

Section A Basic Constants I.

No.	Formula	Name	CAS #	Mol. Wt.	Tfp, K	Tb, K	Tc, K	Pc, bar	Vc, cm ³ /mol	Zc = PcVc/RTc	Omega
1	Ar	argon	7440-37-1	39.948	83.80	87.27	150.86	48.98	74.57	0.291	-0.002
2	Br ₂	bromine	7726-95-6	159.808	265.85	331.90	584.10	103.00	135.00	0.269	0.119
3	BrD	deuterium bromide	13536-59-9	81.918	185.69	206.65	362.00				
4	BrF ₃	bromine trifluoride	7787-71-5	136.899	281.92	398.89	600.00	49.90	114.70	0.115	0.413
5	BrF ₅	bromine pentafluoride	7789-30-2	174.896	212.65	314.31	470.00				
6	BrH	hydrogen bromide	10035-10-6	80.912	186.34	206.46	363.20	85.10			0.069
7	CB ₂ ClF ₂	bromochlorodifluoromethane	353-59-3	165.365	113.65	269.20	426.90	42.60	246.00	0.295	0.182
8	CB ₂ F ₃	bromotrifluoromethane	75-63-8	148.910	105.15	215.41	340.15	39.70	200.00	0.275	0.174
9	CB ₂ F ₂	dibromodifluoromethane	75-61-6	209.816	163.05	295.94	471.30	45.30	250.00	0.286	
10	CClF ₃	chlorotrifluoromethane	75-72-9	104.459	92.00	191.71	301.84	38.73	180.30	0.276	0.175
11	CCl ₂ F ₂	dichlorodifluoromethane (R-12)	75-71-8	120.913	115.19	243.45	385.10	41.30	217.00	0.280	0.179
12	CCl ₃ F	trichlorofluoromethane (R-11)	75-69-4	137.368	162.69	296.81	471.10	44.72	248.00	0.283	0.195
13	CCl ₄	tetrachloromethane	56-23-5	153.822	250.33	349.79	556.30	45.57	276.00	0.271	
14	CF ₄	tetrafluoromethane	75-73-0	88.005	89.55	145.11	227.51	37.45	140.70	0.279	0.177
15	CHBrF ₂	bromodifluoromethane	1511-62-2	130.920	258.65	257.68	412.00	47.90	167.00	0.234	0.172
16	CHClF ₂	chlorodifluoromethane (R-22)	75-45-6	86.468	115.73	232.14	369.28	49.86	166.00	0.274	0.221
17	CHCl ₂ F	dichlorofluoromethane	75-43-4	102.923	138.20	281.97	451.52	51.87	196.00	0.271	0.207
18	CHCl ₃	trichloromethane	67-66-3	119.377	209.74	334.33	536.50	55.00	240.00	0.296	
19	CHF ₃	trifluoromethane (R-23)	75-46-7	70.014	117.96	191.11	298.97	48.36	133.00	0.259	0.267
20	CH ₂ Cl ₂	dichloromethane	75-09-2	84.932	176.00	312.79	510.00	61.00			
21	CH ₂ F ₂	difluoromethane	75-10-5	52.024	137.00	221.43	351.26	58.05	121.00	0.245	0.278
22	CH ₂ O ₂	methanoic acid (formic acid)	64-18-6	46.026	281.50	374.04	588.00	58.07			0.316
23	CH ₃ Cl	chloromethane	74-87-3	50.488	175.44	248.95	416.20	66.80	143.00	0.276	0.151
24	CH ₃ F	fluoromethane	593-53-3	34.033	131.35	194.88	315.00	55.48	113.30	0.240	0.204
25	CH ₃ NO ₂	nitromethane	75-52-5	61.040	244.60	374.35	588.00	58.70	173.00	0.208	
26	CH ₄	methane	74-82-8	16.043	90.69	111.66	190.56	45.99	98.60	0.286	0.011
27	CH ₃ O	methanol	67-56-1	32.042	175.49	337.69	512.64	80.97	118.00	0.224	0.565
28	CH ₄ S	methanethiol (methyl mercaptan)	74-93-1	48.109	150.18	279.11	470.00	72.30	145.00	0.268	0.150
29	CH ₃ N	methanamine (methyl amine)	74-89-5	31.057	179.69	266.82	430.00	74.20	125.00	0.259	0.283
30	CO	carbon monoxide	630-08-0	28.010	68.15	81.66	132.85	34.94	93.10	0.292	0.045

Section A Basic Constants I (*Continued*)

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31	CO ₂	carbon dioxide	124-38-9	44.010	216.58		304.12	73.74	94.07	0.274	0.225
32	C ₂ Br ₂ ClF ₃	1,2-dibromo-2-chloro-1,1,2-trifluoroethane	354-51-8	276.278	<u>323.15</u>	367.06	561.20	36.10	357.80	0.285	0.251
33	C ₂ ClF ₅	1-chloro-1,1,2,2,2-pentafluoroethane	76-15-3	154.467	<u>173.73</u>	234.08	353.10	31.29	256.00	0.273	0.251
34	C ₂ Cl ₂ F ₄	1,1-dichloro-1,2,2,2-tetrafluoroethane	374-07-2	170.921	216.58	276.59	418.70	32.13	294.00	0.271	0.244
35	C ₂ Cl ₂ F ₄	1,2-dichloro-1,1,2,2-tetrafluoroethane	76-14-2	170.921	180.55	276.58	418.90	32.37	294.00	0.273	0.246
36	C ₂ Cl ₃ F ₃	1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	187.375	<u>236.95</u>	320.74	487.40	33.78	325.00	0.274	0.249
37	C ₂ F ₄	tetrafluoroethene	116-14-3	100.016	<u>142.00</u>	197.51	306.40	39.44	172.00	0.266	
38	C ₂ F ₆	hexafluoroethane	76-16-4	138.012	<u>173.05</u>	195.21	293.04	30.39	221.90	0.277	0.257
39	C ₂ HBrClF ₃	1-bromo-1-chloro-2,2,2-trifluoroethane	151-67-7	197.382		323.32	492.20	38.00	302.00	0.280	0.283
40	C ₂ HBrClF ₃	1-bromo-2-chloro-1,1,2-trifluoroethane	354-06-3	197.382		325.70	487.30	34.20	304.00	0.257	0.320
41	C ₂ HClF ₄	1-chloro-1,1,2,2-tetrafluoroethane	354-25-6	136.476	<u>156.15</u>	261.38	400.00	37.60	244.00	0.285	0.260
42	C ₂ HClF ₄	1-chloro-1,2,2,2-tetrafluoroethane (R-124)	2837-89-0	136.476	<u>155.00</u>	261.19	395.60	36.34	243.80	0.269	0.288
43	C ₂ HCl ₂ F ₃	1,1-dichloro-2,2,2-trifluoroethane (R-123)	306-83-2	152.931	<u>166.00</u>	300.81	456.90	36.74	278.05	0.269	0.282
44	C ₂ HCl ₂ F ₃	1,2-dichloro-1,2,2-trifluoroethane (R-123a)	354-23-4	152.931	<u>195</u>	301	461.7		278.00		
45	C ₂ HF ₅	pentafluoroethane	354-33-6	120.022	170.15	225.06	339.17	36.15	211.30	0.271	0.305
46	C ₂ HF ₅ O	pentafluorodimethyl ether (E-125)	3822-68-2	136.022	<u>116.00</u>	235.00	354.50	36.31	236.11	0.237	0.326
47	C ₂ H ₂	ethyne (acetylene)	74-86-2	26.038	192.35	188.40	308.30	61.14	112.20	0.268	0.189
48	C ₂ H ₂ F ₂	1,1-difluoroethene	75-38-7	64.035	<u>129.15</u>	187.50	303.20	44.33	153.50	0.270	
49	C ₂ H ₂ F ₄	1,1,1,2-tetrafluoroethane (R-134a)	811-97-2	102.032	<u>172.15</u>	247.04	374.26	40.59	200.80	0.262	0.326
50	C ₂ H ₂ F ₄	1,1,2,2-tetrafluoroethane (R-134)	359-35-3	102.032	<u>184.15</u>	253.10	391.74	46.40	190.40	0.271	0.293
51	C ₂ H ₃ ClF ₂	1-chloro-1,1-difluoroethane	75-68-3	100.495	<u>142.35</u>	264.05	410.30	40.48	231.00	0.267	0.231
52	C ₂ H ₃ Cl ₂ F	1,1-dichloro-1-fluoroethane (R-141b)	1717-00-6	116.950	169.60	305.20	477.35	42.50	254.00	0.272	0.225
53	C ₂ H ₃ F ₃	1,1,1-trifluoroethane (R-143a)	420-46-2	84.041	161.85	225.86	346.30	37.92	193.60	0.255	0.259
54	C ₂ H ₃ F ₃	1,1,2-trifluoroethane (R-143)	430-66-0	84.041	189.15	276.85	429.80	52.41	179.20	0.263	0.315
55	C ₂ H ₄	ethene (ethylene)	74-85-1	28.054	103.99	169.42	282.34	50.41	131.10	0.282	0.087
56	C ₂ H ₄ Br ₂	1,2-dibromoethane	106-93-4	187.862	<u>283.05</u>	404.50	582.90	71.50	261.70		
57	C ₂ H ₄ Cl ₂	1,1-dichloroethane	75-34-3	98.959	176.19	330.45	523.00	51.00	236.00	0.277	
58	C ₂ H ₄ Cl ₂	1,2-dichloroethane	107-06-2	98.959	237.46	356.66	561.00	54.00	220.00	0.255	

59	C ₂ H ₄ F ₂	1,1-difluoroethane (R-152a)	75-37-6	66.051	156.15	249.10	386.41	45.16	181.00	0.252	0.276
60	C ₂ H ₄ O ₂	ethanoic acid (acetic acid)	64-19-7	60.053	289.77	391.04	594.45	57.90	171.00	0.200	0.445
61	C ₂ H ₄ O ₂	methyl methanoate (methyl formate)	107-31-3	60.053	174.15	304.90	487.20	60.00	172.00	0.255	
62	C ₂ H ₅ Br	bromoethane	74-96-4	108.966	154.55	311.50	503.80	62.30	214.90		
63	C ₂ H ₅ Cl	chloroethane	75-00-3	64.514	134.82	285.42	460.30	53.00	199.00	0.276	
64	C ₂ H ₅ F	fluoroethane	353-36-6	48.060	129.95	235.43	375.28	50.27	164.00	0.267	0.217
65	C ₂ H ₆	ethane	74-84-0	30.070	90.35	184.55	305.32	48.72	145.50	0.279	0.099
66	C ₂ H ₆ O	ethanol	64-17-5	46.069	159.05	351.80	513.92	61.48	167.00	0.240	0.649
67	C ₂ H ₆ O	dimethyl ether	115-10-6	46.069	131.65	248.31	400.10	54.00	170.00	0.276	
68	C ₂ H ₆ S	ethanethiol (ethyl mercaptan)	75-08-1	62.136	152.15	308.15	499.00	54.90	207.00	0.274	
69	C ₂ H ₆ S	2-thiapropane (dimethylsulfide)	75-18-3	62.136	174.85	310.48	503.00	55.30	201.00	0.266	
70	C ₂ H ₇ N	ethanamine (ethyl amine)	75-04-7	45.084	192.15	289.75	456.40	56.30	181.80	0.267	0.276
71	C ₂ H ₇ N	N-methylmethanamine (dimethyl amine)	124-40-3	45.084	180.96	280.00	437.20	53.40	180.00	0.264	
72	C ₃ F ₈	octafluoropropane (R-218)	76-19-7	188.020	125.60	236.60	345.10	26.80	299.82	0.280	0.325
73	C ₃ HF ₇	1,1,1,2,3,3,3-heptafluoropropane (R-227ea)	431-89-0	170.030		293.00	376.00		293.15		
74	C ₃ H ₂ ClF ₃ O	2-chloro-1,1,2-trifluoroethyl difluoromethyl ether (enflurane)	13838-16-9	184.493		329.98	475.03	29.80			0.430
75	C ₃ H ₂ ClF ₅ O	1-chloro-2,2,2-trifluoroethyl difluoromethyl ether (isoflurane)	26675-46-7	184.493		322.42	467.80	30.46			0.402
76	C ₃ H ₂ F ₆	1,1,1,2,3,3-hexafluoropropane (R-236ea)	431-63-0	152.050		279.00	412.50		268.88		0.382
77	C ₃ H ₂ F ₆	1,1,1,3,3,3-hexafluoropropane (R-236fa)	690-39-1	152.050	232.65		398.10		277.21		0.377
78	C ₃ H ₃ F ₅	1,1,1,2,2-pentafluoropropane (R-245cb)	1814-88-6	134.050		255.10	380.40	31.48	268.74	0.267	0.297
79	C ₃ H ₃ F ₅	1,1,1,3,3-pentafluoropropane (R-245fa)	460-73-1	134.050			427.00		259.28		0.385
80	C ₃ H ₃ F ₅	1,1,2,2,3-pentafluoropropane (R-245ca)	679-86-7	134.050	191.20	301.20	447.60		256.02		0.353
81	C ₃ H ₃ F ₅ O	2-(difluoromethoxy)-1,1,1-trifluoroethane (E-245)	1885-48-9	150.050		302.20	444.00		291.02		
82	C ₃ H ₃ NO	1,2-oxazole(isoxazole)	288-14-2	55.058		368.61	590.00	61.00	190.94	0.237	0.258
83	C ₃ H ₄	1-propyne (methyl acetylene)	74-99-7	40.065	170.50	250.72	402.40	56.30	163.50	0.275	
84	C ₃ H ₄	1,2-propadiene	463-49-0	40.065	136.85	238.77	394.00	52.50	173.90	0.279	0.122
85	C ₃ H ₆	propene (propylene)	115-07-1	42.081	87.89	225.46	364.90	46.00	184.60	0.280	0.142
86	C ₃ H ₆	cyclopropane	75-19-4	42.081	145.73	240.34	398.25	55.75	162.80	0.274	0.130
87	C ₃ H ₆ Cl ₂	1,2-dichloropropane	78-87-5	112.187	172.65	369.43	578.00	46.50	287.66	0.278	0.255
88	C ₃ H ₆ O	2-propen-1-ol (allyl alcohol)	107-18-6	58.080		370.23	545.10				
89	C ₃ H ₆ O	propanone (acetone)	67-64-1	58.080	178.50	329.22	508.10	47.00	209.00	0.233	0.307

Section A Basic Constants I (*Continued*)

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90	C ₃ H ₆ O ₂	propanoic acid	79-09-4	74.079	252.31	<i>414.31</i>	<u>604.00</u>	45.30	<u>233.00</u>	0.207	0.539
91	C ₃ H ₆ O ₂	methyl ethanoate (methyl acetate)	79-20-9	74.079	175.15	<i>330.09</i>	<u>506.80</u>	<u>46.90</u>	<u>228.00</u>	<i>0.254</i>	
92	C ₃ H ₆ O ₂	ethyl methanoate (ethyl formate)	109-94-4	74.079	193.55	<i>327.47</i>	<u>508.50</u>	<u>47.40</u>	<u>229.00</u>	<i>0.257</i>	0.282
93	C ₃ H ₆ O ₃	dimethylcarbonate	616-38-6	90.084		<i>363.24</i>	<u>557.00</u>	48.00	<u>251.63</u>	0.261	0.336
94	C ₃ H ₇ Cl	1-chloropropane	540-54-5	78.541	150.35	<i>319.67</i>	<u>503.10</u>	<u>45.80</u>	<u>254.00</u>	<i>0.278</i>	
95	C ₃ H ₈	propane	74-98-6	44.097	91.45	<i>231.02</i>	<u>369.83</u>	<u>42.48</u>	<u>200.00</u>	<i>0.276</i>	<i>0.152</i>
96	C ₃ H ₈ O	1-propanol	71-23-8	60.096	147.00	<i>370.93</i>	<u>536.78</u>	<u>51.75</u>	<u>219.00</u>	<i>0.254</i>	<i>0.629</i>
97	C ₃ H ₈ O	2-propanol	67-63-0	60.096	183.65	<i>355.39</i>	<u>508.30</u>	<u>47.62</u>	<u>220.00</u>	<i>0.248</i>	<i>0.665</i>
98	C ₃ H ₈ O	methyl ethyl ether	540-67-0	60.096	<u>160.00</u>	<i>280.50</i>	<u>437.80</u>	<u>44.00</u>	<u>221.00</u>	<i>0.267</i>	0.236
99	C ₃ H ₈ S	2-thiabutane (methyl ethyl sulfide)	624-89-5	76.163	<u>167.24</u>	<i>339.80</i>	<u>533.00</u>	<u>42.60</u>	260.00	0.250	
100	C ₃ H ₉ N	1-propanamine (propyl amine)	107-10-8	59.111	<u>188.35</u>	<i>320.38</i>	<u>497.00</u>	<u>48.00</u>	235.00	0.273	<i>0.283</i>
101	C ₃ H ₉ N	2-propanamine (methyl ethyl amine)	75-31-0	59.111	<u>177.95</u>	<i>304.93</i>	<u>471.80</u>	<u>45.40</u>	<u>221.00</u>	<i>0.256</i>	0.277
102	C ₃ H ₉ N	N,N-dimethylmethanamine (trimethyl amine)	75-50-3	59.111	155.85	276.02	<u>433.30</u>	<u>40.75</u>	<u>254.00</u>	<i>0.266</i>	
103	C ₃ H ₉ NO	2-ethoxymethanamine (2-methylaminoethanol)	109-83-1	75.112		<i>432.39</i>	<u>630.00</u>	53.00	<u>259.01</u>	0.262	0.604
104	C ₄ F ₈	octafluorocyclobutane	115-25-3	200.031	<u>232.96</u>	<i>267.17</i>	<u>388.37</u>	<u>27.78</u>	<u>324.80</u>	<i>0.279</i>	
105	C ₄ F ₁₀	decafluoro-2-methylpropane	354-92-7	238.028		<i>273.15</i>	<u>395.40</u>	<u>24.20</u>	<u>378.00</u>	<i>0.278</i>	
106	C ₄ H ₄ O	furan	110-00-9	68.075	187.54	<i>304.44</i>	<u>490.15</u>	<u>55.00</u>	<u>218.00</u>	<i>0.281</i>	
107	C ₄ H ₄ S	thiophene	110-02-1	84.142	<u>233.75</u>	<i>357.31</i>	<u>580.00</u>	<u>56.60</u>	<u>219.00</u>	<i>0.252</i>	
108	C ₄ H ₅ N	pyrrole	109-97-7	67.090	<u>249.74</u>	<i>403.00</i>	<u>639.70</u>	<u>63.30</u>	200.00	0.238	
109	C ₄ H ₆	1-butyne	107-00-6	54.092	<u>147.29</u>	<i>281.21</i>	<u>440.00</u>	<u>46.00</u>	<u>208.00</u>	<i>0.262</i>	0.245
110	C ₄ H ₆	1,3-butadiene	106-99-0	54.092	164.24	<i>268.62</i>	<u>425.00</u>	<u>43.20</u>	<u>221.00</u>	<i>0.270</i>	<i>0.195</i>
111	C ₄ H ₆ O ₃	acetic anhydride	108-24-7	102.090	<u>199.00</u>	<i>412.69</i>	606.00	40.00			0.456
112	C ₄ H ₈	cyclobutane	287-23-0	56.108	<u>182.42</u>	<i>285.64</i>	<u>460.00</u>	<u>49.90</u>	<u>218.00</u>	<i>0.275</i>	<i>0.185</i>
113	C ₄ H ₈	1-butene	106-98-9	56.108	87.79	<i>266.92</i>	<u>419.50</u>	<u>40.20</u>	<u>240.80</u>	<i>0.278</i>	<i>0.194</i>
114	C ₄ H ₈	trans-2-butene	624-64-6	56.108	167.58	<i>274.03</i>	<u>428.60</u>	<u>41.00</u>	<u>237.70</u>	<i>0.276</i>	<i>0.218</i>
115	C ₄ H ₈	cis-2-butene	590-18-1	56.108	134.25	<i>276.87</i>	<u>435.50</u>	<u>42.10</u>	<u>233.80</u>	<i>0.269</i>	<i>0.203</i>
116	C ₄ H ₈	2-methylpropene	115-11-7	56.108	132.81	<i>266.24</i>	<u>417.90</u>	<u>40.00</u>	<u>238.80</u>	<i>0.275</i>	<i>0.199</i>
117	C ₄ H ₈ O	butanone (methyl ethyl ketone)	78-93-3	72.107	186.51	<i>352.71</i>	<u>536.80</u>	<u>42.10</u>	<u>267.00</u>	<i>0.252</i>	<i>0.322</i>

118	C ₄ H ₈ O	tetrahydrofuran	109-99-9	72.107	164.61	339.12	540.20	51.90	224.00	0.259	
119	C ₄ H ₈ O ₂	butanoic acid	107-92-6	88.106	267.97	436.87	<u>624.00</u>	40.30	292.00	0.227	0.600
120	C ₄ H ₈ O ₂	2-methylpropanoic acid	79-31-2	88.106	227.05	427.57	<u>605.00</u>	37.00	290.00	0.213	0.618
121	C ₄ H ₈ O ₂	1,3-dioxane	505-22-6	88.106	<u>228.15</u>	379.20	588.00	45.80	257.00	0.241	
122	C ₄ H ₈ O ₂	1,4-dioxane	123-91-1	88.106	<u>284.15</u>	374.50	587.00	51.70	238.00	0.255	
123	C ₄ H ₈ O ₂	methyl propanoate	554-12-1	88.106	<u>185.65</u>	352.60	530.60	40.00	<u>282.00</u>	0.256	0.349
124	C ₄ H ₈ O ₂	ethyl ethanoate (ethyl acetate)	141-78-6	88.106	<u>189.55</u>	350.21	523.20	38.30	286.00	0.252	0.361
125	C ₄ H ₈ O ₂	propyl methanoate (propyl formate)	110-74-7	88.106	<u>180.25</u>	354.69	538.00	40.60	285.00	0.259	0.320
126	C ₄ H ₉ Cl	2-chlorobutane	78-86-4	92.568	141.85	341.24	520.60	<u>36.80</u>	<u>312.00</u>	0.265	0.267
127	C ₄ H ₁₀	butane	106-97-8	58.123	134.79	272.66	425.12	<u>37.96</u>	<u>255.00</u>	0.274	0.200
128	C ₄ H ₁₀	2-methylpropane (isobutane)	75-28-5	58.123	113.54	261.34	<u>407.85</u>	<u>36.40</u>	<u>262.70</u>	0.278	0.186
129	C ₄ H ₁₀ N ₂	piperazine	110-85-0	86.136	384.6	<u>421.772</u>	661.00		267.50		
130	C ₄ H ₁₀ O	1-butanol	71-36-3	74.123	<u>183.35</u>	<u>390.88</u>	<u>563.05</u>	44.23	275.00	0.260	0.590
131	C ₄ H ₁₀ O	2-methyl-1-propanol (isobutanol)	78-83-1	74.123		<u>381.04</u>	547.78	43.00	273.00	0.258	0.590
132	C ₄ H ₁₀ O	2-methyl-2-propanol (tert-butanol)	75-65-0	74.123	<u>298.55</u>	<u>355.49</u>	506.21	39.73	275.00	0.260	0.613
133	C ₄ H ₁₀ O	2-butanol (sec-butanol)	78-92-2	74.123	<u>158.50</u>	372.66	536.05	41.79	269.00	0.252	0.574
134	C ₄ H ₁₀ O	diethyl ether	60-29-7	74.123	156.86	307.59	466.70	36.40	280.00	0.263	0.281
135	C ₄ H ₁₀ O ₂	1,2-dimethoxyethane	110-71-4	90.126		<u>358.15</u>	<u>537.00</u>		<u>270.64</u>		
136	C ₄ H ₁₀ O ₂	1,2-butanediol	26171-83-5	90.126		<u>469.58</u>	<u>680.00</u>		303.05		
137	C ₄ H ₁₀ O ₂	1,3-butanediol	107-88-0	136.154		<u>481.38</u>	<u>676.00</u>		305.00		
138	C ₄ H ₁₀ S	3-thiapentane (diethyl sulfide)	352-93-2	90.189	169.22	<u>365.25</u>	557.00	39.60	<u>318.00</u>	0.269	0.295
139	C ₄ H ₁₁ N	1-butanamine (butyl amine)	109-73-9	73.138	224.05	<u>349.44</u>	526.80	40.40	290.00	0.267	0.338
140	C ₄ H ₁₁ N	N-ethylethanamine (diethyl amine)	109-89-7	73.138	223.35	328.60	496.60	37.10	301.00	0.270	
141	C ₄ H ₁₁ N	2-methyl-1-propanamine (isobutyl amine)	78-81-9	73.138	188.55	<u>340.81</u>	528.50	40.20	286.00	0.262	0.220
142	C ₅ F ₁₂	dodecafluoropentane	678-26-2	288.036	<u>263.15</u>	<u>302.35</u>	422.00	20.40	<u>383.10</u>	0.272	0.415
143	C ₅ H ₅ N	pyridine	110-86-1	79.101	<u>231.43</u>	<u>388.37</u>	620.00	56.70	<u>254.00</u>	0.267	0.242
144	C ₅ H ₆ O	2-methylfuran	534-22-5	82.102	178.87	337.87	527.85	47.20	<u>246.40</u>	0.255	0.278
145	C ₅ H ₈	1-pentyne	627-19-0	68.119	167.50	<u>313.38</u>	470.00	41.70	277.00	0.296	0.394
146	C ₅ H ₈	cyclopentene	142-29-0	68.119	<u>138.05</u>	<u>317.35</u>	<u>506.50</u>	<u>48.00</u>	<u>245.00</u>	0.279	
147	C ₅ H ₈ O	cyclopentanone	120-92-3	84.118	<u>222.50</u>	<u>403.72</u>	624.50	46.00	<u>268.00</u>	0.237	0.288
148	C ₅ H ₁₀	cyclopentane	287-92-3	70.134	<u>179.28</u>	322.38	511.60	45.08	<u>260.00</u>	0.276	
149	C ₅ H ₁₀	1-pentene	109-67-1	70.134	<u>106.95</u>	<u>303.11</u>	<u>464.80</u>	35.60	<u>298.40</u>	0.275	0.237
150	C ₅ H ₁₀	cis-2-pentene	627-20-3	70.134	121.78	<u>310.07</u>	<u>475.00</u>	<u>36.90</u>	<u>302.10</u>	0.273	0.253
151	C ₅ H ₁₀	2-methyl-2-butene	513-35-9	70.134	139.40	<u>311.70</u>	<u>470.00</u>	<u>38.60</u>	292.00	0.288	0.339
152	C ₅ H ₁₀	3-methyl-1-butene	563-45-1	70.134	104.65	<u>293.21</u>	<u>452.70</u>	35.50	<u>304.90</u>	0.288	0.211

Section A Basic Constants I (*Continued*)

No.	Formula	Name	CAS #	Mol. Wt.	Tfp, K	Tb, K	Tc, K	Pc, bar	Vc, cm ³ /mol	Zc = PcVc/RTc	Omega
153	C ₅ H ₁₀ O	cyclopentanol	96-41-3	86.134		<i>413.49</i>	619.50	49.00			0.420
154	C ₅ H ₁₀ O	2-pentanone (methyl propyl ketone)	107-87-9	86.134	196.34	<i>375.39</i>	<u>561.10</u>	<u>36.90</u>	301.00	0.238	0.346
155	C ₅ H ₁₀ O	3-pentanone (diethyl ketone)	96-22-0	86.134	234.20	<i>375.14</i>	561.50	37.30	336.00	0.268	0.342
156	C ₅ H ₁₀ O	3-methyl-2-butanone (methyl isopropyl ketone)	563-80-4	86.134	181.15	<i>367.55</i>	567.70	36.20	310.00	0.238	0.216
157	C ₅ H ₁₀ O	2-methyltetrahydrofuran	96-47-9	86.134	137.04	<i>353.37</i>	537.00	37.60	267.00	0.225	0.292
158	C ₅ H ₁₀ O ₂	pentanoic acid	109-52-4	102.133	239.45	<i>459.31</i>	<u>643.00</u>	35.80	<u>336.20</u>		0.670
159	C ₅ H ₁₀ O ₂	3-methylbutanoic acid	503-74-2	102.133	243.85	<i>449.68</i>	<u>629.00</u>	34.00			0.651
160	C ₅ H ₁₀ O ₂	methyl butanoate	623-42-7	102.133	187.35	<i>375.90</i>	554.40	34.80	340.00	0.257	0.381
161	C ₅ H ₁₀ O ₂	ethyl propanoate	105-37-3	102.133	199.25	<i>372.18</i>	546.00	33.60	345.00	0.255	0.390
162	C ₅ H ₁₀ O ₂	methyl 2-methylpropanoate	547-63-7	102.133	<u>188.45</u>	<u>365.45</u>	540.80	34.30	339.00	0.259	
163	C ₅ H ₁₀ O ₂	propyl ethanoate (propyl acetate)	109-60-4	102.133	<u>178.15</u>	<u>374.65</u>	549.40	33.30	345.00	0.252	0.389
164	C ₅ H ₁₀ O ₂	2-methylpropyl methanoate (isobutyl formate)	542-55-2	102.133	177.35	<i>371.22</i>	551.00	38.80	352.00	0.298	0.400
165	C ₅ H ₁₁ Cl	1-chloropentane	543-59-9	106.595	174.15	<i>381.54</i>	552.00				
166	C ₅ H ₁₂	pentane	109-66-0	72.150	143.43	<i>309.22</i>	<u>469.70</u>	<u>33.70</u>	<u>311.00</u>	0.268	0.252
167	C ₅ H ₁₂	2-methylbutane	78-78-4	72.150	113.26	<i>300.99</i>	<u>460.39</u>	<u>33.81</u>	<u>308.30</u>	0.272	0.229
168	C ₅ H ₁₂	2,2-dimethylpropane (neopentane)	463-82-1	72.150	256.58	<i>282.65</i>	433.75	31.99	303.20	0.269	0.197
169	C ₅ H ₁₂ O	1-pentanol	71-41-0	88.150	<u>194.25</u>	<i>411.16</i>	588.15	39.09	<u>326.00</u>	0.262	0.579
170	C ₅ H ₁₂ O	2-pentanol	6032-29-7	88.150		392.30	<u>560.30</u>	<u>36.75</u>	<u>329.00</u>	0.260	0.561
171	C ₅ H ₁₂ O	2-methyl-1-butanol	137-32-6	88.150		403.79	<u>575.40</u>	<u>39.40</u>			0.605
172	C ₅ H ₁₂ O	2-methyl-2-butanol	75-85-4	88.150	264.40	<i>375.15</i>	<u>545.00</u>	<u>37.90</u>	323.00	0.270	0.478
173	C ₅ H ₁₂ O	3-methyl-1-butanol	123-51-3	88.150	<u>155.95</u>	<i>403.69</i>	579.40	39.10	325.00	0.264	0.559
174	C ₅ H ₁₂ O	3-methyl-2-butanol	598-75-4	88.150		<u>385.20</u>	<u>556.10</u>	<u>38.70</u>			
175	C ₅ H ₁₂ O	ethyl propyl ether	628-32-0	88.150	146.45	<i>337.01</i>	<u>500.60</u>	<u>32.50</u>	339.00	0.265	0.328
176	C ₅ H ₁₂ S	3-methyl-1-butanethiol (isopentyl mercaptan)	541-31-1	104.216	139.64	<i>391.50</i>	604.00	35.00	364.00	0.254	0.191
177	C ₆ ClF ₅	chloropentafluorobenzene	344-07-0	202.511		<i>391.11</i>	570.81	32.37	<u>376.00</u>	0.256	0.400
178	C ₆ F ₆	hexafluorobenzene	392-56-3	186.056		<i>353.40</i>	516.73	32.75	<u>335.00</u>	0.255	0.396
179	C ₆ F ₁₂	dodecafluorocyclohexane	355-68-0	300.047	<u>335.65</u>		<u>457.29</u>	<u>22.37</u>	459.00	0.270	

180	C ₆ F ₁₄	tetradecafluorohexane	355-42-0	338.044	<u>186.05</u>	<u>329.75</u>	448.70	18.70	<u>573.20</u>	<i>0.274</i>	0.513
181	C ₆ F ₁₄	tetradecafluoro-2-methylpentane	355-04-4	338.044		<u>330.75</u>	453.00	18.20	<u>550.00</u>	<i>0.266</i>	
182	C ₆ F ₁₄	tetradecafluoro-3-methylpentane	865-71-4	338.044	<u>158.15</u>	<u>331.55</u>	450.00	16.90	531.00	<i>0.240</i>	
183	C ₆ F ₁₄	tetradecafluoro-2,3-dimethyl butane	354-96-1	338.044	<u>258.15</u>	<u>332.95</u>	463.00	18.70	<u>528.00</u>	<i>0.255</i>	
184	C ₆ HF ₅	pentafluorobenzene	363-72-4	168.066	<u>225.85</u>	<u>358.89</u>	530.97	35.37	<u>324.00</u>	<i>0.260</i>	0.374
185	C ₆ H ₂ F ₄	1,2,4,5-tetrafluorobenzene	327-54-8	150.076		<u>363.50</u>	543.35	37.99			0.357
186	C ₆ H ₅ Cl	chlorobenzene	108-90-7	112.558	227.90	<u>404.91</u>	632.40	45.20	308.00	<i>0.265</i>	<i>0.251</i>
187	C ₆ H ₆	benzene	71-43-2	78.114	278.68	<u>353.24</u>	<u>562.05</u>	<u>48.95</u>	256.00	<i>0.268</i>	<i>0.210</i>
188	C ₆ H ₆ O	phenol	108-95-2	94.113	<u>314.05</u>	<u>455.04</u>	<u>694.25</u>	<u>61.30</u>	<u>229.00</u>	<i>0.243</i>	0.442
189	C ₆ H ₇ N	benzeneamine (aniline)	62-53-3	93.128	<u>266.85</u>	<u>457.17</u>	699.00	53.10	273.90	<i>0.256</i>	<i>0.380</i>
190	C ₆ H ₇ N	2-methylpyridine (2-picoline)	109-06-8	93.128	<u>206.45</u>	<u>402.50</u>	621.00	46.00	<u>335.00</u>	<i>0.260</i>	0.299
191	C ₆ H ₇ N	3-methylpyridine (3-picoline)	108-99-6	93.128	254.96	<u>417.28</u>	645.00	44.80	288.00	<i>0.241</i>	0.279
192	C ₆ H ₇ N	4-methylpyridine (4-picoline)	108-89-4	93.128	276.80	<u>418.49</u>	645.70	46.60	<u>325.62</u>	<i>0.253</i>	0.305
193	C ₆ H ₈ O	2-cyclohexen-1-one	930-68-7	96.131		<u>445.49</u>	<u>685.00</u>	45.30	<u>305.18</u>	<i>0.243</i>	0.308
194	C ₆ H ₁₀	cyclohexene	110-83-8	82.145	<u>169.67</u>	<u>356.12</u>	<u>560.40</u>		<u>296.88</u>		
195	C ₆ H ₁₀ O	cyclohexanone	108-94-1	98.144		<u>428.59</u>	653.00	40.00			0.299
196	C ₆ H ₁₀ O	4-methyl-3-penten-2-one (mesityl oxide)	141-79-7	98.147		<u>402.86</u>	605.00		353.43		
197	C ₆ H ₁₂	cyclohexane	110-82-7	84.161	279.69	<u>353.93</u>	553.50	40.73	<u>308.00</u>	<i>0.273</i>	<i>0.211</i>
198	C ₆ H ₁₂	methylcyclopentane	96-37-7	84.161	130.72	<u>344.98</u>	532.79	37.84	319.00	<i>0.272</i>	<i>0.227</i>
199	C ₆ H ₁₂	1-hexene	592-41-6	84.161	133.34	<u>336.63</u>	504.00	31.43	<u>355.10</u>	<i>0.266</i>	<i>0.281</i>
200	C ₆ H ₁₂	4-methylpent-1-ene	691-37-2	84.161	<u>119.5</u>	<u>326.82</u>	495.00	32.90	357.9	<i>0.286</i>	0.257
201	C ₆ H ₁₂ O	cyclohexanol	108-93-0	100.161	<u>297.65</u>	<u>433.94</u>	648.00	40.75	333.88	<i>0.253</i>	0.366
202	C ₆ H ₁₂ O	2-hexanone (methyl butyl ketone)	591-78-6	100.161	<u>217.40</u>	<u>400.70</u>	587.00	33.20	<u>378.00</u>	<i>0.254</i>	<i>0.393</i>
203	C ₆ H ₁₂ O	3-hexanone (ethyl propyl ketone)	589-38-8	100.161	217.50	<u>396.65</u>	582.80	33.20	<u>378.00</u>	<i>0.256</i>	<i>0.380</i>
204	C ₆ H ₁₂ O	4-methyl-2-pentanone (methyl isobutyl ketone)	108-10-1	100.161	189.15	<u>389.15</u>	574.60	32.70	<u>340.60</u>	<i>0.256</i>	<i>0.351</i>
205	C ₆ H ₁₂ O	butylvinylether	111-34-2	100.163		<u>367.13</u>	540.50	32.00	383.62	<i>0.273</i>	0.358
206	C ₆ H ₁₂ O ₂	hexanoic acid	142-62-1	116.160		<u>478.38</u>	662.00	32.00	<u>377.20</u>		0.694
207	C ₆ H ₁₂ O ₂	methyl pentanoate	624-24-8	116.160		<u>400.55</u>	<u>567.00</u>	31.90	<u>416.30</u>	<i>0.267</i>	
208	C ₆ H ₁₂ O ₂	ethyl butanoate	105-54-4	116.160	175.15	<u>394.69</u>	566.00	30.60	<u>421.00</u>	<i>0.274</i>	<i>0.463</i>
209	C ₆ H ₁₂ O ₂	propyl propanoate	106-36-5	116.160	197.25	395.64	578.00	30.90	394.00	<i>0.253</i>	<i>0.373</i>
210	C ₆ H ₁₂ O ₂	ethyl 2-methylpropanoate	97-62-1	116.160	<u>185.00</u>	<u>383.00</u>	553.00	30.70	<u>421.00</u>	<i>0.281</i>	
211	C ₆ H ₁₂ O ₂	butyl ethanoate (butyl acetate)	123-86-4	116.160	<u>199.65</u>	<u>399.72</u>	579.00	30.90	<u>412.80</u>	<i>0.253</i>	<i>0.407</i>
212	C ₆ H ₁₂ O ₂	2-methylpropyl ethanoate (isobutyl acetate)	110-19-0	116.160	174.25	<u>389.72</u>	561.00	31.60	<u>413.00</u>	<i>0.266</i>	<i>0.456</i>

Section A Basic Constants I (*Continued*)

No.	Formula	Name	CAS #	Mol. Wt.	Tfp, K	Tb, K	Tc, K	Pc, bar	Vc, cm ³ /mol	Zc = PcVc/RTc	Omega
213	C ₆ H ₁₂ O ₂	pentyl methanoate (pentyl formate)	638-49-3	116.160	199.65	<u>403.55</u>	576.00	30.90	<u>412.00</u>	0.254	
214	C ₆ H ₁₂ O ₂	3-methylbutyl methanoate (isopentyl formate)	110-45-2	116.160	<u>179.65</u>	<u>397.28</u>	578.00	31.30	<u>411.40</u>	0.252	0.400
215	C ₆ H ₁₂ O ₃	2-ethoxyethylacetate	111-15-9	132.165		<u>429.74</u>	<u>610.60</u>	31.66	443.5	0.277	0.523
216	C ₆ H ₁₄	hexane	110-54-3	86.177	177.84	<u>341.88</u>	<u>507.60</u>	<u>30.25</u>	<u>368.00</u>	0.264	0.300
217	C ₆ H ₁₄	2-methylpentane	107-83-5	86.177	119.48	<u>333.40</u>	<u>497.50</u>	<u>30.10</u>	<u>366.70</u>	0.267	0.278
218	C ₆ H ₁₄	3-methylpentane	96-14-0	86.177	110.26	<u>336.40</u>	504.40	31.20	366.70	0.273	0.273
219	C ₆ H ₁₄	2,2-dimethylbutane	75-83-2	86.177	173.33	322.87	488.70	30.80	359.10	0.272	0.233
220	C ₆ H ₁₄	2,3-dimethylbutane	79-29-8	86.177	<u>144.35</u>	<u>331.12</u>	499.90	31.30	357.60	0.269	0.248
221	C ₆ H ₁₄ O	1-hexanol	111-27-3	102.177	<u>229.20</u>	<u>430.44</u>	611.40	35.10	381.00	0.263	0.573
222	C ₆ H ₁₄ O	2-hexanol	626-93-7	102.177	<u>223.00</u>	<u>413.02</u>	586.20	33.80	383.00	0.266	0.562
223	C ₆ H ₁₄ O	3-hexanol	623-37-0	102.177		<u>408.94</u>	<u>582.40</u>	33.60	<u>383.00</u>	0.266	0.539
224	C ₆ H ₁₄ O	2-methyl-1-pentanol	105-30-6	102.177		<u>420.76</u>	<u>604.40</u>	<u>34.50</u>			0.498
225	C ₆ H ₁₄ O	2-methyl-2-pentanol	590-36-3	102.177	171.15	<u>394.51</u>	<u>559.50</u>	34.70	380.00	0.283	0.573
226	C ₆ H ₁₄ O	2-methyl-3-pentanol	565-67-3	102.177		<u>401.20</u>	<u>576.00</u>	<u>34.60</u>			
227	C ₆ H ₁₄ O	4-methyl-1-pentanol	626-89-1	102.177		<u>424.93</u>	<u>603.50</u>	36.30	380.00	0.275	0.588
228	C ₆ H ₁₄ O	4-methyl-2-pentanol	108-11-2	102.177		<u>404.86</u>	<u>574.50</u>	33.10	380.00	0.263	0.552
229	C ₆ H ₁₅ N	N,N-diethylethanamine (triethyl amine)	121-44-8	101.192	158.45	362.90	535.00	30.00	390.00	0.263	
230	C ₆ H ₁₅ N	N-propyl-1-propanamine (dipropyl amine)	142-84-7	101.192	210.15	382.30	550.00	31.40	402.00	0.276	
231	C ₇ F ₁₄	tetradecafluoromethylcyclohexane	355-02-2	350.055	<u>228.45</u>	<u>349.45</u>	485.91	20.19	570.00	0.285	
232	C ₇ F ₁₆	hexadecafluoroheptane	335-57-9	388.052	<u>195.15</u>	<u>355.59</u>	<u>475.00</u>	16.50	<u>664.30</u>	0.248	0.561
233	C ₇ H ₃ F ₅	pentafluorotoluene	771-56-2	182.093	<u>243.35</u>	<u>390.65</u>	566.52	31.24	<u>384.00</u>	0.255	0.415
234	C ₇ H ₈	toluene	108-88-3	92.141	178.16	383.79	<u>591.75</u>	<u>41.08</u>	<u>316.00</u>	0.264	0.264
235	C ₇ H ₈ O	benzyl alcohol	100-51-6	108.140	<u>257.80</u>	<u>478.46</u>	715.00	43.00			0.390
236	C ₇ H ₈ O	2-methylphenol (o-cresol)	95-48-7	108.140	<u>302.95</u>	<u>464.17</u>	<u>697.60</u>	50.00	282.00	0.243	0.436
237	C ₇ H ₈ O	3-methylphenol (m-cresol)	108-39-4	108.140	<u>284.95</u>	<u>475.38</u>	705.70	45.60	312.00	0.241	0.452
238	C ₇ H ₈ O	4-methylphenol (p-cresol)	106-44-5	108.140	<u>307.89</u>	<u>475.12</u>	704.50	51.50	277.00	0.244	0.510
239	C ₇ H ₉ N	2,3-dimethylpyridine (2,3 lutidine)	583-61-9	107.155	249.55	<u>434.30</u>	655.40	40.90	367.00	0.275	0.345
240	C ₇ H ₉ N	2,4-dimethylpyridine (2,4 lutidine)	108-47-4	107.155	209.23	<u>431.55</u>	647.00	38.70	367.00	0.264	0.351

241	C ₇ H ₉ N	2,5-dimethylpyridine (2,5 lutidine)	589-93-5	107.155	257.65	<u>430.14</u>	644.20	39.80	367.00	0.273	0.369
242	C ₇ H ₉ N	2,6-dimethylpyridine (2,6 lutidine)	108-48-5	107.155	267.03	<u>416.91</u>	623.80	39.80	367.00	0.282	0.373
243	C ₇ H ₉ N	3,4-dimethylpyridine (3,4 lutidine)	583-58-4	107.155	262.15	<u>452.29</u>	683.80	40.90	367.00	0.264	0.337
244	C ₇ H ₉ N	3,5-dimethylpyridine (3,5 lutidine)	591-22-0	107.155	266.65	<u>445.06</u>	667.20	38.70	367.00	0.256	0.351
245	C ₇ H ₁₂ O ₂	butyl-2-propenoate(butylacrylate)	141-32-2	128.175		<u>419.77</u>	644.00		<u>427.54</u>		0.312
246	C ₇ H ₁₄	cycloheptane	291-64-5	98.188	265.15	<u>391.95</u>	<u>604.30</u>	38.40	<u>359.00</u>	0.274	0.242
247	C ₇ H ₁₄	methylcyclohexane	108-87-2	98.188	146.56	<u>374.09</u>	572.19	34.71	368.00	0.268	0.235
248	C ₇ H ₁₄	ethylcyclopentane	1640-89-7	98.188	134.70	<u>376.59</u>	569.50	33.97	375.00	0.269	0.270
249	C ₇ H ₁₄	cis-1,3-dimethylcyclopentane	2532-58-3	98.188	139.45	<u>364.71</u>	551.00	34.00	<u>363.30</u>	0.277	0.276
250	C ₇ H ₁₄	trans-1,3-dimethylcyclopentane	1759-58-6	98.188	139.18	<u>363.90</u>	553.00	34.00	<u>363.30</u>	0.276	0.253
251	C ₇ H ₁₄	1-heptene	592-76-7	98.188	<u>153.45</u>	<u>366.79</u>	<u>537.30</u>	<u>29.20</u>	<u>409.00</u>	0.267	0.343
252	C ₇ H ₁₄ O ₂	heptanoic acid	111-14-8	130.187		<u>495.35</u>	679.00	29.00	<u>429.70</u>		0.712
253	C ₇ H ₁₄ O ₂	ethyl pentanoate	539-82-2	130.187	181.95	<u>419.25</u>	570.00	27.80	449.00	0.263	
254	C ₇ H ₁₄ O ₂	ethyl 3-methylbutanoate	108-64-5	130.187	<u>173.85</u>	<u>407.45</u>	588.00	27.30	447.00	0.250	
255	C ₇ H ₁₄ O ₂	propyl butanoate	105-66-8	130.187	<u>177.95</u>	<u>416.50</u>	600.00	27.80	449.00	0.250	0.399
256	C ₇ H ₁₄ O ₂	2-methylpropyl propanoate	540-42-1	130.187	201.75	<u>409.75</u>	592.00	27.30	447.00	0.248	0.375
257	C ₇ H ₁₄ O ₂	propyl 2-methylpropanoate	644-49-5	130.187		<u>408.55</u>	589.00	27.30	447.00	0.249	
258	C ₇ H ₁₄ O ₂	3-methylbutyl ethanoate (isopentyl acetate)	123-92-2	130.187	<u>194.65</u>	<u>415.20</u>	599.00	28.10	442.00	0.249	
259	C ₇ H ₁₆	heptane	142-82-5	100.204	182.59	<u>371.57</u>	<u>540.20</u>	<u>27.40</u>	428.00	0.261	0.350
260	C ₇ H ₁₆	2-methylhexane	591-76-4	100.204	154.89	<u>363.18</u>	530.10	27.30	421.00	0.261	0.331
261	C ₇ H ₁₆	3-methylhexane	589-34-4	100.204	149.35	<u>365.00</u>	535.20	28.10	404.00	0.255	0.323
262	C ₇ H ₁₆	3-ethylpentane	617-78-7	100.204	154.57	<u>366.63</u>	540.50	28.90	415.80	0.267	0.311
263	C ₇ H ₁₆	2,2-dimethylpentane	590-35-2	100.204	149.37	<u>352.32</u>	520.40	27.70	415.80	0.266	0.287
264	C ₇ H ₁₆	2,3-dimethylpentane	565-59-3	100.204	82.60	<u>362.91</u>	537.30	29.10	393.00	0.256	0.297
265	C ₇ H ₁₆	2,4-dimethylpentane	108-08-7	100.204	153.94	<u>353.62</u>	519.70	27.40	417.50	0.265	0.304
266	C ₇ H ₁₆	3,3-dimethylpentane	562-49-2	100.204	<u>138.25</u>	<u>359.19</u>	536.30	29.50	414.10	0.274	0.269
267	C ₇ H ₁₆	2,2,3-trimethylbutane	464-06-2	100.204	<u>248.15</u>	<u>354.01</u>	531.10	29.50	397.60	0.266	0.250
268	C ₇ H ₁₆ O	1-heptanol	111-70-6	116.203	<u>239.20</u>	<u>449.81</u>	631.90	31.50	435.00	0.261	0.588
269	C ₇ H ₁₆ O	2-heptanol	543-49-7	116.203		<u>434.20</u>	<u>608.30</u>	<u>30.21</u>	<u>442.00</u>		
270	C ₇ H ₁₆ O	4-heptanol	589-55-9	116.203			<u>602.60</u>		<u>432.00</u>		
271	C ₈ F ₁₈	octadecafluorooctane	307-34-6	438.059		<u>379.05</u>	<u>502.20</u>	16.60	<u>534.40</u>	0.281	0.619
272	C ₈ H ₈ O	methylphenylketone(acetophenone)	98-86-2	120.153		<u>475.26</u>	<u>713.00</u>	40.30	<u>380.23</u>	0.258	0.361
273	C ₈ H ₁₀	ethylbenzene	100-41-4	106.167	178.18	<u>409.36</u>	<u>617.15</u>	<u>36.09</u>	<u>374.00</u>	0.263	0.304

Section A Basic Constants I (*Continued*)

No.	Formula	Name	CAS #	Mol. Wt.	Tfp, K	Tb, K	Tc, K	Pc, bar	Vc, cm ³ /mol	Zc = PcVc/RTc	Omega
274	C ₈ H ₁₀	1,2-dimethylbenzene (o-xylene)	95-47-6	106.167	247.97	417.59	630.30	37.32	370.00	0.263	0.312
275	C ₈ H ₁₀	1,3-dimethylbenzene (m-xylene)	108-38-3	106.167	225.28	412.34	617.00	35.41	375.00	0.259	0.327
276	C ₈ H ₁₀	1,4-dimethylbenzene (p-xylene)	106-42-3	106.167	286.41	411.53	616.20	35.11	378.00	0.259	0.322
277	C ₈ H ₁₀ O	2-ethylphenol	90-00-6	122.167	269.84	477.67	703.00	43.00	342.00	0.252	0.475
278	C ₈ H ₁₀ O	3-ethylphenol	620-17-7	122.167	269.15	491.58	718.80	41.50	342.00	0.237	0.489
279	C ₈ H ₁₀ O	4-ethyl-phenol	123-07-9	122.167	318.18	491.15	716.40	40.50	342.00	0.233	0.491
280	C ₈ H ₁₀ O	2,3-dimethylphenol (2,3-xyleneol)	526-75-0	122.167	345.95	490.03	722.80	46.30	470.00	0.263	0.496
281	C ₈ H ₁₀ O	2,4-dimethylphenol (2,4-xyleneol)	105-67-9	122.167	297.68	484.09	707.60	42.80	510.00	0.249	0.506
282	C ₈ H ₁₀ O	2,5-dimethylphenol (2,5-xyleneol)	95-87-4	122.167	347.97	484.29	706.90	42.80	470.00	0.249	0.514
283	C ₈ H ₁₀ O	2,6-dimethylphenol (2,6-xyleneol)	576-26-1	122.167	318.75	474.18	701.00	46.30	520.00	0.272	0.489
284	C ₈ H ₁₀ O	3,4-dimethylphenol (3,4-xyleneol)	95-65-8	122.167	333.95	500.11	729.80	42.80	460.00	0.241	0.512
285	C ₈ H ₁₀ O	3,5-dimethylphenol (3,5-xyleneol)	108-68-9	122.167	336.75	494.85	715.60	41.30	610.00	0.237	0.544
286	C ₈ H ₁₆	cyclooctane	292-64-8	112.215	287.95	424.31	647.20	35.70	410.00	0.271	0.254
287	C ₈ H ₁₆	t-1,4-dimethylcyclohexane	2207-04-7	112.215	239.85	429.75	587.70				
288	C ₈ H ₁₆	1-octene	111-66-0	112.215	171.46	394.44	567.00	26.80	468.00	0.266	0.393
289	C ₈ H ₁₆ O ₂	octanoic acid	124-07-2	112.215	289.45	512.01	695.00	26.40			0.734
290	C ₈ H ₁₆ O ₂	2-ethylhexanoic acid	149-57-5	144.218		500.66	675.00		554.68		
291	C ₈ H ₁₆ O ₂	propyl pentanoate	141-06-0	144.214	202.45	440.65	613.00	25.20	504.00	0.249	
292	C ₈ H ₁₆ O ₂	2-methylpropyl butanoate	539-90-2	144.214		430.05	611.00	24.90	502.00	0.246	
293	C ₈ H ₁₆ O ₂	propyl 3-methylbutanoate	557-00-6	144.214		429.05	609.00	24.90	502.00	0.247	
294	C ₈ H ₁₆ O ₂	3-methylbutyl propanoate	105-68-0	144.214		433.35	611.00	25.50	497.00	0.249	
295	C ₈ H ₁₆ O ₂	2-methylpropyl-2-methylpropanoate	97-85-8	144.214	192.45	421.75	602.00	24.50	501.00	0.245	
296	C ₈ H ₁₈	octane	111-65-9	114.231	216.39	398.82	568.70	24.90	492.00	0.259	0.399
297	C ₈ H ₁₈	2-methylheptane	592-27-8	114.231	164.13	390.80	559.60	24.80	488.20	0.260	0.378
298	C ₈ H ₁₈	3-methylheptane	589-81-1	114.231	152.63	392.08	563.60	25.50	471.10	0.253	0.371
299	C ₈ H ₁₈	4-methylheptane	589-53-7	114.231	152.21	390.86	561.70	25.40	476.00	0.259	0.371
300	C ₈ H ₁₈	3-ethylhexane	619-99-8	114.231		391.69	565.40	26.10	460.50	0.253	0.362
301	C ₈ H ₁₈	2,2-dimethylhexane	590-73-8	114.231	151.98	379.99	549.80	25.30	478.00	0.265	0.339
302	C ₈ H ₁₈	2,3-dimethylhexane	584-94-1	114.231		388.76	563.40	26.30	468.20	0.263	0.347
303	C ₈ H ₁₈	2,4-dimethylhexane	589-43-5	114.231		382.58	553.50	25.60	472.00	0.263	0.344

304	C ₈ H ₁₈	2,5-dimethylhexane	592-13-2	114.231	181.99	382.26	550.00	24.90	482.00	0.262	0.357
305	C ₈ H ₁₈	3,3-dimethylhexane	563-16-6	114.231	147.06	385.12	562.00	26.50	442.80	0.251	0.320
306	C ₈ H ₁₈	3,4-dimethylhexane	583-48-2	114.231		390.88	568.80	26.90	458.80	0.265	0.338
307	C ₈ H ₁₈	3-ethyl-2-methylpentane	609-26-7	114.231	158.18	388.81	567.00	27.00	445.30	0.254	0.331
308	C ₈ H ₁₈	3-ethyl-3-methylpentane	1067-08-9	114.231	182.31	391.42	576.50	28.10	455.10	0.267	0.305
309	C ₈ H ₁₈	2,2,3-trimethylpentane	564-02-3	114.231	160.90	382.99	563.40	27.30	436.00	0.254	0.298
310	C ₈ H ₁₈	2,2,4-trimethylpentane (isooctane)	540-84-1	114.231	165.80	372.39	543.90	25.70	469.70	0.266	0.304
311	C ₈ H ₁₈	2,3,3-trimethylpentane	560-21-4	114.231	172.48	387.92	573.50	28.20	455.10	0.269	0.291
312	C ₈ H ₁₈	2,3,4-trimethylpentane	565-75-3	114.231	163.97	386.62	566.30	27.30	456.20	0.267	0.316
313	C ₈ H ₁₈	2,2,3,3-tetramethylbutane	594-82-1	114.231	373.94	379.44	567.80	28.70	482.00	0.280	0.248
314	C ₈ H ₁₈ O	1-octanol	111-87-5	130.230	257.65	468.33	652.50	28.60	490.00	0.258	0.594
315	C ₈ H ₁₈ O	2-octanol	123-96-6	130.230	241.15	453.03	637.00	28.10	493.00	0.262	0.531
316	C ₈ H ₁₈ O	3-octanol	589-98-0	130.230			628.50		515.00		
317	C ₈ H ₁₈ O	4-octanol	589-62-8	130.230		440.72	625.10		515.00		
318	C ₈ H ₁₈ O	2-ethyl-1-hexanol	104-76-7	130.230	203.20	457.77	640.50	27.99			0.558
319	C ₈ H ₁₉ N	n-octylamine	111-86-4	129.246		451.70	641.00	26.17	517.00	0.254	0.446
320	C ₈ H ₁₉ N	N-butyl-1-butanamine (dibutyl amine)	111-92-2	129.246	211.15	432.80	602.30	25.70	512.00	0.263	
321	C ₉ F ₂₀	eicosafuorononane	375-96-2	488.067		398.45	523.90	15.60	590.60	0.282	0.635
322	C ₉ H ₇ N	quinoline	91-22-5	129.161	257.55	510.30	782.00	45.00	402.00	0.278	0.315
323	C ₉ H ₇ N	isoquinoline	119-65-3	129.161	299.62	516.35	803.00	47.00	402.00	0.283	
324	C ₉ H ₁₀	indan	496-11-7	118.178	221.74	451.00	684.90	39.50	393.00	0.273	
325	C ₉ H ₁₂	propylbenzene	103-65-1	120.194	173.65	432.35	638.35	32.00	440.00	0.265	0.345
326	C ₉ H ₁₂	1-methylethylbenzene (cumene)	98-82-8	120.194	177.12	425.52	631.00	32.09	434.70	0.261	0.326
327	C ₉ H ₁₂	1-ethyl-4-methylbenzene	622-96-8	120.194	210.81	435.13	640.20	32.30	440.00	0.259	0.364
328	C ₉ H ₁₂	1,2,3-trimethylbenzene	526-73-8	120.194	247.77	449.23	664.50	34.54	435.00	0.267	0.367
329	C ₉ H ₁₂	1,2,4-trimethylbenzene	95-63-6	120.194	229.35	442.49	649.10	32.32	435.00	0.256	0.377
330	C ₉ H ₁₂	1,3,5-trimethylbenzene (mesitylene)	108-67-8	120.194	228.43	437.90	637.30	31.27	430.00	0.252	0.399
331	C ₉ H ₁₈	1-nonene	124-11-8	126.242	191.80	420.03	594.00	23.30	526.00	0.248	0.411
332	C ₉ H ₁₈ O ₂	nonanoic acid	112-05-0	158.241		527.74	711.00	24.30			0.748
333	C ₉ H ₁₈ O ₂	3-methylbutyl butanoate	106-27-4	158.241		452.09	619.00	23.30	500.00	0.226	0.583
334	C ₉ H ₂₀	nonane	111-84-2	128.258	219.66	423.97	594.60	22.90	555.00	0.257	0.445
335	C ₉ H ₂₀	2-methyloctane	3221-61-2	128.258	192.79	416.44	587.00	23.10	529.00	0.250	0.423
336	C ₉ H ₂₀	2,2-dimethylheptane	1071-26-7	128.258	160.16	405.97	577.80	23.50	525.00	0.257	0.383
337	C ₉ H ₂₀	2,2,5-trimethylhexane	3522-94-9	128.258	167.37	397.24	569.80		519.00		
338	C ₉ H ₂₀	2,2,3,3-tetramethylpentane	7154-79-2	128.258	263.26	413.44	607.60	27.40	478.00	0.269	0.304

Section A Basic Constants I (*Continued*)

No.	Formula	Name	CAS #	Mol. Wt.	Tfp, K	Tb, K	Tc, K	Pc, bar	Vc,	Zc =	Omega
									cm ³ /mol	PcVc/RTc	
339	C ₉ H ₂₀	2,2,3,4-tetramethylpentane	1186-53-4	128.258	152.06	406.18	592.70	25.30	490.00	0.258	0.301
340	C ₉ H ₂₀	2,2,4,4-tetramethylpentane	1070-87-7	128.258	206.64	395.44	574.60	24.90	504.00		0.314
341	C ₉ H ₂₀	2,3,3,4-tetramethylpentane	16747-38-9	128.258	171.05	414.71	607.10	26.70	493.00	0.261	0.309
342	C ₉ H ₂₀ O	1-nonanol	143-08-8	144.257	268.15	486.52	668.90	26.30	544.00	0.261	0.633
343	C ₉ H ₂₀ O	2-nonanol	628-99-9	144.257		466.70	649.60	25.30	575.00	0.269	
344	C ₁₀ F ₂₂	docosafluorodecane	307-45-9	538.075		417.35	542.30	14.50	624.20	0.279	
345	C ₁₀ H ₈	naphthalene	91-20-3	128.174	351.35	491.16	748.40	40.50	407.00	0.265	0.304
346	C ₁₀ H ₁₂	1,2,3,4-tetrahydronaphthalene	119-64-2	132.205	237.35	480.75	720.00	36.50	408.00	0.249	
347	C ₁₀ H ₁₂	1-methylindan	767-58-8	132.205		463.80	694.10	35.30	448.00	0.274	
348	C ₁₀ H ₁₂	2-methylindan	824-63-5	132.205		464.50	695.30	35.30	448.00	0.274	
349	C ₁₀ H ₁₂	4-methylindan	824-22-6	132.205		478.60	716.40	35.30	448.00	0.266	
350	C ₁₀ H ₁₂	5-methylindan	874-35-1	132.205		475.10	711.20	35.30	448.00	0.267	
351	C ₁₀ H ₁₄	butylbenzene	104-51-8	134.221	185.19	456.42	660.50	28.90	497.00	0.262	0.393
352	C ₁₀ H ₁₄	2-methylpropylbenzene (isobutylbenzene)	538-93-2	134.221	221.67	445.90	650.00	30.50	480.00	0.271	0.383
353	C ₁₀ H ₁₄	1,4-diethylbenzene	105-05-5	134.221	230.30	456.90	657.90	28.03	480.50	0.247	0.403
354	C ₁₀ H ₁₄	1-(1-methylethyl)-4-methylbenzene (p-cymene)	99-87-6	134.221	205.22	450.26	652.00	28.00	497.00	0.248	0.376
355	C ₁₀ H ₁₄	1,2,4,5-tetramethylbenzene (durene)	95-93-2	134.221	352.45	470.00	676.00	29.00	482.00	0.249	0.423
356	C ₁₀ H ₁₈	cis-bicyclo[4.4.0]decane (cis-decalin)	493-01-6	138.253	230.14	468.92	703.60	32.00	480.00	0.265	0.276
357	C ₁₀ H ₁₈	trans-bicyclo[4.4.0]decane (trans-decalin)	493-02-7	138.253	242.75	460.42	687.00	32.00	480.00	0.272	0.303
358	C ₁₀ H ₂₀	1-decene	872-05-9	140.269	206.89	443.75	617.00	22.20	584.00	0.253	
359	C ₁₀ H ₂₀ O ₂	decanoic acid	334-48-5	172.268	305.15	541.92	726.00	22.30			0.749
360	C ₁₀ H ₂₂	decane	124-18-5	142.285	243.49	447.30	617.70	21.10	624.00	0.256	0.490
361	C ₁₀ H ₂₂	2,2,5-trimethylheptane	20291-95-6	142.285		423.90	598.90	22.40	569.00	0.256	0.398
362	C ₁₀ H ₂₂	3,3,5-trimethylheptane	7154-80-5	142.285		428.83	609.60	23.20	564.00	0.258	0.383
363	C ₁₀ H ₂₂	2,2,3,3-tetramethylhexane	13475-81-5	142.285	219.19	433.46	623.00	25.10			0.366
364	C ₁₀ H ₂₂	2,2,5,5-tetramethylhexane	1071-81-4	142.285	260.60	410.61	581.40	21.90			0.377
365	C ₁₀ H ₂₂ O	1-decanol	112-30-1	158.284	280.05	504.25	684.40	23.70	600.00	0.252	0.661
366	C ₁₀ H ₂₄ N ₄	octamethylethenetetramine	996-70-3	200.326		477.44	680.00		646.21		
367	C ₁₁ H ₁₀	1-methylnaphthalene	90-12-0	142.200	242.69	517.84	772.00	36.00	462.00	0.259	0.348

368	C ₁₁ H ₁₀	2-methylnaphthalene	91-57-6	142.200	307.71	514.20	761.00	35.40	462.00	0.258	0.374
369	C ₁₁ H ₂₄	undecane	1120-21-4	156.312	247.57	469.08	639.00	19.80	689.00	0.257	0.537
370	C ₁₁ H ₂₄ O	1-undecanol	112-42-5	172.311		521.24	705.00	22.40			0.656
371	C ₁₂ H ₁₀	1,1'-biphenyl	92-52-4	154.211	342.35	528.23	773.00	33.80	497.00	0.261	0.404
372	C ₁₂ H ₁₂	1,6-dimethylnaphthalene	575-43-9	156.227	257.00	539.50	784.00	31.00	517.00	0.246	
373	C ₁₂ H ₁₂	2,7-dimethylnaphthalene	582-16-1	156.227	<u>368.85</u>	<u>535.00</u>	<u>775.00</u>	<u>32.30</u>			
374	C ₁₂ H ₁₈	1,3,5-triethylbenzene	102-25-0	162.276		<u>488.93</u>	<u>679.00</u>	24.35	624.14	0.269	0.527
375	C ₁₂ H ₂₀	1,3-dimethyltricyclo[3.3.1.1 ^{3,7}]decane (1,3-dimethyladamantane)	702-79-4	164.292		<u>476.44</u>	<u>708.00</u>		<u>571.45</u>		
376	C ₁₂ H ₂₄	1-dodecene	112-41-4	168.323	237.95	486.95	658.00	19.30			
377	C ₁₂ H ₂₆	dodecane	112-40-3	170.338	<u>263.57</u>	<u>489.48</u>	<u>658.00</u>	<u>18.20</u>	<u>754.00</u>	0.251	0.576
378	C ₁₂ H ₂₆ O	1-dodecanol	112-53-8	186.338	297.10	537.79	720.00	20.80	<u>718.00</u>	0.249	0.684
379	C ₁₃ H ₁₂	diphenylmethane	101-81-5	168.238	298.39	537.65	760.00	27.10	<u>563.00</u>	0.241	0.481
380	C ₁₃ H ₂₈	tridecane	629-50-5	184.365	267.76	508.63	675.00	16.80	<u>823.00</u>	0.246	0.618
381	C ₁₃ H ₂₈ O	1-tridecanol	112-70-9	200.365		553.72	734.00	19.35			0.712
382	C ₁₄ H ₁₀	phenanthrene	85-01-8	178.233	<u>372.35</u>	<u>611.55</u>	<u>869.00</u>	28.70	554.00	0.220	0.479
383	C ₁₄ H ₁₀	anthracene	120-12-7	178.233	<u>492.65</u>	<u>614.39</u>	<u>869.30</u>	28.70	554.00	0.220	0.501
384	C ₁₄ H ₂₂	1,4-di(trimethylmethyl)benzene (p-ditertbutylbenzene)	1012-72-2	190.330	<u>350.80</u>	<u>510.43</u>	<u>708.00</u>	23.00	732.0	0.286	0.506
385	C ₁₄ H ₃₀	tetradecane	629-59-4	198.392	279.01	526.76	693.00	15.70	<u>894.00</u>	0.244	0.644
386	C ₁₄ H ₃₀ O	1-tetradecanol	112-72-1	214.392		569.04	747.00	18.10			0.744
387	C ₁₅ H ₃₂	pentadecane	629-62-9	212.419	283.08	543.83	708.00	14.80	<u>966.00</u>	0.243	0.685
388	C ₁₅ H ₃₂ O	1-pentadecanol	629-76-5	228.419		583.68	759.00	17.00			0.778
389	C ₁₆ H ₃₄	hexadecane	544-76-3	226.446	291.32	559.98	723.00	14.00	<u>1034.00</u>	0.241	0.718
390	C ₁₆ H ₃₄	2,2,4,4,6,8,8-heptamethylnonane	4390-04-9	226.446		520.25	693.00	15.70			0.548
391	C ₁₆ H ₃₄ O	1-hexadecanol	4485-13-6	242.446	<u>322.45</u>	<u>597.53</u>	770.00	16.10			0.818
392	C ₁₇ H ₃₆	heptadecane	629-78-7	240.473	<u>295.13</u>	<u>574.56</u>	<u>736.00</u>	13.40	<u>1103.00</u>	0.242	0.753
393	C ₁₇ H ₃₆ O	1-heptadecanol	1454-85-9	256.472	<u>327.00</u>	<u>611.12</u>	780.00	15.00			0.853
394	C ₁₈ H ₁₄	1,2-diphenylbenzene	84-15-1	230.309	329.35	605.15	857.00	29.90			
395	C ₁₈ H ₁₄	1,3-diphenylbenzene	92-06-8	230.309	<u>360.15</u>	<u>636.15</u>	<u>883.00</u>	<u>24.80</u>	<u>724.00</u>	0.245	
396	C ₁₈ H ₁₄	1,4-diphenylbenzene	92-94-4	230.309	<u>483.25</u>	<u>649.15</u>	<u>908.00</u>	29.90	<u>729.00</u>	0.289	
397	C ₁₈ H ₃₈	octadecane	593-45-3	254.500	<u>301.32</u>	<u>588.30</u>	<u>747.00</u>	12.90	<u>1189.00</u>	0.247	0.800
398	C ₁₈ H ₃₈ O	1-octadecanol	112-92-5	270.499	<u>331.00</u>	<u>623.57</u>	790.00	14.40			0.892
399	C ₁₉ H ₄₀	nonadecane	629-92-5	268.527	<u>305.25</u>	<u>602.34</u>	<u>755.00</u>	<u>11.60</u>			0.845

Section A Basic Constants I (*Continued*)

No.	Formula	Name	CAS #	Mol. Wt.	Tfp, K	Tb, K	Tc, K	Pc, bar	Vc, cm ³ /mol	Zc = PcVc/RTc	Omega
400	C ₁₉ H ₄₀ O	1-nonadecanol	1454-84-8	284.526		<i>635.41</i>	799.00	13.80			<i>0.934</i>
401	C ₂₀ H ₄₂	eicosane	112-95-8	282.554	<i>309.95</i>	<i>616.84</i>	<i>768.00</i>	<i>10.70</i>			<i>0.865</i>
402	C ₂₀ H ₄₂ O	1-eicosanol	629-96-9	298.553	<i>339.00</i>	<i>647.69</i>	809.00	13.00			<i>0.954</i>
403	C ₂₁ H ₄₄	heneicosane	629-94-7	296.580	<i>313.65</i>	<i>629.65</i>	<i>778.00</i>	<i>10.30</i>			
404	C ₂₂ H ₄₆	docosane	629-97-0	310.607	<i>317.55</i>	<i>641.75</i>	<i>786.00</i>	<i>9.80</i>			
405	C ₂₃ H ₄₈	tricosane	638-67-5	324.634	<i>320.65</i>	<i>653.35</i>	<i>790.00</i>	<i>9.20</i>			
406	C ₂₄ H ₅₀	tetracosane	646-31-1	338.661	<i>324.05</i>	<i>664.45</i>	<i>800.00</i>	<i>8.70</i>			
407	ClD	deuterium chloride	7698-05-7	37.467	<i>158.51</i>	<i>188.43</i>	<i>323.50</i>				
408	ClFO ₃	perchloryl fluoride	7616-94-6	102.449	125.41	<i>226.49</i>	368.40	53.70	161.00	<i>0.282</i>	
409	ClF ₅	chlorine pentafluoride	13637-63-3	130.445	171.15	259.28	416.00	53.00	<i>230.40</i>		
410	ClH	hydrogen chloride	7647-01-0	36.461	158.97	<i>188.15</i>	324.69	83.10	<i>81.00</i>	<i>0.249</i>	
411	ClH ₄ N	ammonium chloride	12125-02-9	53.491	793.20	<i>613.16</i>	882.00		165.00		
412	ClNO	nitrogen oxychloride	2696-92-6	65.459	<i>213.55</i>	<i>267.77</i>	440.60	91.20			
413	Cl ₂	chlorine	7782-50-5	70.905	172.19	<i>239.12</i>	417.00	77.00	124.00	<i>0.275</i>	
414	DH	deuterium hydride	13983-20-5	3.022	16.59	<i>22.13</i>	35.90	14.80	62.70	<i>0.311</i>	<i>-0.176</i>
415	DI	deuterium iodide	14104-45-1	128.919	221.28	<i>237.52</i>	421.80				
416	D ₂	deuterium	7782-39-0	4.028	18.63	<i>22.13</i>	38.25	16.50	60.20	<i>0.312</i>	
417	D ₂	deuterium, normal	800000-54-8	4.028	18.72	<i>23.65</i>	38.35	16.65	60.20	<i>0.314</i>	<i>-0.143</i>
418	D ₂ O	deuterium oxide	7789-20-0	20.028	276.96	<i>374.55</i>	643.89	216.71	56.26	<i>0.228</i>	
419	D ₂ S	deuterium sulfide	13536-94-2	36.094	187.15		372.30	89.00	96.00	<i>0.276</i>	
420	D ₃ N	trideuteroammonia	13550-49-7	20.049	198.82	<i>242.10</i>	405.50	113.00	72.00	<i>0.241</i>	
421	D ₃ P	trideuterophosphine	13537-03-6	37.016			323.60	65.00			
422	FH	hydrogen fluoride	7664-39-3	20.006	189.58	292.68	461.00	65.00	69.00	<i>0.117</i>	
423	FNO ₂	nitrogen dioxyfluoride	10022-50-1	65.004	107.15	<i>200.75</i>	349.30	82.00			
424	F ₂	fluorine	7782-41-4	37.997	53.48	<i>84.95</i>	144.30	52.15	66.20	<i>0.288</i>	<i>0.051</i>
425	F ₂ HN	difluoroamine	10405-27-3	53.012	157.15	<i>250.15</i>	403.00	63.00	97.00	<i>0.182</i>	
426	F ₂ N ₂	cis-difluorodiazene	13812-43-6	66.010		<i>167.40</i>	272.00	68.00	<i>113.30</i>		
427	F ₂ N ₂	trans-difluorodiazene	13776-62-0	66.010	101.15	<i>161.70</i>	260.00	64.00	<i>113.30</i>		
428	F ₂ O	oxygen difluoride	7783-41-7	53.996	49.35	<i>128.38</i>	215.20	49.50	97.60	<i>0.270</i>	
429	F ₂ Xe	xenon difluoride	13709-36-9	169.287	402.18		631.00	93.00	149.00	<i>0.264</i>	
430	F ₃ N	nitrogen trifluoride	7783-54-2	71.002	66.37	<i>144.11</i>	234.00	45.30	118.75	<i>0.256</i>	<i>0.124</i>
431	F ₃ NO	trifluoroamine oxide	13847-65-9	87.001	<i>112.15</i>	<i>185.65</i>	<i>302.60</i>	64.00	<i>150.10</i>		

432	F ₄ N ₂	tetrafluorohydrazine	10036-47-2	104.007	<u>111.65</u>	198.95	309.20	37.00	181.00	0.222	
433	F ₄ S	sulfur tetrafluoride	7783-60-0	108.060	<u>148.15</u>	<u>233.15</u>	364.00	43.30	146.00	0.209	0.258
434	F ₄ Xe	xenon tetrafluoride	13709-61-0	207.284	<u>390.25</u>		612.00	70.40	189.00	0.261	
435	F ₆ S	sulfur hexafluoride	2551-62-4	146.056	<u>222.45</u>	209.25	318.72	37.60	198.40	0.282	0.208
436	F ₆ U	uranium hexafluoride	7783-81-5	352.070	<u>337.00</u>	<u>324.96</u>	503.35	45.31	250.00	0.271	0.277
437	HI	hydrogen iodide	10034-85-2	127.912	<u>222.38</u>	<u>237.57</u>	<u>423.90</u>	<u>90.00</u>	<u>132.70</u>		<u>0.038</u>
438	H ₂	hydrogen	1333-74-0	2.016	13.83	20.27	32.98	12.93	64.20	0.303	-0.217
439	H ₂	hydrogen, normal	800000-51-5	2.016	13.56	20.38	33.25	12.97	65.00	0.305	-0.216
440	H ₂ O	water	7732-18-5	18.015	273.15	<u>373.15</u>	647.14	220.64	55.95	0.229	<u>0.344</u>
441	H ₂ S	hydrogen sulfide	7783-06-4	34.082	187.62	<u>212.84</u>	373.40	89.63	98.00	0.283	0.090
442	H ₂ S ₂	dihydrogen disulfide	13465-07-1	66.148	183.35	<u>344.25</u>	572.00	59.10	150.00	0.186	
443	H ₂ S ₃	dihydrogen trisulfide	13845-23-3	98.214		<u>443.13</u>	738.00	51.30	205.00	0.171	
444	H ₂ S ₄	dihydrogen tetrasulfide	13845-25-5	130.280		<u>513.14</u>	855.00	43.70	260.00	0.160	
445	H ₂ S ₅	dihydrogen pentasulfide	13845-24-4	162.346		<u>558.10</u>	930.00	38.90	315.00	0.158	
446	H ₂ Se	hydrogen selenide	7783-07-5	80.976	207.42	228.25	411.00	89.20			
447	H ₃ N	ammonia	7664-41-7	17.031	195.41	239.82	<u>405.40</u>	113.53	<u>72.47</u>	0.255	0.257
448	H ₃ P	phosphine	7803-51-2	33.998	139.37	<u>185.42</u>	<u>324.50</u>	65.40			
449	H ₄ N ₂	hydrazine	302-01-2	32.045	274.68	386.65	653.01	147.00	<u>101.10</u>	0.282	
450	He	helium	7440-59-7	4.003	2.15	<u>4.30</u>	5.19	2.27	<u>57.30</u>	0.301	-0.390
451	He	helium-3	14762-55-1	3.017	1.01	3.33	3.31	1.14	72.50	0.300	-0.480
452	I ₂	iodine	7553-56-2	253.809	386.76	<u>457.56</u>	819.00		<u>155.00</u>		
453	Kr	krypton	7439-90-9	83.800	115.77	<u>119.74</u>	209.40	55.00	<u>91.20</u>	0.288	
454	NO	nitrogen monoxide (nitric oxide)	10102-43-9	30.006	109.51	<u>121.38</u>	180.00	64.80	58.00	0.251	0.582
455	N ₂	nitrogen	7727-37-9	28.014	63.15	77.35	126.20	33.98	<u>90.10</u>	0.289	0.037
456	N ₂ O	dinitrogen oxide (nitrous oxide)	10024-97-2	44.013	182.33	<u>184.67</u>	309.60	72.55	<u>97.00</u>	0.273	
457	N ₂ O ₄	dinitrogen tetroxide (nitrogen dioxide)	10544-72-6	92.011	261.95	<u>302.22</u>	431.01	101.00			1.007
458	Ne	neon	7440-01-9	20.180	24.56	<u>27.07</u>	44.40	27.60	41.70	0.312	-0.016
459	OT ₂	tritium oxide	14940-65-9	22.032	277.64		641.72	214.10	56.00	0.225	
460	O ₂	oxygen	7782-44-7	31.999	54.36	<u>90.17</u>	154.58	50.43	73.37	0.288	
461	O ₂ S	sulfur dioxide	7446-09-5	64.065	197.67	<u>263.13</u>	430.80	78.84	122.00	0.269	
462	O ₃	ozone	10028-15-6	47.998	80.65	<u>161.80</u>	261.05	55.70	89.40	0.229	0.224
463	O ₃ S	sulfur trioxide	7446-11-9	80.064	289.95	<u>317.90</u>	490.90	82.10	126.50	0.254	
464	Rn	radon	10043-92-2	222.018	202.15	<u>209.80</u>	377.00	63.00	140.00	0.281	
465	S	sulfur	7704-34-9	32.066	392.75	<u>717.75</u>	1313.01	182.00	158.00	0.263	
466	Se	selenium	7782-49-2	78.960	<u>494.00</u>	<u>957.95</u>	1766.00	271.60	<u>62.30</u>	0.118	
467	T ₂	tritium	10028-17-8	6.032			40.00	18.50	55.30	0.308	
468	Xe	xenon	7440-63-3	131.290	161.25	<u>165.01</u>	289.74	58.40	118.00	0.286	