chloride	$CHCl_2COCl$	79-36-7	0.074
284	*α*-Epichlorohydrin (Chloromethyloxirane)	C_3H_5ClO	106-89-8	0.147
285	Chloromethyl chloroformate	$C_2H_2Cl_2O_2$	22128-62-7	0.004
286	Diphosgene	$C_2Cl_4O_2$	503-38-8	0.008
287	Butyl chloroformate (Butyl chlorocarbonate)	$C_5H_9ClO_2$	592-34-7	0.007
288	Chloracetyl chloride	C_2H2Cl_2O	79-04-9	0.141
289	Carbonochloridic acid, ethyl ester (Cathyl chloride; Ethyl chloroformate)	$C_3H_5ClO_2$	541-41-3	0.007
290	n-Propylchloroformate (Propyl chlorocarbonate)	$C_4H_7ClO_2$	109-61-5	0.007
291	Methyl chloroacetate	$C_3H_5ClO_2$	96-34-4	0.029
292	Methyl chloroformate (Methyl chlorocarbonate)	C2H3ClO2	79-22-1	0.007
293	Dimethylcarbamoyl chloride (Dimethyl carbamic chloride)	C_3H_6ClNO	79-44-7	0.018
294	3-Chloro-Propanoyl chloride (3-Chloropropionic acid chloride)	$C_3H_4Cl_2O$	625-36-5	0.065
	Fluoro compounds (see also freons)			
295	Octafluorocyclopentene (Perfluorocyclopentene)	C_5F_8	559-40-0	0.016
296	2-Fluorotoluene (1-Fluoro-2-methylbenzene)	$2\text{-}CH_3C_6H_4F$	95-52-3	0.037
297	Carbonyl difluoride	COF_2	353-50-4	0.015
298	Desflurane (1,2,2,2-tetrafluoroethyl difluoromethyl ether)	$CF_3CHFOCHF_2$	57041-67-5	0.005
299	Sevoflurane [2,2,2-trifluoro-1-(trifluoromethyl) ethyl ether]	$CF_3CH(CF_3)OCH_2F$	28523-86-6	0.007
300	Fluorobenzene	C_6H_5F	462-06-6	0.030
301	PFC (perfluoro-1,3-dimethylcyclohexane)	$C_6F_{10}(CF_3)_2$	335-27-3	0.004
	Freons			
302	Freon 11 (Trichloromonofluoromethane)	CCl_3F	75-69-4	0.050
303	Freon 12 (Dichlorodifluoromethane)	CCl_2F_2	75-71-8	0.023
304	Freon 13B1 (Bromotrifluoromethane)	$CBrF_3$	75-63-8	0.004
305	Freon 14 (Carbon tetrafluoride)	CF_4	75-73-0	0.001
306	Freon 21 (Dichlorofluoromethane)	$CHCl_2F$	75-43-4	0.066
307	Freon 22 (Chlorodifluoromethane)	$CHClF_2$	75-45-6	0.008
308	Freon 23 (Trifluoromethane)	CHF_3	75-46-7	0.003
309	Freon 32 (Difluoromethane)	CH_2F_2	75-10-5	0.066
310	Freon 113 (1,1,2-Trichloro-1,2,2-trifluoroethane)	CCl_2FCClF_2	76-13-1	0.018

311	Freon 113a (1,1,1-Trichloro-2,2,2-trifluoroethane)	CCl_3CF_3	354-58-5	0.005
312	Freon 114 (1,2-Dichloro-1,1,2,2-tetrafluoroethane)	$CHClF_2CClF_2$	76-14-2	0.012
313	Freon 114 B2 (1,2-dibromo-1,1,2,2-tetrafluoroethane)	C2Br2F4	124-73-2	0.010
314	Freon 115 (Chloropentafluoroethane)	$CClF_2CF_3$	76-15-3	0.004
315	Freon 116 (Hexafluoroethane)	C_2F_6	76-16-4	0.001
316	Freon 123 (1,1-Dichloro 2,2,2-trifluoroethane)	$CHCl_2CF_3$	306-83-2	0.014
317	Freon 124 (1-Chloro-1,2,2,2-tetrafluoroethane)	$CHClFCF_3$	2837-89-0	0.011
318	Freon 125 (Pentafluoroethane)	CHF_2CF_3	354-33-6	0.007
319	Freon 133a (1-Chloro-2,2,2-trifluoroethane)	CH_2ClCF_3	75-88-7	0.011
320	Freon 134a (1,1,1,2-Tetrafluoroethane)	CF_3CH_2F	811-97-2	0.009
321	Freon 141b (1,1-Dichloro-1-fluoroethane)	CCl_2FCH_3	1717-00-6	0.074
322	Freon 142b (1-Chloro-1,1-difluoroethane)	$CClF_2CH_3$	75-68-3	0.017
323	Freon 143a (1,1,1-Trifluoroethane)	CF_3CH_3	420-46-2	0.006
324	Freon 152a (Difluoroethane; Ethylidene Difluoride)	$C_2H_4F_2$	75-37-6	0.010
325	Freon 218 (Perfluoropropane)	C_3F_8	76-19-7	0.002
326	Freon C 318 (Octafluorocyclobutane)	C_4F_8	115-25-3	0.013
	Other organic compounds			
327	Cyanogen chloride	ClCN	506-77-4	0.222
328	Chloropicrine (Trichloronitromethane)	CCl_3NO_2	76-06-2	0.223
329	Enflurane [2-Chloro-1-(difluoromethoxy)-1,1,2-trifluoroethane]	CHF_2OCF_2CHClF	13838-16-9	0.007
330	Isoflurane (1-Chloro-2,2,2-trifluoroethyl difluoromethyl ether)	$CF_3CHClOCHF_2$	26675-46-7	0.006
331	Halothane (2-Bromo-2-chloro-1,1,1-trifluoroethane)	$CF_3CHBrCl$	151-67-7	0.008
332	Phenylphosphonous dichloride (Dichlorophenylphosphine)	$C_6H_5PCl_2$	644-97-3	0.126
333	Methyl bromide (Bromomethane)	CH_3Br	74-83-9	0.397
334	Bromoform (Tribromomethane)	$CHBr_3$	75-25-2	0.026
335	Ethylene dibromide (1,2-Dibromoethane)	$BrCH_2CH_2Br$	106-93-4	0.037
336	Methyl iodide	CH_3I	74-88-4	0.194
337	Trimethylsilanol (Hydroxytrimethylsilane)	$(CH_3)_3SiOH$	1066-40-6	0.088
338	1,1,3,3-Tetramethyldisiloxane	$(CH_3)_2SiHOSiH(CH_3)_2$	3277-26-7	0.021
339	Hexamethyldisiloxane	$(CH_3)_3SiOSi(CH_3)_3$	107-46-0	0.012
340	Tetraethylorthosilicate	$C_8H_{20}O_4Si$	78-10-4	0.006
341	Hexamethyldisilazane [1,1,1-Trimethyl-N-(trimethylsilyl)-silanamine]	$Si(CH_3)_3NHSi(CH_3)_3$	999-97-3	0.018
342	Hexamethylcyclotrisiloxane	$C_6H_{18}O_3Si_3$	541-05-9	0.004
343	Trimethylborate (Trimethoxyborane)	$B(OCH_3)_3$	121-43-7	0.006
344	Tetramethyl silane	$C_4H_{12}Si$	75-76-3	0.048
345	Trimethoxysilane	$C_3H_{10}OSi$	2487-90-3	0.009
346	Diisopropyl methanephosphonate (DIMP)	$C_7H_{17}O_3P$	1445-75-6	0.008
347	Triethylphosphate	$(C_2H_5)_3PO_4$	78-40-0	0.011
348	Tetramethyl orthosilicate (Tetramethoxysilane)	$Si(OCH_3)_4$	681-84-5	0.006
349	Methyldichlorosilane	CH_3SiHCl_2	75-54-7	0.028
350	Methylvinyldichlorosilane	$C_3H_6Cl_2Si$	124-70-9	0.089
351	Ethylmethyldichlorosilane	$C_3H_8Cl_2Si$	4525-44-4	0.093
352	Dimethylvinylchlorosilane	C_4H_9ClSi	1719-58-0	0.049
353	Methyltrichlorosilane	CH_3Cl_3Si	75-79-6	0.095
354	Dimethyldichlorosilane	$C_2H_6Cl_2Si$	75-78-5	0.046
355	Trimethylchlorosilane	C_3H_9ClSi	75-77-4	0.031
356	Propyltrichlorosilane	$CH_3(CH_2)_2SiCl_3$	141-57-1	0.066
357	Phenyltrichlorosilane	$C_6H_5Cl_3Si$	98-13-5	0.042

358	Phenylmethyldichlorosilane	$C_7H_8Cl_2Si$	149-74-6	0.048
359	Vinyltrichlorosilane	$C_2H_3Cl_3Si$	75-94-5	0.233
360	Dimethyldimethoxysilane	$C_4H_{12}O_2Si$	1112-39-6	0.023
361	Dimethyldiethoxysilane	$C_6H_{16}O_2Si$	78-62-6	0.043
362	Iron pentacarbonyl	Fe(CO)5	13463-40-6	0.001
	Inorganic compounds			
363	Sulfuryl fluoride	SO_2F_2	2699-79-8	0.026
364	Deuterium oxide (Heavy water; Dideuterium oxide)	D_2O	7789-20-0	0.478
365	Ozone	O_3	10028-15-6	0.101
366	Oxygen difluoride	OF_2	7783-41-7	0.658
367	Nitric acid	HNO_3	7697-37-2	0.016
368	Nitrogen trifluoride	NF_3	7783-54-2	0.022
369	Silicon tetrafluoride	SiF_4	7783-61-1	0.007
370	Sulfur hexafluoride	SF_6	2551-62-4	0.004
371	Tungsten hexafluoride	WF_6	7783-82-6	3.146
372	Silicon tetrahydride (Silane)	SiH_4	7803-62-5	0.042
373	Arsine	AsH_3	7784-42-1	0.020
374	Phosphine	PH_3	7803-51-2	0.198
375	Diborane	B_2H_6	19287-45-7	0.046
376	Phosphorus trichloride	PCl_3	7719-12-2	0.258
377	Phosphorus oxychloride	$POCl_3$	10025-87-3	0.023
378	Germanium tetrachloride	$GeCl_4$	10038-98-9	4.280
379	Boron trichloride	BCl_3	10294-34-5	0.008
380	Silicon tetrachloride	$SiCl_4$	10026-04-7	3.002
381	Hydrogen bromide	HBr	10035-10-6	3
382	Chlorine dioxide	ClO_2	10049-04-4	
383	Phosphorus tribromide	Br_3P	7789-60-8	3.311
384	Dichlorosilane	SiH_2Cl_2	4109-96-0	0.118
385	Boron trifluoride	BF_3	7637-07-2	
386	Trichlorosilane	$SiHCl_3$	10025-78-2	0.756

***The lowest possible detection limit (LDL) calculated in Nitrogen for 9.8 m path lenght, 1 min measurement time**

Standard method for determining detection limit of certain component is to compare the known reference spectrum of component in known concentration to the noise level.

At first this means calculating ratio of concentration to absorbance (i.e. how many ppm's is needed for absorbance of 1 AU).

This ratio is then multiplied with noise level at corresponding wavenumber area. The detection limit is 3 times this quantity

LDL = 3 * Noise * ppm/AU

Values are subject to change without notice