Section C Ideal Gas and Liquid Heat Capacities. C_p°/R = a0 + a1T + a2T^2 + a3T^3 + a4T^4.
CpIG and Cpliq at 298.15 K, J mol^{-1} K^{-1}.

No.	Formula	Name	CAS #	Trange, K	a0	a1 × 10^3	a2 × 10^5	a3 × 10^8	a4 × 10^{11}	CpIG	Cpliq
1	Ar	argon	7440-37-1	—	2.500	0.000	0.000	0.000	0.000	20.79	
2	Br_2	bromine	7726-95-6	50-1000	3.212	7.160	−1.528	1.445	−0.499	36.05	75.67
3	BrD	deuterium bromide	13536-59-9	50-1000	3.716	−2.318	0.738	−0.717	0.250	29.23	
6	BrH	hydrogen bromide	10035-10-6	50-1000	3.842	−3.098	0.917	−1.032	0.426	29.14	
7	$CBrClF_2$	bromochlorodifluoromethane	353-59-3	100-1000	1.968	36.592	−5.489	4.036	−1.170	74.65	
8	$CBrF_3$	bromotrifluoromethane	75-63-8	100-1000	1.959	30.789	−3.782	2.236	−0.515	69.24	
9	CBr_2F_2	dibromodifluoromethane	75-61-6	100-1000	2.476	36.115	−5.666	4.368	−1.324	77.02	
10	$CClF_3$	chlorotrifluoromethane	75-72-9	50-1000	2.369	23.861	−1.579	−0.366	0.528	66.87	
11	CCl_2F_2	dichlorodifluoromethane (R-12)	75-71-8	50-1000	2.185	31.251	−3.724	1.930	−0.323	72.28	119.00
12	CCl_3F	trichlorofluoromethane (R-11)	75-69-4	50-1000	2.090	38.890	−6.079	4.542	−1.316	78.09	121.80
13	CCl_4	tetrachloromethane	56-23-5	200-1000	2.518	41.882	−7.160	5.739	−1.756	83.43	131.60
14	CF_4	tetrafluoromethane	75-73-0	50-1000	2.643	15.383	0.850	−2.940	1.469	61.05	
15	$CHBrF_2$	bromodifluoromethane	1511-62-2	100-1000	3.254	13.871	−0.070	−1.130	0.606	58.76	
16	$CHClF_2$	chlorodifluoromethane (R-22)	75-45-6	50-1000	3.164	10.422	1.179	−2.650	1.222	55.85	110
17	$CHCl_2F$	dichlorofluoromethane	75-43-4	50-1000	2.949	17.130	−0.629	−0.821	0.573	60.94	108
18	$CHCl_3$	trichloromethane	67-66-3	200-1000	2.389	26.218	−3.145	1.857	−0.423	65.40	113.80
19	CHF_3	trifluoromethane (R-23)	75-46-7	50-1000	3.450	3.480	3.012	−4.452	1.834	50.98	
20	CH_2Cl_2	dichloromethane	75-09-2	200-1000	2.710	11.561	0.324	−1.370	0.662	50.88	100.00
21	CH_2F_2	difluoromethane	75-10-5	50-1000	4.150	−5.584	4.384	−5.160	1.920	42.88	
22	CH_2O_2	methanoic acid (formic acid)	64-18-6	50-1000	3.809	1.568	3.587	−4.410	1.672	*53.45*	99.17
23	CH_3Cl	chloromethane	74-87-3	200-1000	3.578	−1.750	3.071	−3.714	1.408	40.74	81.84
24	CH_3F	fluoromethane	593-53-3	50-1000	4.561	−10.437	4.813	−5.069	1.769	37.51	
25	CH_3NO_2	nitromethane	75-52-5	50-1000	4.196	−1.102	5.158	−6.721	2.660	57.22	106.80
26	CH_4	methane	74-82-8	50-1000	4.568	−8.975	3.631	−3.407	1.091	35.69	
27	CH_4O	methanol	67-56-1	50-1000	4.714	−6.986	4.211	−4.443	1.535	44.06	81.08
28	CH_4S	methanethiol (methyl mercaptan)	74-93-1	50-1000	4.119	1.313	2.591	−3.212	1.208	50.26	90.50
29	CH_5N	methanamine (methyl amine)	74-89-5	50-1000	4.193	−2.122	4.039	−4.738	1.751	50.05	102.09
30	CO	carbon monoxide	630-08-0	50-1000	3.912	−3.913	1.182	−1.302	0.515	29.14	
31	CO_2	carbon dioxide	124-38-9	50-1000	3.259	1.356	1.502	−2.374	1.056	37.13	
33	C_2ClF_5	1-chloro-1,1,2,2,2-pentafluoroethane	76-15-3	50-1000	2.355	50.469	−5.156	2.041	−0.139	111.10	

Section C Ideal Gas and Liquid Heat Capacities. C_p°/R = a0 + a1T + a2T^2 + a3T^3 + a4T^4.
CpIG and Cpliq at 298.15 K, J mol^{-1} K^{-1} (*Continued*)

No.	Formula	Name	CAS #	Trange, K	a0	a1 × 10^3	a2 × 10^5	a3 × 10^8	a4 × 10^{11}	CpIG	Cpliq
34	$C_2Cl_2F_4$	1,1-dichloro-1,2,2,2-tetrafluoroethane	374-07-2	50-1000	2.268	56.415	−6.908	3.953	−0.861	115.80	
35	$C_2Cl_2F_4$	1,2-dichloro-1,1,2,2-tetrafluoroethane	76-14-2	50-1000	2.525	53.644	−5.771	2.417	−0.199	116.60	
36	$C_2Cl_3F_3$	1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	50-1000	2.133	63.238	−8.916	6.140	−1.683	121.00	
37	C_2F_4	tetrafluoroethene	116-14-3	200-1000	2.223	36.551	−4.776	3.283	−0.931	80.41	
38	C_2F_6	hexafluoroethane	76-16-4	50-1000	2.525	43.543	−2.948	−0.630	0.967	106.54	
41	C_2HClF_4	1-chloro-1,1,2,2-tetrafluoroethane	354-25-6	50-1000	2.888	38.360	−2.468	−0.397	0.677	100.40	
42	C_2HClF_4	1-chloro-1,2,2,2-tetrafluoroethane	2837-89-0	50-1000	3.022	35.834	−1.744	−1.211	0.994	99.06	
43	$C_2HCl_2F_3$	1,1-dichloro-2,2,2-trifluoroethane (R-123)	306-83-2	50-1000	2.996	39.490	−2.743	−0.122	0.572	102.60	
44	$C_2HCl_2F_3$	1,2-dichloro-1,2,2-trifluoroethane (R-123a)	354-23-4	50-1000	2.699	43.299	−3.663	0.697	0.322	*104.45*	
45	C_2HF_5	pentafluoroethane	354-33-6	50-1000	3.146	29.937	−0.056	−3.019	1.669	94.40	
47	C_2H_2	ethyne (acetylene)	74-86-2	50-1000	2.410	10.926	−0.255	−0.790	0.524	59.03	
48	$C_2H_2F_2$	1,1-difluoroethene	75-38-7	200-1000	0.749	26.756	−1.905	0.245	0.204	59.08	
49	$C_2H_2F_4$	1,1,1,2-tetrafluoroethane (R-134a)	811-97-2	50-1000	3.064	25.420	0.586	−3.339	1.716	86.64	
50	$C_2H_2F_4$	1,1,2,2-tetrafluoroethane (R-134)	359-35-3	50-1000	3.084	32.841	−2.425	0.488	0.162	90.32	
51	$C_2H_3ClF_2$	1-chloro-1,1-difluoroethane	75-68-3	50-1000	2.338	29.791	−1.048	−1.336	0.927	83.26	130
52	$C_2H_3Cl_2F$	1,1-dichloro-1-fluoroethane (R-141b)	1717-00-6	50-1000	2.140	36.934	−3.121	0.927	0.068	88.37	
53	$C_2H_3F_3$	1,1,1-trifluoroethane (R-143a)	420-46-2	50-1000	2.577	23.727	0.480	−2.824	1.439	78.61	
54	$C_2H_3F_3$	1,1,2-trifluoroethane (R-143)	430-66-0	50-1000	3.531	16.450	2.074	−4.217	1.869	77.34	
55	C_2H_4	ethene (ethylene)	74-85-1	50-1000	4.221	−8.782	5.795	−6.729	2.511	42.90	
56	$C_2H_4Br_2$	1,2-dibromoethane	106-93-4	298-1000	3.784	24.587	−0.750	−0.886	0.601	*85.31*	135.6
57	$C_2H_4Cl_2$	1,1-dichloroethane	75-34-3	200-1000	2.610	24.853	−0.675	−1.035	0.643	76.32	126.4
58	$C_2H_4Cl_2$	1,2-dichloroethane	107-06-2	298-1000	2.990	23.197	−0.404	−1.133	0.617	77.32	126.30
59	$C_2H_4F_2$	1,1-difluoroethane (R-152a)	75-37-6	50-1000	3.292	11.749	2.835	−4.645	1.941	*68.49*	118.00
60	$C_2H_4O_2$	ethanoic acid (acetic acid)	64-19-7	50-1000	4.375	−2.397	6.757	−8.764	3.478	63.44	123.10
61	$C_2H_4O_2$	methyl methanoate (methyl formate)	107-31-3	298-1000	2.277	18.013	1.160	−2.921	1.342	66.50	119.70
62	C_2H_5Br	bromoethane	74-96-4	100-1000	3.636	6.861	3.749	−5.446	2.231	64.23	99.8
63	C_2H_5Cl	chloroethane	75-00-3	200-1000	3.029	9.885	2.967	−4.550	1.871	62.64	106
64	C_2H_5F	fluoroethane	353-36-6	50-1000	3.881	1.616	4.799	−6.161	2.364	59.61	

65	C_2H_6	ethane	74-84-0	50-1000	4.178	−4.427	5.660	−6.651	2.487	52.47	231.50
66	C_2H_6O	ethanol	64-17-5	50-1000	4.396	0.628	5.546	−7.024	2.685	65.21	112.25
67	C_2H_6O	dimethyl ether	115-10-6	100-1000	4.361	6.070	2.899	−3.581	1.282	65.57	
68	C_2H_6S	ethanethiol (ethyl mercaptan)	75-08-1	50-1000	3.894	12.951	2.052	−3.287	1.312	73.01	117.80
69	C_2H_6S	2-thiapropane (dimethylsulfide)	75-18-3	273-1000	3.535	17.530	0.596	−1.632	0.696	74.06	118.10
70	C_2H_7N	ethanamine (ethyl amine)	75-04-7	50-1000	4.640	2.069	5.797	−7.659	3.043	71.54	129.70
71	C_2H_7N	*N*-methylmethanamine (dimethyl amine)	124-40-3	273-1000	2.469	15.462	2.642	−4.025	1.564	70.50	
72	C_3F_8	octafluoropropane (R-218)	76-19-7	200-1000	1.605	76.488	−8.707	4.540	−0.856	147.95	
73	C_3HF_7	1,1,1,2,3,3,3-heptafluoropropane (R-227ea)	431-89-0								137.00
82	C_3H_3NO	1,2-oxazole (isoxazole)	288-14-2	50-1000	3.911	−9.705	10.380	−13.472	5.359	*59.01*	96.48
83	C_3H_4	1-propyne (methyl acetylene)	74-99-7	50-1000	3.158	12.210	1.167	−2.316	1.002	60.73	
84	C_3H_4	1,2-propadiene	463-49-0	50-1000	3.403	6.271	3.388	−5.113	2.161	81.82	
85	C_3H_6	propene (propylene)	115-07-1	50-1000	3.834	3.893	4.688	−6.013	2.283	64.32	112.00
86	C_3H_6	cyclopropane	75-19-4	50-1000	4.493	−18.097	12.744	−16.049	6.426	55.57	
87	$C_3H_6Cl_2$	1,2-dichloropropane	78-87-5	298-1000	1.697	40.582	−2.247	−0.038	0.377	*98.27*	
88	C_3H_6O	2-propen-1-ol (allyl alcohol)	107-18-6	298-1000	0.248	34.938	−1.685	−0.192	0.324	*76.01*	138.90
89	C_3H_6O	propanone (acetone)	67-64-1	200-1000	5.126	1.511	5.731	−7.177	2.728	74.52	126.60
90	$C_3H_6O_2$	propanoic acid	79-09-4								152.80
91	$C_3H_6O_2$	methyl ethanoate (methyl acetate)	79-20-9	298-1000	4.242	14.388	3.338	−4.930	1.931	85.30	143.90
92	$C_3H_6O_2$	ethyl methanoate (ethyl formate)	109-94-4							89.00	146.60
94	C_3H_7Cl	1-chloropropane	540-54-5	200-1000	4.365	9.895	5.366	−7.708	3.120	85.30	131
95	C_3H_8	propane	74-98-6	50-1000	3.847	5.131	6.011	−7.893	3.079	73.60	120.00
96	C_3H_8O	1-propanol	71-23-8	50-1000	4.712	6.565	6.310	−8.341	3.216	85.56	143.73
97	C_3H_8O	2-propanol	67-63-0	50-1000	3.334	18.853	3.644	−6.115	2.543	89.32	154.40
98	C_3H_8O	methyl ethyl ether	540-67-0	100-1000	4.008	21.493	1.803	−3.333	1.331	93.30	
99	C_3H_8S	2-thiabutane (methyl ethyl sulfide)	624-89-5	273-1000	2.816	29.186	0.807	−2.888	1.325	95.06	144.60
100	C_3H_9N	1-propanamine (propyl amine)	107-10-8	50-1000	4.142	12.606	5.471	−7.524	2.918	91.80	136.20
101	C_3H_9N	2-propanamine (methyl ethyl amine)	75-31-0	50-1000	3.633	22.221	3.094	−5.375	2.236	97.55	163.88
102	C_3H_9N	*N*,*N*-dimethylmethanamine (trimethyl amine)	75-50-3	298-1000	1.660	27.899	2.517	−5.097	2.190	91.80	136.20
104	C_4F_8	octafluorocyclobutane	115-25-3	298-1000	0.949	80.942	−7.976	2.970	−0.087	*79.48*	
105	C_4F_{10}	decafluoro-2-methylpropane	355-25-9	200-1000	1.965	99.798	−11.830	6.680	−1.457	78.02	
106	C_4H_4O	furan	110-00-9	50-1000	3.816	−10.453	12.446	−16.907	7.020	65.40	114.64

Section C Ideal Gas and Liquid Heat Capacities. C_p°/R = a0 + a1T + a2T^2 + a3T^3 + a4T^4.
CpIG and Cpliq at 298.15 K, J mol^{-1} K^{-1} (*Continued*)

No.	Formula	Name	CAS #	Trange, K	a0	a1 × 10^3	a2 × 10^5	a3 × 10^8	a4 × 10^{11}	CpIG	Cpliq
107	C_4H_4S	thiophene	110-02-1	50-1000	3.063	1.520	9.514	−14.129	6.088	72.78	123.88
108	C_4H_5N	pyrrole	109-97-7	50-1000	3.554	−6.426	12.231	−16.957	7.095	71.60	127.74
109	C_4H_6	1-butyne	107-00-6	50-1000	2.995	20.800	1.560	−3.462	1.524	81.42	122.80
110	C_4H_6	1,3-butadiene	106-99-0	50-1000	3.607	5.085	8.253	−12.371	5.321	79.54	125.20
111	$C_4H_6O_3$	acetic anhydride	108-24-7	298-1000	−1.274	50.172	−1.459	−1.951	1.244	*99.51*	124.10
112	C_4H_8	cyclobutane	287-23-0	50-1000	4.739	−16.423	14.488	−18.041	7.089	70.56	109.3
113	C_4H_8	1-butene	106-98-9	50-1000	4.389	7.984	6.143	−8.197	3.165	85.56	124.90
114	C_4H_8	trans-2-butene	624-64-6	50-1000	5.584	−4.890	9.133	−10.975	4.085	87.67	
115	C_4H_8	cis-2-butene	590-18-1	50-1000	3.689	19.184	2.230	−3.426	1.256	80.15	127.00
116	C_4H_8	2-methylpropene	115-11-7	50-1000	3.231	20.949	2.313	−3.949	1.566	88.09	
117	C_4H_8O	butanone (methyl ethyl ketone)	78-93-3	200-1000	6.349	11.062	4.851	−6.484	2.469	103.26	158.90
118	C_4H_8O	tetrahydrofuran	109-99-9	50-1000	5.171	−19.464	16.460	−20.420	8.000	76.53	124.10
119	$C_4H_8O_2$	butanoic acid	107-92-6								177.70
120	$C_4H_8O_2$	2-methylpropanoic acid	79-31-2								173.00
121	$C_4H_8O_2$	1,3-dioxane	505-22-6	50-1000	3.834	−0.249	11.985	−15.494	6.047	89.47	143.90
122	$C_4H_8O_2$	1,4-dioxane	123-91-1	50-1000	3.730	1.851	11.781	−15.602	6.177	92.18	154.50
124	$C_4H_8O_2$	ethyl ethanoate (ethyl acetate)	141-78-6	298-1000	10.228	−14.948	13.033	−15.736	5.999	113.64	170.60
125	$C_4H_8O_2$	propyl methanoate (propyl formate)	110-74-7							110.10	178.10
126	C_4H_9Cl	2-chlorobutane	78-86-4	200-1000	4.450	22.285	4.350	−7.215	3.015	110.22	
127	C_4H_{10}	butane	106-97-8	200-1000	5.547	5.536	8.057	−10.571	4.134	98.49	142.89
128	C_4H_{10}	2-methylpropane (isobutane)	75-28-5	50-1000	3.351	17.883	5.477	−8.099	3.243	96.65	142.50
130	$C_4H_{10}O$	1-butanol	71-36-3	50-1000	4.467	16.395	6.688	−9.690	3.864	108.03	177.06
131	$C_4H_{10}O$	2-methyl-1-propanol (isobutanol)	78-83-1							113.00	183.00
132	$C_4H_{10}O$	2-methyl-2-propanol (tert-butanol)	75-65-0	50-1000	2.611	36.052	1.517	−4.360	1.947	113.63	220.10
133	$C_4H_{10}O$	2-butanol (sec-butanol)	78-92-2	50-1000	3.860	28.561	2.728	−5.140	2.117	112.74	199.00
134	$C_4H_{10}O$	diethyl ether	60-29-7	100-1000	4.612	37.492	−1.870	1.316	−0.698	119.46	172.60
138	$C_4H_{10}S$	3-thiapentane (diethyl sulfide)	352-93-2	273-1000	4.335	26.082	3.959	−6.881	2.900	116.57	171.50
139	$C_4H_{11}N$	1-butanamine (butyl amine)	109-73-9	298-1000	2.668	38.366	1.150	−3.817	1.712	113.90	294.30
140	$C_4H_{11}N$	n-ethylethanamine (diethyl amine)	109-89-7	298-1000	3.028	32.373	2.828	−5.501	2.300	116.00	178.10
141	$C_4H_{11}N$	2-methyl-1-propanamine (isobutyl amine)	78-81-9	298-1000	0.380	53.027	−2.436	0.207	0.038	*117.09*	194.0

142	C_5F_{12}	dodecafluoropentane	678-26-2	200-1000	2.315	123.238	−14.997	8.875	−2.081	231.95	
143	C_5H_5N	pyridine	110-86-1	298-1000	−3.505	49.389	−1.746	−1.595	1.097	78.23	132.70
144	C_5H_6O	2-methylfuran	534-22-5	50-1000	3.952	5.535	9.252	−13.046	5.353	89.66	143.7
145	C_5H_8	1-pentyne	627-19-0	50-1000	3.382	31.688	0.790	−3.109	1.417	106.69	167.00
146	C_5H_8	cyclopentene	142-29-0	50-1000	4.555	−12.408	15.195	−19.676	7.900	*81.25*	122.4
147	C_5H_8O	cyclopentanone	120-92-3	50-1000	4.294	−1.236	13.080	−17.531	7.071	*95.32*	154.5
148	C_5H_{10}	cyclopentane	287-92-3	50-1000	5.019	−19.734	17.917	−21.696	8.215	82.76	126.80
149	C_5H_{10}	1-pentene	109-67-1	200-1000	5.079	11.919	7.838	−10.962	4.381	108.20	154.00
150	C_5H_{10}	cis-2-pentene	627-20-3	298-1000	2.901	31.785	1.842	−3.953	1.609	*108.87*	151.80
151	C_5H_{10}	2-methyl-2-butene	513-35-9	298-1000	1.240	39.303	0.270	−2.500	1.120	*105.00*	152.80
152	C_5H_{10}	3-methyl-1-butene	563-45-1	298-1000	2.108	41.912	−0.416	−1.937	0.954	115.00	156.10
153	$C_5H_{10}O$	cyclopentanol	96-41-3	50-1000	4.370	5.723	13.357	−18.752	7.733	*113.00*	184.5
154	$C_5H_{10}O$	2-pentanone (methyl propyl ketone)	107-87-9	200-1000	7.836	9.051	8.063	−10.847	4.283	125.90	184.30
155	$C_5H_{10}O$	3-pentanone (diethyl ketone)	96-22-0	200-1000	8.071	13.654	6.120	−8.337	3.253	129.87	191.00
156	$C_5H_{10}O$	3-methyl-2-butanone (methyl isopropyl ketone)	563-80-4							124.10	180.10
158	$C_5H_{10}O_2$	pentanoic acid	109-52-4								210.30
159	$C_5H_{10}O_2$	3-methylbutanoic acid	503-74-2								197.10
160	$C_5H_{10}O_2$	methyl butanoate	623-42-7							133.10	200.80
161	$C_5H_{10}O_2$	ethyl propanoate	105-37-3							131.90	197.60
162	$C_5H_{10}O_2$	methyl 2-methylpropanoate	547-63-7							132.00	191.00
163	$C_5H_{10}O_2$	propyl ethanoate (propyl acetate)	109-60-4							134.90	202.20
164	$C_5H_{10}O_2$	2-methylpropyl methanoate (isobutyl formate)	542-55-2							136.60	217.00
165	$C_5H_{11}Cl$	1-chloropentane	543-59-9	200-1000	7.052	9.759	10.210	−14.077	5.640	130.58	
166	C_5H_{12}	pentane	109-66-0	200-1000	7.554	−0.368	11.846	−14.939	5.753	120.04	167.19
167	C_5H_{12}	2-methylbutane	78-78-4	200-1000	1.959	38.191	2.434	−5.175	2.165	118.97	164.80
168	C_5H_{12}	2,2-dimethylpropane (neopentane)	463-82-1	200-1000	−11.428	156.037	−33.383	40.127	−17.806	120.80	172.00
169	$C_5H_{12}O$	1-pentanol	71-41-0	200-1000	5.530	16.887	9.430	−13.725	5.607	130.70	208.10
172	$C_5H_{12}O$	2-methyl-2-butanol	75-85-4	298-1000	4.282	27.248	6.649	−10.683	4.474	*131.69*	247.9
173	$C_5H_{12}O$	3-methyl-1-butanol	123-51-3								211.00
174	$C_5H_{12}O$	3-methyl-2-butanol	598-75-4								245.90
175	$C_5H_{12}O$	ethyl propyl ether	628-32-0							140.00	197.40

Section C Ideal Gas and Liquid Heat Capacities. C_p°/R = a0 + a1T + a2T^2 + a3T^3 + a4T^4.
CpIG and Cpliq at 298.15 K, J mol^{-1} K^{-1} (*Continued*)

No.	Formula	Name	CAS #	Trange, K	a0	a1 × 10^3	a2 × 10^5	a3 × 10^8	a4 × 10^{11}	CpIG	Cpliq
176	$C_5H_{12}S$	3-methyl-1-butanethiol (isopentyl mercaptan)	541-31-1							142.30	200.30
177	C_6Cl_5F	chloropentafluorobenzene	344-07-0	200-1000	2.994	74.969	−8.448	4.889	−1.177	*158.30*	
178	C_6F_6	hexafluorobenzene	392-56-3	200-1000	2.531	75.268	−8.410	4.845	−1.166	*155.38*	
180	C_6F_{14}	tetradecafluorohexane	355-42-0	200-1000	2.660	146.733	−18.179	11.086	−2.710	273.99	
184	C_6HF_5	pentafluorobenzene	363-72-4	200-1000	1.197	72.572	−7.369	3.676	−0.718	*143.02*	
185	$C_6H_2F_4$	1,2,4,5-tetrafluorobenzene	327-54-8	200-1000	0.007	69.341	−6.192	2.343	−0.202	*131.21*	
186	C_6H_5Cl	chlorobenzene	108-90-7	200-1000	0.104	38.288	1.808	−5.732	2.718	97.99	150.80
187	C_6H_6	benzene	71-43-2	50-1000	3.551	−6.184	14.365	−19.807	8.234	82.43	135.95
188	C_6H_6O	phenol	108-95-2	50-1000	2.582	17.501	8.894	−14.435	6.317	103.22	
189	C_6H_7N	benzeneamine (aniline)	62-53-3	50-1000	2.598	19.936	8.438	−13.368	5.630	107.90	191.90
190	C_6H_7N	2-methylpyridine (2-picoline)	109-06-8	50-1000	4.156	2.699	12.517	−17.424	7.163	100.17	158.40
191	C_6H_7N	3-methylpyridine (3-picoline)	108-99-6	50-1000	4.140	2.780	12.458	−17.328	7.118	99.99	158.70
192	C_6H_7N	4-methylpyridine (4-picoline)	1108-89-4	50-1000	3.904	4.296	12.062	−16.884	6.942	99.70	159.00
194	C_6H_{10}	cyclohexene	110-83-8	50-1000	3.874	−0.909	14.902	−19.907	8.011	*101.49*	
195	$C_6H_{10}O$	cyclohexanone	108-94-1	50-1000	4.416	−1.248	17.367	−23.640	9.595	*116.19*	
197	C_6H_{12}	cyclohexane	110-82-7	100-1000	4.035	−4.433	16.834	−20.775	7.746	106.10	156.20
198	C_6H_{12}	methylcyclopentane	96-37-7	50-1000	5.379	−8.258	17.293	−21.646	8.263	109.50	158.70
199	C_6H_{12}	1-hexene	592-41-6	200-1000	6.303	12.352	10.258	−14.272	5.708	130.83	183.30
200	C_6H_{12}	4-methylpent-1-ene	691-37-2	298-1000	−1.326	65.625	−3.560	0.514	0.176	*126.59*	
201	$C_6H_{12}O$	cyclohexanol	108-93-0	50-1000	3.239	21.585	10.322	−14.762	5.885	*128.06*	
202	$C_6H_{12}O$	2-hexanone (methyl butyl ketone)	591-78-6	200-1000	9.146	8.701	10.736	−14.496	5.768	148.53	213.40
203	$C_6H_{12}O$	3-hexanone (ethyl propyl ketone)	589-38-8	200-1000	9.357	13.505	8.735	−11.918	4.710	152.51	216.80
206	$C_6H_{12}O$	4-methyl-2-pentanone (methyl isobutyl ketone)	108-10-1							147.40	209.60
207	$C_6H_{12}O_2$	methyl pentanoate	624-24-8							155.80	229.30
208	$C_6H_{12}O_2$	ethyl butanoate	105-54-4							154.60	255.70
209	$C_6H_{12}O_2$	propyl propanoate	106-36-5							153.10	229.10
210	$C_6H_{12}O_2$	ethyl 2-methylpropanoate	97-62-1							154.00	222.00
211	$C_6H_{12}O_2$	butyl ethanoate (butyl acetate)	123-86-4							151.50	228.40
212	$C_6H_{12}O_2$	2-methylpropyl ethanoate (isobutyl acetate)	110-19-0							154.30	241.10

213	$C_6H_{12}O_2$	pentyl methanoate (pentyl formate)	638-49-3							156.20	243.00
214	$C_6H_{12}O_2$	3-methylbutyl methanoate (isopentyl formate)	110-45-2							155.80	241.30
216	C_6H_{14}	hexane	110-54-3	200-1000	8.831	−0.166	14.302	−18.314	7.124	142.59	195.43
217	C_6H_{14}	2-methylpentane	107-83-5	200-1000	2.096	46.419	3.124	−6.829	2.902	142.21	193.93
218	C_6H_{14}	3-methylpentane	96-14-0	200-1000	0.433	11.143	0.730	−1.612	0.690	140.10	190.66
219	C_6H_{14}	2,2-dimethylbutane	75-83-2	200-1000	3.007	39.059	4.851	−8.243	3.367	141.50	188.70
220	C_6H_{14}	2,3-dimethylbutane	79-29-8	200-1000	−2.214	74.352	−3.697	0.273	0.308	139.41	188.66
221	$C_6H_{14}O$	1-hexanol	111-27-3	200-1000	6.784	17.060	11.935	−17.147	6.985	153.30	232.50
223	$C_6H_{14}O$	3-hexanol	623-37-0								269.30
224	$C_6H_{14}O$	2-methyl-1-pentanol	105-30-6								249.20
229	$C_6H_{15}N$	*N*,*N*-diethylethanamine (triethyl amine)	121-44-8	298-1000	4.581	40.089	5.793	−10.032	4.193	161.00	
231	C_7F_16	hexadecafluoroheptane	335-57-9	200-1000	3.002	170.245	−21.365	13.301	−3.341	316.03	
232	$C_7H_3F_5$	pentafluorotoluene	771-56-2	298-1000	6.079	48.333	0.158	−3.861	1.948	164.30	
234	C_7H_8	toluene	108-88-3	50-1000	3.866	3.558	13.356	−18.659	7.690	103.75	157.29
235	C_7H_8O	2-methylphenol (o-cresol)	95-48-7	50-1000	3.123	31.032	6.152	−10.805	4.642	127.30	
236	C_7H_8O	3-methylphenol (m-cresol)	108-39-4	50-1000	2.876	26.142	8.544	−14.238	6.189	124.68	225.02
237	C_7H_8O	4-methylphenol (p-cresol)	106-44-5	50-1000	2.881	27.407	7.943	−13.423	5.843	124.97	
238	C_7H_9N	2,3-dimethylpyridine (2,3 lutidine)	583-61-9							129.74	189.30
239	C_7H_9N	2,3-dimethylpyridine (2,3 lutidine)	108-47-4	50-1000	4.225	13.393	11.364	−16.169	6.585	120.97	186.00
240	C_7H_9N	2,4-dimethylpyridine (2,4 lutidine)	589-93-5	50-1000	4.247	13.487	11.535	−16.564	6.803	122.01	183.40
241	C_7H_9N	2,5-dimethylpyridine (2,5 lutidine)	108-48-5	50-1000	4.183	14.253	11.226	−16.133	6.610	121.86	184.30
242	C_7H_9N	2,6-dimethylpyridine (2,6 lutidine)	583-58-4	50-1000	3.413	31.807	5.284	−8.851	3.610	128.75	189.60
243	C_7H_9N	3,4-dimethylpyridine (3,4 lutidine)	591-22-0	50-1000	4.135	15.216	10.792	−15.509	6.324	121.78	186.30
244	C_7H_{14}	3,5-dimethylpyridine (3,5 lutidine)	291-64-5	50-1000	3.995	5.299	17.971	−24.179	9.665	132.01	200.00
247	C_7H_{14}	methylcyclohexane	108-87-2	50-1000	3.148	18.438	13.624	−18.793	7.364	135.80	184.50
248	C_7H_{14}	ethylcyclopentane	1640-89-7	50-1000	5.847	−0.048	17.507	−22.495	8.656	133.60	186.60
249	C_7H_{14}	cis-1,3-dimethylcyclopentane	2532-58-3	298-1000	−2.522	60.538	2.703	−7.572	3.361	134.50	190.00
250	C_7H_{14}	trans-1,3-dimethylcyclopentane	1759-58-6	298-1000	−2.522	60.538	2.703	−7.572	3.361	134.50	190.90
251	C_7H_{14}	1-heptene	592-76-7	200-1000	7.520	12.824	12.670	−17.578	7.035	153.46	211.8
253	$C_7H_{14}O_2$	ethyl pentanoate	539-82-2							177.30	257.50
254	$C_7H_{14}O_2$	ethyl 3-methylbutanoate	108-64-5							176.00	253.00
255	$C_7H_{14}O_2$	propyl butanoate	105-66-8							175.80	257.20

Section C Ideal Gas and Liquid Heat Capacities. C_p°/R = a0 + a1T + a2T^2 + a3T^3 + a4T^4.
CpIG and Cpliq at 298.15 K, J mol^{-1} K^{-1} (*Continued*)

No.	Formula	Name	CAS #	Trange, K	a0	a1 × 10^3	a2 × 10^5	a3 × 10^8	a4 × 10^{11}	CpIG	Cpliq
256	$C_7H_{14}O_2$	2-methylpropyl propanoate	540-42-1							179.50	268.00
257	$C_7H_{14}O_2$	propyl 2-methylpropanoate	644-49-5							175.00	254.00
258	$C_7H_{14}O_2$	3-methylbutyl ethanoate (isopentyl acetate)	123-92-2							173.50	265.40
259	C_7H_{16}	heptane	142-82-5	200-1000	9.634	4.156	15.494	−20.066	7.770	165.20	224.98
260	C_7H_{16}	2-methylhexane	591-76-4	200-1000	3.452	46.373	5.446	−9.875	4.089	164.50	222.97
261	C_7H_{16}	3-methylhexane	589-34-4							163.60	221.25
262	C_7H_{16}	3-ethylpentane	617-78-7	200-1000	7.598	19.547	11.641	−16.107	6.378	166.00	219.58
263	C_7H_{16}	2,2-dimethylpentane	590-35-2	200-1000	1.315	60.462	2.813	−7.620	3.434	166.70	221.20
264	C_7H_{16}	2,3-dimethylpentane	565-59-3	200-1000	−4.314	96.708	−6.454	2.227	−0.313	160.83	218.28
265	C_7H_{16}	2,4-dimethylpentane	108-08-7	200-1000	−3.133	97.923	−6.912	2.424	−0.250	170.75	224.22
266	C_7H_{16}	3,3-dimethylpentane	562-49-2	200-1000	−0.480	73.415	−0.740	−3.562	1.822	165.80	214.76
267	C_7H_{16}	2,2,3-trimethylbutane	464-06-2	200-1000	−0.711	73.562	−1.007	−3.018	1.583	163.30	213.51
268	$C_7H_{16}O$	1-heptanol	111-70-6	200-1000	7.935	18.023	14.223	−20.320	8.262	175.90	270.60
270	$C_7H_{16}O$	4-heptanol	589-55-9								317.60
271	C_8F_{18}	octadecafluorooctane	307-34-6	200-1000	3.352	193.679	−24.528	15.491	−3.962	358.07	429
273	C_8H_{10}	ethylbenzene	100-41-4	50-1000	4.544	10.578	13.644	−19.276	7.885	*127.40*	185.96
274	C_8H_{10}	1,2-dimethylbenzene (o-xylene)	95-47-6	50-1000	3.289	34.144	4.989	−8.335	3.338	132.31	188.07
275	C_8H_{10}	1,3-dimethylbenzene (m-xylene)	108-38-3	50-1000	4.002	17.537	10.590	−15.037	6.008	125.71	188.44
276	C_8H_{10}	1,4-dimethylbenzene (p-xylene)	106-42-3	50-1000	4.113	14.909	11.810	−16.724	6.736	126.02	181.66
277	$C_8H_{10}O$	2-ethylphenol	90-00-6	298-1000	−2.392	82.472	−4.476	−0.434	0.890	151.16	
278	$C_8H_{10}O$	3-ethylphenol	620-17-7	298-1000	−4.029	90.167	−5.877	0.702	0.546	148.54	
279	$C_8H_{10}O$	4-ethyl-phenol	123-07-9	298-1000	−3.628	88.368	−5.660	0.616	0.548	148.83	
280	$C_8H_{10}O$	2,3-dimethylphenol (2,3 xylenol)	526-75-0							164.10	
281	$C_8H_{10}O$	2,4-dimethylphenol (2,4 xylenol)	105-67-9	50-1000	3.752	41.738	5.814	−11.112	4.855	156.10	
282	$C_8H_{10}O$	2,5-dimethylphenol (2,5 xylenol)	95-87-4	50-1000	3.008	50.507	2.960	−7.548	3.351	157.09	
283	$C_8H_{10}O$	2,6-dimethylphenol (2,6 xylenol)	576-26-1	50-1000	2.604	51.990	2.683	−7.380	3.340	155.97	
284	$C_8H_{10}O$	3,4-dimethylphenol (3,4 xylenol)	95-65-8	50-1000	1.407	67.846	−1.345	−3.401	1.952	163.52	
285	$C_8H_{10}O$	3,5-dimethylphenol (3,5 xylenol)	108-68-9	50-1000	2.869	43.266	5.901	−11.468	5.053	152.70	
286	C_8H_{16}	cyclooctane	292-64-8	50-1000	4.236	13.119	16.313	−21.072	7.987	146.19	215.50
287	C_8H_{16}	*t*-1,4-dimethylcyclohexane	2207-04-7	50-1000	3.902	20.058	15.345	−20.707	7.974	*155.19*	210.3
288	C_8H_{16}	1-octene	111-66-0	200-1000	8.745	13.240	15.096	−20.895	8.366	176.10	241.40
289	$C_8H_{16}O_2$	octanoic acid	124-07-02								298

296	C_8H_{18}	octane	111-65-9	200-1000	10.824	4.983	17.751	−23.137	8.980	187.78	254.15
297	C_8H_{18}	2-methylheptane	592-27-8	200-1000	5.257	41.188	9.739	−15.692	6.570	187.23	251.99
298	C_8H_{18}	3-methylheptane	589-81-1							185.80	250.20
299	C_8H_{18}	4-methylheptane	589-53-7	200-1000	2.182	62.828	4.419	−10.021	4.358	187.02	251.08
300	C_8H_{18}	3-ethylhexane	619-99-8	200-1000	7.178	33.720	10.365	−15.312	6.088	189.62	250.29
301	C_8H_{18}	2,2-dimethylhexane	590-73-8	200-1000	3.452	55.222	6.066	−11.271	4.732	188.30	249.20
302	C_8H_{18}	2,3-dimethylhexane	584-94-1	200-1000	−3.594	100.983	−4.880	−0.342	0.789	184.10	248.78
303	C_8H_{18}	2,4-dimethylhexane	589-43-5	200-1000	−3.372	108.645	−7.267	2.176	−0.103	192.30	250.08
304	C_8H_{18}	2,5-dimethylhexane	592-13-2	200-1000	−1.367	87.285	−1.799	−3.343	1.857	185.48	249.20
305	C_8H_{18}	3,3-dimethylhexane	563-16-6	200-1000	−2.093	94.480	−2.808	−2.811	1.816	190.87	246.60
306	C_8H_{18}	3,4-dimethylhexane	583-48-2	200-1000	−6.148	116.522	−8.351	2.961	−0.344	182.34	246.90
307	C_8H_{18}	3-ethyl-2-methylpentane	609-26-7	200-1000	−0.873	95.193	−5.319	1.180	0.000	192.05	248.91
308	C_8H_{18}	3-ethyl-3-methylpentane	1067-08-9	200-1000	−1.350	88.584	−1.961	−3.139	1.789	187.99	245.89
309	C_8H_{18}	2,2,3-trimethylpentane	564-02-3	200-1000	−4.490	108.022	−6.486	1.441	0.142	185.64	245.39
310	C_8H_{18}	2,2,4-trimethylpentane (isooctane)	540-84-1	200-1000	0.384	77.059	0.665	−5.565	2.619	188.41	238.55
311	C_8H_{18}	2,3,3-trimethylpentane	560-21-4	200-1000	−5.726	117.939	−8.940	4.012	−0.816	187.02	245.56
312	C_8H_{18}	2,3,4-trimethylpentane	565-75-3							191.59	248.61
313	C_8H_{18}	2,2,3,3-tetramethylbutane	594-82-1	200-1000	0.768	72.950	1.659	−6.322	2.886	187.19	279.10
314	$C_8H_{18}O$	1-octanol	111-87-5	200-1000	9.193	18.228	16.682	−23.641	9.580	198.60	302.40
316	$C_8H_{18}O$	3-octanol	589-98-0								338.50
317	$C_8H_{18}O$	4-octanol	589-62-8								337.60
321	C_9F_{20}	eicosafluorononane	375-96-2	200-1000	3.697	217.163	−27.706	17.697	−4.589	400.11	
322	C_9H_7N	quinoline	91-22-5								194.90
324	C_9H_{10}	indan	496-11-7								190.30
325	C_9H_{12}	propylbenzene	103-65-1	50-1000	4.759	23.956	11.859	−17.393	7.064	152.30	214.71
326	C_9H_{12}	1-methylethylbenzene (cumene)	98-82-8	50-1000	2.985	34.196	11.938	−20.152	8.923	159.69	213.30
327	C_9H_{12}	1-ethyl-4-methylbenzene	622-96-8	50-1000	5.097	17.385	13.600	−19.299	7.817	148.25	210.30
328	C_9H_{12}	1,2,3-trimethylbenzene	526-73-8	50-1000	4.042	31.152	10.185	−16.262	6.922	155.07	216.10
329	C_9H_{12}	1,2,4-trimethylbenzene	95-63-6	50-1000	5.319	20.074	12.034	−16.873	6.687	149.71	215.00
330	C_9H_{12}	1,3,5-trimethylbenzene (mesitylene)	108-67-8	50-1000	5.305	20.039	11.606	−16.317	6.503	147.63	209.10
331	C_9H_{18}	1-nonene	124-11-8	200-1000	9.963	13.704	17.511	−24.203	9.694	198.74	271.20
333	$C_9H_{18}O_2$	3-methylbutyl butanoate	106-27-4							221.40	320.40
334	C_9H_{20}	nonane	111-84-2	200-1000	12.152	4.575	20.416	−26.777	10.465	210.41	284.45
335	C_9H_{20}	2-methyloctane	3221-61-2	200-1000	5.914	47.039	10.387	−16.686	6.852	212.05	271.50
336	C_9H_{20}	2,2-dimethylheptane	1071-26-7							211.30	283.40
337	C_9H_{20}	2,2,5-trimethylhexane	3522-94-9	200-1000	−0.880	92.152	−0.423	−5.261	2.601	*208.11*	
338	C_9H_{20}	2,2,3,3-tetramethylpentane	7154-79-2	200-1000	−6.019	131.511	−9.916	4.520	−0.934	209.80	284.20

Section C Ideal Gas and Liquid Heat Capacities. C_p°/R = a0 + a1T + a2T^2 + a3T^3 + a4T^4.
CpIG and Cpliq at 298.15 K, J mol^{-1} K^{-1} (*Continued*)

No.	Formula	Name	CAS #	Trange, K	a0	a1 × 10^3	a2 × 10^5	a3 × 10^8	a4 × 10^{11}	CpIG	Cpliq
339	C_9H_{20}	2,2,3,4-tetramethylpentane	1186-53-4	200-1000	−5.422	123.507	−8.031	2.590	−0.261	207.30	252.70
340	C_9H_{20}	2,2,4,4-tetramethylpentane	1070-87-7	200-1000	3.621	67.875	4.875	−10.109	4.292	*214.94*	
341	C_9H_{20}	2,3,3,4-tetramethylpentane	16747-38-9	200-1000	−9.189	161.921	−17.927	12.689	−3.869	218.30	275.70
342	$C_9H_{20}O$	1-nonanol	143-08-8	200-1000	10.350	19.105	19.007	−26.878	10.891	221.20	334.20
344	$C_{10}F_{22}$	docosafluorodecane	307-45-9	200-1000	4.042	240.657	−30.888	19.907	−5.219	442.15	
345	$C_{10}H_8$	naphthalene	91-20-3	50-1000	2.889	14.306	15.978	−23.930	10.173	132.55	
351	$C_{10}H_{14}$	butylbenzene	104-51-8	200-1000	6.490	19.080	15.665	−22.059	8.887	173.86	243.39
352	$C_{10}H_{14}$	2-methylpropylbenzene (isobutylbenzene)	538-93-2							173.90	241.00
353	$C_{10}H_{14}$	1,4-diethylbenzene	105-05-5	298-1000	−0.359	75.371	0.442	−5.736	2.783	176.15	239.10
354	$C_{10}H_{14}$	1-(1-methylethyl)-4-methylbenzene (*p*-cymene)	99-87-6							173.70	237.70
355	$C_{10}H_{14}$	1,2,4,5-tetramethylbenzene	95-93-2	298-1000	3.352	67.376	0.527	−4.883	2.290	186.50	
356	$C_{10}H_{18}$	cis-bicyclo[4.4.0]decane (cis-decalin)	493-01-6	298-1000	−5.445	80.068	5.065	−11.756	5.088	168.10	232.00
357	$C_{10}H_{18}$	trans-bicyclo[4.4.0]decane (trans-decalin)	493-02-7	298-1000	−2.155	53.852	12.610	−20.981	9.066	168.60	228.50
358	$C_{10}H_{20}$	1-decene	872-05-9	200-1000	11.175	14.222	19.908	−27.488	11.012	*221.97*	300.3
360	$C_{10}H_{22}$	decane	124-18-5	200-1000	13.467	4.139	23.127	−30.477	11.970	233.05	314.54
361	$C_{10}H_{22}$	2,2,5-trimethylheptane	20291-95-6	200-1000	−0.961	100.294	0.237	−6.883	3.357	229.20	306.40
362	$C_{10}H_{22}$	3,3,5-trimethylheptane	7154-80-5	200-1000	−2.999	118.108	−4.182	−2.362	1.717	232.80	295.30
363	$C_{10}H_{22}$	2,2,3,3-tetramethylhexane	13475-81-5	200-1000	−7.678	153.766	−12.616	6.171	−1.323	*236.82*	
364	$C_{10}H_{22}$	2,2,5,5-tetramethylhexane	1071-81-4	200-1000	0.8	87.376	3.168	−9.35	4.141	*228.78*	
365	$C_{10}H_{22}O$	1-decanol	112-30-1	200-1000	11.637	19.130	21.517	−30.271	12.247	243.80	366.00
367	$C_{11}H_{10}$	1-methylnaphthalene	90-12-0	298-1000	−5.637	98.625	−4.956	−1.033	1.281	159.30	224.40
368	$C_{11}H_{10}$	2-methylnaphthalene	91-57-6	298-1000	−4.671	93.882	−4.334	−1.331	1.317	154.60	
369	$C_{11}H_{24}$	undecane	1120-21-4							255.69	345.05
370	$C_{11}H_{24}O$	1-undecanol	112-42-5	200-1000	12.923	18.973	24.124	−33.816	13.675	*267.24*	
371	$C_{12}H_{10}$	1,1′-biphenyl	92-52-4	200-1000	−0.843	61.392	6.352	−13.754	6.169	165.28	250.95
372	$C_{12}H_{12}$	1,6-dimethylnaphthalene	575-43-9	298-1000	−4.332	103.947	−4.556	−1.769	1.571	185.10	
373	$C_{12}H_{12}$	2,7-dimethylnaphthalene	582-16-1	298-1000	−3.288	101.288	−4.748	−1.079	1.219	*187.08*	
374	$C_{12}H_{18}$	1,3,5-triethylbenzene	102-25-0	298-1000	1.319	87.791	1.406	−7.682	3.595	*224.42*	

376	$C_{12}H_{24}$	1-dodecene	112-41-4	200-1000	13.617	15.108	24.747	−34.111	13.669	*267.38*	360.70
377	$C_{12}H_{26}$	dodecane	112-40-3	200-1000	17.229	−7.242	31.922	−42.322	17.022	278.33	375.47
378	$C_{12}H_{26}O$	1-dodecanol	112-53-8	200-1000	14.073	19.938	26.412	−36.989	14.951	*289.95*	
379	$C_{13}H_{12}$	diphenylmethane	101-81-5								266.10
380	$C_{13}H_{28}$	tridecane	629-50-5	200-1000	18.546	−7.636	34.604	−45.978	18.509	300.97	406.89
382	$C_{14}H_{10}$	phenanthrene	85-01-8	50-1000	2.374	38.372	16.471	−26.813	11.640	*185.16*	
383	$C_{14}H_{10}$	anthracene	120-12-7	50-1000	2.577	31.826	18.811	−29.722	12.840	*182.29*	
385	$C_{14}H_{30}$	tetradecane	629-59-4	200-1000	18.375	6.585	32.307	−42.663	16.590	323.61	438.48
387	$C_{15}H_{32}$	pentadecane	629-62-9	200-1000	21.180	−8.424	39.969	−53.290	21.482	346.25	469.95
389	$C_{16}H_{34}$	hexadecane	544-76-3	200-1000	39.747	−206.152	114.814	−155.548	67.534	368.89	501.45
392	$C_{17}H_{36}$	heptadecane	629-78-7	200-1000	23.813	−9.210	45.333	−60.601	24.455	391.53	534.34
397	$C_{18}H_{38}$	octadecane	593-45-3	200-1000	25.130	−9.603	48.015	−64.256	25.942	414.17	564.45
399	$C_{19}H_{40}$	nonadecane	629-92-5	200-1000	26.447	−9.998	50.697	−67.912	27.428	436.81	595.94
401	$C_{20}H_{42}$	eicosane	112-95-8	200-1000	27.764	−10.389	53.379	−71.567	28.914	459.45	627.45
407	ClD	deuterium chloride	7698-05-7	50-1000	3.917	−3.965	1.205	−1.323	0.521	29.17	
408	$ClFO_3$	perchloryl fluoride	7616-94-6	298-1000	0.470	36.338	−4.796	3.147	−0.83	*64.93*	
410	ClH	hydrogen chloride	7647-01-0	50-1000	3.827	−2.936	0.879	−1.031	0.439	29.17	
413	Cl_2	chlorine	7782-50-5	50-1000	3.0560	5.3708	−0.8098	0.5693	−0.15256	29.14	
414	DH	deuterium hydride	13983-20-5	50-1000	3.893	−3.508	1.083	−1.337	0.580	29.20	
415	DI	deuterium iodide	14104-45-1	50-1000	3.741	−2.862	1.000	−1.051	0.382	29.36	
416	D_2	deuterium	7782-39-0	50-1000	3.590	−0.462	0.057	0.036	−0.026	29.19	
417	D_2	deuterium, normal	800000-54-8							29.20	
418	D_2O	deuterium oxide	7789-20-0	50-1000	4.274	−3.465	1.376	−1.482	0.568	34.26	84.35
419	D_2S	deuterium sulfide	13536-94-2	50-1000	4.290	−3.944	1.974	−2.268	0.872	36.13	
420	D_3N	trideuteroammonia	13550-49-7	50-1000	4.090	−3.243	2.367	−0.264	0.961	38.23	
422	FH	hydrogen fluoride	7664-39-3	50-1000	3.901	−3.708	1.165	−1.465	0.639	29.14	52.00
423	FNO_2	nitrogen dioxyfluoride	10022-50-1	298-1000	1.620	20.883	−2.512	1.586	−0.420	*49.89*	
424	F_2	Fluorine	7782-41-4	50-1000	3.347	0.467	0.526	−0.794	0.330	31.30	
428	F_2O	oxygen difluoride	7783-41-7	50-1000	3.437	5.527	0.502	−1.453	0.735	43.31	
433	F_4S	sulfur tetrafluoride	7783-60-0	298-1000	−0.808	51.235	−8.251	6.335	−1.887	*72.03*	
437	HI	hydrogen iodide	10034-85-2	50-1000	3.648	−1.392	0.389	−0.326	0.110	29.16	
438	H_2	hydrogen	1333-74-0	50-1000	2.883	3.681	−0.772	0.692	−0.213	28.84	
439	H_2	hydrogen, normal	800000-51-5							28.83	
440	H_2O	water	7732-18-5	50-1000	4.395	−4.186	1.405	−1.564	0.632	33.58	75.29
441	H_2S	hydrogen sulfide	7783-06-4	50-1000	4.266	−3.438	1.319	−1.331	0.488	34.12	74.68

Section C Ideal Gas and Liquid Heat Capacities. C_p°/R = a0 + a1T + a2T^2 + a3T^3 + a4T^4. CpIG and Cpliq at 298.15 K, J mol^{-1} K^{-1} (*Continued*)

No.	Formula	Name	CAS #	Trange, K	a0	a1 × 10^3	a2 × 10^5	a3 × 10^8	a4 × 10^{11}	CpIG	Cpliq
442	H_2S_2	dihydrogen disulfide	13465-07-1	50-1000	3.364	8.093	0.636	−1.991	1.048	49.21	92.74
443	H_2S_3	dihydrogen trisulfide	13845-23-3								123.42
444	H_2S_4	dihydrogen tetrasulfide	13845-25-5								154.10
445	H_2S_5	dihydrogen pentasulfide	13845-24-4								184.78
447	H_3N	ammonia	7664-41-7	50-1000	4.238	−4.215	2.041	−2.126	0.761	35.65	83
449	H_4N_2	hydrazine	302-01-2	50-1000	3.627	2.239	2.876	−4.060	1.690	49.12	96.8
450	He	helium	9440-59-7	—	2.500	0.000	0.000	0.000	0.000	*20.79*	
451	He	helium-3	14762-55-1	—	2.500	0.000	0.000	0.000	0.000	*20.79*	
452	I2	iodine	7553-56-2	50-1000	3.508	6.303	−1.461	1.470	−0.531	*36.88*	
453	Kr	krypton	7439-90-9	—	2.500	0.000	0.000	0.000	0.000	*20.79*	
454	NO	nitrogen monoxide (nitric oxide)	10102-43-9	50-1000	4.534	−7.644	2.066	−2.156	0.806	29.87	
455	N_2	nitrogen	7727-37-9	50-1000	3.539	−0.261	0.007	0.157	−0.099	29.12	
456	N_2O	dinitrogen oxide (nitrous oxide)	10024-97-2	50-1000	3.165	3.401	0.989	−1.880	0.890	38.64	
457	N_2O_4	dinitrogen tetroxide (nitrogen dioxide)	10544-72-6	50-1000	3.374	27.257	−1.917	−0.616	0.859	81.07	142.2
458	Ne	neon	7440-01-9	—	2.500	0.000	0.000	0.000	0.000	*20.79*	
459	OT_2	tritium oxide	14940-65-9							34.96	
460	O_2	oxygen	7782-44-7	50-1000	3.630	−1.794	0.658	−0.601	0.179	29.38	
461	O_2S	sulfur dioxide	7446-09-5	50-1000	4.417	−2.234	2.344	−3.271	1.393	40.05	
462	O_3	ozone	10028-15-6	50-1000	4.106	−3.809	3.131	−4.300	1.813	39.60	
463	O_3S	sulfur trioxide	7446-11-9	50-1000	3.426	6.479	1.691	−3.356	1.590	50.86	226.8
464	Rn	radon	10043-92-2	—	2.500	0.000	0.000	0.000	0.000	*20.79*	
465	S	sulfur	7704-34-9	50-1000	2.803	−0.036	0.143	−0.435	0.268	23.67	
467	T_2	tritium	10028-17-8							29.20	
468	Xe	xenon	7440-63-3	—	2.500	0.000	0.000	0.000	0.000	*20.79*	