TABLE 2-156 Heat Capacity at Constant Pressure of Inorganic and Organic Compounds in the Ideal Gas State Fit to Hyperbolic Functions C_p [J/(kmol·K)]

Cmpd. no.	Name	Formula	CAS no.	Mol. wt.	C1 × 1E-05	C2 × 1E-05	C3 × 1E-03	C4 × 1E-05	C5	T_{min}, K	C_p at T_{min} × 1E-05	T_{max}, K	C_p at T_{max} × 1E-05
1	Acetaldehyde	C_2H_4O	75-07-0	44.053	0.4451	1.0687	1.6141	0.6135	737.8	200	0.4660	1500	1.2994
2	Acetamide	C_2H_5NO	60-35-5	59.067	0.342	1.294	1.075	0.64	502	100	0.3448	1500	1.4997
3	Acetic acid	$C_2H_4O_2$	64-19-7	60.052	0.402	1.3675	1.262	0.7003	569.7	50	0.4020	1500	1.5756
4	Acetic anhydride	$C_4H_6O_3$	108-24-7	102.089	0.713	2.222	1.6203	1.676	746.5	200	0.7665	1500	2.5675
5	Acetone	C_3H_6O	67-64-1	58.079	0.5704	1.632	1.607	0.968	731.5	200	0.6049	1500	1.8820
6	Acetonitrile	C_2H_3N	75-05-8	41.052	0.41914	0.8876	1.5818	0.5032	699.8	100	0.4192	1500	1.1285
7	Acetylene	C_2H_2	74-86-2	26.037	0.3199	0.5424	1.594	0.4325	607.1	200	0.3566	1500	0.7575
8	Acrolein	C_3H_4O	107-02-8	56.063	0.48449	1.2546	1.3979	0.87243	633.26	200	0.5467	1500	1.5620
9	Acrylic acid	$C_3H_4O_2$	79-10-7	72.063	0.6059	1.3703	1.6475	1.0446	751.49	250	0.6984	1500	1.7424
10	Acrylonitrile	C_3H_3N	107-13-1	53.063	0.4678	1.0366	1.3998	0.6536	629.35	200	0.5156	1500	1.3464
11	Air	Mixture	132259-10-0	28.960	0.28958	0.0939	3.012	0.0758	1484	50	0.2896	1500	0.3496
12	Ammonia	H_3N	7664-41-7	17.031	0.33427	0.4898	2.036	0.2256	882	100	0.3343	1500	0.6647
13	Anisole	C_7H_8O	100-66-3	108.138	0.7637	2.9377	1.6051	2.17	751.2	300	1.1302	1200	3.0226
15	Benzamide	C_7H_7NO	55-21-0	121.137	1.9581	1.7019	1.3257	–37.417	41.232	298.15	1.2745	1500	3.2501
16	Benzene	C_6H_6	71-43-2	78.112	0.44767	2.3085	1.4792	1.6836	677.66	200	0.5358	1500	2.4157
17	Benzenethiol	C_6H_6S	108-98-5	110.177	0.6895	2.3275	1.512	1.7516	697.9	200	0.7689	1500	2.6739
18	Benzoic acid	$C_7H_6O_2$	65-85-0	122.121	0.77594	2.6455	1.7925	2.2382	835.9	200	0.8126	1500	2.9712
19	Benzonitrile	C_7H_5N	100-47-0	103.121	0.7186	2.27	1.4669	1.693	680.77	200	0.8053	1500	2.6706
20	Benzophenone	$C_{13}H_{10}O$	119-61-9	182.218	1.0099	4.4898	1.311	2.8395	627.4	300	1.8001	1500	4.9311
21	Benzyl alcohol	C_9H_8O	100-51-6	108.138	0.84115	3.1428	1.9539	2.5743	850.06	298.15	1.1198	1500	3.2880
22	Benzyl ethyl ether	$C_9H_{12}O$	539-30-0	136.191	0.9521	2.8868	0.70207	1.6385	2002.6	300	1.5501	1500	4.3445
23	Benzyl mercaptan	C_7H_8S	100-53-8	124.203	0.99192	2.9633	1.5583	2.2116	719.16	300	1.4156	1200	3.2957
24	Biphenyl	$C_{12}H_{10}$	92-52-4	154.208	1.0759	4.2105	1.9041	4.1785	828.81	200	1.1481	1500	4.5557
25	Bromine	Br_2	7726-95-6	159.808	0.30113	0.08009	0.7514	0.1078	314.6	100	0.3090	1500	0.3794
26	Bromobenzene	C_6H_5Br	108-86-1	157.008	0.721	2.064	1.6504	1.687	765.3	200	0.7679	1500	2.4628
27	Bromoethane	C_2H_5Br	74-96-4	108.965	0.47191	1.2787	1.5957	0.85166	703.87	200	0.5089	1500	1.5121
28	Bromomethane	CH_3Br	74-83-9	94.939	0.3377	0.715	1.578	0.4175	691.4	100	0.3378	1500	0.9107
29	1,2-Butadiene	C_4H_6	590-19-2	54.090	0.575	1.6476	1.527	0.99	677.3	200	0.6269	1500	1.9202
30	1,3-Butadiene	C_4H_6	106-99-0	54.090	0.5095	1.705	1.5324	1.337	685.6	200	0.5756	1500	1.9555
31	Butane	C_4H_{10}	106-97-8	58.122	0.7134	2.43	1.63	1.5033	730.42	200	0.7673	1500	2.6602
32	1,2-Butanediol	$C_4H_{10}O_2$	584-03-2	90.121	1.0478	2.549	1.8776	1.875	833	298.15	1.2667	1500.1	3.0289
33	1,3-Butanediol	$C_4H_{10}O_2$	107-88-0	90.121	1.066	2.575	1.967	1.951	860.5	298.15	1.2679	1500.15	3.0311
34	1-Butanol	$C_4H_{10}O$	71-36-3	74.122	0.7454	2.5907	1.6073	1.732	712.4	200	0.8162	1500	2.8509
35	2-Butanol	$C_4H_{10}O$	78-92-2	74.122	0.90878	2.5508	1.893	1.852	832.13	298.15	1.1257	1500	2.8730
36	1-Butene	C_4H_8	106-98-9	56.106	0.64257	2.0618	1.6768	1.3324	757.06	250	0.7571	1500	2.2898
37	*cis*-2-Butene	C_4H_8	590-18-1	56.106	0.5765	2.115	1.6299	1.2872	739.1	200	0.6199	1500	2.2715
38	*trans*-2-Butene	C_4H_8	624-64-6	56.106	0.6592	2.07	1.6733	1.251	742.2	200	0.7004	1500	2.2904
39	Butyl acetate	$C_6H_{12}O_2$	123-86-4	116.158	1.1684	3.769	1.956	2.818	811.2	300	1.5358	1200	3.6724
40	Butylbenzene	$C_{10}H_{14}$	104-51-8	134.218	1.138	4.454	1.5507	3.0497	708.86	200	1.2659	1500	4.8435
41	Butyl mercaptan	$C_4H_{10}S$	109-79-5	90.187	0.92478	2.7795	1.6837	1.5974	758.68	200	0.9714	1500	3.1008
42	*sec*-Butyl mercaptan	$C_4H_{10}S$	513-53-1	90.187	0.92367	2.5166	1.6109	1.5641	739.2	200	0.9763	1500	2.9615
43	1-Butyne	C_4H_6	107-00-6	54.090	0.5587	1.6694	1.5328	1.07	656	200	0.6238	1500	1.9209
44	Butyraldehyde	C_4H_8O	123-72-8	72.106	0.89657	2.3731	1.9754	1.5866	904.13	200	0.9119	1500	2.6775
45	Butyric acid	$C_4H_8O_2$	107-92-6	88.105	1.488	1.3522	1.146	–678	6.98	298.15	1.1533	1500	2.5905
46	Butyronitrile	C_4H_7N	109-74-0	69.105	0.6906	1.9996	1.5494	1.3146	675	200	0.7607	1500	2.3273
47	Carbon dioxide	CO_2	124-38-9	44.010	0.2937	0.3454	1.428	0.264	588	50	0.2937	5000	0.6335
48	Carbon disulfide	CS_2	75-15-0	76.141	0.301	0.3338	0.896	0.2893	374.7	100	0.3100	1500	0.6148
49	Carbon monoxide	CO	630-08-0	28.010	0.29108	0.08773	3.0851	0.084553	1538.2	60	0.2911	1500	0.3521
50	Carbon tetrachloride	CCl_4	56-23-5	153.823	0.37582	0.7054	0.5121	0.485	236.1	100	0.4730	1500	1.0662
51	Carbon tetrafluoride	CF_4	75-73-0	88.004	0.92004	0.16446	1.0764	–5083.8	2.3486	298	0.6106	1500	1.0465
52	Chlorine	Cl_2	7782-50-5	70.906	0.29142	0.09176	0.949	0.1003	425	50	0.2914	1500	0.3793
53	Chlorobenzene	C_6H_5Cl	108-90-7	112.557	0.8011	2.31	2.157	2.046	897.6	200	0.8219	1500	2.5327
54	Chloroethane	C_2H_5Cl	75-00-3	64.514	0.4568	1.2967	1.5992	0.859	708.8	100	0.4569	1500	1.5112
55	Chloroform	$CHCl_3$	67-66-3	119.378	0.3942	0.6573	0.928	0.493	399.6	100	0.4048	1500	1.0063
56	Chloromethane	CH_3Cl	74-87-3	50.488	0.3409	0.7246	1.723	0.448	780.5	150	0.3424	1500	0.9097
57	1-Chloropropane	C_3H_7Cl	540-54-5	78.541	0.621	1.843	1.629	1.2337	724	200	0.6674	1500	2.1126
58	2-Chloropropane	C_3H_7Cl	75-29-6	78.541	0.61809	1.8023	1.5438	1.1893	685.93	200	0.6768	1500	2.1023
59	*m*-Cresol	C_7H_8O	108-39-4	108.138	0.7515	2.09	0.6666	1.212	2214	200	0.8701	1500	3.2075
60	*o*-Cresol	C_7H_8O	95-48-7	108.138	0.7988	2.853	1.4765	2.042	664.7	200	0.9158	1500	3.2163

61	*p*-Cresol	C_7H_8O	106-44-5	108.138	0.7384	2.908	1.4559	2.091	650.42	200	0.8707	1500	3.2102
62	Cumene	C_9H_{12}	98-82-8	120.192	1.081	3.7932	1.7505	3.0027	794.8	200	1.1480	1500	4.1808
63	Cyanogen	C_2N_2	460-19-5	52.035	0.3545	0.5015	1.057	0.452	396	100	0.3648	1500	0.8100
64	Cyclobutane	C_4H_8	287-23-0	56.106	0.44004	2.3074	1.6283	1.5571	744.9	200	0.4903	1500	2.3234
65	Cyclohexane	C_6H_{12}	110-82-7	84.159	0.432	3.735	1.192	1.635	530.1	100	0.4366	1500	3.6516
66	Cyclohexanol	$C_6H_{12}O$	108-93-0	100.159	0.9043	2.5771	0.7882	1.3068	1952.2	200	0.9648	1500	3.8251
67	Cyclohexanone	$C_6H_{10}O$	108-94-1	98.143	0.67384	3.2598	1.3955	2.0209	677.33	200	0.7802	1500	3.4743
68	Cyclohexene	C_6H_{10}	110-83-8	82.144	0.58171	3.1717	1.5435	2.1273	701.62	150	0.5978	1500	3.2132
69	Cyclopentane	C_5H_{10}	287-92-3	70.133	0.416	3.014	1.4617	1.8095	668.8	100	0.4165	1500	2.9298
70	Cyclopentene	C_5H_8	142-29-0	68.117	0.48074	2.5159	1.5803	1.7454	718.37	150	0.4918	1500	2.5619
71	Cyclopropane	C_3H_6	75-19-4	42.080	0.338	1.6894	1.6135	1.1768	722.8	100	0.3381	1500	1.7213
72	Cyclohexyl mercaptan	$C_6H_{12}S$	1569-69-3	116.224	0.54305	3.9962	1.3575	2.5623	618.54	300	1.2644	1200	3.7236
73	Decanal	$C_{10}H_{20}O$	112-31-2	156.265	1.9641	5.1412	1.8989	4.1278	862.51	200	2.0192	1500	6.0539
74	Decane	$C_{10}H_{22}$	124-18-5	142.282	1.672	5.353	1.6141	3.782	742	200	1.7967	1500	6.0932
75	Decanoic acid	$C_{10}H_{20}O_2$	334-48-5	172.265	0.24457	6.546	1.0899	4.8642	424	298.15	2.5232	1500	6.1099
76	1-Decanol	$C_{10}H_{22}O$	112-30-1	158.281	1.6984	5.392	1.568	3.938	720.5	200	1.8502	1500	6.2186
77	1-Decene	$C_{10}H_{20}$	872-05-9	140.266	1.7101	5.2089	1.7265	3.5935	782.92	298.15	2.2304	1500	5.8745
78	Decyl mercaptan	$C_{10}H_{22}S$	143-10-2	174.347	1.931	5.4815	1.6085	3.74	754.75	200	2.0434	1500	6.4613
79	1-Decyne	$C_{10}H_{18}$	764-93-2	138.250	1.5045	4.3794	1.3291	2.5557	632.01	298	2.1938	1500	5.2794
80	Deuterium	D_2	7782-39-0	4.032	0.3029	0.0975	2.515	–0.0275	368	100	0.3020	1500	0.3425
81	1,1-Dibromoethane	$C_2H_4Br_2$	557-91-5	187.861	0.5927	1.158	1.4931	0.8428	655.5	200	0.6442	1500	1.5673
82	1,2-Dibromoethane	$C_2H_4Br_2$	106-93-4	187.861	0.74906	1.2725	1.981	0.9437	845.2	200	0.7635	1500	1.7041
83	Dibromomethane	CH_2Br_2	74-95-3	173.835	0.391	0.648	1.194	0.42	501	100	0.3929	1500	0.9599
84	Dibutyl ether	$C_8H_{18}O$	142-96-1	130.228	1.6122	4.4777	1.6831	2.918	781.6	200	1.6841	1500	5.2145
85	*m*-Dichlorobenzene	$C_6H_4Cl_2$	541-73-1	147.002	0.7	2.0746	1.3664	1.5983	620.16	200	0.8245	1500	2.5161
86	*o*-Dichlorobenzene	$C_6H_4Cl_2$	95-50-1	147.002	0.6948	2.0804	1.3632	1.594	619.2	200	0.8198	1500	2.5161
87	*p*-Dichlorobenzene	$C_2H_4Cl_2$	106-46-7	147.002	0.6978	2.078	1.3635	1.5965	619.37	200	0.8228	1500	2.5175
88	1,1-Dichloroethane	$C_2H_4Cl_2$	75-34-3	98.959	0.5521	1.205	1.502	0.8719	653.5	200	0.6061	1500	1.5615
89	1,2-Dichloroethane	$C_2H_4Cl_2$	107-06-2	98.959	0.65271	1.1254	1.7376	0.878	795.45	200	0.6722	1500	1.5743
90	Dichloromethane	CH_2Cl_2	75-09-2	84.933	0.3628	0.6804	1.256	0.4275	548	100	0.3637	1500	0.9543
91	1,1-Dichloropropane	$C_3H_6Cl_2$	78-99-9	112.986	0.7145	1.7344	1.524	1.223	674.2	150	0.7268	1500	2.1609
92	1,2-Dichloropropane	$C_3H_6Cl_2$	78-87-5	112.986	0.78658	1.7429	1.7157	1.2627	765.1	200	0.8217	1500	2.1894
93	Diethanol amine	$C_4H_{11}NO_2$	111-42-2	105.136	1.208	3.066	2.089	2.343	891	298.15	1.4197	1500.1	3.4674
94	Diethyl amine	$C_4H_{11}N$	109-89-7	73.137	0.9102	2.674	1.719	1.7926	794.94	200	0.9502	1500	3.0519
95	Diethyl ether	$C_4H_{10}O$	60-29-7	74.122	0.8621	2.551	1.5413	1.437	688.9	200	0.9316	1500	2.9244
96	Diethyl sulfide	$C_4H_{10}S$	352-93-2	90.187	0.91273	2.41	1.6686	1.652	771.08	200	0.9567	1500	2.8724
97	1,1-Difluoroethane	$C_2H_4F_2$	75-37-6	66.050	0.49653	1.2546	1.5394	0.87561	694.17	200	0.5373	1500	1.5424
98	1,2-Difluoroethane	$C_2H_4F_2$	624-72-6	66.050	0.51889	1.2431	1.5048	0.76269	697.51	200	0.5536	1500	1.5510
99	Difluoromethane	CH_2F_2	75-10-5	52.023	0.35489	0.71002	1.5936	0.4622	762	200	0.3681	1500	0.9419
100	Di-isopropyl amine	$C_6H_{15}N$	108-18-9	101.190	1.1384	2.5747	0.7384	1.62	2143	300	1.5995	1500	4.1941
101	Di-isopropyl ether	$C_6H_{14}O$	108-20-3	102.175	1.093	3.683	1.6057	2.342	699	298.15	1.5669	1500	4.0535
102	Di-isopropyl ketone	$C_7H_{14}O$	565-80-0	114.185	1.0869	4.054	1.7802	2.9786	791.6	300	1.5102	1500	4.3093
103	1,1-Dimethoxyethane	$C_4H_{10}O_2$	534-15-6	90.121	1.1556	1.8305	0.95919	0.99605	2826.3	298.15	1.2777	1500	3.0678
104	1,2-Dimethoxypropane	$C_5H_{12}O_2$	7778-85-0	104.148	1.0113	3.2393	1.5611	2.1501	689.3	298.15	1.4638	1500	3.6669
105	Dimethyl acetylene	C_4H_6	503-17-3	54.090	0.6534	1.6179	1.7837	1.0242	821.4	200	0.6721	1500	1.9148
106	Dimethyl amine	C_2H_7N	124-40-3	45.084	0.5565	1.6384	1.7341	1.0899	793.04	200	0.5812	1500	1.8585
107	2,3-Dimethylbutane	C_6H_{14}	79-29-8	86.175	0.7772	4.032	1.544	2.508	649.95	200	0.9363	1500	4.0353
108	1,1-Dimethylcyclohexane	C_8H_{16}	590-66-9	112.213	1.0776	4.6718	1.654	3.3397	792.5	200	1.1535	1500	4.9543
109	*cis*-1,2-Dimethylcyclohexane	C_8H_{16}	2207-01-4	112.213	1.1039	4.6445	1.6943	3.3949	798.35	200	1.1777	1500	4.9243
110	*trans*-1,2-Dimethylcyclohexane	C_8H_{16}	6876-23-9	112.213	1.0991	4.6401	1.6679	3.3736	781.97	200	1.1820	1500	4.9275
111	Dimethyl disulfide	$C_2H_6S_2$	624-92-0	94.199	0.7843	1.4364	1.5836	0.871	730.65	200	0.8155	1500	1.9523
112	Dimethyl ether	C_2H_6O	115-10-6	46.068	0.5148	1.442	1.6034	0.7747	725.4	200	0.5436	1500	1.6581
113	*N*,*N*-Dimethyl formamide	C_3H_7NO	68-12-2	73.094	0.722	1.783	1.532	1.31	762	200	0.7594	1500	2.2596
114	2,3-Dimethylpentane	C_7H_{16}	565-59-3	100.202	0.85438	4.5772	1.5181	2.974	641.01	200	1.0550	1500	4.5983
115	Dimethyl phthalate	$C_{10}H_{10}O_4$	131-11-3	194.184	1.396	4.78	2.19	3.9705	900.6	300	1.7481	1200	4.4740
116	Dimethylsilane	C_2H_8Si	1111-74-6	60.170	0.61453	1.7438	1.3418	1.0102	592.09	200	0.7095	1500	2.0944
117	Dimethyl sulfide	C_2H_6S	75-18-3	62.134	0.6037	1.3747	1.641	0.7988	743.5	200	0.6298	1500	1.6949
118	Dimethyl sulfoxide	C_2H_6OS	67-68-5	78.133	0.6949	1.524	1.6514	1.0658	722.2	200	0.7355	1500	1.9255
119	Dimethyl terephthalate	$C_{10}H_{10}O_4$	120-61-6	194.184	1.174	5.32	2.105	4.1	818	298.15	1.6816	1000.15	4.1139
120	1,4-Dioxane	$C_4H_8O_2$	123-91-1	88.105	0.56184	2.7034	1.5171	1.7658	700.76	200	0.6403	1500	2.8174
121	Diphenyl ether	$C_{12}H_{10}O$	101-84-8	170.207	1.0985	4.3412	1.6222	3.6455	743.62	300	1.7298	1200	4.5143
122	Dipropyl amine	$C_6H_{15}N$	142-84-7	101.190	1.2114	2.6127	0.78956	1.6903	2394.4	300	1.5900	1500	4.2484
123	Dodecane	$C_{12}H_{26}$	112-40-3	170.335	2.1295	6.633	1.7155	4.5161	777.5	200	2.2442	1500	7.4325

TABLE 2-156 Heat Capacity at Constant Pressure of Inorganic and Organic Compounds in the Ideal Gas State Fit to Hyperbolic Functions C_p [J/(kmol·K)] (*Continued*)

Cmpd. no.	Name	Formula	CAS no.	Mol. wt.	C1 × 1E-05	C2 × 1E-05	C3 × 1E-03	C4 × 1E-05	C5	T_{min}, K	C_p at T_{min} × 1E-05	T_{max}, K	C_p at T_{max} × 1E-05
124	Eicosane	$C_{20}H_{42}$	112-95-8	282.547	3.2481	11.09	1.636	7.45	726.27	200	3.5235	1500	12.2110
125	Ethane	C_2H_6	74-84-0	30.069	0.40326	1.3422	1.6555	0.73223	752.87	200	0.4256	1500	1.4562
126	Ethanol	C_2H_6O	64-17-5	46.068	0.492	1.4577	1.6628	0.939	744.7	200	0.5224	1500	1.6576
127	Ethyl acetate	$C_4H_8O_2$	141-78-6	88.105	0.9981	2.0931	2.0226	1.803	928.05	200	1.0126	1500	2.6594
128	Ethyl amine	C_2H_7N	75-04-7	45.084	0.594	1.618	1.812	1.078	820	200	0.6139	1500	1.8528
129	Ethylbenzene	C_8H_{10}	100-41-4	106.165	0.7844	3.399	1.559	2.426	702	200	0.8912	1500	3.6147
130	Ethyl benzoate	$C_9H_{10}O_2$	93-89-0	150.175	1.0944	4.1794	0.88375	−1.609	1183.1	300	1.4598	1500	4.2540
131	2-Ethyl butanoic acid	$C_6H_{12}O_2$	88-09-5	116.158	1.0455	2.3148	0.71	1.471	2061.6	300	1.5102	1200.15	3.6330
132	Ethyl butyrate	$C_6H_{12}O_2$	105-54-4	116.158	1.115	3.391	1.6705	2.518	733.6	298	1.5583	1200	3.6213
133	Ethylcyclohexane	C_8H_{16}	1678-91-7	112.213	1.1059	4.6306	1.6628	3.299	781.1	200	1.1875	1500	4.9184
134	Ethylcyclopentane	C_7H_{14}	1640-89-7	98.186	0.82052	4.0342	1.567	2.6697	715.52	200	0.9272	1500	4.1472
135	Ethylene	C_2H_4	74-85-1	28.053	0.3338	0.9479	1.596	0.551	740.8	60	0.3338	1500	1.0987
136	Ethylenediamine	$C_2H_8N_2$	107-15-3	60.098	0.7286	1.8436	1.688	1.199	767.3	300	0.9178	1500	2.2016
137	Ethylene glycol	$C_2H_6O_2$	107-21-1	62.068	0.63012	1.4584	1.673	0.97296	773.65	300	0.7800	1500	1.8095
138	Ethyleneimine	C_2H_5N	151-56-4	43.068	0.343	1.427	1.638	1.037	744.7	150	0.3480	1500	1.5178
139	Ethylene oxide	C_2H_4O	75-21-8	44.053	0.3346	1.2116	1.6084	0.8241	737.3	50	0.3346	1500	1.3297
140	Ethyl formate	$C_3H_6O_2$	109-94-4	74.079	0.537	1.886	1.207	0.864	496	100	0.5412	1500	2.1485
141	2-Ethyl hexanoic acid	$C_8H_{16}O_2$	149-57-5	144.211	1.5777	4.4017	1.7494	3.2378	792.34	298.15	2.0279	1500	5.1201
142	Ethylhexyl ether	$C_8H_{18}O$	5756-43-4	130.228	1.634	4.5119	1.7532	3.1032	809.75	298.15	2.0360	1200	4.8744
143	Ethylisopropyl ether	$C_5H_{12}O$	625-54-7	88.148	1.0953	3.0032	1.7988	2.1311	817.35	298.15	1.3620	1200	3.2289
144	Ethylisopropyl ketone	$C_6H_{12}O$	565-69-5	100.159	1.24	3.2	1.967	2.346	896	298.15	1.4479	1200	3.4234
145	Ethyl mercaptan	C_2H_6S	75-08-1	62.134	0.5576	1.3617	1.5221	0.8073	687.5	200	0.5970	1500	1.6729
146	Ethyl propionate	$C_5H_{10}O_2$	105-37-3	102.132	0.937	2.829	1.648	2.155	724.7	300	1.3377	1200	3.0569
147	Ethylpropyl ether	$C_5H_{12}O$	628-32-0	88.148	1.132	2.94	1.827	2.055	852	298.15	1.3538	1500	3.4535
148	Ethyltrichlorosilane	$C_2H_5Cl_3Si$	115-21-9	163.506	0.85105	1.0378	0.59737	0.94745	2122.7	167	0.8926	1500	2.2349
149	Fluorine	F_2	7782-41-4	37.997	0.29122	0.10132	1.453	0.094101	662.91	50	0.2912	1500	0.3812
150	Fluorobenzene	C_6H_5F	462-06-6	96.102	0.62653	2.1646	1.564	1.7278	724.29	200	0.6914	1500	2.4736
151	Fluoroethane	C_2H_5F	353-36-6	48.060	0.44373	1.3119	1.6422	0.85441	738.77	200	0.4726	1500	1.5008
152	Fluoromethane	CH_3F	593-53-3	34.033	0.33289	0.73989	1.8639	0.46079	891.16	50	0.3329	1500	0.9024
153	Formaldehyde	CH_2O	50-00-0	30.026	0.3327	0.49542	1.8666	0.28075	934.9	50	0.3327	1500	0.7113
154	Formamide	CH_3NO	75-12-7	45.041	0.3822	0.93	1.845	0.69	850	150	0.3833	1500	1.1203
155	Formic acid	CH_2O_2	64-18-6	46.026	0.3381	0.7593	1.1925	0.318	550	50	0.3381	1500	0.9933
156	Furan	C_4H_4O	110-00-9	68.074	0.3727	1.6606	1.5112	1.3145	686	200	0.4376	1500	1.7940
158	Heptadecane	$C_{17}H_{36}$	629-78-7	240.468	2.7878	9.5247	1.6935	6.6651	744.57	200	3.0034	1500	10.4160
159	Heptanal	$C_7H_{14}O$	111-71-7	114.185	1.404	2.5907	0.8315	1.312	2201	200	1.4479	1500	4.2863
160	Heptane	C_7H_{16}	142-82-5	100.202	1.2015	4.001	1.6766	2.74	756.4	200	1.2828	1500	4.4283
161	Heptanoic acid	$C_7H_{14}O_2$	111-14-8	130.185	1.3135	2.3317	0.67567	1.824	1846	300	1.8497	1500	4.2941
162	1-Heptanol	$C_7H_{16}O$	111-70-6	116.201	1.2215	3.991	1.58	2.835	717.7	200	1.3330	1500	4.5346
163	2-Heptanol	$C_7H_{16}O$	543-49-7	116.201	1.4569	2.8252	0.81695	1.766	2537.2	298.15	1.8136	1500	4.6604
164	3-Heptanone	$C_7H_{14}O$	106-35-4	114.185	1.2768	3.381	1.3831	1.888	650.3	200	1.3968	1500	4.1386
165	2-Heptanone	$C_7H_{14}O$	110-43-0	114.185	1.2507	2.148	0.6912	1.619	1759.3	150	1.2688	1200	3.8446
166	1-Heptene	C_7H_{14}	592-76-7	98.186	1.1851	3.6362	1.7359	2.5048	785.73	298.15	1.5434	1500	4.0836
167	Heptyl mercaptan	$C_7H_{16}S$	1639-09-4	132.267	1.442	4.1603	1.6603	2.6572	759.39	200	1.5191	1500	4.7831
168	1-Heptyne	C_7H_{12}	628-71-7	96.170	1.0712	3.0258	1.5273	2.0975	689.62	200	1.1721	1500	3.5985
169	Hexadecane	$C_{16}H_{34}$	544-76-3	226.441	2.6283	8.9733	1.6912	6.264	744.41	200	2.8312	1500	9.8182
170	Hexanal	$C_6H_{12}O$	66-25-1	100.159	1.232	2.2146	0.84	1.219	2205	200	1.2672	1500	3.7314
171	Hexane	C_6H_{14}	110-54-3	86.175	1.044	3.523	1.6946	2.369	761.6	200	1.1117	1500	3.8620
172	Hexanoic acid	$C_6H_{12}O_2$	142-62-1	116.158	1.1622	2.0708	0.68661	1.5355	1932.5	298.15	1.6107	1500	3.7636
173	1-Hexanol	$C_6H_{14}O$	111-27-3	102.175	1.0625	3.521	1.5835	2.462	715.75	200	1.1607	1500	3.9726
174	2-Hexanol	$C_6H_{14}O$	626-93-7	102.175	1.2615	3.5964	1.8445	2.594	819.17	298.15	1.5829	1500	4.0672
175	2-Hexanone	$C_6H_{12}O$	591-78-6	100.159	1.094	1.807	0.689	1.474	1772	200	1.1815	1200	3.3207
176	3-Hexanone	$C_6H_{12}O$	589-38-8	100.159	1.1237	2.936	1.401	1.601	650.5	150	1.1443	1500	3.5874
177	1-Hexene	C_6H_{12}	592-41-6	84.159	1.0434	3.0749	1.7459	2.0728	793.53	298	1.3301	1500	3.4819
178	3-Hexyne	C_6H_{10}	928-49-4	82.144	0.9376	3.015	1.9057	1.986	817	300	1.1909	1500	3.1889
179	Hexyl mercaptan	$C_6H_{14}S$	111-31-9	118.240	1.2662	3.7294	1.6574	2.308	757.8	200	1.3340	1500	4.2483
180	1-Hexyne	C_6H_{10}	693-02-7	82.144	0.9129	2.5577	1.529	1.737	683	200	1.0004	1500	3.0371
181	2-Hexyne	C_6H_{10}	764-35-2	82.144	1.036	3.009	2.116	2.106	902.4	300	1.2215	1500	3.1894
182	Hydrazine	H_4N_2	302-01-2	32.045	0.38711	0.8576	1.7228	0.56635	733.53	200	0.4070	1500	1.0571
183	Hydrogen	H_2	1333-74-0	2.016	0.27617	0.0956	2.466	0.0376	567.6	250	0.2843	1500	0.3225

184	Hydrogen bromide	HBr	10035-10-6	80.912	0.2912	0.0953	2.142	0.0157	1400	50	0.2912	1500	0.3479
185	Hydrogen chloride	HCl	7647-01-0	36.461	0.29157	0.09048	2.0938	–0.00107	120	50	0.2914	1500	0.3406
186	Hydrogen cyanide	CHN	74-90-8	27.025	0.30125	0.3171	1.6102	0.2179	626	100	0.3014	1500	0.5522
187	Hydrogen fluoride	HF	7664-39-3	20.006	0.29134	0.093252	2.905	1.95E–03	1.33E+03	50	0.2913	1500	0.3224
188	Hydrogen sulfide	H_2S	7783-06-4	34.081	0.33288	0.26086	0.9134	–0.17979	949.4	100	0.3329	1500	0.5143
189	Isobutyric acid	$C_4H_8O_2$	79-31-2	88.105	0.74694	2.4356	1.715	1.8484	757.75	298.15	1.0427	1200	2.5383
190	Isopropyl amine	C_3H_9N	75-31-0	59.110	0.68545	2.1876	1.5831	1.3855	691.76	200	0.7510	1500	2.4540
191	Malonic acid	$C_3H_4O_4$	141-82-2	104.061	0.49522	1.8718	1.2958	1.4852	569.96	300	0.9790	1200	2.0517
192	Methacrylic acid	$C_4H_6O_2$	79-41-4	86.089	0.7251	2.089	1.8516	1.6483	798.43	298.15	0.9475	1200.1	2.2057
193	Methane	CH_4	74-82-8	16.042	0.33298	0.79933	2.0869	0.41602	991.96	50	0.3330	1500	0.8890
194	Methanol	CH_4O	67-56-1	32.042	0.39252	0.879	1.9165	0.53654	896.7	200	0.3980	1500	1.0533
195	*N*-Methyl acetamide	C_3H_7NO	79-16-3	73.094	0.6116	2.029	1.7683	1.3302	835.5	300	0.7698	1500	2.2209
196	Methyl acetate	$C_3H_6O_2$	79-20-9	74.079	0.555	1.782	1.26	0.853	562	298	0.8489	1500	2.0754
197	Methyl acetylene	C_3H_4	74-99-7	40.064	0.4478	1.0917	1.5508	0.675	658.2	200	0.4882	1500	1.3293
198	Methyl acrylate	$C_4H_6O_2$	96-33-3	86.089	0.1206	2.3766	1.0543	1.8186	418.8	298.15	0.9908	1200.1	2.1663
199	Methyl amine	CH_5N	74-89-5	31.057	0.41	1.0578	1.708	0.6836	735	150	0.4136	1500	1.2388
200	Methyl benzoate	$C_8H_8O_2$	93-58-3	136.148	0.9396	2.559	0.825	1.36	3000	300	1.2586	1200	3.3569
201	3-Methyl-1,2-butadiene	C_5H_8	598-25-4	68.117	0.671	2.222	1.421	1.194	614.7	150	0.6931	1500	2.5028
202	2-Methylbutane	C_5H_{12}	78-78-4	72.149	0.746	3.265	1.545	1.923	666.7	200	0.8546	1500	3.3792
203	2-Methylbutanoic acid	$C_5H_{10}O_2$	116-53-0	102.132	1.8458	1.743	1.22	–56.11	31.2	300	1.2793	1500	3.2262
204	3-Methyl-1-butanol	$C_5H_{12}O$	123-51-3	88.148	0.92165	3.3371	1.8365	2.4645	757.99	298.15	1.3135	1500	3.4856
205	2-Methyl-1-butene	C_5H_{10}	563-46-2	70.133	0.87026	2.5556	1.7757	1.7636	807.82	200	0.9060	1500	2.8923
206	2-Methyl-2-butene	C_5H_{10}	513-35-9	70.133	0.81924	2.6038	1.7593	1.7195	800.93	200	0.8559	1500	2.8709
207	2-Methyl -1-butene-3-yne	C_5H_6	78-80-8	66.101	0.7906	1.656	1.6926	1.2167	788.4	298.15	0.9632	1500.15	2.1502
208	Methylbutyl ether	$C_5H_{12}O$	628-28-4	88.148	0.82051	3.0869	1.3864	1.7886	613.87	300	1.3300	1200	3.1994
209	Methylbutyl sulfide	$C_5H_{12}S$	628-29-5	104.214	1.0785	2.7388	1.5885	1.9067	749.6	273.15	1.3173	1200	3.1687
210	3-Methyl-1-butyne	C_5H_8	598-23-2	68.117	0.8274	2.1377	1.755	1.5149	782	200	0.8646	1500	2.5255
211	Methyl butyrate	$C_5H_{10}O_2$	623-42-7	102.132	0.894	2.91	1.57	2.073	678.3	298	1.3461	1200	3.0766
212	Methylchlorosilane	CH_5ClSi	993-00-0	80.589	0.59895	1.1636	1.565	0.81581	690.39	200	0.6380	1500	1.5593
213	Methylcyclohexane	C_7H_{14}	108-87-2	98.186	0.9227	4.115	1.6504	2.9006	779.48	200	0.9953	1500	4.3180
214	1-Methylcyclohexanol	$C_7H_{14}O$	590-67-0	114.185	0.7959	2.596	0.6213	2.288	1698.6	300	1.5302	1200	4.1359
215	*cis*-2-Methylcyclohexanol	$C_7H_{14}O$	7443-70-1	114.185	0.92279	2.6709	0.68784	1.9847	1732.4	300	1.5099	1200	4.1467
216	*trans*-2-Methylcyclohexanol	$C_7H_{14}O$	7443-52-9	114.185	0.92279	2.6709	0.68784	1.9847	1732.4	300	1.5099	1200	4.1467
217	Methylcyclopentane	C_6H_{12}	96-37-7	84.159	0.66456	3.507	1.5892	2.3526	727.13	200	0.7510	1500	3.5495
218	1-Methylcyclopentene	C_6H_{10}	693-89-0	82.144	0.69411	3.0209	1.6903	2.1209	781.56	200	0.7464	1500	3.1496
219	3-Methylcyclopentene	C_6H_{10}	1120-62-3	82.144	0.6422	3.0711	1.6387	2.1298	750.25	200	0.7083	1500	3.1549
220	Methyldichlorosilane	CH_4Cl_2Si	75-54-7	115.034	0.7283	1.0307	1.5429	0.7811	668.94	200	0.7717	1500	1.5893
221	Methylethyl ether	C_3H_8O	540-67-0	60.095	0.68681	1.9959	1.5534	1.1168	692.04	200	0.7396	1500	2.2931
222	Methylethyl ketone	C_4H_8O	78-93-3	72.106	0.784	2.1032	1.5488	1.1855	693	200	0.8397	1500	2.4816
223	Methylethyl sulfide	C_3H_8S	624-89-5	76.161	0.75083	1.9577	1.6424	1.1949	749.19	273.16	0.9004	1500	2.3178
224	Methyl formate	$C_2H_4O_2$	107-31-3	60.052	0.506	1.219	1.637	0.894	743	250	0.5888	1500	1.5109
225	Methylisobutyl ether	$C_2H_{12}O$	625-44-5	88.148	0.7284	3.1713	1.352	1.8948	585.14	300	1.3200	1200	3.1987
226	Methylisobutyl ketone	$C_6H_{12}O$	108-10-1	100.159	1.227	2.195	0.842	1.191	2460	298.15	1.4755	1500.15	3.6532
227	Methyl Isocyanate	C_2H_3NO	624-83-9	57.051	0.474	1.226	2.188	0.85983	1008.2	298.15	0.5195	1500	1.3595
228	Methylisopropyl ether	$C_4H_{10}O$	598-53-8	74.122	0.89232	2.4765	1.696	1.5598	791.4	200	0.9280	1500	2.8696
229	Methylisopropyl ketone	$C_5H_{10}O$	563-80-4	86.132	1.5914	1.764	1.2076	–407.4	10.503	300	1.1291	1500	2.9991
230	Methylisopropyl sulfide	$C_4H_{10}S$	1551-21-9	90.187	0.99247	2.7275	2.003	1.8974	849.64	273	1.1377	1500	2.9952
231	Methyl mercaptan	CH_4S	74-93-1	48.107	0.4146	0.8307	1.589	0.4612	716.7	200	0.4329	1500	1.0781
232	Methyl methacrylate	$C_5H_8O_2$	80-62-6	100.116	0.864	1.811	0.7543	0.8	2160	298.15	1.1621	1500	2.8637
233	2-Methyloctanoic acid	$C_9H_{18}O_2$	3004-93-1	158.238	1.7483	4.9288	1.7384	3.5897	788.01	298.15	2.2567	1500	5.7177
234	2-Methylpentane	C_6H_{14}	107-83-5	86.175	0.903	3.801	1.602	2.453	691.6	200	1.0192	1500	3.9617
235	Methyl pentyl ether	$C_6H_{14}O$	628-80-8	102.175	0.94326	3.5965	1.3533	2.0569	599.92	300	1.5600	1200	3.7409
236	2-Methylpropane	C_4H_{10}	75-28-5	58.122	0.6549	2.4776	1.587	1.575	706.99	200	0.7218	1500	2.6656
237	2-Methyl-2-propanol	$C_4H_{10}O$	75-65-0	74.122	0.7704	2.539	1.5502	1.669	679.3	200	0.8567	1500	2.8508
238	2-Methyl propene	C_4H_8	115-11-7	56.106	0.6125	2.066	1.545	1.2057	676	200	0.6763	1500	2.2814
239	Methyl propionate	$C_4H_8O_2$	554-12-1	88.105	0.7765	2.442	1.714	1.818	716	300	1.1242	1200	2.5276
240	Methylpropyl ether	$C_4H_{10}O$	557-17-5	74.122	0.92151	2.3943	1.6936	1.4896	797.79	298	1.1251	1200	2.6391
241	Methylpropyl sulfide	$C_4H_{10}S$	3877-15-4	90.187	0.93775	2.6178	1.7291	1.6236	783.23	298.15	1.1728	1500	2.9904
242	Methylsilane	CH_6Si	992-94-9	46.144	0.46149	1.2781	1.4565	0.79115	643.23	200	0.5141	1500	1.5253
243	alpha-Methyl styrene	C_9H_{10}	98-83-9	118.176	0.78548	3.5969	1.4342	2.5336	651.69	200	0.9445	1500	3.8592
244	Methyl *tert*-butyl ether	$C_5H_{12}O$	1634-04-4	88.148	0.9779	3.091	1.643	2.099	731.191	298	1.3522	1500	3.4779
245	Methyl vinyl ether	C_3H_6O	107-25-5	58.079	0.60865	1.5965	1.619	0.93783	739.55	300	0.7748	1500	1.8871
246	Naphthalene	$C_{10}H_8$	91-20-3	128.171	0.6805	3.5494	1.4262	2.5984	650.1	200	0.8454	1500	3.7359

TABLE 2-156 Heat Capacity at Constant Pressure of Inorganic and Organic Compounds in the Ideal Gas State Fit to Hyperbolic Functions C_p [J/(kmol·K)] (*Concluded*)

Cmpd. no.	Name	Formula	CAS no.	Mol. wt.	C1 × 1E-05	C2 × 1E-05	C3 × 1E-03	C4 × 1E-05	C5	T_{min}, K	C_p at T_{min} × 1E-05	T_{max}, K	C_p at T_{max} × 1E-05
248	Nitroethane	$C_2H_5NO_2$	79-24-3	75.067	0.54619	1.6492	1.4803	1.0635	666.94	200	0.6062	1500	1.9237
249	Nitrogen	N_2	7727-37-9	28.013	0.29105	0.086149	1.7016	0.0010347	909.79	50	0.2911	1500	0.3484
250	Nitrogen trifluoride	F_3N	7783-54-2	71.002	0.33284	0.49837	0.7093	0.23264	372.91	100	0.3404	1500	0.8092
251	Nitromethane	CH_3NO_2	75-52-5	61.040	0.42267	1.0842	1.4885	0.68603	683.57	200	0.4571	1500	1.3280
252	Nitrous oxide	N_2O	10024-97-2	44.013	0.29338	0.3236	1.1238	0.2177	479.4	100	0.2948	1500	0.5828
254	Nonadecane	$C_{19}H_{40}$	629-92-5	268.521	3.1062	10.575	0.76791	–4.5661	912.03	200	3.3533	1500	11.6130
255	Nonanal	$C_9H_{18}O$	124-19-6	142.239	1.7347	4.5115	1.712	3.3256	810.96	200	1.8005	1500	5.4439
256	Nonane	C_9H_{20}	111-84-2	128.255	1.5175	4.915	1.6448	3.47	749.6	200	1.6257	1500	5.5407
257	Nonanoic acid	$C_9H_{18}O_2$	112-05-0	158.238	0.1266	6.011	1.0815	4.5946	418.2	298.15	2.2953	1500	5.5267
258	1-Nonanol	$C_9H_{20}O$	143-08-8	144.255	1.54	4.936	1.578	3.588	721.11	200	1.6777	1500	5.6606
259	2-Nonanol	$C_9H_{20}O$	628-99-9	144.255	1.8197	3.5542	0.81514	2.1974	2508.8	298.15	2.2720	1500	5.8526
260	1-Nonene	C_9H_{18}	124-11-8	126.239	1.5352	4.6844	1.7288	3.2304	783.67	298.15	2.0014	1500	5.2776
261	Nonyl mercaptan	$C_9H_{20}S$	1455-21-6	160.320	1.7646	5.044	1.6182	3.3857	755.48	200	1.8658	1500	5.9082
262	1-Nonyne	C_9H_{16}	3452-09-3	124.223	1.6289	3.9708	1.8928	3.2136	855.52	298.15	1.9693	1500	4.7924
263	Octadecane	$C_{18}H_{38}$	593-45-3	254.494	2.9502	10.034	0.77107	-4.3012	916.73	200	3.1800	1500	11.0160
264	Octanal	$C_8H_{16}O$	124-13-0	128.212	1.6088	4.218	1.9126	3.278	869	200	1.6504	1500	4.9286
265	Octane	C_8H_{18}	111-65-9	114.229	1.3554	4.431	1.6356	3.054	746.4	200	1.4529	1500	4.9764
266	Octanoic acid	$C_8H_{16}O_2$	124-07-2	144.211	1.4082	4.3436	1.4662	2.7687	659.38	298.15	2.0652	1500	5.0411
267	1-Octanol	$C_8H_{18}O$	111-87-5	130.228	1.3805	4.459	1.5751	3.2016	718.8	200	1.5055	1500	5.0965
268	2-Octanol	$C_8H_{18}O$	123-96-6	130.228	1.6383	3.1897	0.81595	1.9814	2521.3	298.15	2.0428	1500	5.2565
269	2-Octanone	$C_8H_{16}O$	111-13-7	128.212	1.3901	3.806	1.3717	2.2573	660.96	150	1.4162	1500	4.6547
270	3-Octanone	$C_8H_{16}O$	106-68-3	128.212	1.4952	4.4103	0.80211	–2.0958	981.95	200	1.5775	1500	4.9067
271	1-Octene	C_8H_{16}	111-66-0	112.213	1.3599	4.1605	1.7317	2.8675	784.47	298.15	1.7723	1500	4.6807
272	Octyl mercaptan	$C_8H_{18}S$	111-88-6	146.294	1.5981	4.6063	1.6295	3.0301	756.28	200	1.6881	1500	5.3549
273	1-Octyne	C_8H_{14}	629-05-0	110.197	1.2307	3.4942	1.528	2.4617	694.81	200	1.3448	1500	4.1604
274	Oxalic acid	$C_2H_2O_4$	144-62-7	90.035	0.25751	1.1734	2.7969	0.65788	878.91	298.15	0.3201	1000.1	0.6502
275	Oxygen	O_2	7782-44-7	31.999	0.29103	0.1004	2.5265	0.09356	1153.8	50	0.2910	1500	0.3653
276	Ozone	O_3	10028-15-6	47.998	0.33483	0.29577	1.5217	0.27151	680.35	100	0.3349	1500	0.5928
277	Pentadecane	$C_{15}H_{32}$	629-62-9	212.415	2.4679	8.4212	1.6865	5.8537	743.6	200	2.6586	1500	9.2209
278	Pentanal	$C_5H_{10}O$	110-62-3	86.132	1.0743	2.8363	1.9549	2.0146	890.44	200	1.0960	1500	3.2404
279	Pentane	C_5H_{12}	109-66-0	72.149	0.8805	3.011	1.6502	1.892	747.6	200	0.9404	1500	3.2927
280	Pentanoic acid	$C_5H_{10}O_2$	109-52-4	102.132	2.836	1.08	2.107	–3.56	283	298.15	1.3824	1500	3.2952
281	1-Pentanol	$C_5H_{12}O$	71-41-0	88.148	0.906	3.062	1.6054	2.115	717.97	200	0.9890	1500	3.4133
282	2-Pentanol	$C_5H_{12}O$	6032-29-7	88.148	1.0853	3.0747	1.8672	2.2271	825.4	298.15	1.3539	1500	3.4701
283	2-Pentanone	$C_5H_{10}O$	107-87-9	86.132	0.90053	2.7085	1.6592	1.8012	743.96	200	0.9591	1500	3.0797
284	3-Pentanone	$C_5H_{10}O$	96-22-0	86.132	0.96896	2.4907	1.4177	1.301	646.7	200	1.0536	1500	3.0358
285	1-Pentene	C_5H_{10}	109-67-1	70.133	0.82523	2.5943	1.7291	1.768	778.7	298.15	1.0856	1500	2.8897
286	2-Pentyl mercaptan	$C_5H_{12}S$	2084-19-7	104.214	1.1327	2.947	1.7418	2.0987	795.78	298	1.4202	1500	3.4994
287	Pentyl mercaptan	$C_5H_{12}S$	110-66-7	104.214	1.0974	3.2959	1.6761	1.9486	757.67	200	1.1547	1500	3.6956
288	1-Pentyne	C_5H_8	627-19-0	68.117	0.753	2.0905	1.5307	1.378	672.8	200	0.8276	1500	2.4754
289	2-Pentyne	C_5H_8	627-21-4	68.117	0.70737	2.2229	1.557	1.3125	690.78	200	0.7700	1500	2.5052
290	Phenanthrene	$C_{14}H_{10}$	85-01-8	178.229	0.9374	4.758	1.382	3.485	627.4	200	1.1959	1500	5.0645
291	Phenol	C_6H_6O	108-95-2	94.111	0.434	2.445	1.152	1.512	507	100	0.4401	1500	2.6045
292	Phenyl isocyanate	C_7H_5NO	103-71-9	119.121	0.59683	2.5533	1.2397	1.5519	576.78	298.15	1.1054	1500	2.8390
293	Phthalic anhydride	$C_8H_4O_3$	85-44-9	148.116	0.7364	2.544	1.0852	0.808	573	298.15	1.0745	1000.15	2.6737
294	Propadiene	C_3H_4	463-49-0	40.064	0.426	1.1194	1.5772	0.7546	680.8	200	0.4646	1500	1.3376
295	Propane	C_3H_8	74-98-6	44.096	0.5192	1.9245	1.6265	1.168	723.6	200	0.5632	1500	2.0556
296	1-Propanol	C_3H_8O	71-23-8	60.095	0.619	2.0213	1.6293	1.2956	727.4	200	0.6665	1500	2.2458
297	2-Propanol	C_3H_8O	67-63-0	60.095	0.73145	2.0313	1.9375	1.4815	843.37	298.15	0.8966	1500	2.2760
298	Propenylcyclohexene	C_9H_{14}	13511-13-2	122.207	1.0563	4.3397	1.6098	3.181	729.66	300	1.6392	1500	4.6527
299	Propionaldehyde	C_3H_6O	123-38-6	58.079	0.7174	1.914	2.0144	1.1708	930.6	200	0.7266	1500	2.1149
300	Propionic acid	$C_3H_6O_2$	79-09-4	74.079	0.6959	1.7778	1.7098	1.2654	763.78	298.15	0.8938	1500	2.1248
301	Propionitrile	C_3H_5N	107-12-0	55.079	0.5357	1.4617	1.553	0.91197	678.2	200	0.5832	1500	1.7235
302	Propyl acetate	$C_5H_{10}O_2$	109-60-4	102.132	1.7994	1.753	1.196	–4.12	108.2	298.15	1.3594	1500	3.2024
303	Propyl amine	C_3H_9N	107-10-8	59.110	0.76078	2.1049	1.7256	1.3936	789.03	200	0.7933	1500	2.4353

304	Propylbenzene	C_9H_{12}	103-65-1	120.192	0.96885	3.7954	1.5168	2.6618	694.3	200	1.0927	1500	4.1613
305	Propylene	C_3H_6	115-07-1	42.080	0.43852	1.506	1.3988	0.74754	616.46	130	0.4436	1500	1.6817
306	Propyl formate	$C_4H_8O_2$	110-74-7	88.105	0.871	2.447	1.9254	1.888	821.3	298.15	1.1022	1500	2.7484
307	2-Propyl mercaptan	C_3H_8S	75-33-2	76.161	0.73815	1.9529	1.5954	1.2356	730.5	200	0.7825	1500	2.3287
308	Propyl mercaptan	C_3H_8S	107-03-9	76.161	0.7474	1.9523	1.631	1.2112	750.92	200	0.7848	1500	2.3216
309	1,2-Propylene glycol	$C_3H_8O_2$	57-55-6	76.094	2.0114	0.8082	1.8656	–2.4404	279.98	298.15	1.0218	1000.15	2.1175
310	Quinone	$C_6H_4O_2$	106-51-4	108.095	0.6487	2.1227	1.3491	1.514	614.8	200	0.7711	1500	2.4969
311	Silicon tetrafluoride	F_4Si	7783-61-1	104.079	0.3681	0.71245	0.65201	0.46721	286.03	100	0.4182	1500	1.0537
312	Styrene	C_8H_8	100-42-5	104.149	0.893	2.1503	0.772	0.999	2442	100	0.8931	1500	3.2416
313	Succinic acid	$C_4H_6O_4$	110-15-6	118.088	0.71806	2.2669	1.2739	1.7342	537.65	300	1.3370	1200	2.5823
314	Sulfur dioxide	O_2S	7446-09-5	64.064	0.33375	0.25864	0.9328	0.1088	423.7	100	0.3354	1500	0.5695
315	Sulfur hexafluoride	F_6S	2551-62-4	146.055	0.35256	1.227	0.67938	0.78407	351.27	100	0.3872	1500	1.5397
316	Sulfur trioxide	O_3S	7446-11-9	80.063	0.33408	0.49677	0.87322	0.28563	393.74	100	0.3408	1500	0.7967
317	Terephthalic acid	$C_8H_6O_4$	100-21-0	166.131	0.945	2.526	0.829	0.5	2010	298.15	1.2478	1500	3.4444
318	*o*-Terphenyl	$C_{18}H_{14}$	84-15-1	230.304	2.0719	6.2668	2.4044	6.345	967.71	298.15	2.4763	1500	6.6947
319	Tetradecane	$C_{14}H_{30}$	629-59-4	198.388	2.3082	7.8678	1.6823	5.4486	743.1	200	2.4864	1500	8.6225
320	Tetrahydrofuran	C_4H_8O	109-99-9	72.106	0.46905	2.5314	1.5998	1.7051	740.64	200	0.5259	1500	2.5538
321	1,2,3,4-Tetrahydronaphthalene	$C_{10}H_{12}$	119-64-2	132.202	0.8145	4.395	1.471	3.065	666.4	200	0.9881	1500	4.5348
322	Tetrahydrothiophene	C_4H_8S	110-01-0	88.171	0.51848	2.4535	1.5018	1.6871	665.31	200	0.6147	1500	2.5679
323	2,2,3,3-Tetramethylbutane	C_8H_{18}	594-82-1	114.229	1.1352	5.6331	1.6211	3.3829	681.9	200	1.3069	1500	5.5784
324	Thiophene	C_4H_4S	110-02-1	84.140	0.40399	1.627	1.4562	1.322	648.81	200	0.4886	1500	1.8098
325	Toluene	C_7H_8	108-88-3	92.138	0.5814	2.863	1.4406	1.898	650.43	200	0.7016	1500	3.0029
326	1,1,2-Trichloroethane	$C_2H_3Cl_3$	79-00-5	133.404	0.66554	1.1257	1.5454	0.97196	717.04	298.15	0.8496	1500	1.6433
327	Tridecane	$C_{13}H_{28}$	629-50-5	184.361	2.1496	7.3045	1.6695	4.9998	741.02	200	2.3156	1500	8.0251
328	Triethyl amine	$C_6H_{15}N$	121-44-8	101.190	1.2766	2.5559	0.80937	1.4829	2231.7	200	1.3278	1500	4.2046
329	Trimethyl amine	C_3H_9N	75-50-3	59.110	0.7107	1.5051	0.79662	0.84537	2187.6	200	0.7439	1500	2.4322
330	1,2,3-Trimethylbenzene	C_9H_{12}	526-73-8	120.192	1.052	3.79	1.4814	2.331	667.3	200	1.1832	1500	4.1983
331	1,2,4-Trimethylbenzene	C_9H_{12}	95-63-6	120.192	1.0106	3.8314	1.501	2.395	678.3	200	1.1354	1500	4.1854
332	2,2,4-Trimethylpentane	C_8H_{18}	540-84-1	114.229	1.139	5.286	1.594	3.351	677.94	200	1.3139	1500	5.3769
333	2,3,3-Trimethylpentane	C_8H_{18}	560-21-4	114.229	0.982	5.402	1.531	3.493	639.9	200	1.2194	1500	5.3754
334	1,3,5-Trinitrobenzene	$C_6H_3N_3O_6$	99-35-4	213.105	2.0367	1.8181	1.2089	0.79777	1060.8	298.15	2.1054	1500	3.7585
335	2,4,6-Trinitrotoluene	$C_7H_5N_3O_6$	118-96-7	227.131	2.154	2.4432	1.1126	0.58651	950.59	298.15	2.2726	1500	4.3560
336	Undecane	$C_{11}H_{24}$	1120-21-4	156.308	1.9529	6.0998	1.7087	4.1302	775.4	200	2.0594	1500	6.8342
337	1-Undecanol	$C_{11}H_{24}O$	112-42-5	172.308	1.859	5.869	1.5718	4.326	722.7	200	2.0232	1500	6.7834
338	Vinyl acetate	$C_4H_6O_2$	108-05-4	86.089	0.536	2.119	1.198	1.147	510	100	0.5404	1500	2.3750
339	Vinyl acetylene	C_4H_4	689-97-4	52.075	0.55978	1.2141	1.6102	0.89079	710.4	200	0.5967	1500	1.5590
340	Vinyl chloride	C_2H_3Cl	75-01-4	62.498	0.42364	0.8735	1.6492	0.6556	739.07	200	0.4457	1500	1.1423
341	Vinyl trichlorosilane	$C_2H_3Cl_3Si$	75-94-5	161.490	0.84894	1.1471	1.38	0.9	644.61	298.15	1.0788	1500	1.8595
342	Water	H_2O	7732-18-5	18.015	0.33363	0.2679	2.6105	0.08896	1169	100	0.3336	2273.15	0.5276
343	*m*-Xylene	C_8H_{10}	108-38-3	106.165	0.7568	3.3924	1.496	2.247	675.9	200	0.8759	1500	3.5920
344	*o*-Xylene	C_8H_{10}	95-47-6	106.165	0.8521	3.2954	1.4944	2.115	675.8	200	0.9643	1500	3.5965
345	*p*-Xylene	C_8H_{10}	106-42-3	106.165	0.7512	3.397	1.4928	2.247	675.1	200	0.8710	1500	3.5923

Constants in this table can be used in the following equation to calculate the ideal gas heat capacity C_p^0.

$$C_p^0 = \mathrm{C1} + \mathrm{C2}\left[\frac{\mathrm{C3}/T}{\sinh(\mathrm{C3}/T)}\right]^2 + \mathrm{C4}\left[\frac{\mathrm{C5}/T}{\cosh(\mathrm{C5}/T)}\right]^2$$

where C_p^0 is in J/(kmol·K) and T is in K. All substances are listed by chemical family in Table 2-6 and by formula in Table 2-7.

The number of digits provided for values at T_{min} and T_{max} was chosen for uniformity of appearance and formatting; these do not represent the uncertainties of the physical quantities, but are the result of calculations from the standard thermophysical property formulations within a fixed format.