TABLE 2-69 Heats of Vaporization of Inorganic and Organic Liquids (J/kmol)

Cmpd. no.*	Name	Formula	CAS	Mol. wt.	$C_1 \times 1E\text{-}07$	C_2	C_3	C_4	T_{min}, K	ΔH_v at $T_{min} \times 1E\text{-}07$	T_{max}, K	ΔH_v at T_{max}
1	Acetaldehyde	C_2H_4O	75-07-0	44.05256	3.4088	0.043317	0.21502	0.23791	149.780	3.23240	466.000	0
2	Acetamide	C_2H_5NO	60-35-5	59.0672	9.9475	0.94835	−0.51011	0.015094	353.150	6.36890	761.000	0
3	Acetic acid	$C_2H_4O_2$	64-19-7	60.052	6.127546	3.683421	−6.193052	2.977694	289.810	2.44660	591.950	0
4	Acetic anhydride	$C_4H_6O_3$	108-24-7	102.08864	5.8564	0.33055	−0.057073	0.083671	200.150	5.14960	606.000	0
5	Acetone	C_3H_6O	67-64-1	58.07914	4.9258	1.0809	−1.3684	0.69723	178.450	3.66050	508.200	0
6	Acetonitrile	C_2H_3N	75-05-8	41.0519	3.8345	0.033941	0.34283	−0.13415	229.315	3.52490	545.500	0
7	Acetylene	C_2H_2	74-86-2	26.03728	1.7059	−0.52025	1.0982	−0.29832	192.400	1.62620	308.300	0
8	Acrolein	C_3H_4O	107-02-8	56.06326	6.6599	2.2443	−2.9192	1.1113	185.450	3.63950	506.000	0
9	Acrylic acid	$C_3H_4O_2$	79-10-7	72.06266	4.3756	2.2571	−4.5116	2.5738	286.150	2.79650	615.000	0
10	Acrylonitrile	C_3H_3N	107-13-1	53.0626	4.3052	0.095188	0.47381	−0.26294	189.630	3.89890	540.000	0
11	Air	Mixture	132259-10-0	28.96	0.74587	0.47571	−0.71131	0.60517	59.150	0.63247	132.450	0
12	Ammonia	H_3N	7664-41-7	17.03052	3.1523	0.3914	−0.2289	0.2309	195.410	2.52980	405.650	0
13	Anisole	C_7H_8O	100-66-3	108.13782	7.6926	1.4255	−1.6901	0.72371	235.650	5.10000	645.600	0
14	Argon	Ar	7440-37-1	39.948	0.84215	0.28333	0.033281	0.030551	83.780	0.65440	150.860	0
15	Benzamide	C_7H_7NO	55-21-0	121.13658	8.7809	0.1933	0.30877	−0.14162	403.000	7.12860	824.000	0
16	Benzene	C_6H_6	71-43-2	78.11184	5.0007	0.65393	−0.27698	0.029569	278.680	3.49320	562.050	0
17	Benzenethiol	C_6H_6S	108-98-5	110.17684	6.081621	0.2724357	0.4430641	−0.3449689	258.270	5.06340	689.000	0
18	Benzoic acid	$C_7H_6O_2$	65-85-0	122.12134	11.374	1.4864	−2.3097	1.4025	395.450	6.94850	751.000	0
19	Benzonitrile	C_7H_5N	100-47-0	103.1213	6.4966	0.54598	−0.42255	0.2597	260.280	5.33600	702.300	0
20	Benzophenone	$C_{13}H_{10}O$	119-61-9	182.2179	10.523	0.87091	−0.45568		321.350	7.48950	830.000	0
21	Benzyl alcohol	C_7H_8O	100-51-6	108.13782	8.4762	0.35251	0.43853	−0.3026	257.850	6.88000	720.150	0
22	Benzyl ethyl ether	$C_9H_{12}O$	539-30-0	136.19098	8.2051	1.4438	−1.8053	0.79682	275.650	5.24700	662.000	0
23	Benzyl mercaptan	C_7H_8S	100-53-8	124.20342	11.544	2.2311	−2.5186	0.83063	243.950	6.26740	718.000	0
24	Biphenyl	$C_{12}H_{10}$	92-52-4	154.2078	7.6737	0.28923	0.34048	−0.26011	342.200	6.11280	773.000	0
25	Bromine	Br_2	7726-95-6	159.808	5.5242	1.5015	−1.7185	0.6614	265.850	3.28440	584.150	0
26	Bromobenzene	C_6H_5Br	108-86-1	157.0079	5.0392	−0.2027	1.2207	−0.70705	242.430	4.71870	670.150	0
27	Bromoethane	C_2H_5Br	74-96-4	108.965	3.9247	0.28886	0.38616	−0.35786	154.250	3.42380	503.800	0
28	Bromomethane	CH_3Br	74-83-9	94.93852	3.1988	0.2896	0.0344	0.0114	179.440	2.75620	464.000	0
29	1,2-Butadiene	C_4H_6	590-19-2	54.09044	3.039582	0.2698591	−0.3789853	0.5165115	136.950	2.82540	452.000	0
30	1,3-Butadiene	C_4H_6	106-99-0	54.09044	3.8018	0.90446	−0.74555	0.24234	164.250	2.76410	425.000	0
31	Butane	C_4H_{10}	106-97-8	58.1222	3.6238	0.8337	−0.82274	0.39613	134.860	2.86840	425.120	0
32	1,2-Butanediol	$C_4H_{10}O_2$	584-03-2	90.121	9.4943	0.64824	−0.24961	0.058188	220.000	7.58750	680.000	0
33	1,3-Butanediol	$C_4H_{10}O_2$	107-88-0	90.121	11.344	1.4414	−1.9412	1.035	196.150	8.14880	676.000	0
34	1-Butanol	$C_4H_{10}O$	71-36-3	74.1216	7.1274	0.0483	0.8966	−0.5116	183.850	6.36430	563.100	0
35	2-Butanol	$C_4H_{10}O$	78-92-2	74.1216	7.5007	0.09616	1.1444	−0.78448	158.450	6.59780	535.900	0
36	1-Butene	C_4H_8	106-98-9	56.10632	3.3774	0.5107	−0.17304	0.05181	87.800	3.01970	419.500	0
37	*cis*-2-Butene	C_4H_8	590-18-1	56.10632	4.3478	1.3196	−1.5096	0.63987	134.260	3.10310	435.500	0
38	*trans*-2-Butene	C_4H_8	624-64-6	56.10632	3.8671	1.0672	−1.2574	0.62539	167.620	2.77200	428.600	0
39	Butyl acetate	$C_6H_{12}O_2$	123-86-4	116.15828	8.8262	1.7772	−1.926	0.63659	199.650	5.32550	575.400	0
40	Butylbenzene	$C_{10}H_{14}$	104-51-8	134.21816	8.0911	1.2599	−1.2911	0.47381	185.300	5.94710	660.500	0
41	Butyl mercaptan	$C_4H_{10}S$	109-79-5	90.1872	5.0883	0.47166	−0.0078998	−0.071247	157.460	4.37960	570.100	0
42	*sec*-Butyl mercaptan	$C_4H_{10}S$	513-53-1	90.1872	4.7563	0.49657	−0.13123	0.027307	133.020	4.18430	554.000	0
43	1-Butyne	C_4H_6	107-00-6	54.09044	4.3143	1.0149	−0.99196	0.40891	147.430	3.20490	440.000	0
44	Butyraldehyde	C_4H_8O	123-72-8	72.10572	4.17	0.23488	0.020947	0.086255	176.800	3.77230	537.200	0
45	Butyric acid	$C_4H_8O_2$	107-92-6	88.1051	6.1947	1.6524	−2.8505	1.6285	250.000	4.16190	615.700	0
46	Butyronitrile	C_4H_7N	109-74-0	69.1051	5.1323	0.32362	0.16979	−0.18921	161.300	4.57590	585.400	0

47	Carbon dioxide	CO_2	124-38-9	44.0095	2.173	0.382	−0.4339	0.42213	216.580	1.52020	304.210	0
48	Carbon disulfide	CS_2	75-15-0	76.1407	4.0359	1.0897	−1.6483	0.9779	161.110	3.17860	552.000	0
49	Carbon monoxide	CO	630-08-0	28.0101	0.8585	0.4921	−0.326	0.2231	68.130	0.65166	132.920	0
50	Carbon tetrachloride	CCl_4	56-23-5	153.8227	4.6113	0.55241	−0.18725	0.022973	250.330	3.47600	556.350	0
51	Carbon tetrafluoride	CF_4	75-73-0	88.0043	1.9311	0.94983	−1.0615	0.51894	89.560	1.42150	227.510	0
52	Chlorine	Cl_2	7782-50-5	70.906	3.068	0.8458	−0.9001	0.453	172.120	2.28780	417.150	0
53	Chlorobenzene	C_6H_5Cl	108-90-7	112.5569	4.6746	0.013055	0.51777	−0.18852	227.950	4.32240	632.350	0
54	Chloroethane	C_2H_5Cl	75-00-3	64.5141	3.253	0.321	−0.252	0.295	136.750	2.95540	460.350	0
55	Chloroform	$CHCl_3$	67-66-3	119.37764	5.3032	1.0366	−0.79572	0.16746	209.630	3.65460	536.400	0
56	Chloromethane	CH_3Cl	74-87-3	50.4875	2.442	−0.298	0.87	−0.271	175.430	2.41470	416.250	0
57	1-Chloropropane	C_3H_7Cl	540-54-5	78.54068	3.93706	0.14297	0.55088	−0.3511	150.350	3.56930	503.150	0
58	2-Chloropropane	C_3H_7Cl	75-29-6	78.54068	3.9033	0.3867	0.008595	−0.016793	155.970	3.36320	489.000	0
59	*m*-Cresol	C_7H_8O	108-39-4	108.13782	6.87	−0.39158	1.7208	−0.97478	285.390	6.37340	705.850	0
60	*o*-Cresol	C_7H_8O	95-48-7	108.13782	13.355	2.3486	−2.5463	0.74218	304.190	6.06020	697.550	0
61	*p*-Cresol	C_7H_8O	106-44-5	108.13782	8.0979	−0.33815	2.3495	−1.7015	307.930	6.57120	704.650	0
62	Cumene	C_9H_{12}	98-82-8	120.19158	7.5255	1.3714	−1.5024	0.59731	177.140	5.41880	631.000	0
63	Cyanogen	C_2N_2	460-19-5	52.0348	2.3558	−0.29499	0.34496	0.24271	245.250	2.33890	400.150	0
64	Cyclobutane	C_4H_8	287-23-0	56.10632	3.6762	0.76666	−0.74793	0.35979	182.480	2.81720	459.930	0
65	Cyclohexane	C_6H_{12}	110-82-7	84.15948	5.193	1.0019	−1.0159	0.46332	279.690	3.38860	553.800	0
66	Cyclohexanol	$C_6H_{12}O$	108-93-0	100.15888	5.5761	−1.7498	4.5168	−2.4034	296.600	6.25790	650.100	0
67	Cyclohexanone	$C_6H_{10}O$	108-94-1	98.143	6.6898	1.0012	−0.96028	0.37622	242.000	4.84470	653.000	0
68	Cyclohexene	C_6H_{10}	110-83-8	82.1436	4.698	0.44894	0.070295	−0.14736	169.670	3.98460	560.400	0
69	Cyclopentane	C_5H_{10}	287-92-3	70.1329	3.4216	−0.21723	1.0245	−0.49752	179.280	3.30460	511.700	0
70	Cyclopentene	C_5H_8	142-29-0	68.11702	3.6524	0.17652	0.2777	−0.10817	138.130	3.37950	507.000	0
71	Cyclopropane	C_3H_6	75-19-4	42.07974	2.7681	0.44645	−0.28756	0.21791	145.590	2.33840	398.000	0
72	Cyclohexyl mercaptan	$C_6H_{12}S$	1569-69-3	116.22448	6.7798	1.1402	−1.1701	0.45855	189.640	5.10540	664.000	0
73	Decanal	$C_{10}H_{20}O$	112-31-2	156.2652	9.0851	1.3026	−1.6803	0.86441	285.000	6.02700	674.000	0
74	Decane	$C_{10}H_{22}$	124-18-5	142.28168	8.7515	1.3204	−1.2441	0.38061	243.510	5.60450	617.700	0
75	Decanoic acid	$C_{10}H_{20}O_2$	334-48-5	172.265	12.531	0.76281	−0.32459	0.054808	304.550	8.84640	722.100	0
76	1-Decanol	$C_{10}H_{22}O$	112-30-1	158.28108	7.9041	−1.36	4.0854	−2.3871	280.050	8.29590	688.000	0
77	1-Decene	$C_{10}H_{20}$	872-05-9	140.2658	6.6985	0.76944	−0.79975	0.42379	206.890	5.35240	616.600	0
78	Decyl mercaptan	$C_{10}H_{22}S$	143-10-2	174.34668	8.4103	0.40556	0.34553	−0.4009	247.560	6.81720	696.000	0
79	1-Decyne	$C_{10}H_{18}$	764-93-2	138.24992	10.603	1.7758	−1.6849	0.38281	229.150	6.07920	619.850	0
80	Deuterium	D_2	7782-39-0	4.0316	0.11867	−0.31087	0.28353	0.34543	18.730	0.12605	38.350	0
81	1,1-Dibromoethane	$C_2H_4Br_2$	557-91-5	187.86116	4.7061	0.098096	0.20134	0.22064	210.150	4.35520	628.000	0
82	1,2-Dibromoethane	$C_2H_4Br_2$	106-93-4	187.86116	6.057225	1.372193	−2.053024	1.161394	282.850	4.06410	650.150	0
83	Dibromomethane	CH_2Br_2	74-95-3	173.83458	6.1207	1.2282	−1.1989	0.40137	220.600	4.18700	611.000	0
84	Dibutyl ether	$C_8H_{18}O$	142-96-1	130.22792	6.4978	0.77464	−0.67379	0.31825	175.300	5.24340	584.100	0
85	*m*-Dichlorobenzene	$C_6H_4Cl_2$	541-73-1	147.00196	5.3065	0.20288	0.039962	0.12466	248.390	4.77510	683.950	0
86	*o*-Dichlorobenzene	$C_6H_4Cl_2$	95-50-1	147.00196	6.4394	0.67955	−0.58058	0.36746	256.150	5.09850	705.000	0
87	*p*-Dichlorobenzene	$C_6H_4Cl_2$	106-46-7	147.00196	7.0416	0.96641	−0.86362	0.32976	326.140	4.68520	684.750	0
88	1,1-Dichloroethane	$C_2H_4Cl_2$	75-34-3	98.95916	4.7631	1.0048	−1.2457	0.67919	176.190	3.62860	523.000	0
89	1,2-Dichloroethane	$C_2H_4Cl_2$	107-06-2	98.95916	5.6489	1.0038	−0.7936	0.17013	237.490	3.84750	561.600	0
90	Dichloromethane	CH_2Cl_2	75-09-2	84.93258	4.8739	0.9583	−0.79374	0.28069	178.010	3.58500	510.000	0
91	1,1-Dichloropropane	$C_3H_6Cl_2$	78-99-9	112.98574	5.6495	1.0359	−0.98747	0.39006	192.500	4.13210	560.000	0
92	1,2-Dichloropropane	$C_3H_6Cl_2$	78-87-5	112.98574	4.2593	−0.0038971	0.58142	−0.23734	172.710	4.03570	572.000	0
93	Diethanol amine	$C_4H_{11}NO_2$	111-42-2	105.13564	12.931	1.2215	−1.3197	0.50585	301.150	8.64260	736.600	0
94	Diethyl amine	$C_4H_{11}N$	109-89-7	73.13684	2.595917	−1.334101	2.366723	−0.7871881	223.350	3.35400	496.600	0
95	Diethyl ether	$C_4H_{10}O$	60-29-7	74.1216	5.947	1.6416	−1.7394	0.5831	156.850	3.75450	466.700	0
96	Diethyl sulfide	$C_4H_{10}S$	352-93-2	90.1872	4.7806	0.39507	−0.028657	0.014929	169.200	4.15460	557.150	0

(*Continued*)

TABLE 2-69 Heats of Vaporization of Inorganic and Organic Liquids (J/kmol) (*Continued*)

Cmpd. no.*	Name	Formula	CAS	Mol. wt.	$C_1 \times$ 1E-07	C_2	C_3	C_4	T_{min}, K	ΔH_v at $T_{min} \times$ 1E-07	T_{max}, K	ΔH_v at T_{max}
97	1,1-Difluoroethane	$C_2H_4F_2$	75-37-6	66.04997	3.663	0.93553	−0.9806	0.46753	154.560	2.67130	386.440	0
98	1,2-Difluoroethane	$C_2H_4F_2$	624-72-6	66.04997	4.2313	0.90591	−0.59583	0.074323	215.000	2.78200	445.000	0
99	Difluoromethane	CH_2F_2	75-10-5	52.02339	3.3907	1.1148	−1.2957	0.58214	136.950	2.40150	351.255	0
100	Diisopropyl amine	$C_6H_{15}N$	108-18-9	101.19	2.8258	−1.5731	2.9709	−1.1073	176.850	3.76470	523.100	0
101	Diisopropyl ether	$C_6H_{14}O$	108-20-3	102.17476	4.630224	1.265631	−2.325122	1.525306	187.650	3.47860	500.050	0
102	Diisopropyl ketone	$C_7H_{14}O$	565-80-0	114.18546	5.2429	0.80535	−1.4147	1.0288	204.810	4.33570	576.000	0
103	1,1-Dimethoxyethane	$C_4H_{10}O_2$	534-15-6	90.121	4.3872	0.56226	−0.60662	0.4202	159.950	3.75280	507.800	0
104	1,2-Dimethoxypropane	$C_5H_{12}O_2$	7778-85-0	104.14758	4.7999	0.30724	−0.024545	0.091361	226.100	4.05570	543.000	0
105	Dimethyl acetylene	C_4H_6	503-17-3	54.09044	3.6881	0.37958	−0.22063	0.21968	240.910	2.92830	473.200	0
106	Dimethyl amine	C_2H_7N	124-40-3	45.08368	3.4422	−0.49774	1.8024	−0.97741	180.960	3.29670	437.200	0
107	2,3-Dimethylbutane	C_6H_{14}	79-29-8	86.17536	4.8054	1.0013	−1.0356	0.4668	145.190	3.72820	500.000	0
108	1,1-Dimethylcyclohexane	C_8H_{16}	590-66-9	112.21264	5.5503	0.7692	−0.56915	0.2328	239.660	4.11250	591.150	0
109	*cis*-1,2-Dimethylcyclohexane	C_8H_{16}	2207-01-4	112.21264	5.4479	0.56826	−0.29095	0.15397	223.160	4.36640	606.150	0
110	*trans*-1,2-Dimethylcyclohexane	C_8H_{16}	6876-23-9	112.21264	5.8702	1.0022	−1.0188	0.46949	184.990	4.47370	596.150	0
111	Dimethyl disulfide	$C_2H_6S_2$	624-92-0	94.19904	5.8328	0.99061	−0.9035	0.34792	188.440	4.43890	615.000	0
112	Dimethyl ether	C_2H_6O	115-10-6	46.06844	2.6377	−0.072806	0.54324	−0.13977	131.650	2.54380	400.100	0
113	*N,N*-Dimethyl formamide	C_3H_7NO	68-12-2	73.09378	5.9186	0.37731	0.0051489	−0.0027682	212.720	5.09300	649.600	0
114	2,3-Dimethylpentane	C_7H_{16}	565-59-3	100.20194	5.3387	0.9509	−0.97007	0.44354	160.000	4.16640	537.300	0
115	Dimethyl phthalate	$C_{10}H_{10}O_4$	131-11-3	194.184	10.263	1.504	−2.441	1.388	274.180	7.17430	766.000	0
116	Dimethylsilane	C_2H_8Si	1111-74-6	60.17042	2.919	0.47315	−0.19035	0.078322	122.930	2.50210	402.000	0
117	Dimethyl sulfide	C_2H_6S	75-18-3	62.134	4.5493	0.81834	−0.47199	0.047802	174.880	3.43160	503.040	0
118	Dimethyl sulfoxide	C_2H_6OS	67-68-5	78.13344	7.0161	0.9938	−1.4767	0.97462	291.670	5.27280	729.000	0
119	Dimethyl terephthalate	$C_{10}H_{10}O_4$	120-61-6	194.184	7.66109	0.36322	−0.28551	0.23966	413.786	6.19680	777.400	0
120	1,4-Dioxane	$C_4H_8O_2$	123-91-1	88.10512	5.0368	0.37438	−0.0004344	0.0050378	284.950	3.92500	587.000	0
121	Diphenyl ether	$C_{12}H_{10}O$	101-84-8	170.2072	6.9745	0.43414	−0.26069	0.15024	300.030	5.84730	766.800	0
122	Dipropyl amine	$C_6H_{15}N$	142-84-7	101.19	7.993218	1.697066	−1.895364	0.6664379	210.150	4.77500	550.000	0
123	Dodecane	$C_{12}H_{26}$	112-40-3	170.33484	10.962	1.5544	−1.5358	0.46286	263.570	6.52590	658.000	0
124	Eicosane	$C_{20}H_{42}$	112-95-8	282.54748	12.86	0.50351	0.32986	−0.42184	309.580	9.59330	768.000	0
125	Ethane	C_2H_6	74-84-0	30.069	2.1091	0.60646	−0.55492	0.32799	90.350	1.78790	305.320	0
126	Ethanol	C_2H_6O	64-17-5	46.06844	6.5831	1.1905	−1.7666	1.0012	159.050	5.00600	514.000	0
127	Ethyl acetate	$C_4H_8O_2$	141-78-6	88.10512	4.8272	0.2372	0.32434	−0.19429	189.600	4.16260	523.300	0
128	Ethyl amine	C_2H_7N	75-04-7	45.08368	4.275	0.5857	−0.332	0.169	192.150	3.29550	456.150	0
129	Ethylbenzene	C_8H_{10}	100-41-4	106.165	7.4288	1.6218	−2.0278	0.906	178.200	5.08620	617.150	0
130	Ethyl benzoate	$C_9H_{10}O_2$	93-89-0	150.1745	6.8245	1.071	−1.943	1.2788	238.450	5.40830	698.000	0
131	2-Ethyl butanoic acid	$C_6H_{12}O_2$	88-09-5	116.15828	8.7212	0.79255	−0.64882	0.28369	258.150	6.51870	655.000	0
132	Ethyl butyrate	$C_6H_{12}O_2$	105-54-4	116.15828	5.7624	0.46881	−0.14511	0.061942	175.150	4.92230	571.000	0
133	Ethylcyclohexane	C_8H_{16}	1678-91-7	112.21264	6.0933	0.96339	−0.94933	0.44931	161.840	4.84420	609.150	0
134	Ethylcyclopentane	C_7H_{14}	1640-89-7	98.18606	5.7997	1.0161	−0.92313	0.33212	134.710	4.65290	569.500	0
135	Ethylene	C_2H_4	74-85-1	28.05316	2.0639	0.80153	−0.8128	0.4179	104.000	1.59660	282.340	0
136	Ethylenediamine	$C_2H_8N_2$	107-15-3	60.09832	5.6091	0.077011	0.66595	−0.43437	284.290	4.62220	593.000	0
137	Ethylene glycol	$C_2H_6O_2$	107-21-1	62.06784	8.9207	0.83021	−0.88126	0.53255	260.150	6.87400	720.000	0
138	Ethyleneimine	C_2H_5N	151-56-4	43.0678	4.7462	0.37327	0.047488	0.045906	195.200	3.96760	537.000	0
139	Ethylene oxide	C_2H_4O	75-21-8	44.05256	4.4514	1.1569	−1.2336	0.50875	160.650	3.19090	469.150	0
140	Ethyl formate	$C_3H_6O_2$	109-94-4	74.07854	4.4151	0.51536	−0.39281	0.28461	193.550	3.63270	508.400	0
141	2-Ethyl hexanoic acid	$C_8H_{16}O_2$	149-57-5	144.211	11.08845	0.7029	−0.10529	−0.17295	155.150	9.30840	674.600	0

142	Ethylhexyl ether	$C_8H_{18}O$	5756-43-4	130.22792	6.6828	0.6664	−0.4545	0.20227	180.000	5.46390	583.000	0
143	Ethylisopropyl ether	$C_5H_{12}O$	625-54-7	88.14818	4.2527	0.42014	−0.17341	0.14204	140.000	3.73840	489.000	0
144	Ethylisopropyl ketone	$C_6H_{12}O$	565-69-5	100.15888	5.6735	0.85864	−1.1249	0.69714	204.150	4.45040	567.000	0
145	Ethyl mercaptan	C_2H_6S	75-08-1	62.13404	4.292	0.93726	−1.0593	0.54636	125.260	3.50010	499.150	0
146	Ethyl propionate	$C_5H_{10}O_2$	105-37-3	102.1317	5.033	−0.023028	0.84791	−0.44199	199.250	4.53900	546.000	0
147	Ethylpropyl ether	$C_5H_{12}O$	628-32-0	88.14818	5.438	0.60624			145.650	4.41400	500.230	0
148	Ethyltrichlorosilane	$C_2H_5Cl_3Si$	115-21-9	163.506	5.0124	0.48381	−0.1946	0.12282	167.550	4.29170	559.950	0
149	Fluorine	F_2	7782-41-4	37.9968064	0.89107	0.48888	−0.44035	0.31792	53.480	0.75083	144.120	0
150	Fluorobenzene	C_6H_5F	462-06-6	96.1023032	3.7517	−0.33542	1.0497	−0.40021	230.940	3.69360	560.090	0
151	Fluoroethane	C_2H_5F	353-36-6	48.0595	2.4749	0.18492	−0.21197	0.36038	129.950	2.31740	375.310	0
152	Fluoromethane	CH_3F	593-53-3	34.03292	1.9302	−0.2029	0.65339	−0.16704	131.350	1.89050	317.420	0
153	Formaldehyde	CH_2O	50-00-0	30.02598	2.9575	0.098296	0.28373		155.150	2.69310	420.000	0
154	Formamide	CH_3NO	75-12-7	45.04062	5.8307	−0.62844	1.6751	−0.77554	275.700	6.17220	771.000	0
155	Formic acid	CH_2O_2	64-18-6	46.0257	2.3195	1.9091	−5.0003	3.2641	250.000	1.88650	588.000	0
156	Furan	C_4H_4O	110-00-9	68.07396	4.4388	0.82914	−0.72757	0.33552	196.290	3.27960	490.150	0
157	Helium-4	He	7440-59-7	4.0026	0.012504	1.3038	−2.6954	1.7098	2.200	0.00966	5.200	0
158	Heptadecane	$C_{17}H_{36}$	629-78-7	240.46774	15.97	1.977	−2.2318	0.78544	295.130	8.59730	736.000	0
159	Heptanal	$C_7H_{14}O$	111-71-7	114.18546	4.7135	−0.27964	0.89761	−0.33523	229.800	4.69820	620.000	0
160	Heptane	C_7H_{16}	142-82-5	100.20194	5.2516	0.51283	−0.10982	−0.01018	182.570	4.31810	540.200	0
161	Heptanoic acid	$C_7H_{14}O_2$	111-14-8	130.185	12.916	1.4923	−1.3795	0.39603	265.830	7.80040	677.300	0
162	1-Heptanol	$C_7H_{16}O$	111-70-6	116.20134	7.0236	−1.3652	3.987	−2.2545	239.150	7.64980	632.300	0
163	2-Heptanol	$C_7H_{16}O$	543-49-7	116.20134	11.119	1.3264	−1.1057	0.36023	220.000	7.18220	608.300	0
164	3-Heptanone	$C_7H_{14}O$	106-35-4	114.18546	6.067	0.18619	0.47762	−0.26967	234.150	5.16400	606.600	0
165	2-Heptanone	$C_7H_{14}O$	110-43-0	114.18546	6.2857	0.3899	0.17742	−0.19455	238.150	5.08510	611.400	0
166	1-Heptene	C_7H_{14}	592-76-7	98.18606	4.9437	0.35428	0.22149	−0.2353	154.120	4.32080	537.400	0
167	Heptyl mercaptan	$C_7H_{16}S$	1639-09-4	132.26694	6.7011	0.38694	0.24973	−0.26228	229.920	5.51330	645.000	0
168	1-Heptyne	C_7H_{12}	628-71-7	96.17018	4.8235	0.35765	−0.060379	0.045749	192.220	4.15950	547.000	0
169	Hexadecane	$C_{16}H_{34}$	544-76-3	226.44116	14.979	1.89	−2.0762	0.71724	291.310	8.19340	723.000	0
170	Hexanal	$C_6H_{12}O$	66-25-1	100.15888	5.3802	0.52771	−0.4757	0.3242	214.930	4.49940	594.000	0
171	Hexane	C_6H_{14}	110-54-3	86.17536	4.3848	0.34057	0.063282	−0.017037	177.830	3.75320	507.600	0
172	Hexanoic acid	$C_6H_{12}O_2$	142-62-1	116.158	9.0746	0.8926	−0.75172	0.34378	269.250	6.47830	660.200	0
173	1-Hexanol	$C_6H_{14}O$	111-27-3	102.17476	7.035	−0.9575	3.1431	−1.8066	228.550	7.15090	611.300	0
174	2-Hexanol	$C_6H_{14}O$	626-93-7	102.175	9.591	1.236	−1.359	0.717	223.000	6.46500	585.300	0
175	2-Hexanone	$C_6H_{12}O$	591-78-6	100.15888	5.5382	0.19854	0.47139	−0.31556	217.350	4.75590	587.610	0
176	3-Hexanone	$C_6H_{12}O$	589-38-8	100.15888	5.8213	0.44196	0.090968	−0.15346	217.500	4.70770	582.820	0
177	1-Hexene	C_6H_{12}	592-41-6	84.15948	4.249938	0.52336	−0.57323	0.45101	133.390	3.75440	504.000	0
178	3-Hexyne	C_6H_{10}	928-49-4	82.1436	4.282053	0.5862582	−0.9710554	0.8523437	170.050	3.73310	544.000	0
179	Hexyl mercaptan	$C_6H_{14}S$	111-31-9	118.24036	5.9346	0.41114	0.043753	−0.081964	192.620	5.08670	623.000	0
180	1-Hexyne	C_6H_{10}	693-02-7	82.1436	6.8856	1.9737	−2.4886	0.99472	141.250	4.44750	516.200	0
181	2-Hexyne	C_6H_{10}	764-35-2	82.1436	6.0629	1.1597	−0.99686	0.32547	183.650	4.26690	549.000	0
182	Hydrazine	H_4N_2	302-01-2	32.04516	5.9794	0.9424	−1.398	0.8862	274.690	4.52380	653.150	0
183	Hydrogen	H_2	1333-74-0	2.01588	0.10127	0.698	−1.817	1.447	13.950	0.09131	33.190	0
184	Hydrogen bromide	BrH	10035-10-6	80.91194	1.5513	−0.80615	1.1788	−0.070978	185.150	1.81940	363.150	0
185	Hydrogen chloride	ClH	7647-01-0	36.46094	3.4872	2.1553	−2.9128	1.2442	158.970	1.74720	324.650	0
186	Hydrogen cyanide	CHN	74-90-8	27.02534	3.3907	0.43574	−0.56984	0.36017	259.830	2.79840	456.650	0
187	Hydrogen fluoride	FH	7664-39-3	20.0063432	13.451	13.36	−23.383	10.785	277.560	0.71043	461.150	0
188	Hydrogen sulfide	H_2S	7783-06-4	34.08088	2.6092	0.47883	−0.2233	0.12903	187.680	1.97460	373.530	0
189	Isobutyric acid	$C_4H_8O_2$	79-31-2	88.10512	4.0385	0.82698	−2.033	1.4769	227.150	3.55340	605.000	0
190	Isopropyl amine	C_3H_9N	75-31-0	59.11026	5.6917	1.2441	−1.0742	0.32331	177.950	3.74360	471.850	0
191	Malonic acid	$C_3H_4O_4$	141-82-2	104.06146	7.7143	−1.0139	2.2898	−0.91517	409.150	8.31300	834.000	0

(*Continued*)

TABLE 2-69 Heats of Vaporization of Inorganic and Organic Liquids (J/kmol) (*Continued*)

Cmpd. no.*	Name	Formula	CAS	Mol. wt.	$C_1 \times$ 1E-07	C_2	C_3	C_4	T_{min}, K	ΔH_v at $T_{min} \times$ 1E-07	T_{max}, K	ΔH_v at T_{max}
192	Methacrylic acid	$C_4H_6O_2$	79-41-4	86.08924	176.7855	16.29674	−28.8053	14.522	288.150	4.28480	662.000	0
193	Methane	CH_4	74-82-8	16.0425	1.0194	0.26087	−0.14694	0.22154	90.690	0.87235	190.564	0
194	Methanol	CH_4O	67-56-1	32.04186	3.2615	−1.0407	1.8695	−0.60801	175.470	3.97480	512.500	0
195	*N*-Methyl acetamide	C_3H_7NO	79-16-3	73.09378	6.8795	0.012343	0.77544	−0.4379	301.150	5.97080	718.000	0
196	Methyl acetate	$C_3H_6O_2$	79-20-9	74.07854	4.329	0.18771	0.33528	−0.17125	175.150	3.83890	506.550	0
197	Methyl acetylene	C_3H_4	74-99-7	40.06386	3.0066	0.25873	0.033435	0.087053	170.450	2.56480	402.400	0
198	Methyl acrylate	$C_4H_6O_2$	96-33-3	86.08924	6.2689	1.6462	−2.2795	1.0975	196.320	4.04870	536.000	0
199	Methyl amine	CH_5N	74-89-5	31.0571	4.2834	0.90615	−0.93138	0.4776	179.690	3.09550	430.050	0
200	Methyl benzoate	$C_8H_8O_2$	93-58-3	136.14792	5.8474	−0.6042	2.1528	−1.2871	260.750	5.78260	693.000	0
201	3-Methyl-1,2-butadiene	C_5H_8	598-25-4	68.11702	4.2709	0.70788	−0.67299	0.43009	159.530	3.46030	490.000	0
202	2-Methylbutane	C_5H_{12}	78-78-4	72.14878	4.233	0.95448	−0.98289	0.45719	113.250	3.43450	460.400	0
203	2-Methylbutanoic acid	$C_5H_{10}O_2$	116-53-0	102.1317	8.223	0.80923	−0.70838	0.32497	193.000	6.57690	643.000	0
204	3-Methyl-1-butanol	$C_5H_{12}O$	123-51-3	88.1482	10.165	1.4422	−1.6123	0.75941	155.950	7.27510	577.200	0
205	2-Methyl-1-butene	C_5H_{10}	563-46-2	70.1329	4.5217	1.0678	−1.1735	0.55525	135.580	3.46420	465.000	0
206	2-Methyl-2-butene	C_5H_{10}	513-35-9	70.1329	4.897	1.1838	−1.2079	0.43353	139.390	3.61390	470.000	0
207	2-Methyl -1-butene-3-yne	C_5H_6	78-80-8	66.10114	4.5822	1.3506	−1.6049	0.71575	160.150	3.20970	492.000	0
208	Methylbutyl ether	$C_5H_{12}O$	628-28-4	88.14818	4.4918	0.32576	0.1124	−0.067377	157.480	3.94480	512.740	0
209	Methylbutyl sulfide	$C_5H_{12}S$	628-29-5	104.214	6.8872	1.2703	−1.2699	0.44562	175.300	4.96500	593.000	0
210	3-Methyl-1-butyne	C_5H_8	598-23-2	68.11702	3.1821	−0.89979	2.8579	−1.7826	183.450	3.25930	463.200	0
211	Methyl butyrate	$C_5H_{10}O_2$	623-42-7	102.1317	5.1299	0.10033	0.64085	−0.38359	187.350	4.58370	554.500	0
212	Methylchlorosilane	CH_5ClSi	993-00-0	80.5889	4.4696	1.1838	−0.87047	0.056694	139.050	3.16280	442.000	0
213	Methylcyclohexane	C_7H_{14}	108-87-2	98.18606	5.3789	0.71218	−0.28902	−0.014989	146.580	4.45440	572.100	0
214	1-Methylcyclohexanol	$C_7H_{14}O$	590-67-0	114.18546	7.7573	0.56959	0.7221	−0.86278	299.150	5.13430	686.000	0
215	*cis*-2-Methylcyclohexanol	$C_7H_{14}O$	7443-70-1	114.18546	9.4404	0.8722	−0.33173	−0.10938	280.150	6.16980	614.000	0
216	*trans*-2-Methylcyclohexanol	$C_7H_{14}O$	7443-52-9	114.18546	9.4625	0.88768	−0.39167	−0.057899	269.150	6.31440	617.000	0
217	Methylcyclopentane	C_6H_{12}	96-37-7	84.15948	5.1137	0.98237	−0.90553	0.34878	130.730	4.10400	532.700	0
218	1-Methylcyclopentene	C_6H_{10}	693-89-0	82.1436	4.2603	0.34248	−0.088074	0.13072	146.620	3.84130	542.000	0
219	3-Methylcyclopentene	C_6H_{10}	1120-62-3	82.1436	4.2081	0.43515	−0.24963	0.20811	168.540	3.63850	526.000	0
220	Methyldichlorosilane	CH_4Cl_2Si	75-54-7	115.03396	4.8242	1.3456	−1.5783	0.61746	182.550	3.24190	483.000	0
221	Methylethyl ether	C_3H_8O	540-67-0	60.09502	3.7592	0.64544	−0.46384	0.21809	160.000	2.98760	437.800	0
222	Methylethyl ketone	C_4H_8O	78-93-3	72.10572	5.2256	0.9427	−1.0868	0.55491	186.480	3.98780	535.500	0
223	Methylethyl sulfide	C_3H_8S	624-89-5	76.1606	4.9455	0.78235	−0.56637	0.22052	167.230	3.90650	533.000	0
224	Methyl formate	$C_2H_4O_2$	107-31-3	60.05196	4.7691	0.98928	−0.98574	0.42695	174.150	3.51240	487.200	0
225	Methylisobutyl ether	$C_5H_{12}O$	625-44-5	88.14818	4.266	0.37791	0.0037827	−0.001928	188.000	3.56270	497.000	0
226	Methylisobutyl ketone	$C_6H_{12}O$	108-10-1	100.15888	8.1495	1.8479	−2.1328	0.76628	189.150	4.98940	574.600	0
227	Methyl Isocyanate	C_2H_3NO	624-83-9	57.05132	3.2575	−0.58542	1.4307	−0.54833	256.150	3.22260	488.000	0
228	Methylisopropyl ether	$C_4H_{10}O$	598-53-8	74.1216	3.8148	0.38959	−0.15805	0.15228	127.930	3.39970	464.480	0
229	Methylisopropyl ketone	$C_5H_{10}O$	563-80-4	86.1323	2.7567	−1.6298	3.0001	−1.1865	180.150	3.74640	553.400	0
230	Methylisopropyl sulfide	$C_4H_{10}S$	1551-21-9	90.1872	4.0063	−0.17489	0.94886	−0.44746	171.640	3.89410	553.100	0
231	Methyl mercaptan	CH_4S	74-93-1	48.10746	3.0851	−0.29985	1.4733	−0.89559	150.180	2.99210	469.950	0
232	Methyl methacrylate	$C_5H_8O_2$	80-62-6	100.11582	5.6613	0.3132	0.57076	−0.46309	224.950	4.46890	566.000	0
233	2-Methyloctanoic acid	$C_9H_{18}O_2$	3004-93-1	158.23802	10.53	0.7454	−0.39297	0.047214	240.000	8.11060	694.000	0
234	2-Methylpentane	C_6H_{14}	107-83-5	86.17536	5.0351	1.1424	−1.3269	0.62481	119.550	3.97590	497.700	0
235	Methyl pentyl ether	$C_6H_{14}O$	628-80-8	102.17476	5.0003	0.42203	−0.14687	0.11507	176.000	4.30250	546.490	0
236	2-Methylpropane	C_4H_{10}	75-28-5	58.1222	3.9654	1.274	−1.4255	0.60708	113.540	2.93300	407.800	0

237	2-Methyl-2-propanol	$C_4H_{10}O$	75-65-0	74.1216	2.2708	−3.8183	6.7137	−2.7247	298.970	4.65420	506.200	0
238	2-Methyl propene	C_4H_8	115-11-7	56.10632	4.3172	1.5334	−1.9	0.83816	132.810	2.92920	417.900	0
239	Methyl propionate	$C_4H_8O_2$	554-12-1	88.10512	4.9563	0.22568	0.45949	−0.31541	185.650	4.26690	530.600	0
240	Methylpropyl ether	$C_4H_{10}O$	557-17-5	74.1216	4.2364	0.25325	0.58114	−0.4757	133.970	3.73780	476.250	0
241	Methylpropyl sulfide	$C_4H_{10}S$	3877-15-4	90.1872	5.7015	1.0015	−0.95589	0.38421	160.170	4.42340	565.000	0
242	Methylsilane	CH_6Si	992-94-9	46.14384	2.0613	0.33885	−0.63279	0.6454	116.340	1.90240	352.500	0
243	alpha-Methyl styrene	C_9H_{10}	98-83-9	118.1757	5.3293	0.15144	0.15411	0.066538	249.950	4.79340	654.000	0
244	Methyl tert-butyl ether	$C_5H_{12}O$	1634-04-4	88.1482	4.0052	0.19309	0.20658	−0.010244	164.550	3.60720	497.100	0
245	Methyl vinyl ether	C_3H_6O	107-25-5	58.07914	3.2566	0.10042	0.26926	−0.0003252	151.150	2.99980	437.000	0
246	Naphthalene	$C_{10}H_8$	91-20-3	128.17052	5.093	−0.44584	1.0348	−0.19528	353.430	5.09530	748.400	0
247	Neon	Ne	7440-01-9	20.1797	0.19063	−0.048268	0.11183	0.25512	24.560	0.17706	44.400	0
248	Nitroethane	$C_2H_5NO_2$	79-24-3	75.0666	3.8821	−1.2495	3.2285	−1.8283	183.630	4.54440	593.000	0
249	Nitrogen	N_2	7727-37-9	28.0134	0.74905	0.40406	−0.317	0.27343	63.150	0.60243	126.200	0
250	Nitrogen trifluoride	F_3N	7783-54-2	71.00191	1.8859	1.0917	−1.4143	0.76165	66.460	1.46720	234.000	0
251	Nitromethane	CH_3NO_2	75-52-5	61.04002	4.7494	0.1535	0.49623	−0.38464	244.600	4.05640	588.150	0
252	Nitrous oxide	N_2O	10024-97-2	44.0128	2.2724	0.22278	0.29352	−0.13493	182.300	1.66660	309.570	0
253	Nitric oxide	NO	10102-43-9	30.0061	0.94287	−2.0627	3.2659	−1.0186	109.500	1.44210	180.150	0
254	Nonadecane	$C_{19}H_{40}$	629-92-5	268.5209	17.161	1.7444	−1.6657	0.43242	305.040	9.52160	758.000	0
255	Nonanal	$C_9H_{18}O$	124-19-6	142.23862	4.5173	−1.1627	2.3227	−0.89716	267.300	5.47060	658.500	0
256	Nonane	C_9H_{20}	111-84-2	128.2551	7.888	1.3126	−1.3571	0.5034	219.660	5.25710	594.600	0
257	Nonanoic acid	$C_9H_{18}O_2$	112-05-0	158.238	12.126	0.82704	−0.42449	0.08636	285.550	8.59240	710.700	0
258	1-Nonanol	$C_9H_{20}O$	143-08-8	144.2545	7.5429	−1.5966	4.6489	−2.7229	268.150	8.24110	670.900	0
259	2-Nonanol	$C_9H_{20}O$	628-99-9	144.255	14.251	1.418	−0.53849	−0.33162	238.150	8.32860	649.500	0
260	1-Nonene	C_9H_{18}	124-11-8	126.23922	5.9054	0.61039	−0.54533	0.30683	191.910	4.92180	593.100	0
261	Nonyl mercaptan	$C_9H_{20}S$	1455-21-6	160.3201	6.6716	−0.70869	2.636	−1.6685	253.050	6.54750	681.000	0
262	1-Nonyne	C_9H_{16}	3452-09-3	124.22334	8.7405	1.5599	−1.7205	0.64325	223.150	5.46000	598.050	0
263	Octadecane	$C_{18}H_{38}$	593-45-3	254.49432	17.264	2.167	−2.6262	1.0161	301.310	8.94580	747.000	0
264	Octanal	$C_8H_{16}O$	124-13-0	128.212	5.7746	0.16524	0.095968	0.10146	251.650	5.17550	638.900	0
265	Octane	C_8H_{18}	111-65-9	114.22852	6.7138	1.0769	−1.0124	0.37075	216.380	4.69860	568.700	0
266	Octanoic acid	$C_8H_{16}O_2$	124-07-2	144.211	12.626	1.1753	−0.835	0.1489	289.650	7.96680	694.260	0
267	1-Octanol	$C_8H_{18}O$	111-87-5	130.22792	7.2468	−1.2464	3.6797	−2.0665	257.650	7.67930	652.300	0
268	2-Octanol	$C_8H_{18}O$	123-96-6	130.228	12.581	1.3269	−0.69134	−0.08027	241.550	7.57060	629.800	0
269	2-Octanone	$C_8H_{16}O$	111-13-7	128.21204	11.048	2.5722	−3.7155	1.7307	252.850	5.50930	632.700	0
270	3-Octanone	$C_8H_{16}O$	106-68-3	128.21204	6.6142	0.58562	−0.40512	0.22144	255.550	5.20760	627.700	0
271	1-Octene	C_8H_{16}	111-66-0	112.21264	5.4859	0.26207	0.50642	−0.43873	171.450	4.79270	566.900	0
272	Octyl mercaptan	$C_8H_{18}S$	111-88-6	146.29352	7.3618	0.63204	−0.29459	0.063444	223.950	5.90250	667.300	0
273	1-Octyne	C_8H_{14}	629-05-0	110.19676	5.367	0.31607	0.073613	−0.040895	193.550	4.67380	574.000	0
274	Oxalic acid	$C_2H_2O_4$	144-62-7	90.03488	7.7236	−0.55914	1.8363	−0.85806	462.650	6.56310	828.000	0
275	Oxygen	O_2	7782-44-7	31.9988	0.9008	0.4542	−0.4096	0.3183	54.360	0.77419	154.580	0
276	Ozone	O_3	10028-15-6	47.9982	1.7289	0.12106	0.088716	0.10749	80.150	1.63130	261.000	0
277	Pentadecane	$C_{15}H_{32}$	629-62-9	212.41458	10.052	0.37778	0.50709	−0.46599	283.070	7.76350	708.000	0
278	Pentanal	$C_5H_{10}O$	110-62-3	86.1323	5.2373	1.0132	−1.6348	1.0473	191.590	4.12150	566.100	0
279	Pentane	C_5H_{12}	109-66-0	72.14878	4.5087	0.95886	−0.92384	0.39393	143.420	3.47660	469.700	0
280	Pentanoic acid	$C_5H_{10}O_2$	109-52-4	102.132	7.3197	1.2093	−1.9114	1.1591	239.150	5.38130	639.160	0
281	1-Pentanol	$C_5H_{12}O$	71-41-0	88.1482	7.39	−0.1464	1.4751	−0.9208	195.560	6.70050	588.100	0
282	2-Pentanol	$C_5H_{12}O$	6032-29-7	88.1482	8.8703	0.90566	−0.67627	0.3485	200.000	6.48970	561.000	0
283	2-Pentanone	$C_5H_{10}O$	107-87-9	86.1323	5.3818	0.35111	0.40264	−0.42577	196.290	4.45330	561.080	0
284	3-Pentanone	$C_5H_{10}O$	96-22-0	86.1323	4.451	−0.5483	2.1051	−1.3486	234.180	4.22720	560.950	0
285	1-Pentene	C_5H_{10}	109-67-1	70.1329	3.5027	0.3481	−0.19672	0.22394	108.016	3.22320	464.800	0
286	2-Pentyl mercaptan	$C_5H_{12}S$	2084-19-7	104.21378	5.0573	0.45827	−0.22568	0.16393	160.750	4.43430	584.300	0

(*Continued*)

TABLE 2-69 Heats of Vaporization of Inorganic and Organic Liquids (J/kmol) (*Continued*)

Cmpd. no.*	Name	Formula	CAS	Mol. wt.	$C_1 \times$ 1E-07	C_2	C_3	C_4	T_{min}, K	ΔH_v at $T_{min} \times$ 1E-07	T_{max}, K	ΔH_v at T_{max}
287	Pentyl mercaptan	$C_5H_{12}S$	110-66-7	104.21378	5.4925	0.38608	0.12415	−0.13245	197.450	4.65540	598.000	0
288	1-Pentyne	C_5H_8	627-19-0	68.11702	5.1346	1.3829	−1.6264	0.67069	167.450	3.49690	481.200	0
289	2-Pentyne	C_5H_8	627-21-4	68.11702	5.4839	0.98943	−0.46159	−0.064298	163.830	3.99170	519.000	0
290	Phenanthrene	$C_{14}H_{10}$	85-01-8	178.2292	10.336	1.0678	−1.0693	0.39121	372.380	7.05940	869.000	0
291	Phenol	C_6H_6O	108-95-2	94.11124	6.283	−0.64878	2.4219	−1.4972	314.060	5.77350	694.250	0
292	Phenyl isocyanate	C_7H_5NO	103-71-9	119.1207	7.3079	1.3522	−1.6409	0.66839	243.150	4.95580	653.000	0
293	Phthalic anhydride	$C_8H_4O_3$	85-44-9	148.11556	18.461	3.6123	−5.1111	1.9668	404.150	6.24970	791.000	0
294	Propadiene	C_3H_4	463-49-0	40.06386	2.8092	0.30398	0.017572	0.10232	136.870	2.44810	394.000	0
295	Propane	C_3H_8	74-98-6	44.09562	2.9209	0.78237	−0.77319	0.39246	85.470	2.47870	369.830	0
296	1-Propanol	C_3H_8O	71-23-8	60.09502	6.8988	0.6458	−0.5384	0.3317	146.950	5.83560	536.800	0
297	2-Propanol	C_3H_8O	67-63-0	60.095	8.502	1.474	−1.878	0.933	185.258	5.61950	508.300	0
298	Propenylcyclohexene	C_9H_{14}	13511-13-2	122.20746	5.9068	0.44605	−0.18075	0.13426	199.000	5.07850	636.000	0
299	Propionaldehyde	C_3H_6O	123-38-6	58.07914	3.3611	−0.27575	0.66467		165.000	3.43940	503.600	0
300	Propionic acid	$C_3H_6O_2$	79-09-4	74.0785	4	1.3936	−2.9465	1.794	252.450	3.09220	600.810	0
301	Propionitrile	C_3H_5N	107-12-0	55.0785	4.6242	0.12029	0.62187	−0.48327	180.370	4.16430	561.300	0
302	Propyl acetate	$C_5H_{10}O_2$	109-60-4	102.1317	6.4745	0.93113	−0.65971	0.17587	178.150	4.85340	549.730	0
303	Propyl amine	C_3H_9N	107-10-8	59.11026	3.4054	−0.29885	0.72173	−0.080173	188.360	3.46570	496.950	0
304	Propylbenzene	C_9H_{12}	103-65-1	120.19158	7.2986	1.2428	−1.361	0.56435	173.550	5.46050	638.350	0
305	Propylene	C_3H_6	115-07-1	42.07974	2.5216	0.33721	−0.18399	0.22377	87.890	2.31770	364.850	0
306	Propyl formate	$C_4H_8O_2$	110-74-7	88.10512	5.7631	0.70122	−0.15754	−0.11477	180.250	4.44670	538.000	0
307	2-Propyl mercaptan	C_3H_8S	75-33-2	76.16062	4.2077	0.33823	0.2503	−0.21085	142.610	3.70860	517.000	0
308	Propyl mercaptan	C_3H_8S	107-03-9	76.16062	4.4542	0.31385	0.30517	−0.24568	159.950	3.88960	536.600	0
309	1,2-Propylene glycol	$C_3H_8O_2$	57-55-6	76.09442	7.097812	−0.5348227	1.770112	−0.9904166	213.150	7.23780	626.000	0
310	Quinone	$C_6H_4O_2$	106-51-4	108.09476	6.2374	0.73316	−1.3874	1.0391	388.850	4.92650	683.000	0
311	Silicon tetrafluoride	F_4Si	7783-61-1	104.07911	2.3637	0.32997	0.055931	−0.011041	186.350	1.48720	259.000	0
312	Styrene	C_8H_8	100-42-5	104.14912	8.6409	1.8893	−2.1943	0.81388	242.540	4.92460	636.000	0
313	Succinic acid	$C_4H_6O_4$	110-15-6	118.08804	11.447	−0.04418	1.1282	−0.67562	460.850	8.50610	838.000	0
314	Sulfur dioxide	O_2S	7446-09-5	64.0638	2.846	−0.24905	0.62158	−0.020421	197.670	2.79080	430.750	0
315	Sulfur hexafluoride	F_6S	2551-62-4	146.0554192	1.3661	−1.1465	1.5442	−0.15766	223.150	1.62200	318.690	0
316	Sulfur trioxide	O_3S	7446-11-9	80.0632	0.8509	−7.1061	11.558	−4.483	289.950	4.41460	490.850	0
317	Terephthalic acid	$C_8H_6O_4$	100-21-0	166.13084	11.928	−0.063031	0.89651	−0.5152	700.150	7.16890	883.600	0
318	*o*-Terphenyl	$C_{18}H_{14}$	84-15-1	230.30376	13.0705	1.329955	−1.300762	0.5044183	329.350	8.42870	857.000	0
319	Tetradecane	$C_{14}H_{30}$	629-59-4	198.388	12.007	1.445	−1.3846	0.42836	279.010	7.33360	693.000	0
320	Tetrahydrofuran	C_4H_8O	109-99-9	72.10572	4.0907	0.12318	0.46123	−0.23807	164.650	3.74660	540.150	0
321	1,2,3,4-Tetrahydronaphthalene	$C_{10}H_{12}$	119-64-2	132.20228	10.07	1.994	−2.5052	1.0593	237.380	6.02700	720.000	0

322	Tetrahydrothiophene	C_4H_8S	110-01-0	88.17132	5.2918	0.57615	−0.32236	0.15218	176.990	4.49330	631.950	0
323	2,2,3,3-Tetramethylbutane	C_8H_{18}	594-82-1	114.22852	3.8116	−0.60048	1.6501	−0.73052	373.960	3.17800	568.000	0
324	Thiophene	C_4H_4S	110-02-1	84.13956	5.2472	0.78829	−0.47503	0.098333	234.940	3.81710	579.350	0
325	Toluene	C_7H_8	108-88-3	92.13842	5.4643	0.76764	−0.62056	0.25935	178.180	4.40060	591.750	0
326	1,1,2-Trichloroethane	$C_2H_3Cl_3$	79-00-5	133.40422	4.1283	−0.34796	1.0118	−0.32712	236.500	4.13030	602.000	0
327	Tridecane	$C_{13}H_{28}$	629-50-5	184.36142	11.72	1.6004	−1.6689	0.56396	267.760	6.97470	675.000	0
328	Triethyl amine	$C_6H_{15}N$	121-44-8	101.19	4.6139	0.41881	−0.23744	0.20257	158.450	4.05710	535.150	0
329	Trimethyl amine	C_3H_9N	75-50-3	59.11026	5.1056	1.6568	−1.6244	0.41985	156.080	3.08740	433.250	0
330	1,2,3-Trimethylbenzene	C_9H_{12}	526-73-8	120.19158	7.0138	1.0377	−1.1841	0.56211	247.790	5.12030	664.500	0
331	1,2,4-Trimethylbenzene	C_9H_{12}	95-63-6	120.19158	7.8955	1.513	−1.9061	0.85016	229.330	5.22830	649.100	0
332	2,2,4-Trimethylpentane	C_8H_{18}	540-84-1	114.22852	5.935	1.1967	−1.2686	0.51652	165.780	4.34440	543.800	0
333	2,3,3-Trimethylpentane	C_8H_{18}	560-21-4	114.22852	6.0778	1.207	−1.3449	0.58	172.220	4.47800	573.500	0
334	1,3,5-Trinitrobenzene	$C_6H_3N_3O_6$	99-35-4	213.10452	10.688	0.38045	−0.00074017	0.0003222	398.400	8.39050	846.000	0
335	2,4,6-Trinitrotoluene	$C_7H_5N_3O_6$	118-96-7	227.1311	1.9497	−8.4859	17.865	−10.196	354.000	8.84860	828.000	0
336	Undecane	$C_{11}H_{24}$	1120-21-4	156.30826	10.136	1.5084	−1.473	0.44521	247.570	6.19520	639.000	0
337	1-Undecanol	$C_{11}H_{24}O$	112-42-5	172.30766	8.7274	−1.5834	5.0913	−3.2171	288.450	8.90070	703.900	0
338	Vinyl acetate	$C_4H_6O_2$	108-05-4	86.08924	4.6643	0.50913	−0.55117	0.45397	180.350	3.97880	519.130	0
339	Vinyl acetylene	C_4H_4	689-97-4	52.07456	3.649	0.4	0.043		173.150	2.98760	454.000	0
340	Vinyl chloride	C_2H_3Cl	75-01-4	62.49822	4.2629	1.0111	−0.48757	−0.045787	119.360	3.21450	432.000	0
341	Vinyl trichlorosilane	$C_2H_3Cl_3Si$	75-94-5	161.48972	4.3817	0.26434	0.034522	0.071549	178.350	3.91430	543.150	0
342	Water	H_2O	7732-18-5	18.01528	5.66	0.612041	−0.625697	0.398804	273.160	4.49810	647.096	0
343	*m*-Xylene	C_8H_{10}	108-38-3	106.165	6.493	1.0653	−1.1205	0.48226	225.300	4.68030	617.000	0
344	*o*-Xylene	C_8H_{10}	95-47-6	106.165	6.5393	0.98813	−0.91617	0.35023	247.980	4.65030	630.300	0
345	*p*-Xylene	C_8H_{10}	106-42-3	106.165	6.6475	1.1739	−1.2812	0.54229	286.410	4.30350	616.200	0

The heat of vaporization ΔH_v is calculated by

$$\Delta H_v = C_1(1 - T_r)^{(C_2 + C_3 T_r + C_4 T_r^2)}$$

where $T_r = T/T_C$, T_C is the critical temperature from Table 2-106, ΔH_v is in J/kmol, and T is in K.

All substances are listed by chemical family in Table 2-6 and by formula.